CULTURAL TRANSFORMATION AMONG THE ILLINOIS: THE APPLICATION OF A SYSTEMS MODEL TO ARCHEOLOGICAL AND ETHNOHISTORICAL DATA

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ABSTRACT

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By

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The concern of this study is the examination of the changes which took place in Illinois Indian culture with European contact. Archeological and historical data are used to consider the change of the Illinois from a populous and powerful group in the seventeenth century to a remanent population in the 1830's. The history of the movements of the Illinois villages, their subsistence, political and social organization and material culture are described from historical sources and through the information obtained from archeological excavations.

Previous studies of the Illinois have not provided a model satisfactory for examining the processes of culture change, frequently considering population change as the single important variable, and approach which is deficient in explanatory power.

A model based on general systems theory was utilized for this study. The use of the systems model enables consideration of a large number of variables in complex interrelationships, and allows for identification of the significant variables for change and for predictive statements.

The solidarity of the village, the observance of village ritual, political flexibility and population change are demonstrated to be the most significant set of variables for change. Population reduction

for the Illinois cannot be separated from the other covarying variables and it is the interrelationships of these variables that account for system change.

The analysis of the Illinois by means of the system model has produced coherent explanations for the changes which occurred and demonstrates the utility of the application of general systems theory to culture change.

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By

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To Jim, with thanks

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LIST OF ABBREVIATIONS

CIHS.....Collections of the Illinois State Historical Society

JR.....Jesuit Relations and Allied Documents

MPHS.....Collections of Michigan Pioneer and Historical Society

WSHS.....Collections of the Wisconsin State Historical Society

CHAPTER I

INTRODUCTION

The Illinois Indians inhabited mainly the state which now bears their name; they were a large group and important in the French control of the area. When the French entered Illinois country in the 1670's the Illinois were powerful, but by 1832 the Illinois were no longer significant in the political maneuverings for power and numerically were greatly reduced.

The Illinois were selected for study for a number of reasons. They are one of the few Indian groups in the Middle West for whom both archeological information and historical documents exist from the beginning of the contact period. Although ethnographic studies were made of the Shawnee and Miami and historical material is available for them, no securely dated or historically identified sites can be associated with them. In the period of early ethnographic inquiries in the 1820's the Illinois were no longer a politically prominent group and were not studied. However, fairly extensive historical documentation relating to the Illinois exists and at least four archeological sites definitely can be associated with them. Two of these sites, the Zimmerman site (Ls 13) from the 1680's, and the Waterman site (R 122) from the 1760's, have been excavated by the author. Surface collections are available from the last Kaskaskia village (Indian Farm or the Guebert Site) 1720-1832,

and a village of the Michigamea believed to date from the 1720-1752. Thus the availability of both archeological and historical records seemed to provide a unique opportunity to examine an Indian culture and the changes which occurred in it as a result of European contact.

The reduction of a populous nation to a small politically helpless one occurred for many Indian groups due to European contact, frequently through destructive warfare or devastating epidemics. The effects of these factors on the Illinois were not of a sufficient magnitude to account for the depopulation which did occur and it is evident that the causes were more complex.

Several general ethnohistorical papers on the Illinois have been written (Temple 1966; Kinietz 1932; Bauxar 1953) and the author has been privileged to read the manuscript of a new, very thorough ethnohistorical account of the Illinois (Hauser 1972).

Ethnohistorical studies, although they may seek to prove some point, are basically ideographic, that is the conclusions reached are particular to the group studied and appropriate only for the group. Such specific goals stand in contrast to the nomothetic aims of systems theory, whereby an attempt is made to find regularities which will allow for generalizing statements involving many groups (Harris 1968:2).

The only study of the Illinois directly related to change was Emily J. Blasingham's dissertation (1960) on the depopulation of the Illinois. The basic assumption made in her paper was that depopulation was the sole or at least major cause of the virtual extinction of Illinois culture; this idea appears to have been taken as given without search for further causes. Depopulation was analysed in light of

a number of variables; warfare, disease, monogamy, liquor, and formation of splinter groups. These variables were discussed separately without an attempt to interrelate them. The linear relationship assumed between the variables "depopulation" and "extinction" appears to simplify the cultural complexity too greatly. A linear relationship is one in which causation is unidirectional, A goes to B, B to C; change in B will only affect C and not have any reciprocal effect on A, that is, no feedback occurs (Blalock 1969: 46). Since it is evident that feedback does occur in a complex system the use of a causal linear model does not adequately fit the observable complexity. Use of a model based on general systems theory is felt more suitable, a culture being viewed as complex sets of interrelationships between and among cultural elements, such as relationships between political and religious elements.

Most studies examining the effects of European contact on the American Indian cultures have been done under the general rubric of acculturation. There have been efforts to develop cross-cultural classifications of the processes of changes (Redfield 1936: Broom et al.1954). Some excellent studies incorporating aspects of this typology have been done, for example Spicer (1961) and Ezell (1961). However, the conceptual model used for analysis remains, for the most part, unspecified, although with the implication that the typological acculturation model is being used. This model depends for variables largely on the usage of the typology of the processes of cultural change (rejection, fusion, compartmentalization etc.), so that use of the model results in verifying the typological structure,

a teleological process.

The use of the typological terminology for variables limits the ability to generalize from individual cases, as the terms are already descriptive of processes and at a high level of abstraction. I believed that this approach would not significantly aid in the study of the Illinois Indians. Verifying the typology again would not satisfactorily explain why the Illinois could be fitted into a particular classificatory pigeon hole.

Some excellent studies have been produced in recent years utilizing general systems theory. Those dealing with archeological materials have generally considered two main topics; artifacts and their interrelationships with the natural and social environment (Deetz and Dethlefsen 1971) and adaptive changes in subsistence patterns (Flannery 1968). Systems theory has also been used productively for an understanding of living populations and of the interrelationships between culture and environment (Rappaport 1968).

The study presented here is directed towards an examination of Illinois Indian culture, how it changes and the causes for change. Change is to be examined by means of a model based on general systems theory, modified from one suggested by David Clarke (1968). This model has utility in examining the interaction of selected variables through time thus permitting an assessment of the importance of each variable in explaining cultural change. This provides a dynamic depiction of causation and results, and generates further hypotheses for testing. All cultural systems are visualized as continuously changing through time by the interaction of various elements of the system with the environment. For this study selection was made of

a point in time at which new environmental input was introduced, this input being contact with the French, a more technologically advanced cultural group. It is not assumed that this is the only environmental input.

There are two major divisions in the study, the description of the data - the archeological and historical records - and the analysis of this data by means of a model utilizing general systems theory.

The description of the data is contained in Chapters II - V. Chapter II gives a chronological outline of the Illinois from initial contact in the 1640's to the most recent, very brief, ethnological study in 1916. This covers the movement of the Illinois from northern Illinois down the Illinois and Mississippi rivers to southern Illinois and then to reservations in Kansas and Oklahoma. Chapter III examines the organization of the Illinois and gives a brief ethnohistorical description of their culture based mainly on French historical documents. Chapter IV summarizes the data obtained from excavations at the Zimmerman site, an Illinois village of the 17th century and Chapter V presents the archeological data from the excavation of an 18th century Illinois village, the Waterman site.

Chapter VI represents the second section of the study and concerns the analysis of the data by means of the processual model. In this chapter the model is described, the variables used in the study are discussed and the sequence of changing states of the Illinois system is examined. The concluding chapter attempts to interpret these findings and to make some general statements on the utility of this method.

This study is not considered to have provided a total and final description of culture process among the Illinois, but to have attempted a new method of examining ethnohistorical and archeological data within the concept of a system, a method which seems to have greater explanatory powers than those previously used.

This formulation is seen as only the initial step in producing a suitable model for examining such data, as the use of systems theory in this study does not imply a quantitative analysis with variables expressed in mathematical terms, but a more general use of systems theory. It is hoped that with additional data from archeological research and further refining of the model the ability to express these formulations in mathematical terms can be gained, that is, to move from an analogue model to a symbolic model. This remains in the future, but this study is considered a building block for such an analysis.

CHAPTER II

HISTORICAL BACKGROUND

The Illinois

The word "Illinois" is a gallicized version of the Algonkian *ereni8o*[1] meaning *men* (Belting n.d. : JR 59:125). The various forms of the word as used by the French are indicated in Table 1; this is not meant to be an exhaustive list. By 1670 the French use of the word had stablized at Illinois or Ilinois.

The Illinois were composed of a number of named villages, at least sixteen are mentioned in the French accounts (Table 2). Five of these: the Kaskaskia, Peoria, Cahokia, Tamaroa and Michigamea, continued to be recognised units until the remanents of the tribe left the state in the 1830's. The others appear briefly and then vanish, presumably absorbed into the larger units. When last noted in the historic documents in 1700 a large group composed of the Coiracoentanon, the Maroa,[2] and Tapouara were residing in the area near Lake Peoria in company with the Peoria. It is likely that they were absorbed by the Peoria or became identified with them subsequently. The Coiracoentanon

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1. 8= w in prevocalic position (Voegelin 1938:105)

2. The Maroa and Tamaroa were spoken of by La Salle as a single group. The Maroa were also mentioned as one of the villages at Pimiteoui in 1694 (CIHS 23:342) at which time the Tamaroa village was on the Mississippi. However, Tonti said; "The Tamarouas... belong to the Illinois nation. Some of them are settled with the Illinois at Fort St. Louis, while others are situated about twelve leagues below the mouth of the Illinois" McDermott 1949:58).

Table 1

Various spellings of Illinois

1656	Liniouck
1658	Aliniouch
1660	Alimiwec
1667	Iliniouk
1668	Alimouec or Alimouek
1669	Ilinois

Table 2

Illinois villages from French accounts

Kaskaskia	(Kakachikiouek; Caskakias; Kachkachkia; Kats)
Peoria	(Peoualen; Peoualeas; Peoucarias)
Tamaroa	
Cahokia	(Kahokias; Cahos)
Michigamea	(Mitchigamea; Michigamis; Metchigameas)
Negawichi	(Negaouichiriniouek)
Moingoena	(Moingoanas; Mouingouena)
Tapouara	(Tapouero)
Coiracoentanon	(Coiraobitanon; Kourerakouitenon)
Chinkoa	
Chepoussa	(Chepouessea; Chepouska)
Maroa	
Michibousa	
Ispeminkia	
Amonokoa	
Omouahoa	
Rapaououa	(Possibly Tapouara)

may have remained a somewhat separate unit, and may be the group which later (1712) moved to Starved Rock, Illinois, but there is only slight evidence for this. The Moingwena had a separate village in 1694 and Mamentoienta, the Grand Chief, refers to the Moingwena as one of the Illinois groups in 1725 (Mercure de France 1725:2844. We can therefore conclude that they must have maintained an individual identity until at least this date.

The Michigamea were said by Tonti to be on a river in southern Illinois (possibly the Kaskaskia) with two other Illinois groups, the Chepoussa and the Michibousa (CIHS 23:277). The Michigamea appear to have remained in southern Illinois and Arkansas and not joined the northern Illinois. Their status as an Illinois group has been questioned (Temple 1966:12). Marquette reported visiting a village called "Mitchigamea" where he could not understand the language (JR 59:151), however, DeLangles felt the village was probably a Quapaw village and the name, Mitchigamea, belonged to another village shown on Marquette's map, west of the Mississippi (DeLangles 1945:40). St. Cosme in 1699 said that the Michigamea, Cahokia and Tamaroa spoke the same language (Kellogg 1917:356. As mentioned above Tonti lists the Michigamea in 1693 as a portion of the Illinois in company with the Chepoussa and Michibousa. In 1680 the Chepoussa were in the northern part of the state with other Illinois villages. The Tamaroa wintered with the Michigamea in 1700 and may have in previous winters also (JR 65:105). Charlevoix stated in 1721 that the Michigamea "a foreign tribe" had been adopted by the Kaskaskia (Kellogg 1923:212). The Michigamea had been living with the Kaskaskia. A possible

function of the adoption will be discussed below.

Village locations and population

A brief outline of the historic locations of the Illinois villages and their movements will be given.[1] No attempt will be made to delineate exact locations in terms of modern maps, although some major village sites are indicated on Figure 1 and the Kaskaskia and Michigamea villages treated in this study will be discussed in detail in the sections concerning the individual villages.

Estimates of the population of historic Indian groups are notoriously difficult to make; besides involving subjective judgements on the reliability of various contemporary viewers, there is a lack of detailed information about the composition of the population. Population may be given in terms of cabins, fires, warriors or souls and probably all are only estimates. These estimates may vary from time to time also due to shifts in the composition of the villages. The largest residential unit was the summer agricultural village but the structure of the society was such that fairly large household groups could move about and attach themselves at least temporarily to other groups. In addition, war parties consisting either of warriors or of family units might be absent from the village for long periods. Winter villages were smaller and scattered. All these factors lend difficulty to estimating population size. Only in a few cases were figures given for cabins, warriors

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1. Detailed information on this appears in Temple 1966 and Bauxar 1953

2. See page 67 for composition of war parties

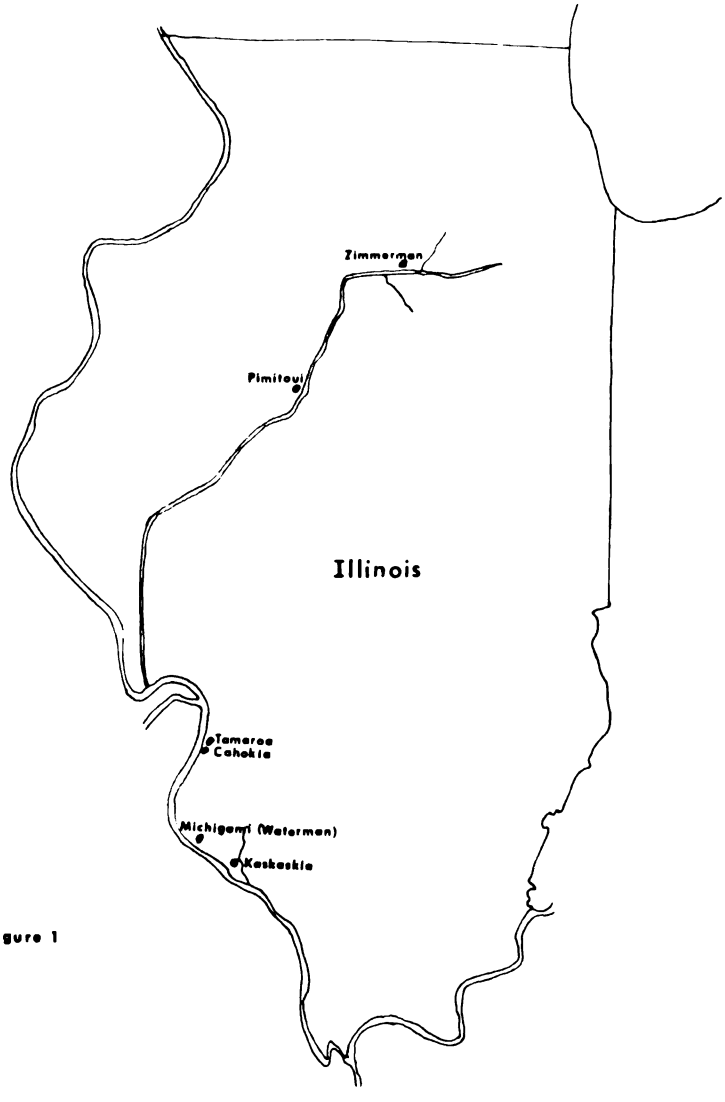

Figure 1

Location of some Illinois Indian villages

Figure 1

and total population for one village which would allow determination of the numerical relationships between the units. These are available for the Grand Village of the Illinois: 460 cabins (Margry 1875 I:466); 1800 warriors (CIHS 23:5) and a total population of between 7000 and 8000 (LeClerq 1881:2:132).

On the basis of these figures Blasingham (1956) estimated 4 warriors per cabin, the number of individuals per cabin as 16.3 and 3.17 dependents per warrior (1956:364).[1] Her paper contains the most thorough study published of the demography of the Illinois and in general her estimates will be adhered to in this study .

The earliest mention of the Illinois was by Father Le Jeune about 1634, who located them somewhere in an area near the Sioux, Winnebago and Potawatomi, far west of the Sault (JR 18:231-33). Around this time the Illinois traditionally are supposed to have nearly wiped out the Winnebago in southern Wisconsin (Blair 1911 I:293-300). Most modern historians have stated that the Illinois were driven out of the Illinois country and west across the Mississippi by Iroquois attacks, however, the first Iroquois attack on the Illinois is said to have occurred in 1656 (Blair 1911 I:151). It is likely that the Illinois'

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1. Blasingham does not explain how she obtained these figures, but they can be computed in the following manner:
can

$$\frac{\text{Warriors } 1800}{\text{cabins } 460} = 3.91 \qquad \frac{\text{total popl. } 7500}{\text{cabins } 460} = 16.3$$

$$\frac{\text{Population - warriors}}{\text{warriors}} = 3.17$$

Other figures given in historical references result in a similar configuration. These are averages for the entire village and no doubt the family composition varied widely within this. It is likely too from the low number of dependents per warrior that the small children have not been counted.

movement westward was part of the general population displacement in the Great Lakes area caused by the Iroquois destruction of the Huron and other eastern tribes. Population movement to the south from these attacks and the dread of the Iroquois communicated by refugees could have caused the Illinois to shift to the western portion of the territory which they had already utilized before actual Iroquois attacks were a danger. The Illinois appear to have been on the Mississippi as early as the 1630's and 1940's where they were intermittently at war with the Sioux, in the later 1650's war with the Iroquois was carried on. One report stated that the Illinois had been nearly exterminated by these wars (JR 51:47) but this does not seem to be the case. Population in the late 1650's was given as 100,000 (JR 44:245-247) but this estimate may have included other groups. Dablon commented that the term Illinois was used originally for a number of different nations to the south, the Illinois having been the first of the southern groups to have visited the French in Wisconsin (JR 55:207). It was not until 1666 that the Illinois began to appear at the trading post at Chequamegon on the southern shore of Lake Superior (JR 51:49). In the late 1660's the Illinois began to move eastward, 15 cabins were at Green Bay in 1670 (Blair 1911 I:321) and in 1672, 20 cabins were at a Mascouten village in the area (JR 58:23).

In 1672 when Marquette journeyed down to the Mississippi, he found at least two villages of Illinois on what was probably the Iowa River (DeLanglez 1945:40). These were the Peoria with some additional groups. The Moingwena were further up the same river, the Maroa were indicated in the central region of Illinois and the

Michigamea in Arkansas. On his return trip, Marquette found a Kaskaskia village on the upper part of the Illinois river near Starved Rock (JR 59:161).

The villages of the Peoria on the Iowa River were said to have 300 cabins and 8000 people. In 1673 the Kaskaskia village had 74 cabins, and the following year Marquette estimated 1500 adult males at the village (JR 59:189). The population in the upper Mississippi-Illinois valley at this time then would be around 9,000 (Blasingham 1956:363). However, the Michigamea, Cahokia, and Tamaroa were not included in this figure.

Marquette established the Mission of the Immaculate Conception at the Kaskaskia village. During his return trip to Michilimackinac he died, and it was not until 1677 that another missionary, Father Claude Allouez, came to the village. When Father Allouez arrived he found the village greatly increased in size to 351 cabins representing eight "tribes" (JR 60:159). This village subsequently came to be referred to as the Grand Village of the Kaskaskia, or the Grand Village of the Illinois.

When LaSalle came down the river in 1679 the Grand Village was deserted as everyone was in winter quarters; two winter camps were later encountered by La Salle. The abandoned Kaskaskia village was said to be 5-6 leagues below the mouth of the Missouri River on the west bank of the Mississippi (Anderson 1901:107).

Henri Tonti, La Salle's second in command, constructed a fort near the winter camps in the vicinity of Lake Peoria, but after La Salle left for Michilimackinac, most of Tonti's men deserted and he was forced to go to the main village for safety. The winter being over, this village was again occupied. Towards the end of the summer

while the major part of the Illinois fighting forces were off on war parties, the Iroquois approached the village. The Illinois shifted their women, children and valuables to a place of safety further down the river, and prepared for battle. After a series of skirmishes the Illinois, having no fortifications, decided to abandon the village. They camped at a short distance from the village for a while, but since the Iroquois showed no signs of leaving, the Illinois moved off down the river. The Iroquois followed on the opposite bank of the river and informed them that they would go away if the Illinois dispersed.

> "...the Kaskaskia, who are the bravest of all, with the Kahokias and the Chinkoas, ascended the Great River, The most populous tribe, the Peoucarias, crossed the prairies beyond the same river. The Omouahoas, the Coirabitanons, the Moingonas,and the Cepouskas descended the Great River; and the Maroas or Tamaroas, the Tapouaros, and the Ispeminkias, more credulous than any of the other Illinois, remained near the mouth of their river, intending to hunt in that neighborhood" (Anderson 1901:215).

The Iroquois immediately fell on the group that remained; 700 women and children were captured and taken into slavery or put to death. This slaughter probably accounts for the loss of the Ispeminkias from subsequent records; the remanents probably affiliated with other villages.

Using the figures given for cabins and warriors in 1680: 460 cabins and 1800 warriors (Margry 1875 1:466; CIHS 23:5) and the number of cabins given for the Tamaroa village in 1682, 180 cabins (Anderson 1898:65), the population for the Illinois around 1680, not including the Michigamea was estimated as 10,500 (Blasingham 1956:365).

The Grand Village had been burned by the Iroquois and remained deserted until 1683 when Tonti and La Salle began the construction of Fort St. Louis on nearby Starved Rock. La Salle convinced Miami and

Shawnee groups to settle near the fort and encouraged the Illinois to return to the area. The fort and the large Indian encampment were intended to provide a barrier to further Iroquois incursions. The Miami and Shawnee left the area after a few years, but the Illinois stayed until 1692. Due to the difficulty of supplying the fort with water and wood in case of attack (Temple 1966:30) and lack of firewood in the area, the villages were moved to Lake Pimiteoui. Lake Pimiteoui was actually a series of three shallow lakes caused by the widening of the Illinois river at the present city of Peoria.

There were several villages at Lake Pimiteoui, Father Gravier speaks of four (JR 65:197) and Deliette of six (CIHS 23:341). These were composed of Kaskaskia, Peoria, Coiracoentanon, Moingwena, Maroa, and Tapouara. The Peoria were said to have 800 people, the Kaskaskia, 750 and the Coiracoentanon 600. The Moingwena, Maroa and Tapouara together comprised 850 persons (CIHS 38:39).[1] The Moingwena previously were designated as a distinct village on the Iowa River and the Maroa and Tapouero probably had suffered in the 1680 attack and may have settled with the Moingwena. The Tamaroa and Cahokia were on the banks of the Mississippi below the mouth of the Illinois. The population of the Cahokia at this period is not known, but the Tamaroa had 180 cabins in 1682 (Anderson 1989;65).

The Mission of the Immaculate Conception followed the villages to Lake Pimieoui; Father Gravier was the priest there. He made some conversions apparently mainly among the Kaskaskia, the most notable of which was the Kaskaskia chief Rouensa and his family.

In 1700 the Kaskaskia headed by Rouensa left the settlement at

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1. These figures are given in the reference, however, in the citations listed there is not a breakdown by tribe given, therefore, there is no way of knowing how it was obtained or how accurate it is.

Pimiteoui parting angrily with their relatives.

> "I do not think that the Kaskaskia would have thus separated from the Peouarooua and from the other Illinois of the Strait, if I could have arrived sooner. I reached them at least soon enough to conciliate their minds to some extent, and to prevent the insult that the Peouatooua and the Mouningouena were resolved to offer the Kaskaskia and the French when they embarked" (J.R. 65:101).

The Kaskaskia had been lured by Iberville's plans for resettlement of tribes down the Mississippi and encouraged by Father Marest who favored this scheme. Father Marest may have worked also on Rouensa's vanity "...Rouensa...gets himself believed when he says that he is called the great chief of the French, as Father Maretz (Marest) has told him" (Palm 1933:36). The Kaskaskia, however, halted their migration near the present city of St. Louis and lived there from 1700 to 1703 on the north bank of the Des Peres River, west of the Mississippi. The village consisted of 30 cabins (Fortier 1909:238), suggesting a population around 400. If the population of the Kaskaskia in 1698 was about 750 presumably the entire Kaskaskia group had not left Pimiteoui at this time. It is probable that this splinter group included only the Christian adherents of Rouensa.

The Cahokia and Tamaroa were situated east of the Mississippi below the mouth of the Missouri River where a mission had been established. The Cahokia were said to have been more numerous than the Tamaroa; in addition some Peoria, Michigamea and Missouri were in the village (Fortier 1922: 149). The population of the Illinois about 1700 was between 5800 and 6250 (Blasingham 1956:367); this did not include a major portion of the Michigamea.

Rouensa attempted to influence the Tamaroa to join his village on the west bank of the Mississippi. One band came over but the rest

remained on the east bank. In 1703 the Kaskaskia village removed to the banks of the Kaskaskia River in Randolph county about 5 or 6 miles upstream from its confluence with the Mississippi. Some Tamaroa may have accompanied them but there is no definite information on this.

The Michigamea at this period appear to have been still ranging from Arkansas to southern Illinois. In the latter area they developed a fairly close relationship with the Tamaroa.

In 1706 the chief, Mamemtoienta was sent from the Pimiteoui villages to Montreal to account for the death of a soldier. On arriving at Michilimackinac he was informed by the Ottawa that the French were weak and feared the Indians so he returned to the villages urging the removal of the French. One man, inspired by this talk, shot the missionary Father Gravier.[1] Father Mermot at the Kaskaskia village of Rouensa had to send men to retrieve Father Gravier who later died of his wound. This action of the Peoria had the grave result of cutting them off from regular trade for some time.

In 1710 the number of Illinois warriors was given by Raudot as 1500 (Kinietz 1940:383), using 3.17 persons per warrior this gives a population of around 6200.

By 1716 or earlier a portion of the Peoria (possibly the Coiracoentanon) removed to Starved Rock where they remained with some interruptions until about 1736. The village there was known as Le Roche and was situated on one of the islands in the river (Kellogg 1923:186).

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1. Temple (1966:36) is incorrect in saying that Mamemtoienta shot Father Gravier. In the original account (JR 66:55) it is clear that it was another man, unidentified by name.

Sometime after 1716 the Michigamea joined the Kaskaskia in their village. This village was also occupied by French inhabitants. In 1719 or 1720 the commandant of Fort de Chartres, Boisbriant, decided to divide the village. The French remained in the original village, the Kaskaskia moved 4 or 5 miles upstream and the Michigamea established their village a half league north of Fort de Chartres (Palm 1933:49). By 1721 the Cahokia and Tamaroa had combined into a single village (Kellogg 1923:201).

The Illinois continued to be at war with a number of tribes, the most persistant of which were the Fox. In 1721 or 1722 the Peoria at Pimiteoui and Le Roche deserted their village for a year or two due to pressures from the Fox and their allies (Mereness 1916:70). Part of the Peoria were back at Pimiteoui in 1723 (JR 67:163) and the Le Roche group probably returned around the same time.

In 1728 there were still several "tribes" in the Peoria village (WSHS 17:48). Presumably one of these was the Moingwena, still identified as a separate unit in 1725 (Mercure de France 1725:2844).

The Fox continued to be a constant threat until 1730 when a combined French and Indian army defeated and nearly exterminated them.

The villages at this time were Kaskaskia, Michigamea, Cahokia and two Peoria settlements, one at Lake Peoria and the other at Starved Rock. By the 1750's the refurbished Fox and other groups including the Sioux were again attacking the Illinois.

By 1750 the population had dropped to approximately 2,000 (Blasingham 1956:369). The Kaskaskia, Michigamea and Cahokia villages together accounted for half of that, the Peoria for the remainder. The

population seems to have remained stablized at this figure until about 1765.

In 1752 some Cahokia, fearing the revenge of the Fox for killing some of their warriors, joined the Michigamea at their village. The Fox made a surprise attack on the Michigamea village, killing 60 or 70 people and seizing a number of prisoners.

During the French and Indian wars many of the Illinois joined the French in attacks on the British settlements.

The Peoria remaining at Pimiteoui abandoned the upper Illinois permanently around 1763, the Le Roche village having been abandoned about the same time. Some Peoria had been in southern Illinois with their relatives previously and in 1763 a Peoria village existed on the Michigamea reserve. Both villages combined (Peoria and Michigamea) were said to have 300 warriors (Mereness 1916:363).

The most serious disruption for the Illinois appears to have been the conflict between the British and French over the trade and the subsequent loss of Louisiana to the British. The reaction of the Illinois to the British rule was to abandon the eastern side of the Mississippi. Soon, some of the Illinois, particularly the Kaskaskia, began to drift back into the area and receive presents from the British. Although all groups finally made peace with the British, they continued to carry most of their furs to the Spanish at St. Louis.

Most of the Peoria remained west of the Mississippi and many of their kinsmen joined them. Other Illinois went to the Osage and Missouri or to the Piankashaw and Wea with whom they were extensively intermarried (CIHS 29:687).

> "The Indians have also left our Side, and gone to the Spanish side... He [Kaskaskia chief] has since prevailed on a few of the Kaskaskia to come to receive presents from Major Farmer, but none of the other tribes of the Illinois has come in yet" (CIHS 11:131).

Most of the Kaskaskia returned to their village which also was composed of Michigamea, Cahokia and Tamaroa. Some of the Michigamea returned to their reserve for a time. At one point many of the Kaskaskia moved down to join the Quapaw (Temple 1966:52). In 1766 there were said to be 150 warriors of the Kaskaskia; 40 of the Michigamea; 250 of the Peoria and 40 of the Cahokia (CIHS 11:126), which gives an estimated total population of 1500. In 1769 the great chief Pontiac was killed by a Peoria Indian. Following this many northern groups attacked the Illinois.

When the Americans entered the area the Illinois were divided in their allegiance. After the beginning of American rule the Kaskaskia remained at their village, but the other groups left the area going west of the Mississippi.

By 1777 the Tamaroa and Cahokia had united with the Kaskaskia and the Kaskaskia and Peoria together were said to number only 100 warriors (WSHS 18:368).

The Kaskaskia (with associated members of other groups) were in their village in southern Illinois and the Peoria were in Missouri in 1792 when the Kaskaskia made a treaty with United States Government at Vincennes turning over the west section of Illinois which had been their reserve which they were unable to use due to their small numbers. The United States Government agreed to protect the Kaskaskia (from other Indians), to give them an annuity of $1,000 a year, to build a house for the chief, to provide support for seven years for a Catholic priest and to build a church.

In 1817 the Kaskaskia, Cahokia and Peoria were said to have had 250 warriors (Brown 1909:308). In 1818 the Peoria who had not been present at the previous treaty, agreed to its terms in a treaty at Edwardsville, Illinois and were given a reservation on the Blackwater River in Missouri territory where they had been living for sometime (Temple 1966:55).

In 1832 the Kaskaskia wished to move west to join the Peoria and ceded the remaining land in Illinois except for 350 acress given to Ellen Ducoign, the chief's daughter who remained. The combined Kaskaskia-Peoria settled on a tract in Kansas; in 1867 they removed to Oklahoma (Royce 1899:842). A brief unpublished study of the Peoria was done there much later by Truman Michelson (1916).

Environment

The prehistoric area utilized by the Illinois cannot be determined definitely, but most likely it included the southern part of Michigan, the southern portion of Wisconsin and northern Illinois. All the known historic Illinois villages were located within the present state of Illinois, most of which falls within the Illinoian biotic province (Cleland 1966:12) and the Praire Peninsula (J.A. Brown, 1965). There are three major vegetational types present in this area; prairie, savanna and woodlands. The uplands are prairie grasslands with dispersed oak-hickory groves. The river bottoms are largely wooded, but there is also some grassland. Large areas of forest edge and savanna are present providing an excellent habitat for the white tailed deer. Elk were also present in the mixed woodland and grasslands and near marshy areas. The tall grass prairies supported large herds of buffalo. The alluvial soil

provided lands suitable for primitive farming practices. Many of the marshy areas provided sheltered land and feeding grounds for flocks of migratory birds. A detailed discussion of the Prairie Peninsula and its resources can be found in J.A. Brown (1965).

The climate is humid continental with extremes of temperature, however, the growing season is quite long being between 160 days in the north and 190 in the south (Garland 1955:10).

Good descriptions of the environment and resources can be found in the historic accounts where they were noted by men who had to utilize these resources along with the Indians.

> "These plains...are usually covered with bison in prodigious number...the soil is excellent and seems only to ask cultivation... There are wild apple trees...several kinds of plum trees, the same for walnuts...strawberries, raspberries, bush mulberries...hazel nuts, and wild grapes are very common there... The forests are full of deer, wapiti, bears, partridges of two kinds, turtle doves..." (La Salle in Tucker 1946).

> "You see places on one side that are unwooded prairies requiring only to be turned up by the plow, and on the other side valleys spread a half a league before reaching the hills, which have no trees but walnuts and oaks; and behind these, prairies... (CIHS 23:205).

> "There are avenues extending farther than the eye can reach.. not a single bit of brushwood. This may be due to the endless number of buffalos that pass there. The reason why these places are so much frequented by these animals is because there is a kind of marsh here and there in the middle of these alleys which serves them for watering places" (CIHS 23:318).

The Illinois utilized all of the major ecological zones available to them. Their economic and settlement pattern corresponds to the Miami-Potawatomi pattern as defined by Fitting and Cleland (1969:297). This includes at least two settlements, a summer base camp and a winter hunting camp. The Illinois subsistence cycle is described below.

Table 3

Population Figures for the Illinois

1656	60 villages
1657-8	60 villages - 20,000 men - 100,000 total population
1668	formerly 10 now 2 villages
1669	5 villages - 2000 population
1670	8 villages
1672	dwell on Mississippi River - 20 cabins at Miami-Mascouten village
1673	Peoria, 8000 population - 3 villages - 300 cabins in one village - Michigamea possibly in Arkansas-Kaskaskia, 74 cabins
1674	Kaskaskia, 500 chiefs and elders, 1000 young men, 5-600 fires
1677	Kaskaskia, 351 cabins, 8 tribes
1679	460 cabins, 4-5 fires - Tamaroa village 200 families
1680	Kaskaskia 4-500 cabins each with 5-6 families - Illinois 1800 warriors
1682	Tamaroa 180 lodges
1690's	6 villages at Peoria - Cahokia and Tamaroa more than 60 cabins each - 80 cabins of Illinois on Kankakee - 200 cabins Peoria - Michigamea, Chepoussa, Michibousa up the Kaskaskia River
1694	Kaskaskia 750 population - Peoria 800 - Coiracoentanon 600 - Moingwena, Maroa, Tapouero 850 - 4 villages at Pimiteoui - 260 cabins, 800 warriors, population 3000
1699	Tamaroa 300 cabins
1700	removal of village of Kaskaskia, 30 cabins - Tamaroa awaiting Michigamea to form one village
1710	Illinois 1500 warriors
1712	3 villages - Peoria 900-800 population
1717	400 men, Le Roche
1722	700 warriors

Table 3(cont'd)

1723	Peoria, 300 cabins, 4-5 fires - 11 villages belonging to the tribe
1732	Kaskaskia, 200 warriors - Michigamea, 100 warriors - 3-400 Cahokia and Peoria at Cahokia
1736	Michigamea, 250 men - Kaskaskia, 100 men - Peoria at Le Rocher 50 men - Chokia or Tamaroa 200 men
1750	Kaskaskia 600 population - 3 villages total 800 population - 2000 counting Peoria - 15-20 per cabin - 300 warriors for the three villages
1757	Michigamea andCahokia 400 warriors - Kaskaskia, 400 warriors - Peoria, 700 warriors
1763	Kaskaskia, 100 warriors - Michigamea, 400 warriors - Cahokia, 60 warriors
1766	Illinois 650 warriors - Kaskaskia, 150 warriors, Cahokia, 20 cabins of Peoria - Michigamea 40 warriors - Peoria, 250 warriors - Cahokia, 40 warriors
1777	Kaskaskia and Peoria, 100 warriors
1817	Kaskaskia, Cahokia, Peoria, 250 warriors
1820	Kaskaskia, 30-40 persons - Peoria 10-15 by Ste. Genevieve
1832	Kaskaskia, 40 persons
1885	Peoria, Kaskaskia, Wea and Piankashaw, 149 persons

(JR 42:221; JR 44:247; JR 51:47; JR 54:167; JR 55:97; JR 58:23; JR 58:97; JR 59:151; JR 59:161; JR 59:189; JR 60:159; Anderson 1901:85; Anderson 1901:107; CIHS 23:5; Anderson 1898:65; CIHS 23:341; CIHS 23:276-7; CIHS 38:39; Fortier 1922:147; Palm 1933:36; JR 5:105; Kinietz 1940:383; JR 66:229; WSHS 16:373; Mereness 1916:70; JR 67:163; Palm 1933:72; Palm 1933:72; JR 69:145, 149; WSHS 18:177; CIHS 10:4, 218; CIHS 11:126; WSHS 18:368; Brown 1909:308; Blair 1923 2:201; Rothersteiner 1918:203; Hodge 1912:598.)

CHAPTER III

ETHNOHISTORICAL DESCRIPTION OF THE ILLINOIS INDIANS

The Illinois

The Illinois belong to the Algonquian linguistic family. The Illinois and Miami appear to have been originally a single group and their languages are closely related (Callender 1962:36). This similarity of language was noted by a contemporary observer.

> "The languages of the Illinois and of the Miami were the same...there being no difference except that the accent of the Illinois is very short and that of the Miami very long. One pronounces the h and the other the f" (CIHS 23:307).

The time of the separation of the Miami and Illinois is not known. Dablon, visiting a combined Miami-Mascouten village in the Green Bay region in 1670, commented that the Miami had separated from the rest of the Illinois "for the purpose of forming here a sort of transplanted colony" (JR 55:209). As his contact was mainly with the Miami it would appear he received this information from them. Trowbridge's account of the Miami in 1824 indicated that the Miami then regarded the Illinois in a younger brother status, the Miami saying that they had found the Kaskaskia, originally a separate tribe, on the Wabash River. The Kaskaskia were incorporated but the two groups later separated again (Trowbridge 1938:12). Since the Miami at this period were unable to recall that they had lived in the Green Bay area when contacted by the French, this account must be suspect and may be a later readjustment of the relationships between the groups.

Political organization

To begin to discuss the Illinois it is first necessary to describe the political organization and social integration of those units subsumed under the name of Illinois. A definition of political organization is given by Fried.

> "Political organization comprises those portions of social organization that specifically relate to the individual or groups that manage the affairs of public policy or seek to control the appointment or action of those individuals or groups (1967:21).

Saxe (1970) has discussed basic political units. He recognizes a unit which he calls the "Largest Permanent Political Unit" (1970:91), which is defined as: "A social unit that (1) internally, permanently regulates the behavior of its members, and (2) externally, stands as a unified whole against other like groups. Permanent does not imply 'constantly', but regularly recurrant" (1970:93). Although there are permanent political units at different levels, such as the family, the "Largest Permanent Political Unit" represents the numerically greatest and consistently integrated group which acts in a manner corresponding to his criteria above. He points out that the "Largest Permanent Political Unit" is congruent with Sahlin's primary tribal segments and also with Fried's "largest continuously functional unit" (Saxe 1970:99).

Indications are that the named village units are the "Largest Permanent Political Units." The villages acted frequently as single political entities in the observance of the calumet ceremonies; in playing la crosse as a village ceremony before the entire village left on the summer buffalo hunt, and in the formal sanctions imposed on behavior during the hunt.

The Illinois have been referred to as a confederacy. A confederacy has been defined as: "A loose association of political units at any level of complexity that cede their autonomy either temporarily or partially" (Helm 1968:95). Although under this definition any alliance between political units would constitute a confederacy, it does not seem suited to the Illinois. The Illinois do not appear to have been able to effectively combine for warfare, generally warfare was carried on by individual villages or groups within the villages. Confederacy as used in the records seems only to have been applied to the Illinois at a late period, when, numerically impoverished, they took part in treaty negotiations with other related Algonkian groups.

This leaves us with the unpleasantly difficult term "tribe". A tribe is often defined on the basis of various criteria of common language, common name, recognized territory, or a feeling of unity. Bounding is the greatest difficulty with the term. It is frequently difficult to draw lines between groups: for instance, two groups may share similar customs and language, but consider themselves as different groups and the territories utilized may overlap.

The usefulness of the term has been questioned particularly for cross-cultural usage because of its ambiguity. In Essays on the Problem of Tribe evidence was put forth to indicate that all the usual criteria can prove unsatisfactory (Helm 1968). One paper in that volume suggests a definition of tribes as "politically autonomous groups bearing separate whole cultures (Helm 1968:95), but our discussion above reveals that the consideration of the tribe as a politically autonomous group is incorrect. The tribe is not the political unit, it is the village. Sahlins also arrives at this conclusion stating:

"A tribe as a whole is normally not a political organization but rather a social-cultural-ethnic society" (Sahlins 1961: 190). Such an argument has taken us full circle to the original discussion of tribes with all the attendant bounding problems so well discussed by Fried (Helm 1968). If the village is the "Largest Permanent Political Unit" the view of political organization has to relate to this. Fried states that: " Most rank societies are strongly based on villages. However, the conspicuous feature is that the largest continously functional unit and the village tend to be congruent" (Fried 1967: 174).

Evidence for the Illinois as a rank society is slight. There appears to have been a recognised position of chief, though without many of the powers associated with a chiefdom. The Miami, from whom the Illinois recently had parted, had a Grand Chief with powers and privileges which do resemble those associated with the chiefly office in a chiefdom. The Grand Chief "position" as it existed among the Illinois did not have those associated obligations and rights, although succession may have been hereditary in a particular clan or lineage.

Based on the indirect evidence given in the French accounts it is believed that the Illinois at contact represented an incipient rank society. The Illinois cannot be referred to as a chiefdom; although the position of chief held some political power and prestige, how much cannot be determined. The use of the term chief in this study will refer to the status recognised by the French as a leadership position, with the understanding that the use of this term does not imply the multiplicity of rights, obligations etc., usually implied by

the term, nor does it suggest political organization equivalent to a chiefdom.

Organization of the Illinois

The village represented the largest permanent political unit and was composed of numerous household units. Classification of these is difficult. It is not possible to determine from the historical records whether these units represent clans or lineages, but they do appear to constitute some form of descent group. Since their actual composition is not determinable these units will be referred to as linked households, recognising that the cohesiveness of the unit basically was due to the male head, patrilineal and possibly patrilocal proclivities of the group. These households consisted of groups of individual cabins, each containing an extended family; several cabins being under the authority of one male leader or chief. This unit tended to maintain its individual identity although partially submerged in the village organization. Winter camps were sometimes made up of a single linked household (Kellogg 1917:351,353).

Callender indicates that the Shawnee and Miami, with whom he groups the Illinois had a more formalized community structure than did other Algonkian groups. The village was the most important political and ceremonial unit, was named,constituted a descent group and had ritual functions connected with it (Callender 1962:37). Hickerson suggests that named villages originally represented single clan villages (1970:45).

Evidence for the organization of the Illinois village is slight but certain assumptions can be made, based on observable similarities

with related groups.

The village itself may represent a clan or maximal lineage and different ritual functions might have been assigned to each village so that cooperation would be required to benefit the entire group. Such a ritual requirement would have served to integrate the villages and to reduce the tendancy towards separatism (Callender 1962:37). The recognition of the villages as all "Illinois" might have been founded on such a cooperative ritual basis, actually an extension of real or defined kin ties. Some evidence for this ritual cooperation exists which will be discussed further below.

The French referred to the Illinois as a "nation" and the subdivisions as "tribes". In the Illinois Dictionary under the French listing of both tribe and village the same term min8teni appears (Belting n.d.). Tribe or tribu was often used for what we would now call clans, and it may be that the ritual extension of ties was through clan membership. These may have been the ties activated by village ceremonies mentioned for the Illinois, the most important of which was the calumet dances and its attendant performances. The calumet ceremony was a means of obtaining unity within as well as forming alliances with other groups; possibly it was an annual religious occasion. Another cause for dances was the funeral of a warrior. All people were said to be entitled to have a dance, if they could provide presents for this purpose, but it is obvious that the most elaborately staged were for the important men. Deliette said that the relations of the deceased gathered and identified how many villages they represented, sending for the chiefs and dancers after relationships were discovered (CIHS 23:359). This is very

specifically stated as village and he tells of actions in the dance which dedicated portions of the dance to the various villages. It is possible that this represents renewal and readjustment of lineage or clan ties on the death of a segment head. Significantly in this regard he comments: "And the common people have dances" (CIHS 23:360), obviously the dances for the common people differed from the ones he described.

Another village activity was the ceremonial game of la crosse, also mentioned by Deliette in regard to the funeral ceremonies above. If the deceased preferred la crosse this could be played in the place of the dance, the same villages participating (CIHS 23:360).

The playing of the ceremonial game of la crosse was necessary before leaving on the summer hunt. Deliette stated that the Peoria and Coiracoentanon usually joined against the four other villages (Kaskaskia, Moingwena, Tamaroa and Tapouara), because the Peoria and the Coiracoentanon were as large as the other four together (CIHS 23:342). This has frequently been suggested as indicating a moiety division for the Illinois (Callender 1962:42; Hauser 1972:127). Fried points out that in a ranked society a moiety arrangement may cross-cut the ranking of the individual villages (1968:119). This is the only possible indication of such an arrangement for the Illinois with the exception of a suggestion in a listing of clan names of an Earth-Sky dicotomy.

The Miami-Illinois appear to have split along segmentary lines. In Service's discussion of chiefdoms he points out that there is a tendancy for junior segments of a lineage to split off and move out from the original areas; the lineages keeping their respective ranks and that: "To the extent that the spatial distribution of growth is unimpeded, there is a tendancy for distance from the original center to correspond to rank differences among the local groups..." (Service 1962:166).

If the Miami are considered to be in the area of the original homeland and the segments distributed in order of rank, this would be for the major groups; Kaskaskia, Peoria, Tamaroa, Cahokia, and Michigamea. This would place the Michigamea the furthest geographically and culturally. Of course, other factors could contribute to this spacing, but there are indications that these may represent ranking of the units.

The Kaskaskia were the paramount group but were not at any time in the historical accounts the largest group, in 1680 they were smaller than either the Peoria or the Coiracoentanon. The French considered the Kaskaskia the "true Illinois" (Margry 2:201 in Palm 1933), a designation which was not given because they encountered the Kaskaskia first. Initial contact with the Illinois in their territory was by Father Marquette in 1673 when he encountered two villages of the Illinois, the first apparently a Peoria village, from which he was taken to another village to be presented to the Grand Chief of the Illinois (JR 59:119). Most likely this second village represented a portion of the Kaskaskia, as when La Salle visited two winter villages in 1679, one village was Kaskaskia and the Grand Chief resided there.

The Kaskaskia remained the paramount group throughout the existence of the group in Illinois. The term "Illinois" when used by the French could refer to a person from any village or as a synonym for Kaskaskia. Tonti met a group composed of "Illinois, Missouritas and Tamaroas" (CIHS 23:107) and his subsequent discussion indicated the "Illinois"referred to Kaskaskia. In the 1750's the French could still use Illinois and mean Kaskaskia; there are references such as "Two Illinois and some Cahokia" (CIHS 29:449). At a conference called by the French commandant at Fort de Chartres in 1752 which all remaining

Illinois groups attended, the Michigamea delegation (as they rose to leave), thanked the Kaskaskia (CIHS 29:546).

The Grand Chief of the Illinois appears to have been drawn from the Kaskaskia. In 1679 Chassagoac, a Kaskaskia, was the Grand Chief. Mamemtoienta became the Grand Chief in 1706 and was still known as such in 1725. In 1712 however, Cadillac speaks of the "great chief" of the Illinois as Mankouaandelly, who appears to be from the village of Le Roche (Starved Rock) which was a Peoria village (MPHC 33:545). Five pages later the great chief (presumably the same man) is called Chachagouache. Cadillac, however, may refer to the village chief, although it is possible the Peoria had assumed a great title for their chief for the occasion, or even more likely that Cadillac had.

The Peoria appear to be next in importance.[1] Always numerically strong their relationship to the Kaskaskia in the early days when they were in close contact seems frequently to have been marked with jealousy. In the 1690's the Peoria indignantly rejected the interference of the priest, Father Gravier, saying: "Let the Kaskaskia pray to God if they wish and let them obey him who has instructed them. Are we Kaskaskia? Any why shouldst thou obey him, thou who art a Pecuareoua?" (JR 64:173).

The southern group of villages appears to be in order of importance, the Tamaroa - Cahokia - Michigamea. The Tamaroa are stated to have been the oldest residents in the area they shared with the Cahokia (Rothensteiner 1918:149). The Cahokia and Tamaroa resided near each other and gradually coalesced into one village (Kellogg 1923:201). The sharing of the area with the Cahokia may relate to the disastrous

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1. According to the late accounts from the Miami, the Peoria were supposed to have been descended from the Kaskaskia (Trowbridge 1938:12).

attack of the Iroquois in 1680 in which the Tamaroa were said to have lost 1200 persons, killed or captured (Temple 1955:24).

These indications of the relative importance of the villages are tenuous evidence at the best and will not be carried further, but left as hypotheses for further testing.

Suggestions that these named villages probably represented some kind of descent group is found in the historical documents. La Salle gave the name Omouahoa as one of the villages in 1680 (Anderson 1901: 215), elsewhere he mentioned Omoahoha as an Illinois chief (Anderson 1901:99). Hennepin also speaks of this chief: "Father Zenoble's host, Oumahouha, that is to say, Wolf, who was chief of a family or tribe.." (Cross 1938:83). This also suggests that some of these villages may have been temporary units or segments on the verge of becoming separate villages and if fission took place, the name of the chief (lineage or clan head) may have become synonymous with the village. From Father Hennepin's account it is impossible to determine if Omoahoha was a lineage or clan leader.

Village organization

Based on similarities between the Illinois and Miami it can be suggested that each village had a head village peace chief. There is no information on how the village chief was selected or if he represented a particular clan or lineage. A chief might also have been a magical-religious practioner (shaman) or juggler as the French called them. The chief of the Peoria in 1694 (name not given) was stated to be the most prominent of the jugglers (JR 64:161). Shamanistic ability does not appear to be a requirement for leadership, although confidence in the chief's relationship with the supernatural may have helped in

maintaining his position. More likely the recognition of supernatural powers came from the possession of lineage or clan bundles rather than a personal bundle. The amount of authority which could be exercised by the chiefs was slight. The French commented that: "The chiefs have no authority; if they should use threats far from making themselves feared, they would see themselves abandoned by the very men who had chosen them for chiefs" (JR 66:221).

Once chosen chief it may have been viewed as a permanent status. St. Cosme and Tonti encountered a chief "formerly famous in his nation, but who has since been abandoned by nearly all his people" (Kellogg 1917:350). Presumably attachment was made by the deserters to other bands on the basis of kin ties.

Whether the village chieftainship was hereditary in a lineage or clan is not clear, although Bossu comments: "The Indians only value the sons of the Caciques, in as much as they are brave and virtuous after the example of their father and ancestors" (Bossu 1771:164). The predominant pattern in the later period appears to be the succession of a chief by his son or classificatory son. Agapit Chicagou, who died in 1754, was succeeded by his son Papape-changouhias Chicagou (Bossu 1771: 185). The Kaskaskia chief Rouensa appears to have been succeeded (at an unknown date) by his son, also named Rouensa.[1]

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1. Although this nowhere is stated in the records it can be inferred from dates. Rouensa in 1694 had a daughter 17, he was a chief at that time and probably was at least 34. A chief named Rouensa continues to appear in documents until at least 1752, which would make the original man 92. As the Rouensa in 1752 also had brothers, who were chiefs of the Piankashaw, one of whom lived until at least 1767, it seems logical to assume that there were two chiefs of the name Rouensa.

The Grand Chief does not seem to have had any great importance among the Illinois; his functions appear to have been to represent the Illinois to foreign groups in various matters. This constrasts with the same position among the Miami which was an hereditary position with considerable power and prestige. Possibly the position of the Grand Chief had greater importance among the Illinois earlier. With the introduction of the fur trade a new means of obtaining prestige was introduced which could be participated in by any male. The prestige of the Grand Chief, if based on hereditary rights, might have suffered in contrast to the prestige obtained through engagement in the fur trade and be more dependent on his personal achievements than had previously been the case. However, the Miami engaged in the fur also and the prestige of their Grand Chief does not appear to have undergone such reduction.

In the 1800's the Miami considered the Illinois as younger brothers. Although statements from this period are suspect, it is possible that the Illinois chiefs had less prestige, however unfortunately there is no likelihood of being able to determine if this is correct or not.

As stated earlier, the Grand Chief appears to have been selected from the Kaskaskia, but documentation is insufficient to determine if hereditarily within a particular family. Mamentoienta's name (Bear's Head) would suggest that he was of the bear clan from which the chief was chosen in several Algonkian groups.

The only information about selection of a chief may be that in 1706

when Mamentoienta was chosen to represent the tribe to the governor (JR 66:51). However, no statement is given to indicate that this made him the principal chief, it is not until later references that he appears designated as such (Dunn 1902:293).

Mamentoienta has frequently been referred to as a Peoria since he was selected at Pimiteoui after the Kaskaskia under Rouensa had departed, but the chiefs there would have been from all the remaining villages at Pimiteoui, not just Peoria. As was pointed out in Chapter II the cabins that left with Rouensa may not have constituted the entire Kaskaskia village, most likely they represented only the Christianized portion. Mamentoienta is spoken of as a Kaskaskia in 1722 and in 1725 (Mereness 1916:76; WSHS 16:451). The end of Mamentoienta's tenure as principal chief is not documented so there is no evidence if he died still holding the position or if he was replaced in his old age. The subsequent principal chiefs were all from the Kaskaskia village. This might have been influenced by the fact that the Kaskaskia were the most acculturated group and in closest contact with the French authorities, but the principal chief had been drawn from them before any substantial French influences.

The chief's rights and obligations as leaders are little known outside of their obligations to give feasts to their followers (JR 66: 221). They did, of course, take part in the councils which determined the village actions and relationships, including receiving emissaries from other Indian nations and making alliances. The chiefs remained the accepted channel for communication as indicated in a document of the 1750's; blankets and belts had been brought from the Miami to a group at winter camp:

"The Illinois replied that they could not accept this message as they had no chief" (CIHS 29:437). They subsequently went in search of their chief to receive it.

There were war chiefs or "captains" as the French called them who headed the war parties. The chiefs, heads of the linked households, probably also functioned as war chiefs, with the exception of the village chief who was a peace chief. There is only one reference to a principal war chief (CIHS 10:441) but this probably refers to a village war chief. War chiefs are said to have had at their disposal 20-50 young men (CIHS 23:376) and these men are said to have come from several cabins. The French designated the large oval dwellings containing extended families as cabins. A suggestion of the number of cabins involved in a linked household is given in a late account when the houses may have been smaller; a chief has accompanying him men from 17 cabins (CIHS 29:670).

It is not clear if the war chiefs collected war parties by lineage membership or by clans. Deliette, in describing the formation of a war party, has the leader plead for participation for revenge because "He was your relative as well as mine since we are all comrades"(CIHS 23:377). In addition the members of the war party and the deceased are referred to as brothers. These statements do not clarify matters. Among the Miami the war party seems to have been constituted on clan affiliation. "...each chief...inviting only the young men of his particular village or family. He dislikes to ask any one of another tribe [clan] because the chief is always considered responsible for his young men..." (Trowbridge 1938:20). From correspondences with other Algonkian groups and the little evidence available, Illinois clans would appear to be totemic with possibly distinct hair styles and prehaps clan owned names.

In Deliette's discussion of the war parties he commented that when leaving messages they drew a portrait of themselves on a tree and since "several of them have heads of hair that look just alike..." they were also distinguished by name, that is an animal which signified their name (CIHS 23:378). He then went on to give a list of what are presumably the Illinois clans in the 1690's, what he termed "significant names"; Buck, Buffalo, Wolf, Sun, Earth, Water, Woman, Child, Girl (CIHS 23:379). He listed compounds of those names such as Bear's Head, Buffalo Hump etc. Although Bear did not occur in the first list, because of its presence in the second it must have been an oversight. It is possible that Sun and Earth (Water) represent moiety divisions. A much later list of clans (1736) gives Crane, Bear, White Hind, the Fork [Thunder?] Tortoise and an unnamed device of some Kaskaskia described as "feathers of an arrow notched or two arrows supported against each other 'X'" (WSHS 17:250). This device of the Kaskaskia is suggested by Good (1972:86) as being represented on a pendant found at the last Kaskaskia village (1720-1832).

The 1736 listing of clans or tribes as they are called in the list discusses a number of groups both Algonkian and Siouan, and the author further states: "All nations have this in common; that a man who goes to war denotes himself as much by the device of his wife as by that of his own tribe, and never marries a woman who carries the same device to his" (WSHS 17:252). Women peace chiefs are not mentioned for the Illinois but there is a vague category of women "who govern the young women and grown girls" (JR 64:199). Possibly they had duties similar to the Miami and Shawnee matrons in their other roles of overseeing the female duties of the

village.

One woman chief of a linked household is mentioned but this is obviously an unusual occurance and appears to have been the result of personality and her ability to obtain aid from sons and sons-in-law for feasting (Kellogg 1917:353).

A council of elder men advised the village chief, but the functions of this group are not clear. It was a recognised institution and it was known who belonged to the council "Haragonatat, a chief man of the Kaskaskia village" (CIHS 29:663). Marquette found "500 chiefs and elders at the Kaskaskia village (JR 57:181). There was also a council of chiefs, such as the one which functioned to appoint Mamemtoienta to speak for the group, but this may have included the council of elders (JR 66:51). There may have been a separate council of warriors also, but this is only mentioned once (Bossu 1771:164).

Social structure

The Illinois were patrilineal and had an Omaha-type kinship system (Callender 1962:38). Patrilocality appears to have been predominent, although matrilocal residence was possible as in the case of the female chief mentioned above. There is no suggestion of alternating locality, that is, matrilocal in the summer agricultural village and patrilocal on the hunt. The cabin was supplied by the female but whether this constituted any sense of ownership is not known. Women might hold feasts for other women for aid in preparation of their fields and an excuse was required for not appearing in response to the summons (Cihs 23:340), which might indicate some concept of female ownership of the fields. Very little information is found in the historical accounts about kinship, although Deliette provides two statements:

"It should be stated that they almost all call each other relatives, and such degrees of kinship as I have just enumerated [father, brother, uncle] are often claimed by persons whom we should not even call cousins. I have seen men of eighty claim that young girls were their mothers" (CIHS 23:363-4).

"It is usually the sisters and the aunts or nieces of their wives whom they marry. These they call Nirimoua. When a man is a good hunter, it is a very easy matter for him to marry all who stand within this degree of relationship. The women designate him in the same manner" (CIHS 23:355).

Several other references to polygamy, especially sororal polygamy occur (see below). The only other reference to kinship is an indirect one. A trader was told by a chief who was in a sibling relationship to Rouensa, that a deceased child of Rouensa's was being taken to Kaskaskia for burial (CIHS 29:521). The French at Kaskaskia comment that Rouensa has brought his nephew for burial (CIHS 29:532). Rouensa is also related to Pedagogue and Le Mouche Noir, chiefs of the Weas or Piankashaws, who are stated to be his brothers although brought up among the Miami. At least one was in an elder brother relationship to Rouensa (CIHS 29:719). No information is available on Rouensa's parentage, they could be uterine brothers or mother's sister's sons.

The kinship terms given (Table 4, Figures 2 and 3) are based on the Illinois Dictionary (Belting n.d.) which is a compilation of the Illinois language drawn up by the Jesuits in the late seventeenth-early eighteenth century, and Lewis H. Morgan's schedules obtained from Kaskaskia and Peoria in 1859 on the reservation in Kansas.

The term indicating a marriageable person nirimoua in Deliette, is given as nirim8o in the Illinois Dictionary and in Morgan's list appears as nelimwa. The word translates as a sister-in-law form. This applies (male speaking) to BroWi, FaBroSoWi, WiSi, and MoSiSoWi.

Table 4

Illinois Kinship Terms

Reference Number	1730	1859	Equivalents
1	ninkia	ningeah	mother
2	nossa	nosa	father
3	nissensa	nesanza	elder bro.
4	nichima	neshema	younger bro.
5	nimissa	nemissa	elder sis.
6	nichima	neshema	younger sis.
7	nic'issa	ningwasa	son
8	nitana	nindaha	daughter
9	nimech8ma	namashoma	grandfather
10	n8eo8ma	nakoma	grandmother
11	noseema	nosama	grandchild
12	niseg8ssa	nezagossa	aunt
13	nichissa	nezhesa	uncle
14	niring8a niring8arissa	nelagwalasa	nephew
15	nichimissa	neshemissa	neice
16	nissema	nahaganakwa nakoma	dau.in-law
17		nelagwala	son-in-law
18	nirim8o	nelimwa	sis-in-law
19	nitec8essima	n'dakwasanya	sis-in-law
20	nitchang8a	n'janqua	sis-in-law
21	nirim8o	netawa	bro-in-law male speaking
22	ninapema	nabama	husband

Table 4 (cont'd.)

Reference Number	1730	1859	Equivalents
23	ni8i8o	newewa	wife
24	n8e8ma (husM) nimech8ma niseg8ssessa (HusF)	nosamah	HUS., M,F, GM, GF
25		namashomakeah	Wife's F
26	nisegssessa	nezeksasakeah	Wife's M
27	nita8a	amaka	Wife's bro.

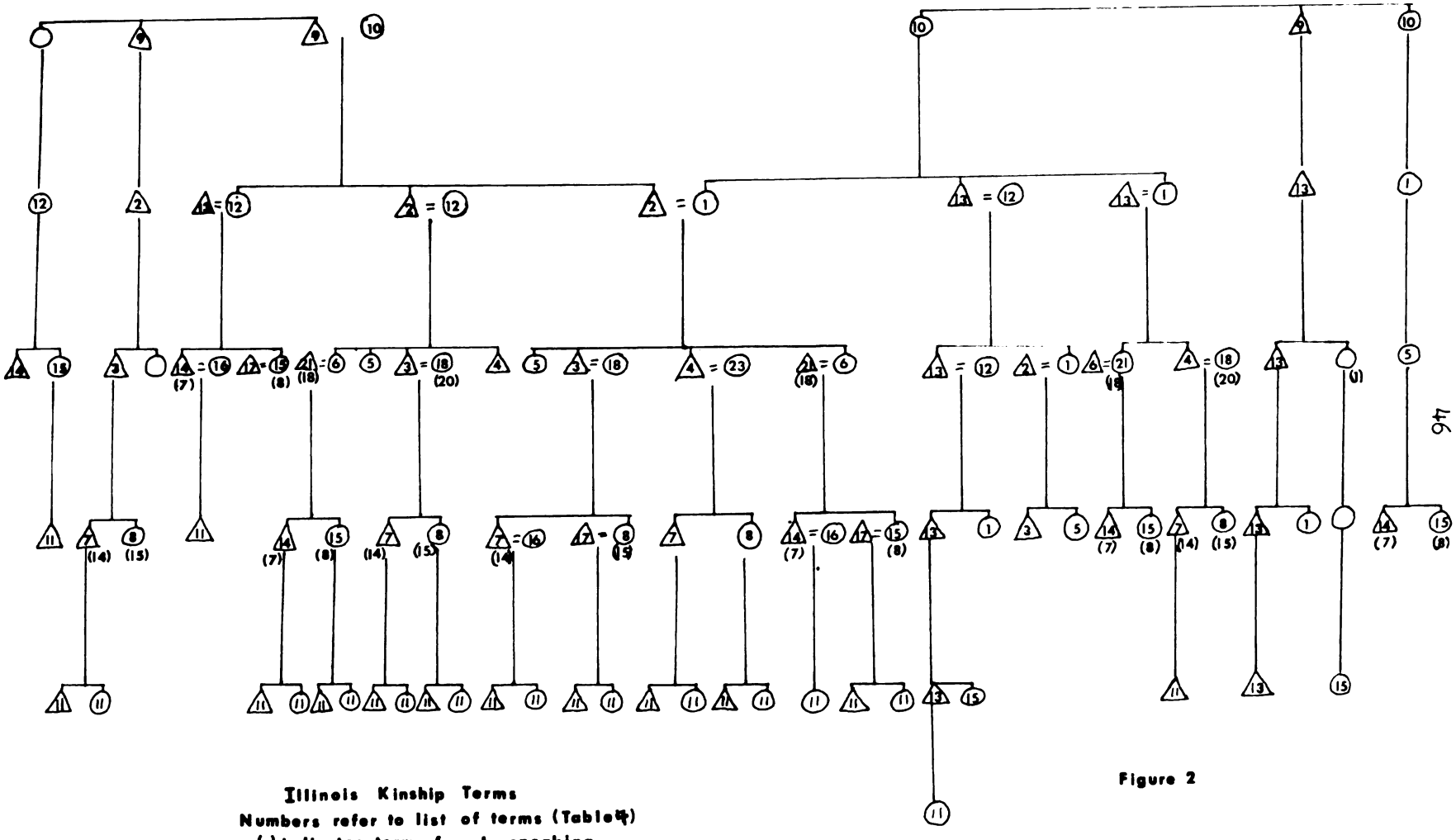
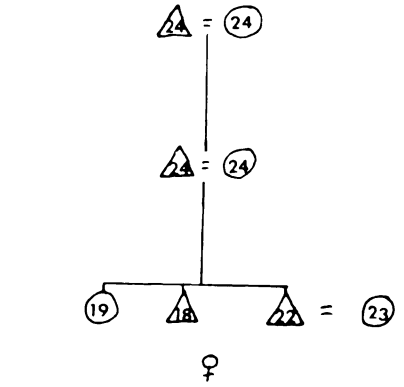
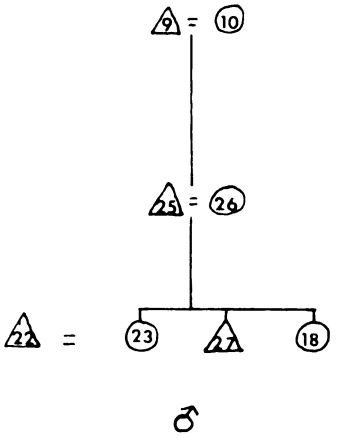


Figure 2

Illinois Kinship Terms
Numbers refer to list of terms (Table 4)
( ) indicates term - female speaking





Affinal Terms
Figure 3

Considering the time differential between the two schedules there is a striking lack of change in terminology. The intervening 130 years covers the time when the Illinois went from a powerful and populous nation to a handful of about 200 persons. The Kaskaskia had been undergoing fairly intensive acculturative pressures for 130 years, the schedule obtained from the Kaskaskia informant in 1859 had the greatest differences in pronunciation. The Peoria, with a larger population, greater isolation and so more conservative, had a schedule almost identical to the 1730 listing, barring a sound shift from r to l and differences in orthography.

Adoption seems to have been practised both as a friendship adoption and as a replacement for those lost in warfare, Father Gabriel was adopted as a son by an Illinois named Asapista "so that the good father found in his cabin a subsistence in the Indian fashion" (Cox 1922:109). Father Mimbres was adopted as a son by the chief Oumahoud (Cox 1922:109). Replacement adoption is discussed under warfare.

The Kaskaskia are said to have adopted the Michigamea (Kellogg 1923:212). As the village was already a part of the Illinois this must have been to place them in some special relationship with the Kaskaskia or to so place at least the most important lineage(s). The two groups had been living together in a village for some portion of the period 1712-1720. If they were the two most widely separated in rank, this adoption might have been a method of adjusting this and of joining the groups more closely. It may, however, have applied only to some lineages. The fact that two chiefs of the Michigamea are called Chicagou may relate to this adoption as Chicagou (Chassagouache) may have been a Kaskaskia name previously.

The berdache held a fairly high position in Illinois society in the 1670's. Father Marquette related that they could go to war but only use clubs not bows and arrows "which are the weapons proper to men" (JR 59:129). Likewise at the calumet dance they could sing but not dance as did the men. Because of their different life they were looked on as possessing power and were "summoned to the Councils and nothing could be decided without their advice" (JR 59:129). In 1752 Bossu discussed what appears to be berdaches and if so their status in society had declined greatly. He says that those who had run away from danger or deserted in action were considered a disgrace and obliged to let their hair grow and wear women's clothes. This might be Bossu's interpretation of why they became berdaches except that he does say that people continually reproached them and that one man had redeemed himself and had been rewarded with a wife. If Bossu is correct this would indicate a change in attitude towards them, probably due to the religious teachings (Bossu 1771:139).

Subsistence and settlement

As discussed above the Illinois had a Miami-Potawatomi pattern of adaptation (Fitting and Cleland 1969:297). The summer villages of the Illinois were always situated in an alluvial valley. Corn, beans and squash were the staple crops, although they grew several others including pumpkins and watermelons. Watermelons are not native to the Americas but were introduced by the Spanish and apparently spread very rapidly through the agricultural tribes (Cutler and Whitaker 1961:484). Several kinds of corn were grown, Deliette mentions a small early corn and a larger late variety (CIHS 23:343-4). A number of varieties are listed in the Illinois Dictionary, a small sweet, red, blue, black,

yellow and white (Belting n.d.). Corn was gathered at the end of August and laid out to dry (CIHS 23:344); great supplies of this dried corn were stored in pits underground (Anderson 1898:29). Pumpkins and squash were sliced, air and sun dried and stored for winter use (CIHS 23:345). In addition to the cultivated plants the Illinois used a wide variety of wild plants: grapes, plums, persimmons, apples, strawberries, raspberries, mulberries as well as many nuts and roots. Father Allouez stated: "They eat 14 kinds of roots which they find in the prairie... They gather from trees and plants 42 different kinds of fruits, all of which are excellent..." (JR 60:161). Their roots included the so-called macopin, possibly the root of the white water lily (Faulkner 1965:108) or the yellow lotus (J. A. Brown 1961:29), which required a good deal of work in its preparation.

> "It is a big root which they get in the marshes...The women have peculiar difficulty in cooking them. Sometimes three or four cabins combine and dig a hole in the ground five or six feet deep and ten or twelve square. They throw a great deal of wood into it, which they set on fire, and when it is aflame they throw in a number of rocks, which they take care to turn over with big levers until they are red; then they go in quest of a large quantity of grass which they get at the bottom of the water and which they spread as well as they can over these rocks to the thickness of about a foot, after which they throw on many buckets of water, and then as fast as they can each cabin puts its roots in its own place, covering them over with dry grass and bark and finally earth. They leave them thus for three days. They shrink to half their former size" (CIHS 23:345-6).

Buffalo probably were not found east of the Mississippi until around 1600 (Griffin and Wray 1945:25), but during the seventeenth century buffalo were plentiful. Coming downriver from Chicago in the 1680's, buffalo began to be sighted around Mazon Creek (Kellogg 1917: 350).

Although by 1701 the Indians already possessed horses (Fortier 1909:239), there is no indication that they were used in the hunt until the 1770's, buffalo being taken by a surround on foot (CIHS 23:310). The Illinois were well known for their swiftness of foot. Guards for the hunt had powers similar to those in the Plains; Deliette related the destruction of the belongings of a man and woman who attempted to leave the camp before the entire group (CIHS 23:309-310). Twelve hundred buffalo were killed on one hunt and the meat dried for storage (CIHS 23:318). In 1723 Father Rasle stated that "There is no year when they do not kill more than a thousand roebucks and more than two thousand oxen" (JR 67:169). Bear, elk, and a variety of birds, especially turkey and ducks were also used for food. Fish were to be had in abundance in the river although meat was preferred.

> "They take little trouble to make nets suitable for catching fish in the rivers, because the abundance of all kinds of animals which they find for their subsistence renders them somewhat indifferent to fish. However, when they take a fancy to have some, they enter a canoe with their bows and arrows; they stand up that they may better discover the fish, and as soon as they see one they pierce it with the arrow" (JR 67:171).

Many of the French accounts exclaim about the vast abundance of resources in Illinois country. "We have seen nothing like this river that we enter, as regards its fertility of soil, its prairies and woods; its cattle, elk, deer wild cats, bustards, swans, ducks, parroquets, and even beaver" (JR 59:161). Marquette comments that famine was unknown among the Illinois (JR 59:127), and indeed there is only one mention of possible famine, for the Peoria in 1752 when a drought threatened the corn and they were prevented from fear of the Chippewa from going on their regular hunt. No other information is available on this and it is possible that the prognosis for the corn

was premature or that the Chippewa dispersed. However, psychological deprivation may have been felt by the Illinois when they did not have fresh meat. Marquette was told that the Kaskaskia village was suffering from hunger because the snow and cold prevented them from hunting (in November). However, he was brought corn, dried meat and pumpkins by some Frenchmen from the Peoria village and it can be presumed that the Kaskaskia village was equally well supplied with these commodities (JR 59:175).

The yearly round of activities was similar to that described for the Miami-Potawatomi (Fitting and Cleland 1969). Large permanent villages were situated near the agricultural land. In late spring and early summer the entire village unit lived here while the corn was planted and cared for. The corn was planted in May (CIHS 23:7) and after it was hilled up in June the entire village, with the exception of a few women, left to go on the summer buffalo hunt (CIHS 23:340). The majority of the meat seems to have been processed away from the village including drying most of the meat for storage. Towards the end of the summer the village was reoccupied and the crops harvested, processed and stored. Throughout the summer and fall wild vegetable materials were collected, eaten and some processed for storage. Individual daily hunting was also carried on by the young men. In the late fall the village split up into smaller units, the linked households, and left the main village site to settle in areas well situated for shelter,firewood and game (JR 65:259). There was a winter hunt of shorter duration ending about Christmas time (JR 65:75) and throughout the winter hunting individually and in small groups was carried on.

The agricultural activities were carried out by the women with the assistance of the old men. The young men did the day to day hunting. All able bodied persons, male and female, participated in the summer and winter hunts.

Dress and ornaments

The Illinois men generally wore nothing but a breechclout and moccasins. "The men go without clothing, have their nose and ears pierced and the hair cut within an inch of the scalp" (Anderson 1898: 30). The women appear to have worn a two piece outfit consisting of a skirt and some type of upper garment (JR 66:229). Robes of dressed skin were used in summer and hides with the hair on in the winter (JR 66:165).

> "The Indians cut away the back and around the neck where the skin is thickest. Using only the thinnest part of the belly, they dress it very carefully with the brains of all sorts of animals, thereby making it as supple as our chamois skins dressed in oil. They paint it with various colors, trim it with red and white porcupine quills, and make it into ceremonial robes to wear at feasts" (Cross 1938:61).

Examples of these painted robes are illustrated in Hamy (1897). The robes are painted with geometrical designs in red, black and yellow; none of these show porcupine quill decoration.

Tattooing was used liberally by both sexes. For a male tattoo marks were supposed to be applied only upon distinguishing themselves in battle. An assembly of warriors decided that the tattooed skin should be flayed from a man who had been tattooed without having war accomplishments. He was saved from this by having the tattoos removed by a preparation of Bossu's (Bossu 1771:164). Women's tattoos were considered only decorative; they were tattooed on the cheeks, breasts and arms. Young men were tattooed on the back

from the shoulders to the heels and at 25 (or first war exploits?) on the stomach, sides, and upper arm (CIHS 23:328-9).

Men wore headdresses of a variety of colored feathers (JR 67:165). The wool from the buffalo was spun and used to make garters, belts, bags and garments, some of which had designs worked into them (WSHS 16:373). Father Rasle described some of the jewelry worn: "They wear collars and earrings made of little stones, which they cut like precious stones; some are blue, some red, and some white as alabaster; to these must be added a flat piece of porcelain which finishes the collar" (JR 67:165).

The Indians readily accepted European materials for decoration, although few are mentioned in the records. Chicagou, chief of the Michigamea, received a medal from the King of France (Dunn 1902:293) which he wore and which his son inherited (Bossu 1771:140). Medals, crosses, rosaries or beads might be given as rewards for learning the cathechism (JR 64:231). The possession of religious objects did not mean necessarily that the owner was a Christian, as Charlevoix found out. A Peoria chief was wearing a brass cross and an image of of the Virgin Mary, but the Indian merely had donned these as an honor to Charlevoix.

Weapons and untensils

When the French came into the Illinois River valley the Illinois had had access to European goods for sometime, as they had been trading in the Green Bay region for about 30 years. In 1680, although the majority of the weapons had gone with war parties, there were 100 guns and 300-400 rounds of ammunition in the village when the Iroquois approached (Anderson 1898:195). In 1677 though, Allouez stated that

they did not usually use guns in offensive warfare as they found them "too cumbersome and slow" (JR 60:161), though they did take them to terrify those nations who did not know the use of guns. The primary weapons in the 1690's were the war club, bow and arrows. "The war club is made of a deer's horn or of wood, shaped like a cutlass, with a large ball at the end" (JR 67:171). Chipped stone arrowheads were used and continued to be used at least to the middle of the eighteenth century. Father Gravier was shot with a stone arrowhead in 1706. In 1723 arrows were still the principal weapon for hunting and warfare as they could fire many arrows in the time it took to reload a gun. "These arrows are barbed at the tip with a stone, sharpened and cut in the shape of a serpent's tongue; if knives are lacking, they use arrows also for flaying the animals which they kill" (JR 67:169).

Shields were provided for protection from the enemy's arrows. "They carry also a large shield, made of the skins of wild bison, arrow proof and covering the whole body" (JR 60:161). These shields were in use as late as 1721 at least among the Peoria (Kellogg 1923:192).

Marquette remarked that the Illinois made all their utensils of wood and ladles out of horn (JR 59:129). Presumably "all utensils" refers to serving dishes; wooden platters were used at a feast given in his honor (JR 59:123). Cooking vessels were both the brass trade kettles and pottery vessels in the 1690's. Deliette mentioned the inclusion of either a small kettle or pot in the grave (functional and ceremonial equivalents)(CIHS 23:357). A large pottery vessel was used as a drum on occasions, a skin stretched across the top with water

inside the vessel to moisten the skin to improve the tone (CIHS 23:386-7 ; Anderson 1896:174). By the 1760's pottery was not used, but how rapidly brass kettles had replaced pottery is not known.

Bark dishes and wooden spoons also were used (JR 63:289). In 1687 the Illinois had both iron and stone knives; the stone ones being of at least two sizes. Beschfer, who sent an ethnographic collection back to France, differentiated between a "dagger" and a "knife" and a large and small dagger. He also added that the handle of one which was missing could be easily replaced as "it consists merely of a piece of wood of no particular shape" (JR 63:281). Deliette mentioned that the women preferred using a shell to a knife in scraping the kernels of corn from the cob (CIHS 23:344).

Fire was made by means of a fire drill before the use of a strike-a-light and flint. A piece of white cedar with a notch cut in it was placed on dry grass or rotten wood. A stick of blackberry wood, with the end shaped to fit the hole in the cedar was turned rapidly in the hand (CIHS 23:317).

The Illinois did not use the birch bark canoe, these being too fragile for the snag filled Illinois and Mississippi rivers, instead they used hollowed out tree trunks. These perogues, as the French called them, were quite large and were said to carry 40-50 men (Anderson 1901:145).

Gambling was a favorite pastime of the men, one game being played with straws and markers of beans from the locust tree. They would stake all their property on the game, even their sisters (CIHS 23:351-52). There were other games also.

> "The most common game for men is one using the pits of certain fruits, which they stain black on one side and red

> on the other, the pits are put on a plate of wood or bark, a blanket, a coat, or a robe of dressed skin. Six or eight people play... The purpose of this is to mix the six pits. If five pits come with the same side up, red or black, that is counted as only one throw gained, because generally a game consists of a certain number of throws as set by the players" (Cross 1938:56-7).

Structures

In the villages the houses possibly were arranged in rows on "Streets" (JR 67:163). The size probably varied but most were said to have contained 4 to 5 fires (JR 59:123). La Salle indicated that there were from five to six families in each cabin (Anderson 1901:85), although he does not indicate the size or composition of the family unit. Rouensa's family is said to consist of 15 individuals (JR 64: 233) but the composition of it is not fully known, the only members appearing in the historic records include Rouensa, his wife, a daughter and Rouensa's younger brother. Fifteen to twenty individuals per cabin is mentioned as average in 1750 (JR 69:147).

Charlesvoix, speaking of Algonkian groups in general, said that the houses were from 15-2- feet wide and sometimes a hundred feet in length (Kellogg 1923:177). House remains from the Anker and Oak Forest sites which are earlier but probably of related Algonkian groups, have similar houses. Structures varying from 25-32 feet in length and 13-15 feet in width were found at Oak Forest and a house 55 x 13' at Anker (Bluhm and Liss 1961:101; Bluhm and Fenner 1961:141). The framework of the house was made of saplings bent over and fastened at the top. The cabins were covered with mats made of rushes and the floor was also covered with mats. The houses could be easily dismantled and the mats carried to the winter village (CIHS 23:308). There was only one

entrance (Mereness 1916:71) and the cabins were said to be wind, snow and rain proof (Cross 1938:65). Apparently different houses were used on the hunt, possibly bark covered (CIHS 23:308).

A number of different types of houses were distinguished in the French translations of the Illinois terms; the menstrual hut, a large or long cabin, small cabin, round cabin and a large round cabin (Belting n.d.).

The small menstrual huts were constructed near the house. A kind of scaffolding or ramada was made for summer use (CIHS 23:372). The large cabin or large round cabin may have been a structure used only for ceremonial occasions. There are indications that this may have been a building set apart for holding council meetings, housing honored guests, and for religious occasions (Kellogg 1923:195; Bossu 1771:188).

The large villages in the late 1600's did not have any protective stockade, the village being spread out, scattered along the bank of a river or lake. There is reference to a Michigamea woman being killed at the gate of her village in 1722, which suggests that the village was surrounded by a fence or stockade of some sort (WSHS 16:461), and the Waterman site village had a stockade.

Life Cycle

Birth took place in the menstrual hut. Deliette informs us that in case of a difficult birth a group of young men surrounded the hut, beat on it, shot off guns and made war cries. Prior to her return to her husband's cabin, the cabin was cleaned; the ashes removed from the fireplace and a new fire lit. The woman also cleansed herself by bathing before her return (CIHS 23:354-5).

No information is provided on the naming of children or if there

were clan owned names. The Illinois Dictionary may suggest naming practices in the French translations of the Illinois, "je te nomme" and "mon patron" but these may well refer to baptismal practices.

Girls at first menstruation were expected to construct a hut at some distance from the village and remain there for its duration. They were urged to fast to receive visions and power (CIHS 23:355). No mention is made of whether boys were expected to fast for visions, but most likely they were. During subsequent menses the woman would occupy the small menstrual hut near her cabin.

Marriage procedures were generally instituted while the man was absent from the village. His father, or the father's brother, gathered a variety of goods together, according to their wealth, and had them taken by female relatives to the home of the desired bride. The boy's father asked that he might warm himself at the fire and that he might have moccasins, as it was the woman who built the cabins, supplied the firewood and dressed the skins (CIHS 23:332). A similar formula was used among the Miami and Shawnee (Trowbridge 1938:41). The girl's brothers are said to have determined whom their sister would accept (JR 65:67). If the proposed alliance was not satisfactory the gifts were returned. If accepted, the girl's family then dressed here carefully and went with her to the man's home bearing gifts. This was done four times and the last time she stayed (CIHS 23:333). Bossu commented that marriage: "...has no other form than the mutual consent of the parties...whenever they are dissatisfied with each other they separate without ceremony..." (Bossu 1771:128). The Indians complained to Deliette that the French had caused changes

in the age of marriage (in the 1690's) and that formerly a man had to have gone on several war parties and would be 25-30 years old before marriage. The girls were also around 25. The age changed, they said, for some men married before 20 and girls under 18 (CIHS 23:330).

Polygamy was common, generally sororal polygamy. The French did not succeed in changing this entirely as it was still practiced in 1752 (Bossu 1771:128). Upon the death of her husband a woman should not marry for a year or her husband's family had the right to scalp her (CIHS 23:334). If the husband remarried shortly after the death of his wife to a woman of another family, his late wife's relatives had the right to break into the cabin and destroy articles within it (CIHS 23:361). Infidelity was punished often by scalping the woman (CIHS 23:337); another source says that their noses were cut off (JR 58:99). It is not clear from Deliette's account whether another Illinois punishment for adultery was the practice of "putting a woman on the prairie" as it was usually called on the Plains.

> "Others inflict another punishment; they post some thirty young men on a road by which they know that their wives must pass in going to the woods. As soon as they see her, the husband issues from the ambuscade and says to his wife; As I know that you are fond of men I offer you a feast of them - take your fill. Her cries are futile; several of them hold her, and they enjoy her one after the other" (CIHS 23:335).

Often the lover might be attacked by the husband. If he survived there was no complaint from his relatives, but if he died his brothers or close relatives would take vengence despite gifts (CIHS 23:337).

The Illinois appear to have practiced both primary inhumation and secondary reburial. Deliette in the 1690's described an extended

primary burial. The face and hair of the individual were painted red, a new shirt, leggings and moccasins were put on , and the body covered with a robe. The grave was dug as long as the body and a little wider and was lined on the bottom and sides with wood from an old dugout canoe. "They put a little kettle or earthen pot, about a double handful of corn, calumet, a pinch of tobacco, a bow and arrows...." (CIHS 23:357). Forked sticks were placed at the head and foot ends of the grave with a cross piece between, then a grave shelter was built over this framework. If the dead man was a war chief a large tree was peeled, painted and decorated with pictures of his achievements. The tree was stuck into the ground near the grave. As soon as possible the members of the various villages gathered to dance for his funeral (CIHS 23:357-9). The dance appears to have been repeated at the year's end (Anderson 1896:174).

Joutel, also from the same period as Deliette's account (1680-1690) describes another practice: "When any of them dies they wrap them up in skins, and then put them into Coffins made of the Barks of Trees..." (Anderson 1896:174). La Salle mentioned: "...Scaffolds where the Illinois are accustomed to leave their dead hanging for a long while before burial " (Anderson 1901:211).

It is possible that the differential treatment was due to status, some buried immediately and others exposed first. "They pay a Respect to their Dead, as appears by their special care of burying them, and even of putting into lofty Coffins the Bodies of such as are considerable among them, as their chiefs and others ..." (Anderson 1896:174).

Although Deliette describes a primary inhumation and speaks of a post for a war chief he does not indicate that they are one and the same burial. He also mentions a variety of other practices, so this does not conflict with Joutel. In 1723 Father Rasle stated: "It is not their custom to bury the dead; they wrap them in skins and hang them by the feet and head to the tops of trees" (JR 67:167). This was only one step in the mortuary procedure and Father Rasle apparently did not witness the remainder. Prisoners who were killed by torture were not buried (Kellogg 1923:186).

There were some specialized burial areas in which graves were marked. The post for a chief as mentioned is one type of marker, and probably smaller ones were used for ordinary people. Grave houses were also made. The Iroquois on their march from Starved Rock to the mouth of the Illinois are said to have destroyed burial places enroute (Anderson 1901:213).

Religion

The French, especially the priests insisted that the Illinois had no religion; by this they meant no formal religious institutions.

The calumet was the most important representative of the supernatural. "There is nothing more mysterious or more respected among them" (JR 59:131). There was one calumet for war and one for peace, the feathers decorating the stem of the war pipe were red, and on the peace pipe a variety of colors. Marquette tells us that the functions of the calumet observances were to end disputes, strengthen alliances and deal with strangers. It was also necessary to perform the ceremony before bathing at the beginning of the summer and before eating the first fruits of the harvest. The calumet dance was for important

events, making peace, uniting for war, public rejoicing and for honoring a nation or person (JR 59:131, 133). The importance of the calumet ceremony may be a late development (J. A. Brown 1965:93). The ceremony was held in a large cabin in the winter, and in a shaded field in the summer. A rush mat was laid in the center of the area on which the calumet was placed, medicine bags and weapons were laid beside it. The calumet ceremony appeared to the French to have three different parts. First, as each participant entered, he danced with the calumet, sometimes offering it to the sun and earth. Secondly, there was a mock combat staged, one warrior having weapons and the other only the calumet. Following this each warrior present took the calumet in his hands, recited his war deeds and received presents from the giver of the dance.

Games of la crosse also had a ceremonial meaning. A game of la crosse was played before the village left on its summer hunt (CIHS 23:341) and a game of la crosse could be substituted for a dance at the funeral of a warrior if he had preferred the game to the dance.

All warriors had individual medicine bags.

> "Every young man has a little mat made of the round reeds I have mentioned which grow in the marshes. The women dye them black, yellow and red, and make them about three feet long and two feet wide. They fold over one end about a foot in the form of a comb case and in it they put some of these birds of which I have spoken" (CIHS 23:375).

A list of some of the birds is also given by Deliette: stone falcons, crows, carrion crows, turtle doves, ducks, swallows, martins and parrots (CIHS 23:375). These individual bundles, that is the birds mentioned, were combined with the war leader's when they were on the warpath (CIHS 23:379). The bundles are said to have consisted of the skin of a bison, bear, other animals and birds (JR 66:233). Sacrifices

might be made to the bundle, especially sacrifices of dogs. The priests were disturbed by the native practices.

> "In public they perform a hundred mummeries full of impiety; and talk to the skins of animals, and to dead birds, as divinities. They claim that medicinal herbs are gods, from whom they have life, and that no others must be worshipped. Everyday they sing songs in honor of their little manitous as they call them (JR 64:187).
>
> "I saw a little dog suspended at the end of a pole stuck into the ground. I had never seen anything of the kind since I had been among the Illinois. I was astonished, for I was not yet convinced by actual experience that they hung up dogs or other animals to stay diseases" (JR 64:187).

A ceremony honoring an unusual manitou was given in 1756 by the Peoria and witnessed by Bossu. The manitou appears to have been for the whole village and apparently was some abnormal animal. The shamans had their bodies and faces covered with designs in clay and had on head-dresses of feathers and horns. This manitou did not last long as Bossu convinced them it was evil, got it turned over to him and sent its bones to France for examination (Bossu 1771: 190-191).

There were probably bundles owned by clans and lineages, but evidence for this is lacking. Some bundles were used for curing. Sucking the afflicted area and then producing a bear's tooth, claw, etc., as evidence of the cause of illiness was practiced (JR 66:233, 235). They also used a variety of herbal medicines and were quite skillful at curing wounds (CIHS 23:267).

More general beliefs are only mentioned briefly : "They recognise a good and evil spirit to whom they give a few attributes. They believe also in metemsychosis" (Mereness 1916:71).

Charlesvoix has the sole mention of socery; most likely practices

such as this would be concealed as much as possible from the priests.

> "They make small figures to represent those whose days they have a mind to shorten, and which they stab to the heart. At other times they take a stone and by means of certain invocations, they pretend to form such another in the heart of their enemy" (Kellogg 1923:154).

As noted by Kinietz (1940:215) the Illinois seem to have had the Grand Medicine Society or Mide. The account given by Deliette mentions both male and female participants, characteristic of the Mide, but not of other ceremonial associations. Deliette reported that they constructed an enclosure "half an arpent square" to which the medicine men and women came with their medicine bags and rattles. They then performed a series of mock death and resuscitations to impress the public (CIHS 23:369-371).

The ceremonies and their effects were very definitely expressed by Deliette in terms of social control. One shaman had rattlesnakes with their fangs drawn which he planned to use to impress the youth. He stated the function of this: "...it was done for a good purpose; it was necessary that the young men should fear them when the medicine men remonstrated with them" (CIHS 23:374).

Warfare

War was the major occupation of men between the ages of twenty and forty. The Illinois had been warring with the Sioux in the 1640's and continued to fight with them and the Iroquois; in later years the Fox were the most dangerous and persistent enemies of the Illinois.

[1]Prior to starting on a war party, the leader made a feast and invited the warriors he wanted to join him. Then there was dancing with

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1. This section is based on (Kellogg 1923:187; CIHS 23:376-387).

prayers to their medicine bundles for assistance in the coming battle. All the men's personal bundles were combined with the leader's. The war party left the village at night and camped some distance away from it. They set up caches of food at various places on their route and arranged meeting places in case they were pursued and became separated on their return. The least experienced member of the party had the duties of preparing the food and repairing the moccasins.

The enemy camp was scouted out carefully and then attacked at day break. Their main interest was in taking prisoners alive, as prisoners were valuable for trade as slaves, or in the case of the Iroquois, desired for revenge.

The returning war party contrived to arrive outside the village in the evening and word of their accomplishments were sent into the village. If one of their party had been killed the leader came into the village painted with mud and had to give presents to the relatives of the deceased. He was expected to go out again soon to revenge the death.

If all had returned safely a prominent man of the village invited the war party to a feast. In the morning the men dressed the prisoners in finery and entered the village. The prisoners were left outside the cabin to sing their death song while the war party feasted. The council decided to whom the prisoners should be granted to replace those killed in war.

> "...if anyone of their warriors has been killed, and they think it a duty to replace him in his cabin, they give to this cabin one of their prisoners who takes the place of the deceased; and this is what they call resuscitating the dead" (JR 67:173).

If the prisoner was allowed to live he was taken into the cabin, whether as a slave or actual adopted replacement it is not clear. Deliette

says that few were granted their lives, but the period he spent in Illinois country was a period of intensive conflict with the Iroquois who were the one generally captured then. It is likely that members of other groups were more readily assimilated. Women and children are said to have been spared generally in the attacks on Pawnee and Quapaw.

Charlevoix said that if a prisoner's life was to be granted two young people untied the prisoner and ran with him to the river where he and they plunged in. After a ceremonial washing he was taken to the cabin where he was to live.

If the prisoner was slated to die, he died by fire. This does not appear to have been originally an Illinois custom but one which was taken over from the Iroquois. "It was the Iroquois who invented this frightful manner of death and it is only the law of retaliation that the Illinois, in their turn treat these Iroquois prisoners with equal cruelty" (JR 67:175). War parties to the south and west to the Quapaw and Pawnee appear to have had a different composition from those going into Iroquois country. The Iroquois were bitterly hated, dangerous enemies and only warriors went against them. The Pawnee and Quapaw were considered a source of slaves and Deliette says that almost the whole village would go on these war parties. (CIHS 23:386).

CHAPTER IV

THE ZIMMERMAN SITE - LS 13

Location

The older of the two archeological sites of the Illinois examined is the "Grand Village of the Illinois", as it was called by the French, which was occupied between 1673-1680 and 1683-1692. In the two year interval the Illinois moved west of the Mississippi. The Zimmerman site (Ls 13) represents a portion of the Grand Village. The Zimmerman site is located in La Salle County, Illinois in the NW ¼, Section 23, Township 33 N, Range 2 East and the NE portion of Section 22.

The site was first excavated in 1947 through a joint project of the Illinois State Museum and the University of Chicago under Dr. John McGregor and Dr. Kenneth Orr.

The site is on the north bank of the Illinois River between Ottawa and Utica across from Starved Rock State Park. The Park takes its name from the prominent physiographic feature known to the French as le rocher. This is a landmark on the river and was the site of La Salle and Tonti's Fort St. Louis, built in 1683.

Parkman (1910: 239-241) believed that the Illinois village was on the former location of the modern village of Utica. However, others have not concurred with this (Garraghan 1931; Temple 1966). A study of all available historical documents concerning the location of the village was carried out in 1946 (Tucker 1947). A condensed

version of this manuscript appeared in an earlier report on the site (J. A. Brown 1961) and will not be repeated in detail. "The village of the Illinois was on the edge of the river, on the north side... The Aramoni [Vermillon] River... goes to join the Illinois river a little more than 2 leagues below the village (Margry 2:124). Two leagues above the village was the Pestogonki River [the Fox] (CIHS 23:306) and six leagues above was a rapids at the present Marsailles, Illinois. A league is equal to between two and two and a half miles, in the French usage of the time.

Until the dam was built at the foot of Starved Rock, there was a rapids there also; presumably this is the portage that Marquette refers to; "In the spring and during part of the summer there is only one portage of half a league. We found on it a village of Illinois called Kaskaskia, consisting of 74 cabins" (JR 59:161). La Salle left two men to guard baggage on an island near the village; the island was between two rapids (Anderson 1901:229). The village extended east or upstream from the rapids.

The Franqelin map of 1688 (Tucker 1942:Plate XIb) showed the Illinois on the north bank of the river slightly upstream from Starved Rock, but the location was not very specific. Mrs. Tucker found that the reading of "six leagues" as given in Margry for the distance between Ft. St. Louis on Starved Rock and the village was an error in transcription and that the correct distance was half a league (Tucker 1947:5). Half a league is between one and one and a quarter miles; the western edge of the area designated the Zimmerman site is approximately three-quarters of

a mile from Starved Rock.

In short the Grand Village was on the north side of the river between two rapids, below the Fox river, above the Vermillon and approximately a mile upstream from Starved Rock. The Zimmerman site and areas east and west which exhibit scatterings of historic material answer the description of the location.

The 1673 village was a small one with 74 cabins; by 1675 seven other groups of the Illinois had joined the Kaskaskia. In 1680 the settlement of 460 cabins was said to extend along the river for a league and to be a quarter of a league in width (back from the river) (Anderson 1901:195). The settlement was interpreted by the earlier excavators as being formed of village units, each unit separated slightly spatially and representing a different group of the Illinois. It is likely that this is a correct interpretation of the settlement pattern. Evidence from the later villages at Lake Pimiteoui indicates that this type of layout was followed there (JR 65:197). The major historic component examined in recent work at the Zimmerman site appears to be delimited on the east by a small slough and to extend west from there approximately 1500 feet. West of this limit there is an area with very few traces of historic occupation, further west again there is historic material, but this area was only tested in 1947 and not excavated since.

The area excavated at the Zimmerman site (Figure 4) had one major historic component, named the Danner component by the earlier excavators based on a pottery style which was found consistently throughout. Small amount of other styles of pottery were found which probably represented other coeval components. The Danner component is considered

to represent one of the village units within the Illinois settlement. The other components represented in small amounts, probably are from other village units.

All historical and geographical evidence points to the Zimmerman site as being a portion of at least the pre-1680 village. It is probable that when the Illinois returned to the area in 1683 they settled in the vicinity of their former village. The time interval between the two occupations is so short that it is impossible to determine, using archeological methods, which settlement the site represents.

The interpretation of the affiliations of the Danner component offered by the earlier workers also contributed a further source of confusion. When the site was excavated in 1947, little was known of the early historic period and of native pottery styles. The only well-known sites were the Fort Ancient ones (Griffin 1943) materials which had been suggested as belonging to Shawnee. The pottery from Zimmerman was different from any found earlier in the Illinois area and shared some very generalized resemblances to Fort Ancient materials. This, and the occurrence of a Shawnee village on the north bank on the Franquelin 1688 map, caused the pottery and the historic Danner component to be tentatively assigned to the Shawnee.

Subsequent work has shown that body and decorative treatment share strong similiarities over a large portion of the upper Midwest, which appears to be a style zone, perhaps equivalent to the area occupied by the Central Algonkian. Characteristic throughout the area are: vessels with added rim strips or fillets; notched lips, notching often done with the finger; grooved paddle and cord marked bodies, generally carefully impressed; and small strap handle sometimes

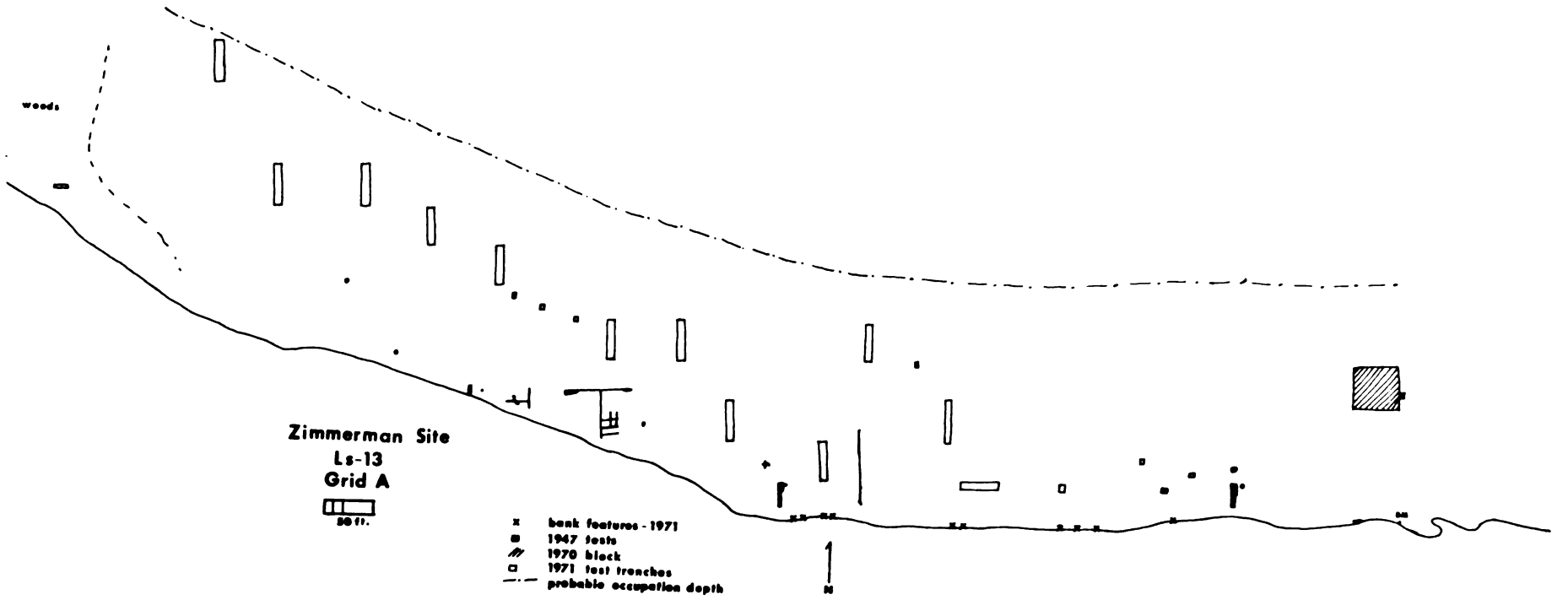
woods
Zimmerman Site
Ls-13
Grid A
50 ft.
bank features - 1971
1947 tests
1970 block
1971 test trenches
probable occupation depth
N

Figure 4

decorated. Vessel form is almost entirely wide-mouthed jars. In consequence the assessment of Danner as Shawnee is not necessarily valid, the only historical evidence for the Shawnee on the north bank of the river is the 1688 map. It is probable that the Zimmerman site represents a portion of the Illinois village and not a Shawnee village.

Environment

Between the Fox River at Ottawa and the Little Vermillon at La Salle the Illinois flows westward in a valley one and a half to two miles wide, the bluffs rising about 150 feet abruptly to the uplands on both sides. By the Zimmerman site the river is divided by several islands, one, Delbridge being quite large. Here the terrace on the north extends for a mile back to the bluffs and is about seven and a half miles long (Bauxar 1953; Sauer, Cady, Cowles 1918). The prairie comes nearly to the edge of the bluffs and its margin is covered with oak forest including white oak (Quercus alba), red oak (Q. rubra), bur oak (Q. macrocarpa), the black oak (Q. veltina) and often shag bark hickory (Carya ovata). The bottomlands has willows (Salix fluviatilis and S. nigia), box elder (Acer negundo), the river maple (A. saccharium), walnut (Juglans nigra), hackberry (Celtis occidentalis), the white ash (Fraxinus americana) and the cotton wood (Populus deltoides) (Sauer, Cady, Cowles 1918:131, 138-9).

The river terrace and especially the islands which were probably inundated annually were very fertile farming land. The availability of several ecological zones and especially long strips of forest edge made the site well suited for utilizing a variety of resources. Nearby marshy areas were and still are havens for large numbers of water birds.

Excavation

Work under the direction of the author was carried out in the summers of 1970 and 1971 for the La Salle County Historical Society in the area of the site designated as Grid A.

A site report has been prepared which includes details on methods of excavation and a complete analysis of the data recovered (manuscript in author's possession). Only the data directly pertinent to this study will be presented here.

Village layout and structures

Most of the historic accounts from the 1670's and 1680's came from the Grand Village so the archeological evidence should corroborate and expand on the historic documents. The village had a lineal settlement pattern. "The village, which was situated on the north bank of the river, along which it extended for a league, and a quarter of a league in width, had no wall or entrenchment" (Anderson 1901:195). " They are housed in 351 cabins, which are easily counted, as most of them are situated upon the bank of the river" (JR 60:159). An earlier village mentioned by Dablon at another location was said to be three leagues long "the cabins being placed lengthwise" (JR 54: 167). Unfortunately the most choice house sites and probably the most thoroughly utilized land has been washed into the river. The construction of a dam at Starved Rock raised the water level ten feet, covering most of the islands. In 1947 it was estimated that the river had already washed out a fifteen foot deep strip along the north bank. Erosion has continued since then and probably increased with the deposition of silt in the channel and raising of the water level,so that about thirty feet may have been lost. Many features can be seen eroding out of the cut bank. There may have been "streets" or open spaces dividing rows

of houses such as Marquette indicated for the Peoria village (JR 59:132).

Much of this regretably remains speculation for the Zimmerman site as due to the depth of the plow zone and the loss into the river, most of the evidence for houses and house floors has been destroyed.

The earlier excavations uncovered an occupation level in several places, five short rows of post molds possibly forming one or more structures were located but not traced out. Also a slightly curved row of postmolds was interpreted as the possible remains of a rectangular structure.

An ovoid patch of yellow sand 2-3 inches deep and measuring 9.5' east/west and 6' north/south was uncovered but only five postmolds were located. If this was a structure its long axis would be parallel to the river (Bauxar 1953:19).

Increased disturbance from plowing in the last 23 years frustrated attempts to recover complete house patterns. In 1970 a small circular structure 13' in diameter was located, but the floor was gone in the plow zone. An intensive search for structural remains was carried on in 1971 by one of the students on the project, Charles Orser, who succeeded in establishing several post mold lines that he was able to classify as structures, even though he was unable to follow out the entire structure. He was able to delineate 2 arcs which presumably were the ends of a roughly rectangular structure, the curvature not being such as to imply a circular one. These remains suggested building widths of ten and eleven feet.

In another area regularly spaced postmolds suggested a circular structure about 12' in diameter. In addition to these probable structures a more well-defined one was located north of the circular structure,

composed of a line of postmolds defining an end wall and a portion of one side wall. The exact width was not determined but the end was 7' long, the wall made a right angle turn and 19' of the side wall was followed out.

Although several other patterns were examined none could even be classified as possibilities. From the extreme shallowness of the postmolds remaining, two to three inches, it is evident that the majority of the soil has been disturbed.

Artifact Categories

It is realized that the division of the material into functional categories is to a certain extent arbitrary. Many items may have had multiple functions for example, decorative objects often had religious connotations. The grouping of the items is based on the historical accounts and on later ethnographic studies of related groups by which the function of most items can be ascertained. Winter's (1969) functional categories have been used as a general outline with modifications where it was necessary.

Dress and Ornaments

As could be expected from the type of clothing described in the ethnohistoric section there are no archeological remains of clothing. The hides, woven belts and porcupine quill decorations have all decayed. Evidence for some ornaments remains. There were items of both local materials and of European manufacture. Some European materials were modified by the Indians to suit their cultural needs.

The glass seed beads are one of the most common European trade items found. The majority of the small beads (ca. 2mm dia.) are blue-green,

but there are a few white and black ones, and a single red one was found in 1947. Beads are not plentiful, the total for the 1970-71 seasons is 53. Blue-green necklace beads, a larger size bead (ca. 6 mm dia.) are also not plentiful (18). No other type of glass bead was found. Small brass beads were made from strips cut from brass kettles, these beads are about 6 mm long and 2 mm in diameter. Several beads when found, were still strung together on rawhide strips (total 55).

Pieces from brass kettles also were cut and made into tinklers. These were sewn to moccasins or clothing to create a jingling sound. Brass wire was used for ornaments. Pieces of this wire are sometimes found made into large springlike objects which from their occurrance with burials appear to have been used as earrings or as part of a head-dress. These coils are large, ca. 3 cm in diameter. Although these were sometimes found at the ears, others appear to have been located beside the head in a manner suggesting their use in the hair. Two different burials had 6 coils each, three on each side of the head, possibly these were worn with locks of hair woven through them similar to the usage of copper tubes in some areas (Quimby 1966:36). A set of three matched bone tubes may also have been used in this way. These tubes were made from bird bone and showed marks from an iron file on the exterior. They were 3 cm long and highly polished.

The Indians modified some of the glass beads. Eight fragmentary native made glass objects were found. These had been formed by grinding up small glass beads into a powder, moistening them probably with saliva as a binding agent to form a paste and then heating them on a piece of brass until the glass melted and fused together (Ubelaker and Bass 1970). None of the pieces were whole so it could not be told what

type of decorative object these represented but they appear to have been circular. It is not know where this manufacturing technique was developed but these fragments are the earliest which have been found (M. K. Brown 1972).

General utility tools

Iron was very poorly preserved and highly corroded so that only a few pieces were identifiable. A French clasp knife blade was found in 1947 and what appears to be a small clasp knife in a metal case in 1971. Although iron knives were present they were probably scarce and Beschfer in 1687 says that the Illinois continued to use stone knives, of which he sent examples to France (JR 63:281). He mentions "A stone dagger... another and smaller dagger. A stone knife" (JR 63:281). What the distinctions were between daggers and knives he does not explain. It is possible that these represent size differences. Two different groupings of knives were noted from the excavations for size and shape. The smaller knives ranged from 25-42 mm in length. The larger ones were up to 68 mm in length. The small knives and projectile points might be used as functional equivalents, Father Rasle stated "...if knives are lacking, they use arrows also for flaying the animals which they kill" (JR 67:169).

Stone scrapers showed usage on the end, side or sometimes both. A few were carefully unifacially chipped; these were humpbacked and pear shaped. Others were made on flat tabular flakes. Some of these may have been used in the working of hides. Although bone preservation was good, no bone beamers were found.

Two fragmentary iron axes were found in 1947.

Weapons

Although from historical records it is known that guns were present at the village, no gun parts, flints or musket balls have been found. Doubtlessly the materials were scarce and well cared for, but it is surprising that nothing has yet been found.

Small triangular flint projectile points were found but were not abundant, the 23 found ranged in length from 17-37 mm. A bone point recovered was of the triangular shape of the flint ones but it had serrations. There was one brass point and a large triangular piece of iron which may have been a projectile point or merely a fragment with that shape. It appears to have been made from a spoon, strainer or such, with a riveted handle.

A broken bone harpoon was 7 cm long with a single barb. This piece represents the tip so there may have been additional barbs.

Fabricating and processing tools

Bone needles used to assist in weaving the mats for lodges seem to have been of at least two types. One is shaped like an oversized crochet hook with a round shaft of interdeterminate length but preserved to 17.5 cm long. The other, a more common variety, appears from the curvature to have been made from the ribs of some fairly large animal. No complete specimens have been found. The longest fragment is 21.8 cm long. These needles seem to have had at least 2 perforations in the base, and the tip is rounded and polished from use.

Perforators or awls of stone, bone and iron were used. Bone ones might have been used as awls for piercing holes in hides in preparation for sewing as would the iron awls, only 2 of which have been found. Small stone perforators with a diamond cross-section were probably

reamers and used on harder materials such as drilling the bowl of a pipe. Two showed a high polish from use.

Tools used in the flaking of stone tools were made from both antler and bone, antler being the most common, generally unmodified tines with a blunt end. Bone flakers were more smoothed and shaped with slightly beveled tips. A small stone hammer, found in a pit with an unusually large number of flint chips, was probably also used in chipping flint.

Fragments of eight sandstone abraders were found, some with wide shallow channels which were used in pairs to smooth the surface of an arrow shaft and others with narrow grooves presumably used to sharpen bone awls etc. Chert spokeshaves with chipped semi-lunar notches along the edge were found. These were used for shaving down sticks for initial smoothing in preparation of an arrow shaft. A fragmentary bone tool of the type generally called a shaft wrench had two perforations, one 1.9 cm in diameter, the other was broken. Several small pointed fish spines cut at the base were located together. These may have been blanks for needles.

Utensils

Not unexpectedly, no wooden utensils or even fragments have been found. Pottery, although consistently present, is not abundant and many of the fragments were 2 cm or less in size. Only 5 whole or restorable vessels have been found but an estimated total of 60 vessels are represented by fragments from the later excavations. The pottery which occurs consistently and which is represented by the whole vessels is of the Danner component (Kellar 1949). This pottery is shell tempered with grooved paddle and cordmarked body treatment which ends at the shoulder, the rim is smooth. Both body treatments are fairly carefully applied, the impressions may be diagonal, vertical or horizontal. Rims

are flaring, lips are notched or impressed with some object, frequently the finger tip. Straphandles in hourglass shape, either plain or with incised design, are known. Vessels appear to have come in a variety of sizes, including minature vessels of which no complete ones were recovered. Restored vessels varied from 16 to 32 cm in depth. The smaller pots have rounded bottoms, the larger vessels are subconcoidal. Presumably it is the larger type of pot which was used on occasions as a drum.

Although the most frequently found European materials on the site were brass kettle fragments it is not possible to estimate vessel number. Two kettle lugs were found, but all else is scrap, most of which is extremely small, too small for any further utilization. Some fragments showed patches; it appears that brass was a highly valued material and in short supply.

Horticultural tools

Hoes made from bison scapula were used for horticultural work, the spine, anterior border and sometimes the axillary borders were cut off and the entire glenoid cavity removed. The vertebral border generally shows extensive wear. There is a perforation in the center of the scapula presumably used for hafting which also shows signs of wear.

Antler digging tools were used. These are unmodified antlers which were probably lashed to a handle. The end tines show extensive wear and polish.

Recreational equipment

If they used plumstones and bean markers these did not survive. Although some charred plumstones were found, they are as likely to be the remains of food as part of the game. However, small bone counters

were found. These are small, 22-25 mm long cylindrical pieces of bone with rounded ends. A small flat disc shaped piece of bone was found which may also have been a counter or used in a similar fashion to the plumstones.

Smoking might well be characterised as both recreational and ceremonial. No ceremonial pipes of redstone (probably catlinite) such as were mentioned by Marquette (JR 59:131) were found. A pipe bowl of a white chalky stone only partly completed and a roughly shaped blank for a pipe out of the same type of stone were found. From the appearance of the unfinished forms these pipes would have had, if completed, a rough cylindrical shape not more than 33mm long.

Ceremonial Equipment

The sole item which may relate to religious practices is a brass snake, 61 mm long; it is cleverly fashioned from a piece of B-sectioned trade wire. Snakes were important in some religious activities (CIHS 23:371). Similar snakes, though of native copper have been found on earlier sites (Bluhm and Liss 1961) (Quimby 1966b).

Burials

A total of 27 individuals from the historic component have been found at the Zimmerman site. Table 5 gives a brief summary of these. Sixteen of these were children or infants, there was one adolescent, five adult males, two adult females and three adults of unknown sex. Although the large number of children may indicate a high rate of infant mortality it is necessary to view this with caution since there is a small total sample. In addition it is likely that there was a designated area where the majority of the adult burials took place. An area west

Table 5

Burials - Zimmerman site

Burial Number	Position	Sex	Age	Remarks
1		M	30-40	Danner Grooved paddle pot
2	flexed		2- 2.5	blue seed and necklace beads, blue tubular bead, 6 brass coils
3	extended		1- 1.5	beads(unknown type) 2 brass coils
4			Adult	fragments of skull in refuse pit
5	extended	M	45-55	no artifacts
6	bundle	M	45-55	no artifacts (in pit with 7,8,9)
7	bundle		11-12	no artifacts
8	bundle		2.5-3.5	a brass coils with 8 or 9
9	bundle		12-20 mo.	see above
11	flexed	M	27-35	communal pit with 12,13,14
12	bundle		25-40	partial burial, legs
			1.5-3	cranial fragments
13	extended	F	40-50	no artifacts
14	bundle	M	25-30	6 brass coils
22			6-7	3 brass tubes,1 necklace bead
			7-9	
23	extended		18 mo.	axe
24	bundle	M	25-30	iron tool, compass
25A	bundle		21-27 mo.	blue necklace beads with A or B
25B	bundle		18-24 mo.	see above
26	bundle	F	Adult	partial burial, leg and pelvis

Table 5 (cont'd.)

Burial Number	Position	Sex	Age	Remarks
27	bundle		2-4	no artifacts
28	bundle		5 children (ranging from neonate to ca. 5yrs.	blue seed beads, 2 brass coils

of the Danner component village was tested in 1947, the only features found here were burials and more were located than were excavated. Only three of the adults (not counting a skull fragment in a refuse pit) were interred within the village proper. Two of these were in a pit originally dug to contain a child, and appear to be on the northern periphery of the village. The other adult burial was within the village area.

As can be seen from Table 6 there was a variety of burial treatments; two flexed burials, five extended and seventeen bundle burials, the predominant type. As was discussed in Chapter III differences in status may account for differential treatment, but the sample is not adequate to determine this with any degree of certainty. All burials for which orientation could be determined (5) were oriented E/W with the head to the west. Eleven burials had associated goods (Table 5). Neither of the two females had any burial goods, but as one was represented only by one leg and half a pelvis this is not necessarily significant. Of the five males identified only two had burial goods. The males who had burial goods were bundle burials. Ear coils were found in the group of burials with another male, but it was indefinite with which individual they were associated.

There is evidence that there were at least two methods of handling the dead. In one an ovoid pit was dug nearly the length of the body. The body was placed in the grave with the head and upper part of the body raised slightly leaning against the west wall, burials 5, 13, and 23 were handled in this manner. There are indications that the graves were left open for some time. Deliette described the contruction of a grave house (CIHS 23:357-8) and this was a common Algonkian practice (Bushnell: 1920). No indication of post molds were found for

Table 6

Burial Disposition by Age and Sex - Zimmerman site

	Extended	Flexed	Bundle	Unknown
Child	XXX	X	XXXXXX XXXXX	XX
Adolescent			X	
Adult Male	X	X	XXX	
Adult Female	X		X	
Adult (sex unknown)			X	XX

Burial 5 and 13. Burial 23 had two at the east end of the grave but none were located at the west end.

In the case of Burials 13 and 23 the graves were left open at least until additional burials were added. The burial pit may have been enlarged then in the case of Burial 23 and certainly had to be for Burial 13 to allow for accomodation of Burials 11, 12 and 14.

In the other method of disposal of the dead, the bodies were first placed on a scaffold until the flesh decayed, then the bones were collected and placed into graves either with other individuals or separately. This seems to have been a preferred treatment for children. It is also indicated by Joutel (Anderson 1896:174) to be a treatment reserved for high ranking males.

The grave which contained Burials 23-26 was a deep oval pit, which had been capped with approximately a 6 inch thick layer of gray clay. Feature 11 was noted as having a distinct gray clay oval cap also. However, below this cap there was no indication that the ground had been disturbed and no sign of usage of the pit. It is suggested that this might have been a symbolic grave, an empty grave dug for someone lost elsewhere.

Subsistence

In 1970 a study was done of the faunal remains (E. Cardinal 1971) which showed that the most important single species was the bison, which accounted for 54.4 percent of the meat, elk contributed 19.8 percent, white tailed deer 10.2 percent and bear 6.3 percent. a number of smaller species were also used but did not make a substantial contribution to the diet. Remains of dogs were found in the refuse

pits and as dog meat was used for feasts, this can be considered part of the subsistence.

Bird remains were not too plentiful, which is surprising considering the suitable location of the site for obtaining birds. Turkey was the most plentiful, but duck and whistling swans were also present.

Despite Rasle's comments of the apparent indifference of the Illinois towards fish (JR 67:171), there were a large number of fish remains. Turtles and mussels also constituted a minor part of the diet.

It is obvious that the Illinois utilized all major resource areas available to them, the woodland, prairie, savannas, streams and marshes. They appear to have concentrated on species which would yield the highest proportion of meat per animal as bison, elk and deer. Elk and bison were butchered mainly away from the village so that only certain portions were brought back, generally sections of long bones and occasionally ribs or vertebrae. The deer were largely between $2\frac{1}{2}$ - 3 years, an age when they would be in prime condition, which suggests a selective hunting pattern. From the species present it appears that the site was occupied in the spring, fall and summer which agrees with the historical evidence.

Carbonized corn and beans have been found in abundance. Corn is both the 8 rowed and 10 rowed types and possibly also a 12 row. Watermelons were mentioned by the French and carbonized seeds occur, also squash seeds. In addition to cultivated plants, seeds of several wild species were retrieved from the pits; hickory nuts, walnuts, sunflower seeds, hackberry, sumac seeds and pecan shells.

Roots and tubers, presumably also used for food were not recovered but 5 roasting pits similar to those described by Deliette were found (see above page 50). The only real difference from the pits reported by him was the shape, they were not rectangular but large ovals. In the bottom of the pits were the remains of logs 2-4 inches in diameter completely carbonized, above this was a layer of fire-cracked rock with ash filling the interstices, then a thick layer of ash and earth. The sides of the pits were oxidized to a bright red from the heat. Wood charcoal from the pits indicates species now present in the area: oak, hickory, sassafras, elm, hackberry, ash and walnut.

There were smaller pits with ash but few stones also having the sides bright red from heat. Most likely these were earth ovens perhaps used to bake a kind of bread such as that mentioned by Joutel "Bread made of Indian corn, baked in the Embers" (Anderson 1896:176).

The functions of the other pits were not so easily determined. Many appear to have been dug for storage of corn and other items. In 1970-71, out of 76 pits, 49 could be assigned to the historic peroid due to the inclusion of European materials and another 13 probably should be added to that on the basis of pit type and the presence of shell tempered pottery of the Danner complex. Sixteen of the pits located in 1947 were historic.

Village Organization

The lack of complete houses and preserved house floors limits severely attempts to detect social differences within the village. Some indications of possible social distinctions come from features 52-53, pits which are close together and which it is suggested, probably

belonged to the same household. These pits have a larger number of items *in toto* in comparison to other pits, they also share similarities in the artifacts which they have and in the quantities which occur. Several unusual items suggest a distinctive inventory: three matched bone tubes, native manufactured glass objects and a pipe blank. The assemblage from the pits is male related in content having projectile points, knives, bone flaking tools etc.

Some type of communal activity is implied by the roasting pits, if the social interaction coincided with that observed by Deliette. Indications of status differentiations in the burials has already been discussed.

Even if there were not historical records the scarcity of trade goods itself would suggest a very early historic site. The amount of goods received from the traders at Green Bay or elsewhere must have been small. In 1674 there were two resident traders in the Illinois county and at least two or three Illinois actively participating in the fur trade (JR 59:175). However, that trade goods are at a premium is evidenced not only by their scarity but by the extensive reuse of brass. Although this might point only to the pre-1680 village, there is no way of estimating the amount of increase in trade goods in 1683 nor exactly how much of this would be reflected in the archeology. What has been found archeologically corresponds with the ethnohistoric description and can be taken as a fairly accurate picture of the Illinois culture in the 1600's.

CHAPTER V

THE WATERMAN SITE - R 122

Location

The second village, the Waterman Site, a Michigamea village, is located in Randolph County, Illinois, Section 14, Range 10 West, Township 5 South, in the W½ of the SE¼ of the SE¼ and E½ of the SW¼ of the SE¼, within the present Fort de Chartres State Park. It is probably the second village which the Michigamea occupied on the reserve.

The Michigamea had been residing with the Kaskaskia and the French in the Kaskaskia village. About 1720 this village was divided into three villages, the French remaining in the original village, the Kaskaskia moving up the Kaskaskia River five or six miles and the Michigamea moving to a reserve near Fort de Chartres which had been set aside for them (Kellogg 1917:205).

> "The tract of land laid down in the plat, bounded by the Coule de Nau, the Mississippi and the lower line of St. Philip was reserved for the Michigamea Indians (so-called) and was never conceded away either by the French or English, and the allotments below the Fort never did extend further than the said base line as laid down in the plat. We have found its very boundaries as placed by the French government" (American Public Lands in Palm 1933:55).

Documentation is slight, but the village which the Michigamea built in the 1720's was said to have been situated half a league from the first Fort de Chartres. "The most numerous [village] is on the banks of the Mississippi... Half a league below stands Fort de Chartres" (Kellogg 1923:205). At this period the Michigamea were said to have 200 warriors(Mereness 1916:69) indicating a population around 900.

In 1752 the village was destroyed by a combined attack of Fox, Sioux, Chippewa, Winnebago, Potawatomi and Menonimee (CIHS 29:654). About eighty Michigamea were killed or captured in this battle and the village was burned (Bossu 1771:135).

The probable site of this village has been located recently on an old bank of the Mississippi, the river having changed its course several times since. The site is on a wide ridge and there are traces of what are probably houses. The area is presently being farmed and materials which are turned up by the plow would suggest that this is the village of 1720-1752.[1]

The Michigamea built a new village on the reserve after the burning of the first and the Waterman site probably represents the post-massacre village. The dates suggested by the material indicate an occupation from the mid-1750's to the 1770's and this village is known to have been about half a mile from Fort de Chartres.

Later structures were built on the ridge in the 1820's - 1840's, probably a house and several outbuildings. Pits and a well associated with this house were located.

Environment

The village was situated on the floodplain on the northern bank of the Mississippi. About four miles to the east the bluffs rise to the rolling uplands. This area is below the boundary of the Prairie Peninsula and was not affected by later glaciations. Consequently the drainage system is well developed and many streams have cut deep ravines. Buffalo would have been found in the occasional open prairies on the

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1. The site was located by Irvin Peithman and Ruth Gilster and the surface collection from the site is presently in their possession.

bluffs or further north and west, and white-tailed deer were plentiful. Fish could be obtained from some of the large shallow lakes on the reserve. Water fowl were attracted to the area by the quantity of marsh lands.

There were a series of wooded zones present. At the edge of the river were willows (Salix fluviatilis) with cottonwood (Populus deltoides), elm (Ulmus americana, U. rubra), hackberry (Celtis occidentalis) further back from the river. A large number of vines grew in this forest, morning glory, poison ivy, trumpet vine and grape. The major shrub was elderberry. In higher areas and on the talus of the bluffs were tulip trees and various species of oak and hickory. The low lying lands of the reserve were generally flooded every year and the soil was fertile.

The site is situated on a fairly high sandy ridge running roughly north-south; even before the building of the levee the ridge was not covered by floods according to information given to Mr. Peithman by older inhabitants in the area (Irvin Peithman, personal communication 1971). To the east and north of the ridge were sloughs or shallow lakes at the period of occupation of the site. These and the Coule de Nau probably represent remanents of old channels of the Mississippi, but no studies have been made of meanders in this region.

Wind erosion has been occurring on the western and southwestern sides of the ridge where two and a half to three feet has been lost. Leaching is also extensive on the site, edges of features and postmolds were hard to detect.

Excavation

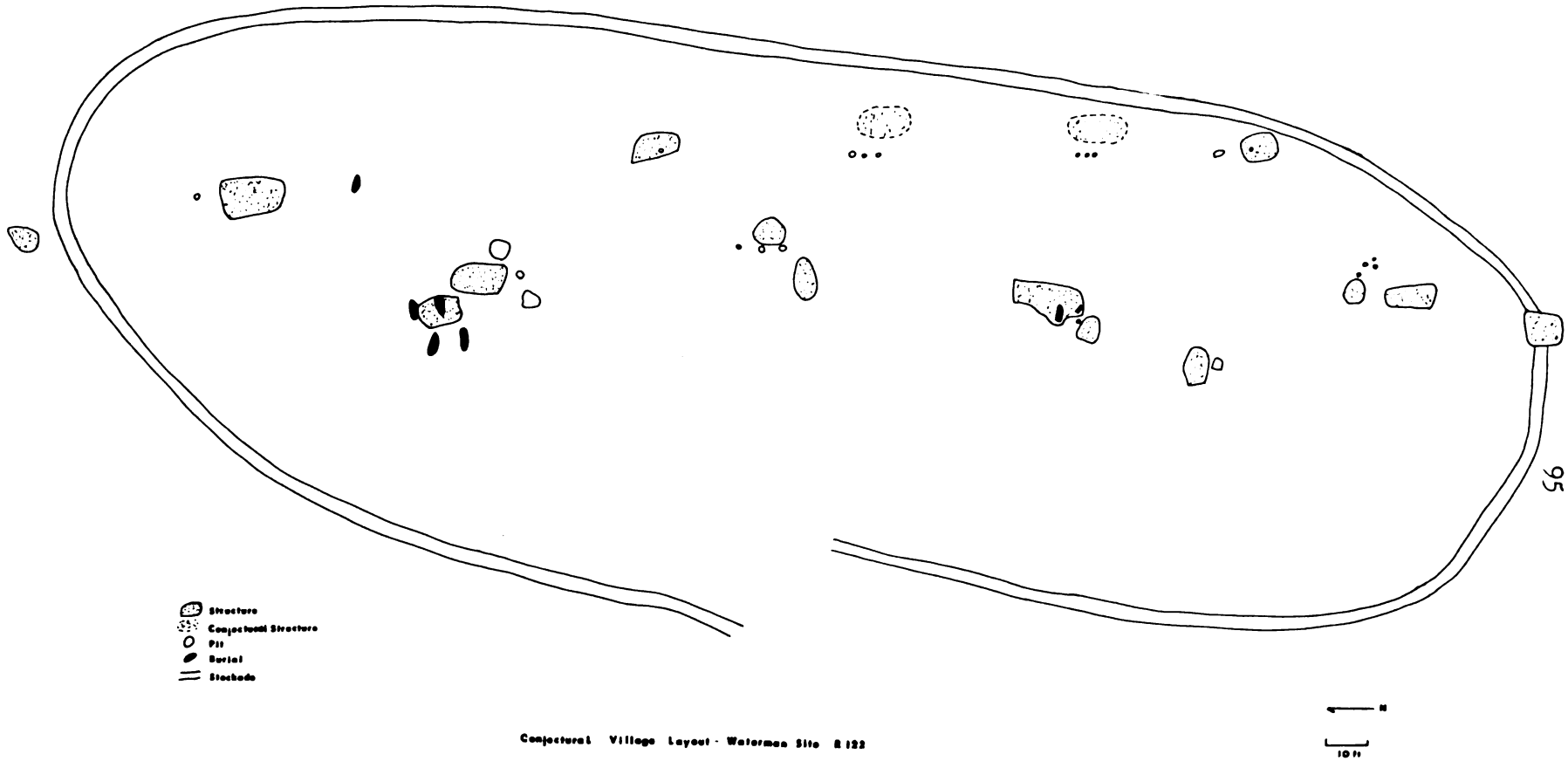
The site was excavated by the author in 1971 for the Illinois Department of Conservation. As for the Zimmerman site an extensive site report is being prepared so that only information necessary for this study will be included here.

Village layout and structures

There has been no appreciable deposition on the ridge following the abandonment of the village and extensive erosion has occurred at least since the initiation of modern farming. The major portion of the occupation surface of the village has been blown away or incorporated in the plow zone, however, more indications for village layout exist here than at Zimmerman. A sketch of the probable village layout as developed from the archeological remains is given in Figure 5. The village was surrounded by a stockade. The projected area enclosed by the stockade would have been approximately 430 x 170 feet. Within this area were located 13 structures, and the distribution of pits suggests the presence of two others outside the area of excavation. The excavations did not cover the entire site. Although extensive tests on the western side failed to disclose structures, there may be additional ones there. One large area on the northwestern side was not crossed by the trenches used to explore the site.

The structures appear to have been arranged roughly in two, possibly three rows, with "streets" in between in a manner similar to that suggested for the early Peoria village (see above page 57). The long axis of the structures was roughly north-south, following the orientation of the ridge.

The stockade trench was encountered at several points and followed



Conjectural Village Layout - Waterman Site B 122

Figure 5

for varying distances; the largest continuous section traced out being 60 feet. The trench was three to three and a half feet deep in portions of the site which had the least erosion; remanents of it in other parts were only a few inches deep. It was three to four feet wide. Although careful examination was made by cutting the trench both horizontally and vertically, it was not possible to locate any postmolds. Despite the lack of postmolds it is presumed that this is a stockade trench for a number of reasons: the trench appears to be continuous around the village; it was not situated to control drainage; and was not deep or wide enough to provide any barrier without posts inserted in it. The Indians at this period were very apprehensive about attacks from northern groups and at least one reconstruction of the trench was revealed in several profiles, an effort which would imply that the trench had some importance. The earlier village seems to have had some type of stockade around it (WSHS 16:461).

On the west side two very eroded sections of the trench were detected. There was no indication of how, if at all, these sections joined; they may have formed a protectively overlapping entrance or represent the separate construction phases of the stockade which may have diverged in this area but, due to the extensive erosion on the western side, this could not be determined.

The structures were ovoid, rectanguloid or circular and ranging from 21 feet long and 12 feet wide to 9 feet in diameter, with floor areas of a maximum of 250 square feet and a minimum of 81 square feet. Again because of leaching it was not possible to locate any postmolds associated with the structures. Structures were defined by dark organic stained soil, contrasting with the sterile yellow sand

surrounding it, or be differential drying in areas with consistently darker soil.

The structures appear to have been constructed in or on the edge of a shallow excavation, and were probably similar to those described otherwise for the Illinois, oval pole frames covered with mats or barks. Mud daub was found and probably used for chinking. A hearth area was located within each structure, generally on the west or southwest side. One structure, House 1, had a projection on the west where all the ash and burned soil was concentrated, suggesting the possibility of a stick and mud fireplace similar to French construction of the period. This was the largest house (Table 7). From historical accounts it is known that floors were covered with mats as late as 1756 (Bossu 1771:117), and traces of matting were found in House 10 preserved by contact with brass.

Shallow pits, apparently for refuse, were as large as some of the smaller structures. Since postmolds were not present to assist in separating structure from pits, the presence or absence of a hearth area was used as criteria for a structure.

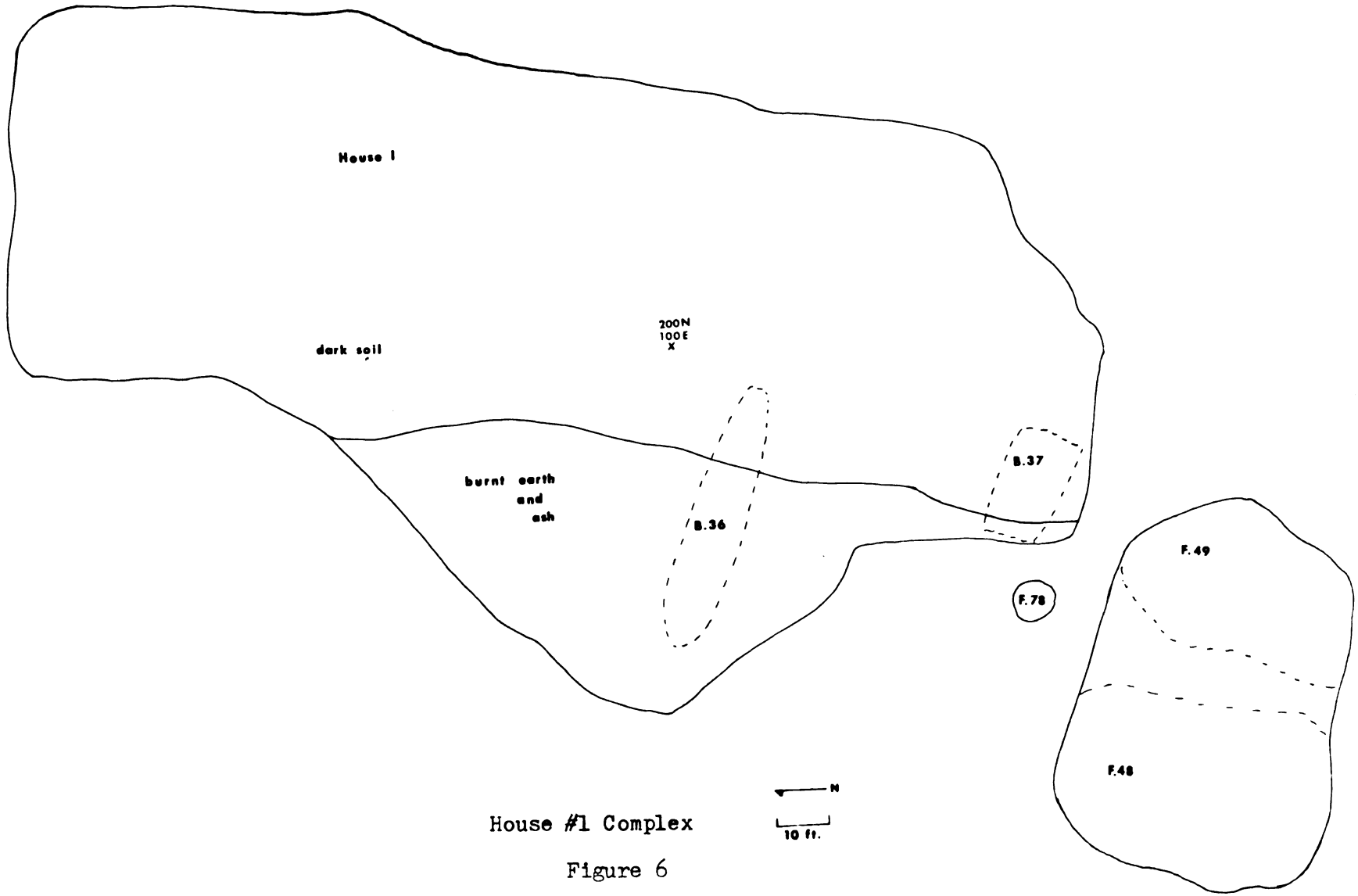
Structural complexes

At least three units tentatively referred to as household complexes were excavated. The household complex is defined as consisting of two structure and a series of pits. The structures are a large oval building and a smaller structure of varying form (Figures 6 and 7). The majority of the pits were small and filled with carbonized corncobs. Further discussion of these pits will be given below, but it is felt that they probably represented hide smoking pits (Binford 1967). It is suggested that the household complex represented the dwelling of an extended family; the smaller cabin, a menstrual hut

TABLE 7

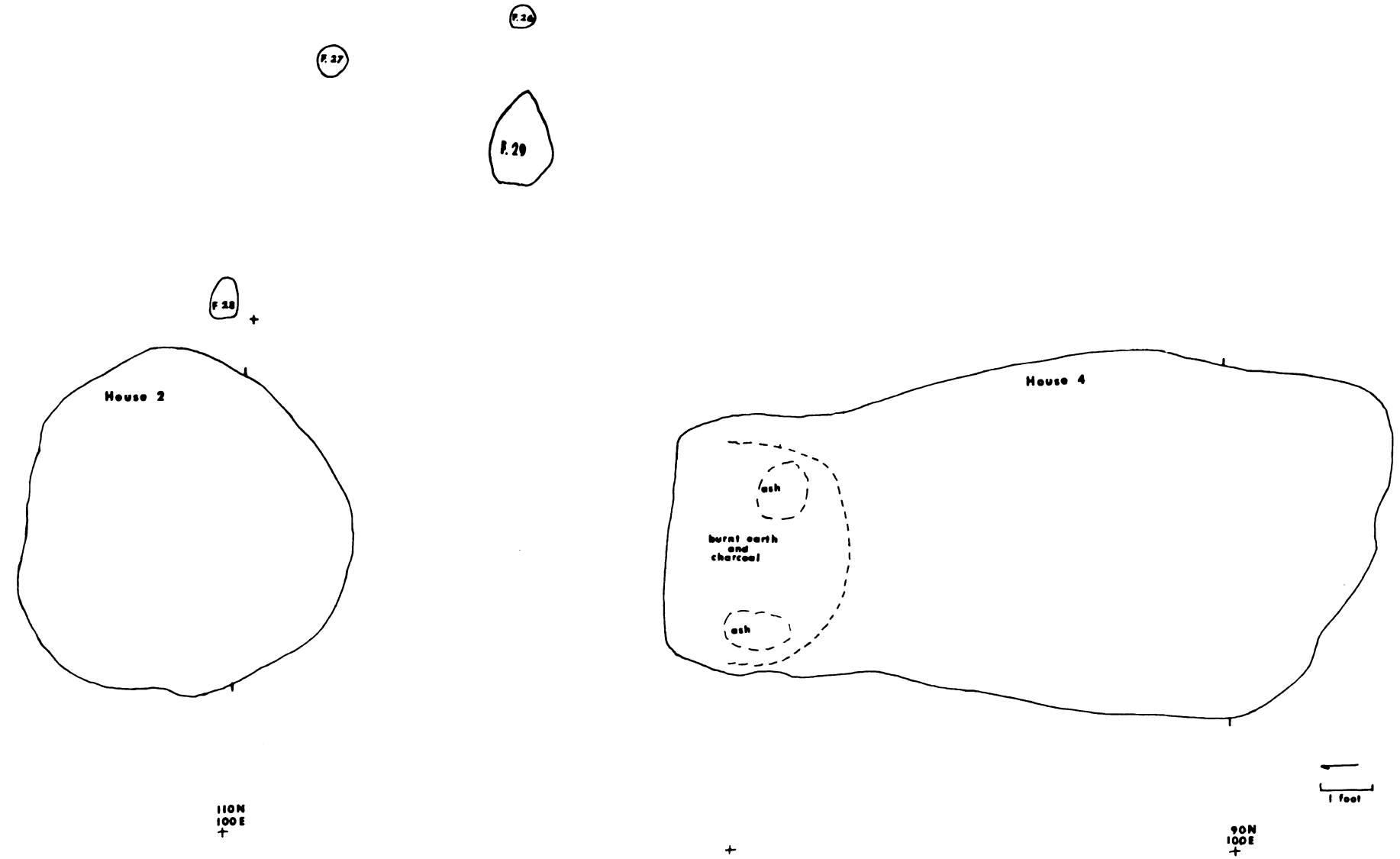
House Dimensions - Waterman Site

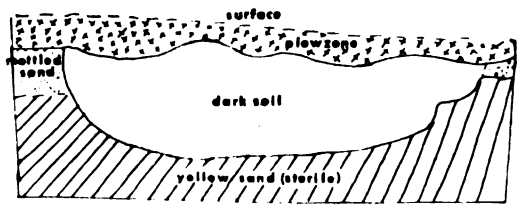
Structure # 1	21 x 12 feet
Structure # 2	$6\frac{1}{2}$ x 7 feet
Structure # 3	14 x 8 feet
Structure # 4	14 x 7 feet
Structure # 5	12 x 9 feet
Structure # 6	misnamed, not a structure
Structure # 7	13 x 9 feet
Structure # 8	well associated with later farmhouse
Structure # 9	12 x 6 feet
Structure #10	9 x 9 feet
Structure #11	$12\frac{1}{2}$ x $18\frac{1}{2}$ feet
Structure #12	9 x $12\frac{1}{2}$ feet
Structure #13	10 x $8\frac{1}{2}$ feet
Structure #14	13 x $6\frac{1}{2}$ feet
Structure #15	8 x 10 feet



House #1 Complex

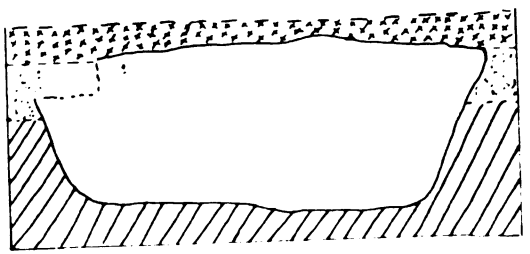
Figure 6





House #4 Complex

Figure 7



for confinement of the females of the household during menses, and that the pits around the units were utilized by the females of the house in tanning hides for trade.

Burials were sometimes found in association with these complexes. The graves were dug into the fill of the house pit and appear to have been dug after the house had fallen into disuse.

A village of 20-25 structures, including both dwellings and out-buildings is envisoned. Space estimates for structures range between 4-12 persons per cabin. The small huts suggested as menstrual huts would contain a maximum of two persons. It would appear that the dwellings contained nuclear or extended families, some of these probably being polygynous. These families were not as large as in the earlier period. The total population for the village is difficult to estimate; the number of warriors given at this time is forty (CIHS 11:126) which would suggest between 150-200 persons which would equate well with the archeological remains.

Dress and ornaments

Although definite historical information is lacking for this village the likelihood is that hides had been largely replaced by manufactured foods for clothing. The Peoria who were less exposed to trade appeared in French cloth garments in 1752 (CIHS 29:453). Blankets are frequently mentioned as parts of messages and probably were partly replacing hides in this context, although hides continued to be used for messages as late as 1781 (Hauser n.d.:54). Trade coats of wool with brass braid were found with two of the burials. The only other indications of dress were small fragments of cloth preserved by brass or silver plated items and clusters of beads around the knees, suggesting the presence of

beaded garters.

Seed beads were not of the blue green variety of the earlier site, but a clear blue, white, black, green and a red and black (Cornaline d'Aleppo). Necklace beads were of several colors. The total number of beads found, including both seed and necklace beads was close to 20,000.

One burial was found with at least 6 strands of necklaces around the neck. These were carefully arranged with like beads together or two alternating types. A string of reddish purple faceted beads were at the neck of another burial and had a cross attached, this may have been a rosary.

Ear ornaments were of silver and brass; silver ball and cone earrings and ear bands, plain wide loops which may have clamped on the ear lobe. Silver bracelets and solid thick brass wire bracelets were worn. Rings were made of silver, brass and iron and one had a glass set.

The remains of a beaded bag filled with vermillon was with one burial, on the lower part the pattern of two horizontal rows of white seed beads was preserved. Other traces of bags were rows of tinkling cones, one bag had a row of 6 tinklers on the bottom and another had two rows of 4 tinklers each.

Evidence for hair styles was provided from several burials. One style of male hairdressing included a series of small brooches fastened to locks of hair on the right side of the head. Another style seems to have included a shell, Delft hair ornament or brass hairpipe directly at the back of the skull. One burial had long solid brass wire coils 9 mm in diameter down each side of the head. At the back of the head of this burial on the upper part of the occipital was a brass hairpipe apparently also part of the hair arrangement.

European materials were modified by the Indians to their own demands. Brass and iron tinkling cones were popular and there were small brass beads 2-3 mm long and 2 mm diameter found still strung on a thread preserved by copper salts. Lead pendants or beads were fashioned from musket balls. The pendants were roughly tear drop shaped with a single perforation and flat on both faces. The beads were constructed by flattening the lead into a long strip and rolling it to make a cylindrical bead. Although none were found in the excavations, several native made glass objects were plowed up with burials earlier. These are all triangular pendants (M. K. Brown 1972).

Soft paste European ceramics were modified by the Indians. Plain white Delft was used to made ornaments which were worn in the hair. These were about 5 cm long, 6 mm wide at the ends and expanded at the center to 13 mm. A pendant was cleverly constructed from a ceramic lid, the knob being the central portion and all the remainder cut away except for one portion which was notched to hold a cord for suspension.

General utility tools

No stone knives were present, but 22 iron knives or fragments of knives were found. The majority were French clasp knives, although there was one British clasp knife. Butcher knives were also present.

Two very large stone scrapers were found in the plow zone and may have formed part of the historic assemblage.

Weapons

The Michigamea used both European and native weapons. Gun parts were not plentiful but a large number of gun flints (66) were found. Gunparts of French origin included a side plate, cock, frizzen, lockplate, and tang from a buttplate (T. M. Hamilton, personal communication,

1972). There were also musket balls, lead shot and iron grape shot. However, the use of the bow and arrow had not been discontinued. Although only eleven flint projectile points were found, there were seventeen projectile points cut from brass. Some of these were conical in shape, similar to the tinkling cones, only with the apex closed; these have been called Kaskaskia points (Perino 1971:58). The other brass points were triangular, some had a tang. Many of these had a perforation nearly in the center. Two projectile points chipped from bottle glass were found, these were also small triangular points.

Fabricating and processing tools

Sandstone abraders were still in use for smoothing arrow shafts. From the width of the grooves of the abraders and the diameter of the base of the concial brass points it can be determined that arrow shafts were approximately 8mm in diameter. Sandstone abraders probably also were used for sharpening bone tools. Whetstones to sharpen iron tools were present.

The majority of the tools used were of European materials and generally specifically of European manufacture. Iron axes and the awls were used. Fleshers, for cleaning hides, were of iron, splayed at one end for scraping.

Bone mat needles made from animal ribs continued in use to weave the mats for covering the houses and floors. No complete specimens were recovered.

Portions of what appear to be sandstone metates were found.

Utensils

By the time of the occupation of this village, pottery does not appear to have been made for ordinary use. Only one pottery vessel

occurred, that was in a burial of an adult male and two small children. The vessel is small, 5.4 cm high and made of four conjoined pots. The pots were rounded, have roughly smoothed lips and there are small round punctations over the whole shoulder and onto the joined areas. The origin of this vessel is not known.

Fragments of brass kettles were common, although rarely in large pieces as much brass was reworked into other items such as the tinkling cones and projectile points. A few fragments of iron kettles also occurred. Three complete French bottles were found as burial goods and fragments of both olive-green wine bottles and blue-green square bottles were common (M. K. Brown 1971:108, 112). The whole bottles date between 1740-1765. With the exception of the three whole bottles, olive green bottles were very fragmentary; from the necks and rims it appears that both French and British bottles were present, although French predominated.

Fragments of European ceramics, outside of those probably associated with the later farm structures were not too common. Those from the Indian occupation were almost entirely French faience or English Delft, tin glazed soft paste earthenware; plain white, blue and white and polychrome pieces were found. Many of these correspond to the description of ceramics manufactured in Rouen (Miller and Stone 1970:266ff).

Horticultural tools

Fragments of iron hoes are in the surface collection from the site[1] but none were found in the excavations. No scapula hoes were found, but

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1. Surface collection materials from the site are in the possession of Irvin Peithman or in the museum at Fort de Chartres.

bone preservation was very poor.

Ceremonial equipment

Pipes found in the burials may have had personal ceremonial significance. The only other articles which could be associated with religious practices were medicine bags. Pipes were found with males except for one found with a female who also possessed a medicine bag. The pipe found with the female was keel shaped, skillfully carved and had incised arcs on both sides. All other pipes found were of the mic-mac style, made from soft local stones.

That the only female with a pipe also had a medicine bag suggests that pipes probably had a ceremonial significance as these articles would indicate she had magical power i.e. was a shaman. The medicine bag contained the skull of a very small animal, probably a rodent. A medicine bag was also found with an adult male which contained two unidentified carnivore jaws. The outline of the bag in which they had been contained was retained in a reddish pigment and the bottom of the bag had been decorated with two rows of tinkling cones.

Recreational equipment

The presence of sixteen small counters from the excavations suggests that the plumstone game or a similar game was played. The counters were about 1 cm in diameter and made from sherds of Delft. One face still retained the white glaze of the ceramic but the glaze had been removed from the other leaving the buff paste exposed.

Lead "whizzers" made from musket balls were found. These were flat disks ca. 35 mm in diameter with serrated or smooth edges. There were at least 2 perforations in the center. A cord was passed through

the perforations, twisted and released, producing a humming noise. It is possible some of these were used as buttons instead.

Bones, hollowed and shaped for the pin and cup game were found.

Burials

A total of 55 individuals were excavated at the Waterman site in 1971. Approximately 17 fragmentary burials had been previously uncovered by the plow. Some of the excavated skeletons were only partially present and portions of them may be counted among the 17, however, it is likely that additional skeletons were totally destroyed by the plow, so a total of 72 individuals originally interred is a reasonable estimate.

Although there is some information on the seventeen plowed out, this discussion will focus only on the burials excavated in 1971. The distribution by age groups appears in Table 8. Infants are poorly represented. It may be that due to the thinness of the bones many have decayed completely leaving no recognizable trace. It is also possible that infants under three years of age received burial in a different area. The distribution of males and females appears fairly normal although only 28 burials could be sexed.

There were two cemetery areas outside the village wall, one to the south and one to the north. Possibly there was an additional one on the western side. Two burials were located beyond the stockade line to the west and there were other scattered remains suggesting that a more extensive burial area may have existed there prior to erosion. Burials were found within the village, outside or on the interior of structures.

The south cemetary had suffered from extensive erosion. The

Table 8

Burial Disposition by Age - Sex - Waterman Site

Age	Male	Female	Unknown	Total
<3			2	2
3-12			7	7
12-18		2	1	3
18-21		1	1	2
21-35	4	6	3	13
35-50	6	3		9
>50	1	1	2	4
(?)>25		3	2	5
Total	11	17	24	52

burials here were laid out roughly in rows. The burials were oriented east-west with the rows following the long axis of the ridge. With two exceptions the burials had the head to the east. The exceptions were a young child and a female over 25 who were oriented to the west. The female was the only burial in the southern cemetery without grave goods.

Of the 18 burials in the south cemetery 4 were identified as females and 1 as male. The remainder were too badly damaged to permit sexing.

Ten burials were found within the village. Of these two were male, five were female and the other three children. One woman and a child were within the fill of House #1: another female was in House 12, three others were in the area around House 12 and House 3. The remaining ones were not obviously associated with any household complex but may have been related to some which were not exposed.

The burials within the village walls were oriented east-west. One child, one male and two females had the head to the west. Neither of the two females had burial goods, although all other burials within the village did. There was no evidence of disturbance by the plow of these burials, the center of the ridge has not been as affected by erosion.

The western side of the north cemetery has been eroded and two fragmentary burials not included in Table 11 were located there, but the remainder found were generally well below the plow zone. A total of 26 individuals were located here, 8 females, 8 males, 7 children and one unidentifiable adult. The orientation in this cemetery was different from the village and the south cemetery. The majority were oriented north-south, although there were three oriented east-west.

Table 9

Burials, South cemetery, Waterman site

Burial	Age	Sex	Head orient-ation	Seed Beads	Necklace Beads	Tinklers	Prooches	Ear Band	Bracelet	Ear Bob	
18	20-30		E	2545		16					
19			E								
20	50		E	47			1	1	1		silver pendant
21	25		E	4		12					brass chain
22	20-30		E								coat
23	50		E	7							
24											
25	17-25		E	630	361		6	1	2	3	cross,rings iron box
26	25-30	F	E								
28	25	F	W								
29	11-13		E	1	1						
30			W	3162	34						iron cup
32	25	F	E	4	1						
33	25-35	M		13	2		3				brass beads
34			E	7							
35	35-50	F	E	1295							
38			E	849							
40	25										

Table 10

Burials, Within Village, Waterman site

Burial	Age	Sex	Head orient-ation	Seed Beads	Necklace Beads	Brooches	Ear Band	Knife	Bells	Pipe	
27	30-40	M	E	3185			1	1			mirror, axe silver pendant
31	4-6		E	166	524		1	1	9		brass chain, cross
36	17-21	F	W								
37			E		1				4		brass chain
39	35-50	M	W					1		1	
41	25+	F	E	1427							
42	25-30	F	E	99	1					1	animal skull, ring
43		F	W								
44	5-7		W	2008		2					ear bob, cross siver bracelet
46	15-20	F	E			2					

Table 11

Burials, North cemetery, Waterman site

Burial	Age	Sex	Head orient-ation	Seed Beads	Necklace Beads	Tinklers	Brooches	Ear Band	Knife	Pipe	
47	20-25	M	N								
48	3-5		S	394	121	8	2		1		pistol, sword hilt
49	20-30	F	SE								
50	30-40	M	S	2		12	5	1			2 animal skulls
51	50+	M	N			2					2 wire coils brass hairpipe
52	2-3		S	18	82						
53	40-50	F	S								ring
54	25-35	F	S					2			
55	25		S								
56	25-35	F	N					1			
57	30-40	M	N					1			
58ABC	25 4-6 4-6	M	S	961	153				2	1	bell, awl, pottery vessel, strike alight
59	25-35	M	N	56	2					1	cross, bottles
60	40-50	M	N								
61	40-50	M	S		53						
62	50	F	S					2			

Table 11 (cont'd.)

Burial	Age	Sex	Head orient-ation	Seed Beads	Necklace Beads	Tinklers	Brooches	Ear Band	Knife	Pipe	
63	20-25	F	SW								
64	3-6		E	739	141	9		1			bracelet, silver pendant
65	12-16	F	E	105	73		1				
66	40-50	F	E								
67	3-6		S		1						brass hairpipe, 2 braclets, silver gorget, cross braclet
68	1-2		N								

Two burials must have had coffins as nails were found and plotted in, when projected 3-dimensionally these give the shape of a rectangular box surrounding the corpse. Logically there must have been something connecting them at one time; no stain could be detected however. Several other burials are suspected of having been either in boxes secured with wooden pegs, or in a grave lined with boards due to the rectangular shape of the grave. The majority were placed in a long oval grave, perhaps on bark or wrapped in cloth; bark was found preserved by copper salts in one grave and fragments of rough cloth in others.

Evidence for the presence or absence of grave shelters was not satisfactory. There were a few burials which appeared to have some weathering of the bones and some damage or misplaced bones that did not seem attributable to burrowing animals, but conclusive evidence was absent.

Subsistence

The area occupied by the Michigamea was probably no less productive than that of the Zimmerman site and the growing season was slightly longer. There was a fairly large population in the area, the Kaskaskia and Michigamea Indians and several French settlements.

> "Wild cattle, deer, elk, bears, wild turkeys abound everywhere in all seasons except near the inhabited portions. It is usually necessary to go one or two leagues to find deer, and seven or eight to find oxen. During a portion of the spring, the country is overrun with swans, bustards, geese, ducks of 3 kinds, wild pigeons and teal" (JR 69:143, 145).

Deer represented the most important contribution to the diet. Butchering patterns for buffalo were evidently different from those at Zimmerman in that all meat must have been cleaned from the bone

and processed before the return to the village, for buffalo bones are not present in the faunal remains from the site. This is a significant omission as on the basis of the archeological evidence it would appear that there had been a shift from buffalo and deer to deer alone as the main meat resource. Historical documents reveal that buffalo was still important and the change has been in the butchering techniques, possibly due to having to transport the meat for a longer distance.

Only eight bones of domesticated animals were found in features associated with the Indian occupation. This village does not appear to have had any quantity of domesticated animals although the Kaskaskia village did have (Mereness 1916:259).

A proportionately large number of turtles were found and they appear to have been an important supplement to the diet. The turtles and fish remains found were species indicative of back water lakes and sloughs; such areas were readily available on the reserve. Birds were under-represented in the faunal remains, considering the historical records (Parmalee 1972). No turkey bones were found although the French records explicitly mention the abundance of these birds. Bone preservation was was extremely poor at the site, which may account for some of the discrepancies.

Corn continued to be the staple crop and probably beans and squash were grown also, although only the carbonized remains of corncobs were found. Hides from the animals they caught were sold to the French. "They [the French] also trade in skins, such as beaver, buck and deer, buffalo and bear skins and other peltries, which they get very cheap from the Indians" (Mereness 1916:70).

Dressing the buffalo, deer and other skins was one of the major

occupations of the women. Not only did they process these but they could sell them (Mereness 1916:70). Hides were a major trade item and this may lend credence to hide smoking as being the function of the most prevalent feature type on the site. These features were small pits 12-15 inches in diameter and 6-8 inches deep (not including the plow zone). They were straight sided, fairly flat bottomed and filled with carbonized corncobs lacking the kernels, occasionally other charred material ocurred. Binford (1967) using ethnographic descriptions and archeological data has suggested hide smoking as a function of similar pits. He also suggested that they would be found in the base camp rather than in the winter hunting encampments as the ethnographic accounts indicate this work was done in the spring and summer. This would fit well with the remains at the Waterman site which was a base settlement, and with the historical records indicating the importance of hides in trade.[1] Preservation of organic materials besides the corncobs was slight. Flotation samples yeilded nothing.

With the exception of the corn cob pits, there were no other distinctive types of pits. Sizes and shapes varied considerably, many were completely void of materials. Only one showed any sign of burning within it. No roasting pits such as those from Zimmerman were found, apparently this food resource was no longer being utilized or was being prepared in another form. There was a lack of large pits suitable for the storage of corn and it is possible that some of the shallow large features lacking hearth areas were corn cribs for above ground storage of corn.

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[1] Since pottery was not manufactured at the site Munson's (1969) suggestion of use for interior blacking of pots is not relevant here.

Village organization

From the household complex it appears that women were still segregated from the males of the household during menses. Despite the handicap of menses it was possible for some woman to attain status as shamans or jugglers. Evidence from the earlier period has been cited for the probable existence of the Mide and it may be that a female buried with a pipe and medicine bag was associated with this.

The sizes of the probable resident structures varied, some variation was probably due to the residential group size and some to the wealth and importance of the owner. The residential group appears to have been smaller than at the Zimmerman site, although in 1750 15-20 persons were given as an average (JR 69:147). Subsequent depopulation due to the attack by the Foxes and their allies might have contributed to the reduction in the size of the household as well as religious and social factors. Polygamy was still practiced although there may have been a reduction in the average number of wives from 4 to 2 (Bossu 1771:128). The largest structure was House 1. This structure had an area containing a concentration of ash extending from the body of the building westward, the size and shape of which suggested a fire place. Within the other houses the fire area was on one side of the structure but within the curve of the building and presumably an open hearth. The differences in House 1 may suggest a more acculturated and/or more prestigious owner.

The most noticable differences in burial goods were between males and females; males were interred with pipes, knives, single ear bands and tinkling cones, with the exception of the one woman noted before. No other woman had any of these items buried with her. Some of these

items were found with children suggesting that these children were male children. Most commonly associated with children were vermillon, beads and bells, no bells were found with adults.

The cemeteries exhibited a difference in burial orientation. In the south cemetery the burials were oriented E/W and in the north cemetery N/S, with three exceptions. The village shared the orientation of the south cemetery. A variety of reasons for the two cemeteries and their differences have been considered: chronological difference between th two, burials representing two different village units (the Peoria lived on the Michigamea tract in the 1760's) (CIHS 11:126), or the two cemeteries representing the moiety division of the village.

Unfortunately the evidence does not allow for any one of these to be selected with certainty. Sone artifacts from the north cemetery suggest use of the cemetery beginning ca. 1754, while some of the burials in the south cemetery have materials that date from the 1760's. However, there is a great deal of overlap in artifactual materials and only a very few items from either cemetery can be dated closely. The difference in time between the two, if it existed, would be too small to account for the shift in orientation to be related to change over time.

The virtual lack of indications of moiety division among the Illinois in the historical documents makes it impossible to include any evidence for this as a reason for the orientations.

Since it is known that in the 1760's a group of Peoria were living with or near the Michigamea, the possiblilty of the cemeteries representing different village practices remains for the moment the strongest. However, no other Peoria or Michigamea cemetery has been

excavated which might substantiate this.

Although the village possessed mainly European manufactured items or items constructed from these, the village remained Indian in its structures, subsistence and sexual distinctions. The village almost certainly was founded subsequent to the Fox raid in 1752 and was abandoned some time in the 1770's when the numerically weakened Michigamea joined the Kaskaskia at their village.

CHAPTER VI

THE PROCESSUAL MODEL

Models

A model is a heuristic construct which attempts to organize a variety of information into a framework to allow for structuring of observations. Models represent a hypothesis or set of hypotheses concerning the relationships and interaction of elements within the model, therefore they can be predictive. Models may be implicit or explicit, all structuring of information implies the use of a model whether recognised or not. Implicit models, because of the lack of formulation of exact requirements for inclusion or exclusion of elements, remain ideographic and cannot be used satisfactorily for generalization.

A model is supposed to correspond as closely as possible with observed reality. At the same time the model simplifies the complexities of the real situation in order to make these easier to handle and comphrehend. This simplification is made possible because of regularities which occur within systems. These regularities are imposed by the set of constraints operating within the system which limits infinite variety. The recognition of these regularities through explicit dynamic models allows for the development of generalizing statements.

In model building selection is made of certain elements to be contained in the model, while others will be rejected for incorporation in it.

"...Models represent a simplification of the real situation, in that the number of possible choices is limited by the conditions set up" (Cole and King 1968:464). Thus the selection of a model or the selection of data to use in model building predetermines to some extent the information which can be extracted. Selection of a model is largely determined by the problem that is under examination and the limits required by it. Although this may endanger the results, much of the problem can be overcome by carefully examining the model for fit and when discrepancies or disjunctures appear this may involve adding additional data or redesigning the model to adequately explain these residuals. By so doing it can be hoped to make the model as congruent with the data and with observed reality as possible.

A wide variety of models and classifications of models exists. One is given by Clarke (1968:33,445) in which models are divided into three general groups; iconic, analogue and symbolic. Iconic models are essentially diagrammatic, an example being the histogram. The iconic model demonstrates the action of some particular aspect or aspects of the data. The analogue model is more comphrehensive and often designed to encompass a whole system. "Analogue models represent observed attributes by substituting other kinds of 'analogous'attributes whose consequences are congruent to those of the observed attributes" (Clarke 1968:33). Symbolic models represent a higher level of abstraction and are mathematical expressions of analogue models. Models may be constructed from the data or it may be felt that: "...a certain model fits the archeological situation under investigation and the aim is therefore to test the model for adequate fit or to obtain predictive information from it" (Clarke 1970:443). Following the second of these ideas, Clarke's general process model

was chosen for examining the data and identifying the critical variables which initiate change in the Illinois system.

Clarke's general process model

Clarke proposed a general model for archeological processes which he described both diagrammatically and as a series of postulates concerning the behavior of the system.

He presumes a continually changing system (S). Input from the environment (E) interacting with elements in the system can produce changes in values. These changes generally will occur within certain limits which are determined in part by past states of the system (ξ); this "memory" of past states acts as a regulatory mechanism (R). Input from the environment and interaction among the variables within the limits imposed by the regulator produce changes which can be expressed as probabilities in the form of a matrix or table of possible outcomes or transformations.[1]

He offers for the purposes of analysis the division of the system into a series of arbitrary subsystems: economic, religious, psychological, social and material (Clarke 1968:102-103).

A series of variables are abstracted from these subsystems, the variables being determined by the nature and scope of the problem under examination. The variables used in the model are classified as inessential, essential and key variables. Inessential variables are: "...those which are not relevant to the study in hand and which consequently do not figure in the system as defined, and those [variables] which are constant throughout" (Clarke 1968:71).

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1. "The table or matrix of possible transformations expresses the limit of the set of possible outcomes under varying conditions" (Clarke 1968:65).

Essential variables are those:

> "... which are part of the system and whose values may change as part of the changing system. These express the survival or continuity of the system as the same system rather than as a transformation. It is these essential variables which an efficient regulator 'R' must protect from transformation by blocking the flow of variety from disturbance if the system is to survive in its present form" (Clarke 1968:71).

Key variables are:

> "...those essential [variables] whose successive transformation values are covarying in some specific relationship with successive values of other similar [variables]..." "Amongst key [variables] will usually be found those which comprise the maximally constrained set in the system's trajectory... In this set the [variables] define the threshold and the height of the threshold separating the system from some alternative state" (Clarke 1968:71-72).

The significant variables, the essential and key variables can only be identified from the manipulation of the data within the framework of the model. Initially this implies the inclusion of a larger number of variables than may be necessary to offer an adequate explanation for the changes in the system and involves two distinct operations, the first in which the data is examined by all selected variables, from which analysis the significant variables can be determined. The system secondly is analysed in terms of these significant variables.

Change in the system is induced by the introduction of new elements from the total environment (social as well as natural). These elements May be rejected by or accepted into the system. if accepted the integration of assimilation of these may produce different types of change. These are categorized by Clarke as: new (gain); alternative (disjunction) contradictive (equivocation); and confirmative (redundant) (1968:90).

New information or elements are those which are not present in the system and may add to the system variety. Information may, however, present alternative values or elements which add additional

choice or possibilities to the existing variety. Contradictive information is in opposition to values or elements already present in the system and necessitates the elimination or partial elimination of these. Redundancy is when the information is such that it replicates and reinforces that which is already in existence.

New and alternative elements add greater variety to the system and provide a larger "memory" store or regulator, giving a greater range of variability, that is a larger set of conditions under which the system can persist without major transformation. Redundancy assists by reinforcing elements of the system and emphasizing their intrinsic importance. Contradictive information, because of its incompatability with existing elements, forces the elimination of some elements and when this reaches the maximum constraint of the key variables, a threshold is attained beyond which the system cannot continue without major transformation. Sometimes alternative and contradictory elements may combine to form new variations in order to continue the system or, depending on the constraints of the system, direct it towards a new equilibrium.

The amount of variation permissable in the values of each variable differs, but it is not the sum of variation possible for all variables which determines the threshold, but the variation permissable in the area of constraint, the key variables, which determine if the system is to maintain itself in its present form. The amount of total variation present can have effect in acting as a regulator. The limits of the range of variability within the system must also be obtained through the model by examining the variables, their interconnections and responses to environmental input. When change exceeds the constraints of the system, disintegration of that system is caused

with the formation of another system subsequently, generally incorporating parts of the original, but modified and altered so that a different set of constraints is operating in the system. This change occurs through: "...the cumulative and successive introduction of new states which do not change the overall system network immediately and independently but which build by cumulative effect to a threshold of metastable equilibrium" (Clarke 1968:68)[1].

Change may have different sequences of states in similar systems. Several systems might exist in an identical state[2] and eventually reach another identical state, but this does not indicate that all pass through the intervening states in the same sequence. There may be alternative routes to the final "goal". The direction which these systems take is called their trajectory[3].

The processual model

As mentioned above general systems theory appears to hold the greatest possibilities for examination of the data. Clarke's model based on this theory was selected for use because it appeared to fit most closely the data available and to suggest methods of examination which were suitable for the purposes of the study.

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1. "A system is said to be in metastable equilibrium if its state is only stable in the absence of a suitable catalyst, which if introduced into the system would immediately initiate displacement away from the equilibrium state" (Clarke 1968:49).

2. A state is defined as: "A specific value of an attribute, or the specific values of a set of attributes, in a system" (Clarke 1968:82). [An attribute is used alternately with variable in most of Clarke's discussion; attributes referring to artifacts and variables to sociocultural elements].

3. A trajectory is defined as: "The successive sequence of states of an attribute, entity or vector generated by successive transformations" (Clarke 1968:82).

The model has been adapted for better fit to the information available. The lack of a means at present to give numerical values to the probability of change from one state to another precludes the use of a stochastic matrix or table as part of the model. Clarke's concept of subsystems will not be used in this study as it is felt this concept is better suited to studies oriented to detailed examination of a specific subsystem. To abstract subsystems from the system and consider the variables within them would constrict the manipulation of the model and considerations of the interconnections of the variables.

The model then consists of sets of essential and key variables abstracted from the total system and their linkages which include both linear and feedback relationships. Through the covariation of the key variables it is possible to obtain some predictions for sequences of transformations which could occur under certain conditions. The essential variables represent the continuity of the system.

The variables used in the study are listed in Table 12. It is obvious that, as in the choosing of a model, selection of variables is also determined by the problem under consideration and the data available.

Variables are: "Any quantity or value which varies or a quantity which may take any one or a specified set of values" (Clarke 1970:670).

Variables are abstracted from a system in terms of certain specific theories held about the properties of cultural systems. The variables used here are largely based on social and political theory as put forth by Fried (1967). In that work he is concerned with the evolutionary development of different means by which societies

TABLE 12

Variables used in the study: amount and variety

A. subsistence movement

B. food resources

C. natural environmental change

D. size of settlement

E. size of residential unit

F. linked household solidarity

G. village solidarity

H. village ritual observances

I. political flexibility

J. native political authority

K. Illinois ritual observances

L. individual religious practices

M. ascribed status

N. exchange resources

O. goods given in trade

P. native materials and technology

Q. external political conflict

R. population change

organize and direct their activities and particularly the development of status positions in relation to this. Many of the conceptual categories which he uses have a long history of anthropological usage, but no attempt is made herein to trace these. These concepts were selected as ones which appeared to have utility for examining the material at hand with the recognition that these categorizations do represent, to some extent, untested assumptions about structural relationships.

The variables as selected represent different levels of abstraction. In moving from one level to a higher one "each class on the original level becomes an element of a new more abstract class" (Blalock (1969:144). Thus the variable on a lower level is causally linked to other variables within the framework of a certain theory. These lower level variables may be considered "indicators" of causal relationships(Blalock 1969:36) and may be treated as being part of a variable or groups of variables at a higher level. These "indicators" are not used directly in the final manipulation of the model which is done by means of the minimal number of significant variables.

For example, it may be that size of the settlement is not an independent variable, but has causal relationships with subsistence movement and political flexibility. Size of settlement therefore could be considered a variable at a lower level, and indicator, and the concept of political flexibility at a higher level, in that it is more abstract and that settlement size could be considered an element of it.

Variables have both quantitative and qualitative aspects which

need not be rigorously separated at this time. An obvious example of this is in the variable goods given in trade. Not only does the amount of material being traded vary but the types of items and the value of them varies, for instance, bracelets may be of copper or silver. Although trade records may indicate in some cases variation in cost of these items, these distinctions are at a lower level and can be considered elements in the variable.

Some of Clarke's definitions will be made more explicit for the purposes for this study. The inability to attach any exact mathematical quantity to changing values of a variable means that a state is defined by assumptions about the rate of increase or decrease in values of particular variables or set of variables. Although there is a constant change in the relationship of any two or more variables in the system a state can be visualized as an equilibrium point represented by the intersection of the slopes of the rates of increase and decrease in the variables.

Trajectory used herein refers to the successive sequence of states through which the villages pass. All Illinois villages are part of the same system, begin at a similar state (in the study) and arrive at another similar state. The routes by which they attain the final state are not identical, and these routes or sequences of states, are their trajectories. The village trajectories are shown in Figure 8.

The regulatory mechanism 'R' is seen as the memory of former states which includes how past environmental input has been channeled to maintain the equilibrium.

The initial system examined is referred to as S^1, the second

Dates*	Kaskaskia	Peoria	Michigamea	Tamaroa-Cahokia
1840	h	h	h	h
1775	g	g	g	g
1765		f	f	
1752	f			f
1730	d	e	d	d
1712			c	
1700				c
1694	c	c		
1673	b	b		b
1634	a	a	a?	a

→ indicates direction of change

* dates are approximate only but are given to indicate sequence and lag

Village trajectories

Figure 8

system, that which forms after the disruption of the first, is S^2.

Variables used in the study: amount and variety

(A) Subsistence movement. Subsistence movement is the regular seasonal utilization of varied resources from diverse ecological zones. This mainly involves the summer and winter hunts with movement to prairie areas for buffalo and woodland edge areas for deer. Vegetable resources were collected in these movements and crops, particularly corn and beans, were grown. Measure of this subsistence movement can be obtained from the historical records documenting movements to and from hunting encampments, indications of the development of other resources limiting movement or decreasing the necessity for it, and archeological faunal remains revealing utilization patterns.

(B) Food resources. Food resources can be measured from both historical records listing items utilized and their respective importance in the diet and from floral and faunal remains found on the archeological sites.

(C) Natural environmental change. Differences in environment were slight among the various regions utilized by the Illinois, although availability of some resources was affected by other factors such as distance to go to obtain the resource.

(D) Size of settlement. From historical sources it is known that there was a large summer village and a smaller winter camp. The size of settlement can be measured from population figures given for village settlements, numbers of cabins for winter camps, and archeological distribution of structures and cultural material.

(E) Size of residential unit. Size of residential unit can be measured through references in historical documents and through estimations of the number of people who could occupy the space within a structure found archeologically.

(F) Linked household solidarity. Linked household solidarity is the cohesiveness of a kin unit composed of one or more extended families residing in several different residental units. The composition is difficult to assess from the records as the kin units of the Illinois were not well defined or recognised by the French; therefore, it is necessary to equate the linked household with a basic kin unit, ignoring finer distinctions which may have existed.

(G) Village solidarity. Village solidarity is the cohesiveness of the village unit with its possible diffuse kin ties. Estimates of village solidarity can be obtained from the historical records by indications of actions by the entire village group or by the disparite actions of units within the village.

(H) Village ritual observances. The seasonal movement of the Illinois villages culturally necessitated rituals before the summer hunt and at harvest time, integrating the village and reestablishing the necessity for ritual cooperation for the maintanence of the system. Village ritual also took place on the death of a warrior or chief.

(I) Political flexibility. The largest permanent political unit, the village, alternated with a smaller political unit, the linked household, in summer to winter cyclical shifts. The yearly cycle with its political shifts can be noted from the historical records with mention of the summer village or hunt and the winter camps.

(J) Native political authority. Native political authority refers

to autonomy of the villages and to the powers of the chiefs to decide, with agreement of the elders, to take certain actions and to exercise social control. This can be measured from indications in the historical record of the freedom or lack thereof of the native authority to make these decisions.

(K) Illinois ritual observances. Illinois ritual observances depend entirely upon references in historical materials and are difficult to handle. Inter-village rituals such as the calumet ceremony and games of la crosse are not mentioned after 1700, although they may have continued.

(L) Individual religious practices. What constituted individual religious practices must be interpreted from the historical records. The Jesuit's accounts are quite biased so that the real effects of the Catholic religion and the persistence of Illinois native beliefs are hard to assess.

(M) Exchange resources. The initial trade item was fur robes; slave trade quickly followed this and by the 1670's hunting was carried out for fur pelts intended for trade. Slave trade increased until 1723 when the introduction of negro slaves decreased the demand for Indian slaves. By the 1720's the trade in beaver had declined and there was an increase in trade in tanned hides. The French also hired some Indians as hunters to provide fresh or dried meat. Hides remained the predominant trade item until the 1770's when land became a trade commodity by means of treaties. After the removal to Kansas and then to Oklahoma farm produce and hiring out for wages became the means of exchange.

(O) Goods given in trade. (Table 13)

(P) Native materials and technology. The gradual replacement

TABLE 13

Goods given in trade

(1688)[1]

10 yards of linen at 35 sols a yard
19 yards of capot serge at 4 livres 5 sols
3 Normandy blankets 8 livres apiece
23 dozen butcher knives at 40 sols
3 dozen ditto large at 3 livres
12 pairs of trade stockings at 45 sols a pair
2 large blankets at 16 livres apiece
30 hatchets at 18 sols apiece
100 ℔. powder at 25 sols
200 ℔. lead at 6 sols
1 ℔. of ball
6 guns at 22 livres apiece
10 pair of poitou stockings at 3 livres, 10 sols a pair
7 trade shirts at 3 livres apiece
24 of brandy at 50 sols
2 barrels at 50 sols
5 ℔. of glass beads at 40 sols a pound
8 ℔. of thread for nets at 25 sols a pound
24 steels at 4 sols apiece
4 ℔. of balls of which 8 pounds are of royal lead at 6 sol
100 arrowheads at 2 sol apiece
30 augers
15 ¼ lbs. kettles at 45 sols a pound
2 ℔.¼ azure blue at 9 livres
6 small hatchets at 20 sols
6 dozen knives at 22 sols
50 pounds of kettles at 40 sols a pound
15 yards of scarlet cloth at 9 livres, 10 sols a yard
200 musket flints at 10 sols a hundred
46 ℔. of tobacco at 45 sols a pound
1 collar at 35 sols
6 large axes at 45 sols apiece
1 ℔. gun worms at 3 livres
12 mirrors at 5 sols apiece
2 dozen of clasp knives at 3 sols

(1710)[2]

barrel of one hundred livres of powder
10 livres of white beads, olive shaped and large sized
4 livres of small beads, blue, green and white
5 livres of good vermillion

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1. List selected from "Account for Illinois Trade" (CIHS 23:162-169).

2. List selected from items requested by Father Marest (JR 66:27;29; 31; 133).

TABLE 13 (cont'd)

(1710 cont'd)

one gross of large clasp-knives
half a gross of large bells and half a gross of small ones
twelve pots of Spanish wine
one thousand pins
Twelve pewter spoons, with knives and forks
150 livres of powder
50 livres of assorted shot, large and small
30 livres of bullets
500 gunflints
ten livres of vermilion
ten livres of large glass beads-black, white and striped
ten livres of small glass beads- white, green and transparent
one gross of large clasp-knives, with horn handles
one gross of round buckles, both large and medium-sized
one gross of small metal plates
Six grossof finger Rings
3 gross of awls
One thousand needles
Six boxes of gun-flints
20 gun screws
3 dozen Spools of fine iron wire
Three dozen hatchets-medium sized, large and small
Three dozen medium-sized hoes
Three hatchets, 3 mattocks
One dozen trade shirts, large, medium-sized and small

(1765)[1]

A Strowd of 2 yards long to be sold at 2 large Bevers or 3 dressed bucks
Strowd stockings to be sold for a Buck Skin
White blankets of 24 Blk in a peice 2 middleing Bevers or a large buck & a Doe
Mens Penniston Coats with Gimps 3 Bucks, or 2 Bever
Mens Coarse Garlix Shirts 1 Buck, or 1 Middleing Bever
Mens Ruffled Shirts 2 Bucks or 2 middleing D or 2 otters or 7 Racoons
Childrens Shirts from five to two years old a Doe Skin or 2 2 large Raccoons
Black wampum C^t if good 1 small Bever 1 lb$\frac{1}{4}$
Cutteau large knives - 1 large Raccoon or 3 Musquash
Small knives for Women 1 Small Racoon or 2 Musquash
1 P of best Roll Gartering 1 Bever or 2 Doe Skins, or 6 Raccoons
1 pound of Virmillion - 2 Bevers, or 3 Bucks

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1. List selected from "Schedule of equivalents for barter of goods and skins" (CIHS 10: 402-3).

TABLE 13 (cont'd)

(1765 cont'd)

1 fathom Calicoe - 1 Bever or 3 Doe Skins
Brass Kettles as they Weigh at the rate of 1 lb Bever @ pound
Tin or Camp Kettle of a Gallon 1 Bever or 1 Buck and Doe
Silver Arm Band, well made, 4 Bucks or 3 Bevers
Rist Band Silver D° 2 Bucks or 2 small Bevers
Broches of Silver - 1 Racoon Musquash
1 pr Silver Ear Bobs - 1 good Doe skin or small Bever
large Silver Cross - 1 buck or middleing Bever
Womens Silver Hair plate large 4 bucks or 3 Bevers large
Gun powder 1 lb one small Bever or 1 middle size buck
5 bars of lead - one buck or middleing Bever
12 gun flints - 1 small racoon or 2 musquash
Looking Glass middle sized 2 Raccons or 6 Musquash
Jews Harps 6 for a large Racoon
Bever traps. 2 Bevers middle sized or 2 Bucks
Brass Rings 6 for a small Racoon or 2 Musquash
Wire by the Fathom if thick 1 Racoon, if very small 1 Musquash
horn combs, 2 for a Racoon, or 3 Musquash or 1 Mink
3 gallon cag of rum, 3 large Bevers or 4 large Bucks

(1820)[1]

25 catfish hooks 50 cents
1000 gunflints, $5
one gross butcher knives $33.33
one dozen scissors $3
half gross jews harps $1.50
200 needles $1.50
one dozen ivory combs $2.50
2 dozen riding combs $2
Two lbs colored thread $3
one piece black Barcelona handkerchiefs $12
eight Madras handkerchiefs $3.33
14 cotton shawls $5.60
26 pair blankets $136
half a dozen tin pans $2.50
one dozen tin cups $1.12
one dozen snaffle bridles $12.50
one dozen weeding hoes $15
400 lbs tobacco $64.96
300 lbs gunpowder $150
one gross gartering $3
half gross fire steels $6
five lbs. vermillon $11.25

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1. List selected from American State Papers Indian Affairs (2:291; 296; 300).

TABLE 13 (cont'd)

(1820 cont'd)

39 3/4 yards blue cloth $78.70
six dozen looking glasses $6
1½ dozen axes $22
one dozen tomahawks $18
34½ gallons whiskey $25.87
206 lbs bacon $20.00
8 chiefs coats $128
24 shirts $38.40
8 guns $64
1 gross pipes $2.25
225 lbs. bar lead $11.25
one nest of brass kettles $33.75
one gross of Indian awls $2.50
one half gross of brass finger rings $1.25
one pair of silver arm bands $6.50
one pair of silver wrist bands $2.50
one pair silver gorgets $6
5 lbs of blue and white beads $7.50
one gross of gun worms $2.50
12 dozen paper looking glass $18.00
55 silver half moons or breastplates $66.00
24 eagle silver cockades $3
24 pieces of riband assorted $30.00
15 pairs of N.W. point blankets $150.00
2000 gr. of wampum $12.00
3 barrels of flour $12.00

The costs of articles are given to indicate relative values within individual lists. The French livre or franc was equal to 20 sou (Paucton, 1780).

Table 14

Native materials and technology

	Zimmerman	Waterman	Guibert*
projectile points, flint	xx	x	xxx
projectile points, brass	x	xx	x
projectile points, glass		x	
knives, flint	xxx		
knives, iron	x	xxx	xx
scrapers, flint	xx		
fleshers, iron		xx	x
gunparts		x	xxx
gun flints		xxx	xxx
musket balls and shot		x	xxx
perforators, stone, bone	xx		
awls, iron	x	x	x
bone points	x	x	
harpoon, bone	x		
flakers, bone	xx		
mat needle, bone	x	x	
shaft wrench, bone	x		
file, iron		x	
bone tubes	x	x	
antler digging tool	x		
scapula hoe	xxx		
iron hoe		x	x
axe, iron		x	x
bone counters	xx		
delft counters		xx	xx

Table 14 (cont'd.)

	Zimmerman	Waterman	Guibert
sand stone abraders	xx	x	
stone pendant	x	x	x
pottery vessels	xx	x	
glass beads	x	xxx	xx
brass beads	xx	x	
tinkling cones	x	xxx	xx
native made glass	x	x	x
pipe	x	xx	xxx
est. European ceramic vessels		xx	xx
est. glass vessels		xx	xx
catlinite		x	x
scissors		x	
strike a light		x	
est. kettles		x	xxx
bells		x	x
gorget		x	
earrings		x	
rings		x	x
bracelets		x	x
cross		x	x
brooches		x	
medicine bag		x	
pistol		x	
religious medals		x	x
catlinite pendants			xx
catlinite molds		x	x

Table 14 (cont'd.)

	Zimmerman	Waterman	Guibert
jew's harps		x	x
buttons		x	x
coin			x
baling seal			x

x = present

xx = frequent

xxx = abundant

*Guibert site is the name given to the last Kaskaskia village by Good (1972).

These frequencies are given only as indications of change. The material from the sites is not strictly comparable. Only a small portion of the large Zimmerman site has been excavated. The Michigamea material represents both surface collection and excavations; the majority of the village has been tested. The Guibert site material is entirely from surface collections.

of native materials and technology with European derived items is shown in Table 14.

(Q) External political conflict. External political conflict includes both warfare with other Indian groups and British, French and American conflicts over possession of Illinois country. The amount occurring at any one time can be assessed from the historical records.

(R) Population changes (Table 1).

The successive states: S^1: an outline

A brief outline of the states is given in terms of the variables whose slopes of increase and decrease define those points determined as states.

State (a) represented by the chronological period 1634-1672 is not covered by the archeological record or by the historical documents in any depth, although State (a) is not before European contact. In the conclusions the model will be used to predict the values of the variables in this state.

State (b) shows the value of ascribed status to be decreasing and there is a beginning of decrease in the use of native materials and technology. An increase is seen in goods given in trade and in exchange resources (Figure 9).

State (c) has increasing variety in individual religious practices. Exchange resources increase and so do goods given in trade. Native political authority, village ritual, Illinois ritual observances and village solidarity all show decrease in values. Very different trajectories for the villages result from the changes in this state (Figure 10).

State (d) occurs in the Kaskaskia, Tamaroa and Michigamea trajectory. Native political authority declines sharply. Subsistence movement in the winter hunt decreases and there is a decline in the use of native materials and technology. Goods given in trade increase and there is also increase in the variety of exchange resources and in food resources. Village ritual and village solidarity continue to decline (Figure 11).

State (e) occurs only in the Peoria trajectory. There is decline in the amount of goods given in trade and village solidarity and native political authority also decline. External political conflict in the form of warfare increases (Figure 12).

State (f) shows reduction in the values of village solidarity, village ritual observances, political flexibility, native political authority and ascribed status. Variety in individual religious practices has increased and exchange resources and goods given in trade continue to increase. The use of native materials and technology has declined further. Into these changes is input additional external political conflict which results in a catalystic reaction and rapid system change (Figure 13).

Successive states: S^2: an outline

State (g) shows decreases in exchange resources and further reduction in the use of native materials and technology. Political flexibility decreases sharply; population and the size of settlement decrease. External political conflict increases (Figure 14).

State (h) represents the system equilibrium of S^2. In terms of the variables from S^1 there is nearly complete reduction and replacement

of native political authority and replacement of native materials and technology. Subsistence movement ceases and variety of food and exchange resources increase.

State (a)

As mentioned previously State (a) which is a hypothetical construct will not be discussed at this point. States (a) and (b) seem to have been shared by all villages units; historical documentation is lacking for the Michigamea for these states, but it can be predicted from the model that they also took part in at least State (a).

State (b)

The Zimmerman site dates from that point when the Illinois system was in what is called State (b). The archeological data is given in Chapter IV.

The subsistence economy based on the seasonal exploitation of resources requiring subsistence movements affected the political organization of the units. The large summer settlement had a village political structure and linked household formed the political unit in the winter camp. The summer village with its many linked households was not highly integrated, village affiliation probably was based on some descent principle. It was possible for households to affiliate with other villages with whom they had kin ties. The centrifugal tendencies in such a structure were modified by social obligations and by village ritual requirements. The chiefs of the linked households and the principal village chief were the village political authorities, supported by the village elders. Shaministic practices contributed magical sanctions to methods of social control. The lineal settlement pattern of the

village along the river bank reflected the lack of focus on any one specialized area or important household.

The mission of the Immaculate Conception was founded by Marquette in the Kaskaskia village. This was maintained but few converts were made.

Introduction of the fur trade provided new variety for economic advancement and thus allowed for increase in the prestige of achieved status. Engagement in the fur trade enhanced the prestige of the men engaged in it. Other economic values such as sharing may have been affected.

> "Chachagwessiou and the other Illinois left us to go and join their people and give them the goods that they have brought, in order to obtain their robes. In this they act like traders and give hardly any more than do the French"(JR 59:175).

It is possible that initially, the higher ranking males dealt in the fur trade; Chachagwessiou appears to have been or to have become shortly the Grand Chief of the Illinois. The fur trade also provided new opportunties for advancement for men from less prestigious families and younger males who could attain wealth from both furs and slaves captured in warfare.

In material culture, trade items were additive or substitutions for Indian materials. Some substitutions represented alternative variety, stone knives functioned in company with iron knives. Alternative variety is again indicated by the inclusion of either a pot or a brass kettle in the graves (CIHS 23:357).

Summary

Political flexibility, village ritual, subsistence movement and village solidarity were maintained. The variety of exchange resources rose as furs were trapped for specific use in the trade and war was

carried on to obtain slaves. The increase in exchange resources lead to a decrease in the importance of ascribed status with prestige and wealth being acquired through the fur trade.

The amount of ascribed status was reduced coupled with a rise in exchange resources. Variety of goods given in trade increased at the expense of a slight decrease in the use of native materials and technology. No significant change is seen in the other variables (Figure 9).

State (c)

In 1694 the villages from the Zimmerman site area moved to the Peoria lakes, called Pimiteoui by the Illinois. Apparently members of all villages except the Michigamea and Cahokia were in the villages at Pimiteoui.

The mission also moved to the Pimiteoui villages and one of the Kaskaskia chiefs, Rouensa, and his family were converted. The alignment of Rouensa with the French interest caused extensive socio-political repercussions in the villages, affecting the amount of native political authority and village solidarity. Rouensa's move caused a shift in values as he de facto placed the French (in the person of the priest) as authority in the village structure. This introduced a contradictive element into the system for, as the priest gained authority, this reduced the authority of the chiefs. There was potential for conflict in these incompatible sources of authority. Expression of this can be seen in the chiefs' mandate forbidding anyone to attend the Catholic services. When people disobeyed, a man came into the chapel brandishing a club, demanding why the chiefs' prohibition had been ignored and commanding them to leave. No one left however.

Revivalistic attempts were made particularly among the Peoria, to try to reduce the contradictive variety of Christian religion, taking the form of reemphasizing the traditional religious values of the society in an attempt to reassert the authority of the chiefs and shamans. The threat to native authority was recognised.

> "...one of the oldest among the elders - full of zeal of the ancient customs of the country and apprehending that his credit and that of his class would be diminished if their people embraced the faith - went through the village calling out: ' All ye who have hitherto hearkened to what the black gown has said to you, come to my cabin. I shall likewise teach you what I learned from my grandfather, and what we should believe. Leave their myths to the people who come from afar and let us cling to our own traditions " (JR 64:183).

What had probably been more or less latent hostility between village units also surfaced in this conflict indicating a lessening in Illinois solidarity.

The Catholic segment of the Kaskaskia does not appear to have represented the entire Kaskaskia village, as Mamentoienta who later became the Grand Chief was strongly opposed to the French. Thus even the Kaskaskia village was split. Such a split had grave implications not only for the ritual of the Kaskaskia village but for the integration of all villages. If the participation of all villages was deemed necessary for certain ritual observances reaffirming the social and political structure of the Illinois, the departure of the Kaskaskia must have caused disturbance in these ritual observances. It may be significant that the Pimiteoui villages from 1694-1700 are the last recorded instance of large multi-village gatherings.

When the Kaskaskia under Rouensa moved south it was partly under the incentive of obtaining greater access to trade goods, but it is obvious that it was also an attempt to reestablish equilibrium in the

native authority structure to avoid further disruptions in the Pimiteoui villages. However, although the Kaskaskia left, the conflict in values and the reduction in village solidarity continued among the Peoria and other remaining villages. In 1706 Father Gravier was shot and the French forced to leave, but even with their departure the native political authority in the Pimiteoui villages attained only a temporary equilibrium.

A few Tamaroa were in the villages at Pimiteoui, but for the main body of the Tamaroa, State (c) does not appear to have begun until around 1700 when a mission was started at the Tamaroa village. The arrival of the French and the Kaskaskia under Rouensa caused disruptions for the Tamaroa and Cahokia. Historical documentation is slight but as could be expected similar stresses due to contradictive elements seem to have occurred. Village solidarity was reduced and a portion of the Tamaroa affiliated with Rouensa's village (Palm 1933:36).

The Michigamea did not go through State (c) until 1712-1736. During this period they were first with the Kaskaskia and the French in the Kaskaskia village in southern Illinois and then in their own village on their reserve within a mile of Fort de Chartres. The division of the Kaskaskia and Michigamea villages was done by an external power, the French commandant, and indicates that native political power was severely eroded. The assignment of the Michigamea to a reserve also suggests this. This reduction in native political authority affected village solidarity also, for after the division of the villages some of the Michigamea went to join the Quapaw in Arkansas with whom they apparently had close relations (Temple 1966:39).

Summary

The conditions of this state were quite similar for all groups but resulted in diverse trajectories. Reduction occurred in the amount of native political authority partly caused by the introduction of a new element in religious practices. Acceptance of new religious practices was affected by a desire for greater variety of trade materials and the need for closer association with the French to obtain these. Closer relations with the French decreased the native political authority as resistance to external authority caused oscillations in the internal authority structure. The ritual well-being of the villages depended on cooperative ritual observances which reaffirmed social and political solidarity within and among villages. Change in religious beliefs of individuals reduced the effectiveness of Illinois ritual observances and thereby Illinois and village solidarity.

Archeological sites for this state are not available but it can be predicted that lineal village patterns persisted and that residential unit size remained unchanged. Material culture would be predominantly native with a larger amount and variety of European materials present than in State (b). Floral and faunal remains would show no significant variation from those in State (b).

Reduction occurs in village ritual and Illinois ritual observances with a concurrant reduction in village solidarity. The amount of native political authority varies directly with the increase of new individual religious practices. Exchange resources increase and there is a corresponding increase in goods given in trade. Although direct evidence is lacking on replacement of native materials and technology, it can be predicted from the rise in goods given in trade that there is

decrease in this variable. No significant changes occur in the remaining variables (Figure 10).

State (d)

The Kaskaskia, Cahokia, Tamaroa and Michigamea followed one trajectory after State (c) and the Peoria another. State (d) represents the Kaskaskia, Cahokia, Tamaroa and Michigamea trajectory.

In 1703 the Kaskaskia and probably part of the Tamaroa moved to southern Illinois, the majority of the Tamaroa and Cahokia remaining in their village on the Mississippi. The Kaskaskia village on the Kaskaskia River was occupied by the Kaskaskia, Michigamea and French between 1712-1720. In 1720 separate villages were created for all three by the French authorities.

The Kaskaskia remained in close contact with the French. There was increase in the variety of food resources, many of the Kaskaskia adopting the raising of cattle, pigs and chickens from the French. Another new element added to the food resources was wheat. The use of the plow began around 1712, but the women continued to have responsibility for the fields.

No definite information is available on the quantity of domestic animals, but in 1712 Father Marest stated that:

> "... our village [Kaskaskia] is the only one in which a few savages are permitted to remain during all these journeys, [hunts] many of them raise chickens and pigs in imitation of the Frenchmen... and these savages are exempt, for the most part from this sort of hunting (JR 66:257).

Linkage can be seen between the variety and availability of resources and the subsistence movement. With the increased availability of resources not requiring mobility subsistence movement decreased and

a concommitant reduction in village ritual can be suggested. Being "permitted" to remain suggests the likelihood of sanctions to enforce and maintain village ritual which was necessary for part of the subsistence movement. Significantly it appears to be only summer hunts which decreased in frequency, those which required village ritual. Winter encampments for the Kaskaskia continue to be noted in the records.

The variety of exchange resources increased with a shift from fur pelts to tanned hides of buffalo, deer, bear, fox and wild cats. Trade was also carried on in the meats of the buffalo, bear, deer and other species with Frenchmen in the area (Mereness 1916:70).

Also during this period there was a decrease in the trade in slaves as negros were being imported to replace the Indian slaves in many areas.

Although the surface collection from the Kaskaskia village (Good 1972) covers more than the time represented by State (d), it indicates that replacement of native materials and technology with European was increasing. Pottery manufacture ceased with the use of trade kettles and European ceramics. Manufacture of a few items from flint continued but iron had replaced most. Cloth was used for most clothing, although skins were not entirely abandoned.

Religious practices appear to have incorporated both Illinois and Catholic observances, to some measure Catholic beliefs were additive rather than contradictive. Penicaut gives a description of marriage procedures which is identical to Deliette's with the exception that after the final procession with the girl to the man's house, the banns were then published in church (Palm 1933:45). However, most religious

elements were contradictive and may have reduced the actual number of converts. In 1723 D'Artguiette commented that converts were not numerous and attributed it largely to the desire to have more than one wife (Mereness 1916:72). Nevertheless the acceptance of some portion of the Kaskaskia of Catholic beliefs did encourage monogamy, thus affecting family and residential unit size.

The amount of native political authority was greatly reduced, mention has been made in connection with the Michigamea in State (c) that the French separation of the original villages indicated a loss of internal political authority. Although Rouensa was the village chief, it is obvious that much political authority was vested in the priest. Rouensa's initial ascribed status as a linked household (possibly village) chief had been increased by his achieved status as a leader who had taken his group away to presumed better economic relationships with the French. In State (d) the native political authority is so reduced that there is a shift from achieved to ascribed status again, however, ascribed status in this case is based on French cultural beliefs that a father should be succeeded by his son.

Information from the Tamaroa and Cahokia villages suggest that these villages followed a similar course to the Kaskaskia. Domesticated animals occurred there also and although no historical evidence exists for reduction in subsistence movement it can be predicted that this did occur, with decreasing political flexibility and village solidarity.

Change did not take place without producing conflicts and stress within the system. In 1712 the death of Father Berger, the missionary to the Tamaroa was a cause of great joy for the village. They

broke up the large cross he had erected in the village and praised their manitou (JR 66:263). This disruption may perhaps be seen not so much as a rejection of alien religious beliefs, but as a desire to reinstate native political authority. However, this action was punished by Franch threats to cut off trade. Replacement of native materials with European had advanced to the point that the chiefs were forced to make peace in order that they might continue the trade, despite the limitations this intercourse with the French placed on their authority.

The native political authority went through further oscillations in attempting to maintain the village autonomy. In 1735 there was an attempted revolt by the Cahokia (Palm 1933:70). This resulted in increased reduction in the native authority as the French soldiers were stationed near by them.

The Tamaroa and Cahokia were more exposed to the dangers of warfare than the Kaskaskia so that population decline was greater due both to deaths and to households leaving for other villages for protection. It can be presumed that there was a reduction in the residential unit size.

The Michigamea during this state are slightly different from the Kaskaskia. Raising domesticated animals would not appear to have been adopted by them (extrapolating from later archeological evidence); there is no information concerning subsistence movement. Their native political authority decreased sharply through their close association with the French. The Michigamea village chief was one of the chiefs who went to France to meet the King in 1725. This gave him great prestige, but prestige which arose from association

with the French rather than from traditional sources.

Splitting of the village occurred earlier and reduction in village solidarity can be presumed to have continued. The exposure to external political conflicts affected the Michigamea particularly in 1752 when the attack by the Fox and their allies destroyed the Michigamea village.

The consideration of these changes would lead us to predict that excavation of the Kaskaskia village would indicate a predominance of European materials over native,and religious items would exhibit Catholic symbolism rather than native. Structures might reflect the greater permanence of the dwelling and floral and faunal remains should indicate spring, summer and fall occupation with the addition of faunal remains from European introduced stock. Village layout may reflect French village organization rather than the lineal pattern of the Illinois. Structures within the village can be expected to exhibit fairly large differences between the more traditionally oriented and the more French oriented families. Residential unit size decreases during the period and rebuildings of structures should indicate a reduction in the size of dwellings.

The known archeological site for the Michigamea from this state has not been excavated. It can be predicted from the model that the village remains would indicate a constant reduction in native materials and their replacement by European items. Some decrease in residential unit size can be predicted, not through religious values but due to population decrease from warfare and household separation. Structural remains can be expected to exhibit acceptance of some European traits such as shape, structural details or materials etc.

The prediction can be made that this type of structural change would most likely occur in the dwellings of high ranking individuals with close political relationships with the French. This state also covers a portion of the occupation of the excavated Michigamea village. Here European materials predominate and residential unit size is decreased. There is some variation in house construction and the layout of one structure suggests the possible use of an European type fireplace. Although artifactual material remaining is slight and not significant for distinguishing social position, this is the largest structure in the village.

Summary

In this trajectory which includes the Kaskaskia, Tamaroa and Cahokia and with some modification the Michigamea, reduction is seen in subsistence movement, size of residential unit and amount of native political authority. Due to the linkages between variables it can also be predicted that reduction occurred in village solidarity and in village ritual observances. Although attempts were made to reassert native political authority the increasing dependence on manufactured goods and French threats to cut off these goods, made this impractical.

There is no indication that Illinois ritual obervances continue. Ascribed status increased but with a different rationale than previously. Modification in the subsistence movement was allowed by the addition of imported animal and plant resources. Exchange resources increase with a linked rise in goods given in trade, resulting in decrease in use of native materials and technology. The exposure to

attacks by other Indian groups helped to reduce village solidarity also.

An increase in food resources resulted in a decrease in subsistance movement which lead to further decline in village solidarity and village ritual. Native political authority declined sharply. Exchange resources increased and also goods given in trade and the use of native materials and technology decreased (Figure 11).

State (e)

The Peoria followed a different trajectory than the groups just mentioned. After the removal of Father Gravier in 1706, the Peoria were never again in close contact with a large number of the French. Trade, although cut off for a time, was restored in a few years, but there was not a resident trader among the Peoria until 1751. The lack of contact with the French also means that there is very little information from the historical records for this critical period.

Domesticated animals do not appear to have been obtained by the Peoria and no reduction in seasonal movement is seen, the Peoria still going on the summer hunt in the 1770's. Reduction in village solidarity appears to have taken place without immediate reduction in village ritual; in 1756 Bossu observed a village ceremony.

The Peoria (presumably having incorporated other smaller villages) always maintained a much larger population than the other Illinois villages. This was probably a factor in the continuance of village ritual. Despite the reduction in village solidarity and the loss of personnel, a larger village can be expected to have a greater

number of persons possessing requisite ritual statuses and knowledge.

The Pimiteoui settlements experienced extensive stress from external political conflicts with other Indian groups. At least twice, 1718 and 1722, the Peoria were forced to abandon northern Illinois because of attacks from the Fox. The reduction in goods given in trade once resulted in their being beaten for lack of powder (JR 66: 267). These disruptions helped to contribute to the decline of village solidarity. Around 1712 one group of the Peoria, possibly the Coiracantnenon who were originally a separate group, left Pimiteoui and went to Starved Rock where they built a village. Religious practices also resulted in some splitting and reduction of village solidarity among the Peoria, those who had become Catholic left, joining the Kaskaskia.

The lesser supply of trade goods resulted in the longer persistence of native materials and technology. Skin clothing and stone arrowheads were used at least as late as 1723 (JR 67:163, 165). The reduction in the amount of trade goods also affected village solidarity in that households sought additional ways to increase the variety, some by leaving and attaching themselves to other villages where trade relations were better, others by seeking trade with the British (CIHS 10:295).

The lack of trade and external political conflicts also resulted in decrease in native political authority, the Peoria did look to the French for assistance against their enemies particularly until 1730 when a combined Illinois- French war party temporarily destroyed the power of the Fox.

Summary

The Peoria village, if any of it remains under the present city of Peoria, could be predicted to show little change in total village patterning from States (b) and (c) since the lineal pattern should persists. Population reduction among the Peoria was not as great as for the other villages and religious changes were slight; residential units should therefore remain about the same size. Replacement of native materials with European would not be as extensive as among other groups, though the appearance of British materials at a slighter earlier date than for the other villages can be predicted.

In the trajectory of the Peoria reduction occurs in village solidarity but there is lag before this affects village ritual and political flexibility. Native political authority continues to undergo displacements away from equilibrium with a negative feedback loop linking it with village solidarity. That is, decrease in native political authority produces a reduction in village solidarity; as village solidarity decreases native political authority is further affected. Decrease in goods given in trade also decreased village solidarity as households sought better positions for trade. Decline in the use of native materials and technology was very slow due to due to less access to trade. Contradictive elements in individual religious practices and increase of external political conflict in the form of warfare decreased village solidarity. Despite the decreasing village solidarity it is possible that warfare played a a part in maintaining village ritual, possibly as an attempt to reduce conflict and reinstate an equilibrium by magical means.

Population decrease was not as severe as in other villages. Other variables do not appear to change values.

Decrease in goods given in trade and increase in external political conflict lead to decreasing village solidarity and native political authority (Figure 12).

State(f)

State (f) represents the culminating effects of the introduction of new variety into the system which results in a threshold of metastable equilibrium. Into this metastable equilibrium is introduced additional input producing imbalance and the breakdown of S^1. The various village trajectories culminate in this state between 1750 and 1765 after which system dissolution occurs and a series of oscillations begins before the establishment of S^2.

In this state there is the final breakdown of village cohesion and with it village ritual. There does not seem to be further reduction in subsistence mobility, the winter hunt continues, the hunt in which the village divides into the linked households and which does not demand cooperative village ritual. The variety of religious practices has helped to reduce the village ritual and as these are abandoned the cultural necessity for coherence as a village unit, that is a kin unit larger than the linked household, decreases. Although the Peoria continued the summer hunt, the evidence suggests that with continuing reduction in village solidarity, ritual observances declined and it became the linked households only who participated in both hunts.

With breakdown in village ritual and loss of village solidarity kin ties of a more diffuse nature were activated. The adoption of some Michigamea groups by the Quapaw reflects this and the merging of some groups with the Wea or Piankashaw with whom they were intermarried already. During this period the Cahokia and Tamaroa villages totally lost any distinct village identity. Some Tamaroa had been with the Kaskaskia for a long time and Cahokia linked households moved about, some going to Peoria for a while and others to the Michigamea Peoria linked households likewise dispersed. By 1763 and probably earlier there were Peoria living on the Michigamea reserve, another group joined the remanents of the Cahokia at their village and others left the region completely for parts of Missouri.

Disaffection with the French had been exhibited before in the revolts of the Tamaroa and Cahokia. After the defeat of the Fox in 1730, the Peoria felt less need for French protection and therefore of French political influence, but by 1752 the Fox were once more resurgent and the Peoria were turning to the French again. However, all groups experienced ambivalence in their relations with the French. Disaffection was aided and abetted by the British traders in hopes of winning over the trade from the French.

Despite the dependence of the Kaskaskia on the French they too wavered in their allegiance. The Kaskaskia chief, Rouensa, had two brothers evidently brought up among the Wea or Piankashaw, were now chiefs there. He attempted to keep peace between the French and the Miami groups in order to protect his brothers. Other Illinois also had relatives among the Miami and French opposition to the Miami

caused stress and distrust. One Indian inquired: "Why do you strike a tribe allied to me, where all my relatives are?" (CIHS 29:518). An abortive attack on the French by Piankashaw and some Illinois resulted in the capture of a few Piankashaw and two Illinois. This briefly united the Illinois and members of all villages in the face of French opposition requested the release of the prisoners. Eventually the prisoners were released because the commandant realised he could not force the Illinois to go to war against the Piankashaw because they had too many relatives there.

There was an increase in the variety of trade goods given as the British traders attempted to win over the Illinois (CIHS 29:448). The trade goods they offered were cheaper and some times better than those of the French, who in these critical years were experiencing difficulties in obtaining supplies (CIHS 29:762). The Michigamea after their defeat in 1752 came to the commandant at Fort de Chartres to obtain guns and were told that there were none. They feared to go back again to him and presumably received some weapons through the British.

The Illinois vacillated between the various advantages and obligations. Increased danger from attacks by other Indian groups often egged on by British agents increased the dangers of hunting and resulted in reduction in exchange resources.

The arrival of British power in the area in 1765 was the catalyst which initiated the final disruption of the system. Political leadership of the French had replaced native political authority to the extent that most Illinois fled west of the Mississippi to

remain within their sphere of influence.

This departure indicates the final breakdown of the village as a ritual-political unit. Some households affiliated with the Wea or Piankashaw and others with the Osage and Missouri. Many of the Peoria joined their relatives already in Missouri on the Blackwater River. The reduction of the village to the integral linked household units had been developing for some time and was now completed.

The material culture of this stage is seen at the Waterman site, British goods as well as French occur. The more showy articles such as the silver bracelets and gorget may indicate trade with the British or gifts given in an attempt to win them over. The disintegration of the villages may be reflected in the varying orientations of the burials, suggesting that occupancy of the village was by representatives of more than one village unit.

Population figures at this time have little relevance for estimating population decrease. Population decrease must be seen in terms of the dissolution of the villages and the affiliation and subsequent identification of groups, probably linked household units, with other Indian nations. Actual numerical population decline is not indicated here, but a cultural population decline, that is the number of people identified with the Illinois cultural group sharply decreased.

Summary

The culminating effect of change in many variables can be seen in this state. The maximum constraints in the system appear to be in the set composed of political flexibility, village solidarity,

village ritual observances and population change. The reduction of the village to linked household units was no longer a reversible process so that village political structure was abandoned and with it the ability to assimilate and cope with additional environmental input.

The imposition of political authority by the French had resulted in a concominant reduction of native political authority. Coupled with the loss of a village structure this left the Illinois socially and politically unable to maintain a unified political structure following the removal of French influence.

Reduction has occurred in village solidarity, village ritual observances, political flexibility, and native political authority. Variety of individual religious practices has increased. Exchange resources and goods given in trade have increased causing decline in the use of native materials and technology. Into these changes was input additional external political conflict which resulted in catalystic reaction and rapid system change (Figure 13).

State (g)

The British attempted to make peace with the Illinois and by 1766 some of the Illinois, mainly the Kaskaskia, began to drift back into the area and resettle in the old Kaskaskia village. Although the village is spoken of as Kaskaskia, records reveal that the village was composed of members of almost all of the original village units. Some of the Michigamea returned and reoccupied their old village. The organization of the groups were on the basis of the linked households, although the Kaskaskia attempted to maintain a village. It is

evident that Ducoign, although called the Grand Chief, was essentially a village leader.

Native political authority was completely submerged in external powers. When Ducoign was selected chief by the village it was agreed he would be chief only if it was acceptable to the British. Some trade continued but during the British period most trade was carried on with the Spanish. External political conflict continued to be a problem.

In 1774 due to the constant dangers of attack by other Indian groups, Ducoign moved part of the village to the Spanish side of the Mississippi and contemplated having the group adopted by the Quapaws (Temple 1966:52). When the Americans entered the area in 1778 the allegiance of the Illinois was divided with various bands supporting or opposing American rule. The Kaskaskia village favored the Americans and they returned to southern Illinois after the American took control of the area. A few Cahokia remained at their old village, but shortly left, and went west of the Mississippi where the remaining Illinois were located. The Kaskaskia in the American period tried to take up sedentary farming. Hunting in small groups was attempted but the danger of attack from other Indians severely limited this.

The Kaskaskia village subsisted on their produce and on annuities from the United States government. The Kaskaskia ceded most of their land to the United States government in 1792 and in 1832 ceded the remainder except for a small portion assigned to the chief's daughter who remained. They then moved west to join the Peoria and shortly moved with them to a reservation in Kansas.

Summary

State (g) is marked by oscillations towards a new equilibirum. The decrease in variety of exchange resources emphasizes their dependence on external political powers. Some attempts are made at utilizing a new subsistence pattern, sedentary farming, partly influenced by danger from external political strife with other groups of Indians. Attempts are made on the part of the Kaskaskia to return to village organization, but unsuccessfully. Substitution of European materials for native ones continue and the range of desired trade items increases.

The occupation of the Kaskaskia village site extends up to 1832. It known that the United States government built a house for Chief Ducoign under terms of the treaty and there probably was an increased use of American style log houses rather than the traditional mat covered dwelling, which could be seen from the archeological record. Since hunting was so curtailed cloth can be expected to have replaced hides for clothing, and faunal materials from the archeological site should reveal a greater use of domestic animals. Almost the entire material cultural inventory would be materials of European manufacture or constructed from such imported raw materials.

Decrease in exchange resources occurs and reduction in native materials and technology. Population decreases and with it the size of settlement. External political conflict increases (Figure 14).

State (h)

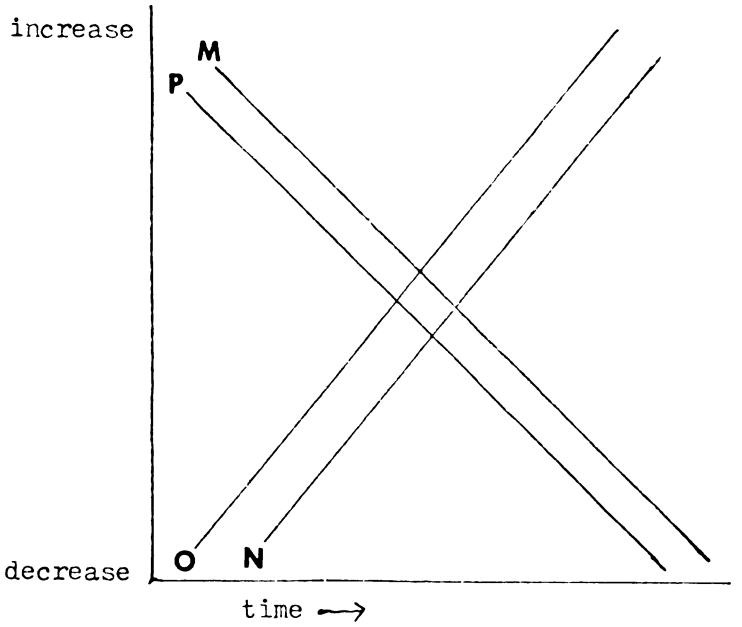
State (h) is outside the scope of the study and covers the time from the removal of the Illinois to Kansas and later to Oklahoma.

It has been represented here as a single state which is overly simplified, but evidence for a detailed analysis is lacking Only the general outlines of this state will be given, adequate discussion of it would necessitate development of new variables relevant to S^2. Since this is not feasible now, reference will be made to variables from S^1 for continuity.

Subsistence movement was abandoned, although some hunting provided a supplement to the food resources. Sedentary farming was taken up and there was a gradual increase in the variety of exchange resources including farm produce and hiring out as wage laborers. Residential units were composed of extended and nuclear families, remanents of the linked households. Polygamy ceased, partly as a result of Catholic religious values, and partly due to external political pressure. Native political authority was totally subject to that of the larger United States government. Native positions of authority continued and these now had ascribed status due to the influence of the larger political entity which recognized recognized a position of "chief" and saw this as descending from father to son.

The use of native materials and technology declined rapidly, and increasingly large number of materials used were of American manufacture or derivation and the variety of goods received increased greatly. Many of these goods were received as treaty annuities or in exchange for labor.

The new system S^2 appears to have obtained a dynamic equilibrium with new system constraints.



M - ascribed status

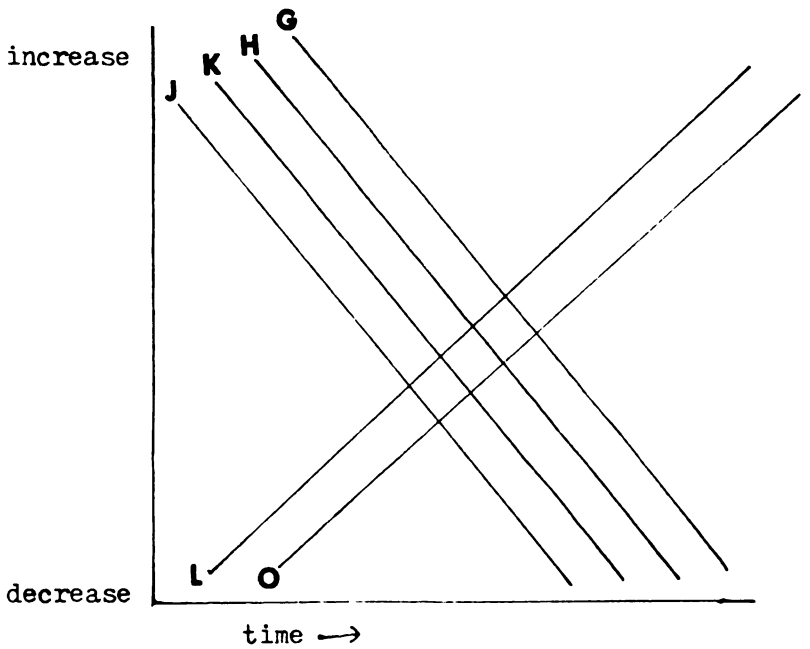
N - exchange resources

O - goods given in trade

P - native materials and technology

Directions of change in State (b)

Figure 9



G - village solidarity

H - village ritual observances

J - native political authority

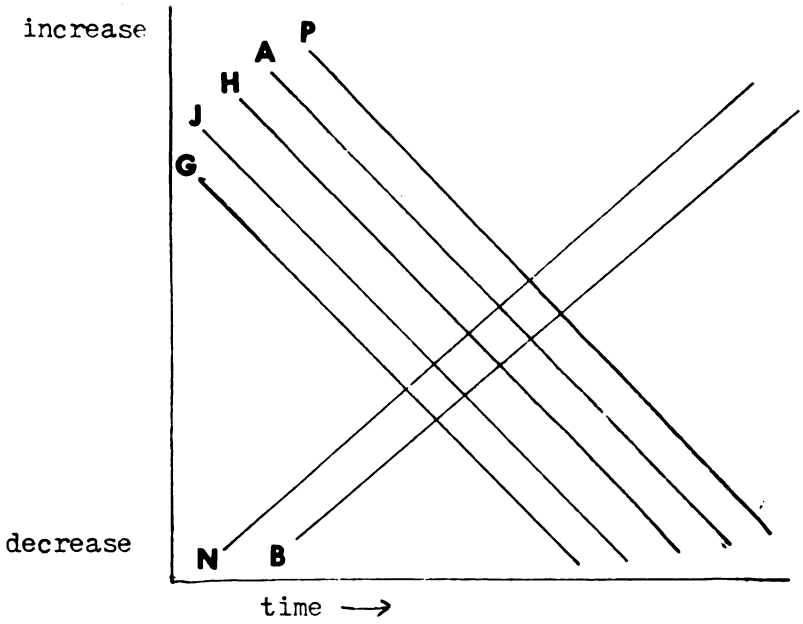
K - Illinois ritual observances

L - individual religious practices

O - goods given in trade

Directions of change in State (c)

Figure 10



A - subsistence movement

B - food resources

G - village solidarity

H - village ritual observances

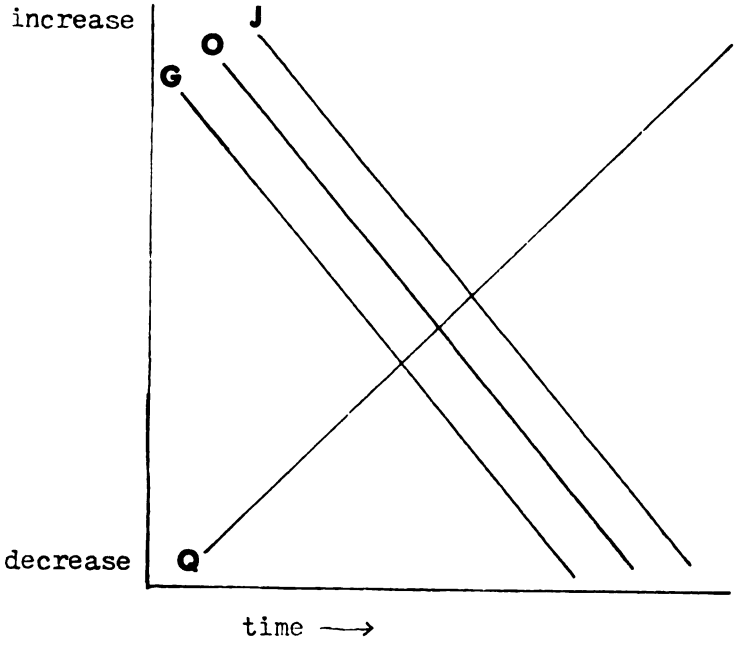
J - native political authority

N - exchange resources

P - native materials and technology

Directions of change in State (d)

Figure 11



G - village solidarity

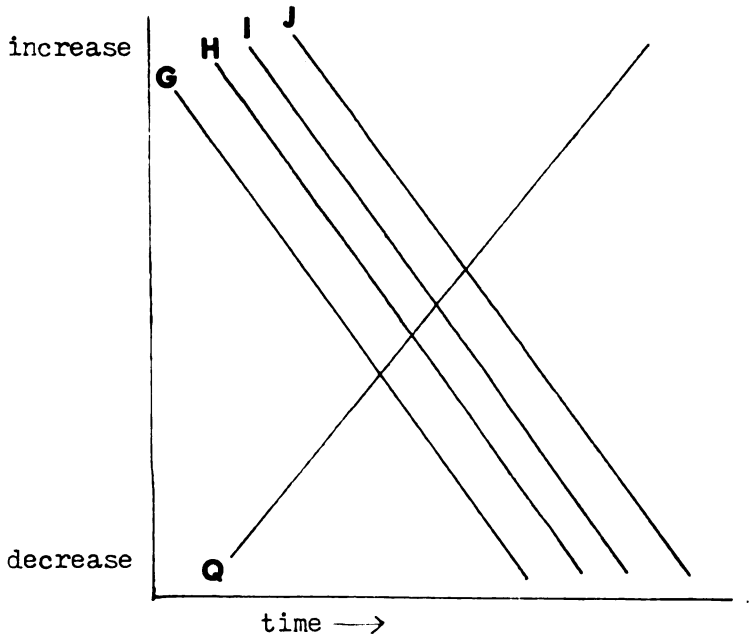
J - native political authority

O - goods given in trade

Q - external political conflict

Directions of change in State (e)

Figure 12



G - village solidarity

H - village ritual observances

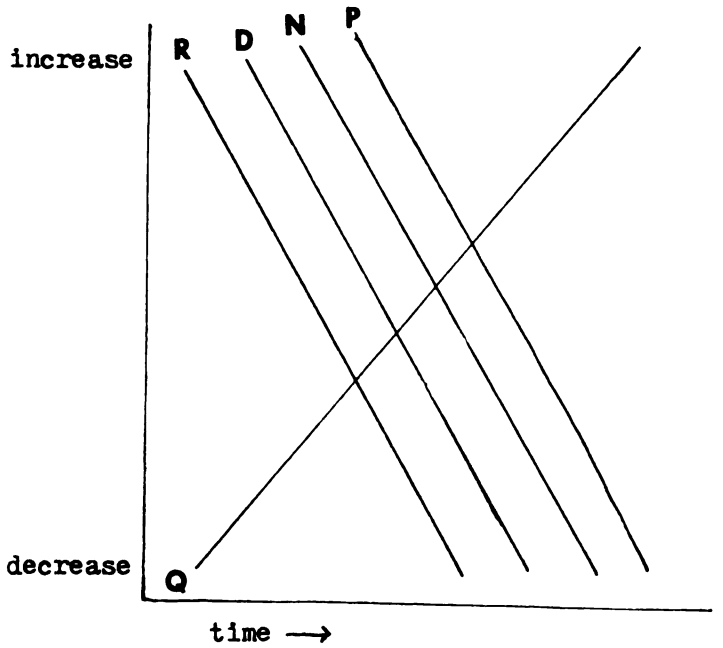
I - political flexibility

J - native political authority

Q - external political conflict

Directions of change in State (f)

Figure 13



D - size of settlement

N - exchange resources

P - native materials and technology

Q - external political conflict

R - population change

Directions of change in State (g)

Figure 14

CHAPTER VII

CONCLUSIONS

The variables

Changes in the Illinois cultural system have been considered by means of a number of variables. Not all variables isolated for the discussion have equal utility in the model, certain variables can be seen to have more explanatory power than others. These variables are the essential and key variables, the use of which in the model allows for an economical representation of the complexities of observed reality. Some variables which have been included in the initial examination of Illinois culture may be considered inessential because they do not appear from present evidence to have changed values throughout the period of study. Some variables can be seen to be at a lower level of abstraction and because of their direct causal relationship with other variables be considered indicators of these variables. Other variables represent input from the environment.

Inessential variables

Those variables which are considered inessential for this study are natural environmental variation and linked household solidarity.

The Illinois ranged from the northern to southern portions of the present state of Illinois. Their villages were always situated in the alluvial flood plain but positioned so as to utilize several ecological zones. Fish could be procured from the rivers. A variety of eatable

vegetable resources and rushes for mats were from marshy areas which provided feeding grounds for seasonally migrating water fowl also. The soft soils of the alluvial plains were suitable for the cultivation of crops; hillsides and savannas provided a variety of game and the prairies held the buffalo.

In considering the archeological data it is apparent that there are some differences in environment between the Zimmerman and Waterman site regions, which resulted in slightly different availability of particular resources and in procurement patterns. No major differences between the regions are seen and the data do not allow for evaluation of minor variation. The utilization of resources in both areas is quite similar. Present evidence would indicate therefore, that natural environment can be considered a constant since the adaptation of the Illinois seems to exhibit no important variation.

Linked household solidarity as far as can be determined from historical records and operation of the system as revealed through the model, does not undergo any significant variation during the study. Although it is evident that households can undergo fission, this appears to have occurred irregularly throughout. There is no indication that linked household fission increases through the period of study, although household size was reduced due to other factors. The consistency of of this unit is reflected in the kinship terminology. Despite the vast changes which occurred in the culture over the more than one hundred years of contact, the schedules obtained in 1859 were virtually identical to those from 1700. The linked household appears to be the most consistently integrated kin unit and to have persisted even through system change, therefore, it cannot be considered as a factor in change.

Environmental input

Two variables represent exogenous environmental input into the system: external political conflict and goods given in trade. Two other variables food resources and exchange resources represent system utilization of environmental input. Food resources and exchange resources are essential variables and are merely separated from the rest of the essential variables for convenience in discussion.

Food resources which are obtained from the natural environment do not show significant change in kind. However, new resources are input from the exogenous environment; both animals and plants are introduced by the French. The input of these additional resources interacts with the variable of subsistence movement allowing for reduction in this variable.

Exchange resources are also part of the natural environment, but visualizing certain resources as elements for exchange necessitates a social definition of exchange resources, that is what will be accepted in trade. The interaction of exchange resources with goods given in trade thus leads to a wider social definition of exchange resources, producing a feedback loop, so that increase in goods given in trade increases the variety of exchange resources. For example, initial trade was in fur robes, the goods received for these stimulated an expanded definition of exchange resources. Fur hides and slaves being added to the variety of exchange resources which enabled the procurement of more trade goods.

The variable goods given in trade interacts with exchange resources as mentioned above, but also partakes of a larger environmental framework exogenous to the system, that is, the European

trade network. The availability of trade goods, the cost and feasibility of transporting them from this environment acts as a regulator for this variable (Figure 15).

External political conflict is a significant input from the environment. Although direct results generally can be seen only in population decrease, external conflict also effects change by influencing such variables as native political authority or village solidarity. External political conflict can be direct warfare or conflicts existing in the exogenous environment which through linked systems can cause effects on variables within the system.

Essential variables

An essential variable helps to maintain the system but its values can change as part of the changing system. The essential variables in the study are: native political authority, Illinois ritual observances, individual religious practices, native material and technology and subsistence movement. Food resources and exchange resources are also essential variables but have already been discussed above.

Native political authority acts to maintain the system by perpetuating and regulating the distribution of authority within the system and provides a means of social control. Native political authority is closely linked with individual religious practices. Native political authority is based on and sanctioned by traditional religious practices so that variations from these weakens authority. Thus when there is an increase in the variation of individual religious practices the amount of native political authority has been shown to decrease.

Individual religious practices are also closely associated with village ritual observances and village solidarity. An increase in variety of individual religious practices creates conflicts which weaken the solidarity of the village and cause decrease in ritual observances.

Illinois ritual observances are linked with village solidarity. Village ritual statuses must be reaffirmed through the village observances in order for these statuses to operate within a multi-village ritual context. Therefore, when village solidarity is reduced and the number of or reaffirmation of ritual positions declines, Illinois ritual observances decline sharply.

The use of native materials is obviously directly correlated with the availability and desireability of introduced items from the exogenous environment. Manufactured items generally are taken into the system to replace homologous artifacts within the system. Change in material culture is the type of change most readily observable from archeological materials. Replacement in material items may occur without disruption as long as the means of acquisition can be worked into the system. Initially trade was carried on in what were essentially surplus goods, furs collected for their own use and as a by product of subsistence efforts. The shift in material culture, from pots to kettles etc., does not of itself create extensive change, these items can be utilized within the existing network, it is rather the interaction with the variables relating to exchange that creates value change. Obviously the substitution of manufactured goods for native raw materials is closely linked with exchange resources and goods given in trade.

Subsistence movement is the regular seasonal movement to food resources. Increase in the variety of food resources not requiring seasonal movement tends to reduce subsistence movement. Subsistence movement is closely related to political flexibility as shifts in the political organization are required by the seasonal movement. It is also related to village ritual since a reduction in village ritual effects reduction in that portion of the subsistence movement which requires ritual observances.

There are variables which cannot be considered essential variables by themselves, but depend on joint action with other variables. These are at a lower level of abstraction than the essential variables and are indicators of the essential variables.

Size of settlement is significant in its relationship to other variables, particularly subsistence movement, political flexibility and population change. Reduction in the values of any of these variables will effect reduction in the size of settlement.

The size of the residential unit is related to population change and to individual religious practices. Population decrease tends to reduce residential unit size and religious practices may also decrease residential unit size by cultural restriction of marriage practices, such as monogamy.

Ascribed status is related to the amount of native political authority and to exchange resources. With increase in the variety of exchange resources there is greater opportunity to attain achieved status and a reduction in the value of ascribed status occurs, reducing native political authority which is based on ascribed status. Although ascribed status from traditional sources declines, the exogenous

political system places emphasis on the importance of ascribed status, but ascribed status which is sanctioned by this system rather than the native system. Reference is made here to European insistence on political stability and continuity by orderly succession in the authority positions.

Key variables

A key variable is an essential variable which covaries in some specific relationship with other similar variables. The key variables comprise the set having the greatest constraints within the system. The key variables are: village solidarity, village ritual observances, political flexibility and population change. Initially this set represents a steady state equilibrium which is maintained by the balance of all variables. Village solidarity depends on village ritual observances and village solidarity is necessary to maintain the political flexibility seen from the shifts in political organization required by the subsistence movement. This set undergoes oscillations in values with the input of contradictive elements into village solidarity. Population decrease with reduction in village solidarity affects the observance of village ritual, not through actual total numerical decline in population but through the reduction of persons within the village having the requisite ritual statuses and knowledge. Population decrease thus sets up a negative feedback loop to village solidarity causing further reduction.

Political flexibility is reduced with the decline in observances of village ritual which are necessary for the regular shift from household to village organization. The continuance of linked household organization through the entire subsistence cycle enables greater

population movement, even outside the system, which again reduces the population and further contributes to the reduction of village solidarity.

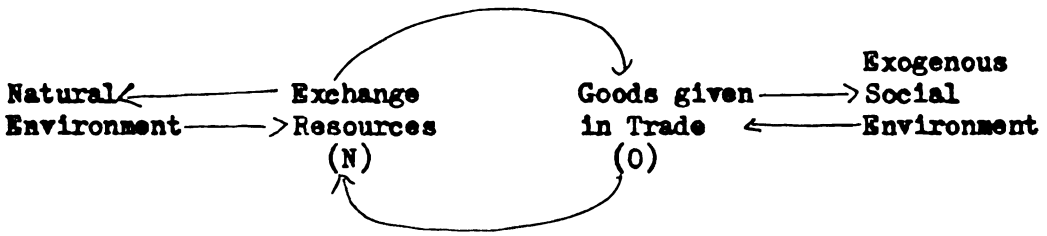
The negative feedback operating within this set reduces the values of the key variables (Figure 16). This reduction leads to a threshold, the constraints in the system becoming such that additional input cannot be channeled through the set, resulting in system change. The operation of this is discussed more fully below.

The model

Examination of the Illinois system in terms of the essential and key variables shows the following.

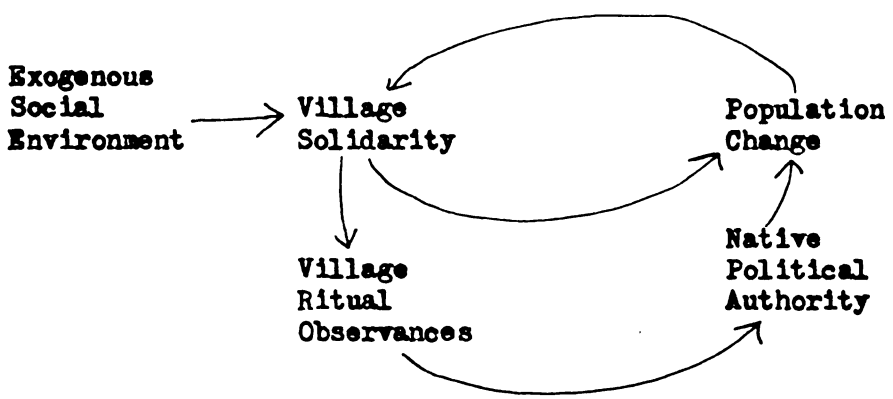
State (b) represents a dynamic equilibrium of the system. The essential and key variables remain in equilibrium, the changes which occur are absorbed within the structure of the system. The new and alternative elements presented mainly involve the substitution or addition of manufactured goods for materials of Indian origin, which adds variety to the system. Although there is a rise in input from the exogenous environment the regulating mechanisms of the system can handle the variations.

In State (c) however, the input from the exogenous environment increases and contradictive elements are introduced. The contradictive elements introduced into individual religious practices and native political authority are not successfully regulated by traditional methods for dealing with variety and consequently changes in values occur. Change also occurs in village solidarity. Decrease in village solidarity enables the prediction that village ritual also



Feedback relationship between variables N. and O

Figure 15



Interaction among key variables

Figure 16

decreases, which is further suggested by the reduction in population due to separation of households from the village. Further reduction in native materials and technology can be assumed and the means of acquistion of trade goods can further add contradictive elements as receiving gifts for attending and reciting catechisms.

All variables undergo rapid shifts away from equilibirum. There are oscillations in values with stop gap attempts to regulate the system and readjust to the former balance. However, the input from the environment has increased greatly and presents contradictive information which cannot be handled by traditional means. Due to "hunt and seek"oscillations (Clarke 1968:76) different trajectories towards an equilibrium are followed by the several villages subsequently.

State (d) is in the Kaskaskia, Tamaroa, Cahokia and Michigamea trajectory. Input from the exogenous environment is high due largely to strong European influence. Additional food resources from this source adversely affects traditional subsistence movements. Subsistence movement is closely linked with village ritual so that disruption in the subsistence quest results in reduction in village ritual. Village ritual and village solidarity covary so that reduction in one affects the other and further affect political flexibility which begins to decrease. Associated reduction and redistribution of population is also observed. Such a total reduction in variation among the essential and key variables reduces the total variation present and reduces the values of the key variables leading to increased constraints within the system.

State (e) is in the Peoria trajectory. The contradictive elements introduced in individual religious practices, although largely rejected by the Peoria, had already in State (c) resulted in a reduction in native political authority and in village solidarity. The alternatives in religious beliefs allowed for decrease in native political authority and even with the removal of direct contradictive input by geographic and political isolation of the Peoria, the equilibirum remains disturbed. Village solidarity has been affected by the division due to new religious practices. Reduced access to trade goods also reduces village solidarity since attempts are made to increase the materials given in trade by movements of households away from the village. External political conflict increases and effects oscillations in village solidarity through opposing choices of action. Cooperation in action through village solidarity is necessary to settle the conflict of warfare, but conflict also tends to decrease village solidarity due to households seeking other areas having less political conflict. No change is seen in the subsistence movement, but political flexibility begins to decrease as attempts are made to maintain equilibrium by operating in smaller units.

Historical records are inadequate for this state, but it can be predicted that after State (c) conflicts between the village units remaining at Pimiteoui increased; the departure of one group to a separate village at Starved Rock suggests this. The increasing loss of solidarity as "Illinois" would come with the decrease in Illinois ritual observances.

In State (f) input from the exogenous environment has effected extensive change in almost all variables. The coherence of the Illinois villages has been drastically reduced through conflicts in religious practices, the erosion of native political authority, the reduction in village solidarity and political flexibility, with the linked household as the only consistently maintained political unit. The loss of the political organization of the village and village solidarity in concerted action indicates the height of the threshold separating S^1 from S^2. The constraints implied by the set of key variables means that S^1 can only persist when cooperation in units larger than households is possible under stress. A emporary equilibrium has been maintained with dependence on the French and when input from the environment occurs in the form of external political conflict, the key variables are no longer able to channel the input and rapid disintegration of the system occurs.

State (g) represents oscillations among various values for a new system equilibrium which is obtained in State (h).

State (a)

From the model it can be determined what the probable values of the variables were in State (a). State (a) does not represent a prehistoric state of the Illinois. Throughout State (a) there was first long indirect contact with Europeans through Indian middlemen and then later direct contact with the French at trading posts.

State (a) is very similar to State (b) with certain important distinctions. The political flexibility, village solidarity and

village and Illinois ritual observances would have all functioned in a dynamic equilibrium with the subsistence movement. Native political authority can be presumed to have functioned through hereditary chiefs. The Grand Chief would have had more power and prestige than the village chiefs and possibly had certain rights emphasizing this distinction such as a larger cabin and special regalia. Social control was maintained by social pressures of the kin groups, fear of magical sanctions from the shamans, and a recognition and continual verification of ascribed status roles. Ritual activities for the welfare of the village or of all Illinois would have occurred at fairly regular intervals. Native materials and technology were used almost exclusively with the highly desirable European materials probably in the possession of higher status individuals or families.

Utility of the Model

The significance of general systems theory and a processual model for studying the Illinois is that it reveals the combinations of variables which effect change. The variables which are most significant for depicting change are those which comprise the set: village solidarity, village ritual, political flexibility and population change. Population change although significant cannot be said to be the only or main factor in Illinois change. Population change is highly correlated with the amount of village solidarity and political flexibility. Population change in terms of absolute reduction of numbers by external elements such as war or disease is not the significant factor, it is the change which occurs in

relation with and due to shifts in the values of the other key variables. To consider population change exclusively would produce little rationale for disruption of the Peoria. Sheer population fluctuation is insufficient to account for system change, only in company with other factors does it have explanatory powers.

Ethnohistorical studies of American Indian groups have tended to suggest single variables as causes for disruption of Indian cultures. The single variable is then taken as an independent variable and the causes or effects as dependent variables. This model implies (though such is probably not the intent) that there is no interrelationship or interaction between the independent variables (warfare, disease, fur trade etc.) nor among the dependent variables. The resulting model is an additive linear model which cannot handle feedback relationships. Actually what is produced is a group of low level variables which can be taken as indicators of the independent variables. Without consideration of further complex interrelationships between variables, explanation is limited and contrary situations cannot be explained.

Warfare and disease are frequently given as the cause for the decline of a group, however, intensive warfare or destructive disease can be encountered without causing decline. The Fox, who were virtually annihilated twice in warfare, were able to reconstitute and remain politically and culturally viable. The Mandan, after near extermination by disease, were able to partially reestablish their population and culture before other factors intervened to continue the decline. These histories suggest that such simple models can produce only low level explanatory statements which can

have little predictive value.

A model which is designed to consider a wider range of variables with complex interrelationships can have value for predictions and can be used for examining many different systems. Although the study here has been confined to the use of a processual model with a single group it is believed that this model can be utilized to consider change in other groups and to assist in the formulation of general statements concerning the processes of cultural change.

The use of the model for the study has produced a better understanding of the operation of the system and the changes which took place for the Illinois through contact with a technologically superior culture. The examination of the Illinois has been done on the basis of interpretation of historical records and of archeological data from the few sites available for study. During the time period explored, the Illinois occupied at least twelve different village sites and an unknown but considerable number of winter camps. Out of these only two have been excavated. Predictions of what may be found in the other unlocated or unexcavated sites have been made in the sections discussing the separate states. The examination of some of these localities may be expected to confirm these predictions and possibly to add information which will require reconsideration of the relationship between certain variables which will aid in further refining the model and the view of the system which it allows. This study is considered only as a step towards the total understanding of the Illinois culture, but indicates that the examination of a cultural system by means of a model based

on general systems theory has greater potential for explanation than those hitherto used in studies of cultural change.

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