Draper Site Ceramic Analysis
Structure 2

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Introduction

The longhouse was the primary focus of domestic activity in the Huron village. Within each house, the hearth was the area of most household activity and social interaction. At the hearthside, where the people gathered, pots were made, used, and broken, fires kindled, meals prepared, and storage pits dug and filled. Projectile points were manufactured, adzes ground, and awls and needles cut from bone, nets were mended, clothing sewn from dressed hides, drying racks and sweat lodges were put up and pulled down, and refuse accumulated and was swept away. In addition to the activities of the daily routine, special events of an integrative nature, feasts, dance ceremonies, healing rituals, funerals, and the occasional torture, were also held in the longhouse. People moved in and out, and additions and repairs were made to the structure (c.f. Tooker 1967; Trigger 1969).

All of these activities, whether repeated day to day or unique events, left some trace of their occurrence on the longhouse floor, in the associations of certain artifacts and features with one another. An intact occupation floor can, then, be considered a complex artifact in itself, and it should be possible, with proper techniques and caution, to derive from it not only information concerning the activities and the areas in which they took place, but perhaps also the patterns of residence and social interaction they infer (A.E. Tyyska, personal communication).

The ceramic analysis of Structure 2 is a preliminary attempt to define areas of ceramic related activity, and, if possible, to relate these to theoretical models of social and residential structure, both within the house, and within the broader framework of the Draper village community. Although similar studies have been carried out elsewhere (e.g. Longacre 1964; Deetz 1965; 1968; Brose 1970), the 1973 excavations at Draper are the first in Ontario which have provided sufficiently detailed information concerning the associations of ceramics on the living floor of a virtually undisturbed longhouse to allow this type of analysis to be undertaken.

There are, unfortunately, some limitations on the interpretations; the house could not be completely excavated, and the central area and east end of the structure present serious (though not overwhelming) gaps in the interpretations. The project was originally conceived as a computerized spatial analysis; however given the resources and time available it was not possible to develop a program which would meet the requirements of the research design. The approach taken, which involved the statistical comparison of artifact clusters on the floor as opposed to the associations among individual artifacts, was simpler, but quite effective nonetheless. Perhaps the most serious limitation was the lack of comparative data from other houses at Draper and from other sites, without which it was difficult to make any but the most basic interpretations of the relationships observed. It is, however, a beginning, hopefully to be corroborated by future research.

The study is divided into four parts. The first consists of the formal typological analysis of rims, castellations, and pottery pipes, the presentation of the basic data upon which the rest of the work is based. Section two consists of a detailed distributional analysis of the ceramics, and interpretations of the patterns of residence and behaviour inferred from the relationships of the potsherds on the living floor. In the third section the material from House 2 is compared with that from past excavations on the site, and an effort is made to place it in the temporal and social context of the village. The results of the analysis are summarized in the fourth section.

Typological Analysis

The first stage of analysis of the material from the 1973 excavations consisted of the formal analysis of pottery types, castellations, and clay pipes found in House 2, and in the middens adjacent to its west end. To facilitate the handling of the ceramic material, each of the 308 rims and 49 castellations in the sample was sketched on an index card and pertinent data regarding its location, descriptive,

metric, and technological attributes recorded. The artifacts were then grouped into types using the criteria for defining Iroquoian ceramic types (Table I) established by MacNeish (1952), and refined by Emerson (1968) and Ramsden (1968).

Table 1A Pottery Types

LO	Lawson Opposed
LI	Lawson Incised
PN	Pound Necked
NC	Niagara Collared
WC	Warminster Crossed
SN	Sidey Notched
HI	Huron Incised
WH	Warminster Horizontal
SI	Seed Incised
SC	Sidey Crossed
BN	Black Necked
OT	Onondaga Triangular
DU	Durfee Underlined
RL	Roebuck Low Collar
RD	Rice Diagonal
MS	Miscellaneous (includes Draper Group)
LH	Lalonde High Collar
SY	Syracuse Incised
RP	Ripley Plain
WI	Wagoner Incised
MO	Middleport Oblique
OH	Ontario Horizontal

Table 1B Castellation Types

SL	Scalloped-lip
RR	Rolled Rim
RC	Round
DR	Developed Round
PC	Pointed
DP	Developed Pointed
TC	Turret
NC	Nubbin
NH	Notched
N&G	Notched & Grooved

Table 1C Pipe Types

CR	Collared Ring
CL	Conical Ring
ER	Elongated Ring
IR	Iroquois Ring
PT	Plain Trumpet
DT	Decorated Trumpet
TT	Tapered Trumpet
CT	Coronet
VS	Vasiform
BP	Bulbous Plain
EF	Effigy
HE	Human Effigy
MP	Miscellaneous

After the artifacts had been typed, the data was recorded in accordance with a format developed by Ramsden (see Appendix A) and punch cards prepared for each artifact to allow computerized processing of the material. After an evaluation of a number of programs available through the computer centre at the University of Toronto, the Statistical Package for the Social Sciences (Nie Bent & Hull 1970) was selected as best suited to the requirements of this phase of the analysis. This easy-to-use fortran language procedure consists of a number of subroutines for various statistical analyses, including percentage frequency and multivariant regression analysis. Its one drawback is that it is difficult to integrate it with other procedures. It was quite adequate for the requirements of this study, however.

The frequency of each of the 15 types and miscellaneous rimsherds found in Structure 2 is presented in Table II.

Table II Pottery Type Frequencies

type	House 2		West Area		East Area	
	f	%	f	%	f	%
LO	2	0.7	2	0.7	0	0.0
LI	19	6.2	17	5.5	2	0.7
PN	33	10.7	20	6.5	13	4.2
NC	6	2.0	4	1.3	2	0.7
WC	26	8.4	23	7.7	3	1.0
SN	12	3.9	6	2.0	6	2.0
HI	30	9.7	24	7.8	6	2.0
WH	1	0.3	1	0.3	0	0.0
SI	1	0.3	1	0.3	0	0.0
SC	5	1.6	3	1.0	2	0.7
BN	120	39.0	95	30.8	25	8.1
OT	7	2.3	3	1.0	4	1.3
DU	2	0.7	1	0.3	1	0.3
RL	7	2.3	3	1.0	4	1.3
RD	3	1.0	3	1.0	4	1.3
MS	34	11.0	29	9.4	5	1.6
totals	308	100.1%	235	76.6%	73	23.9%

The most frequently occurring type in the house was Black Necked (39.0%). Miscellaneous rims (unidentifiable under the MacNeish classification, and in most instances represented only by one or two sherds), accounted for 11.0% of the total. Third were Pound Necked rims (10.7%), and fourth Huron Incised rims (9.7%).

Of the 49 castellated sherds analyzed, 7 types were recognized (Table III). Of these, the most prevalent was the scalloped lip type, accounting for 44.9% of the sample. Second was the pointed variety (12.2%), and third the turret, round, and developed round forms (10.2% each). The developed pointed castellation accounted for only 8.2% of the sample, and rolled rim only 4.1%.

Nineteen bowl and 36 stem and mouthpiece fragments of pottery pipes were recovered from Structure 2. The Elongated Ring type constituted 26.3% of the sample of

Table III Castellation Type Frequencies

type	House 2		West Area		East Area	
	f	%	f	%	f	%
SL	22	44.9	15	30.6	7	14.3
RR	2	4.1	0	0.0	2	4.1
TC	5	10.2	4	8.2	1	2.0
PC	6	12.2	4	8.2	2	4.1
DP	4	8.2	3	6.1	1	2.0
DR	5	10.2	4	8.2	1	2.0
RC	5	10.2	4	8.2	1	2.0
totals	49	100.0%	34	69.5%	15	30.5%

bowls. Of second importance was Conical Ring (15.8%). Collared Ring, Plain Trumpet, and Cornet were 10.5% each, while Bulbous Plain, Decorated Vasiform, Decorated Trumpet, Effigy, and miscellaneous forms accounted for 5.3% apiece (Table IV).

Table IV Pottery Pipe Type Frequencies

type	House 2		West Area		East Area	
	f	%	f	%	f	%
CR	2	10.5	2	10.5	0	0.0
CL	3	15.8	2	10.5	1	5.3
ER	5	26.3	2	10.5	3	15.8
PT	2	10.5	1	5.3	1	5.3
DT	1	5.3	1	5.3	0	0.0
CT	2	10.5	1	5.3	1	5.3
VS	1	5.3	1	5.3	0	0.0
BP	1	5.3	1	5.3	0	0.0
EF	1	5.3	1	5.3	0	0.0
MP	1	5.3	1	5.3	0	0.0
totals	19	100.0%	34	68.6%	6	31.7%

It is interesting to note at the outset that the frequencies of pot types and pipe types differ considerably in many respects from those of previous analyses of material from random and midden tests, and from excavations at the north end of the site. Black Necked enjoys a greater, and Huron Incised a lesser, frequency in House 2 than elsewhere on the site, and the high frequency of Elongated Ring pipe bowls in the house is also significant. The implications of these marked differences will be discussed later.

Distributional Analysis

The second part of the ceramic analysis involved the detailed distributional analysis of the rims, castellations, and pipes on the floor of Structure 2. The primary aims of this study were to attempt to delineate ceramic related activity areas such as hearth areas and middens, and to determine whether or not there were any similarities or differences in the distribution of the various types which could infer social or residential structure within the longhouse. In conjunction with this, a study was made of the incidence of carbon incrustation on the rim interiors to see if there could have been differential utilization of particular types for storage or cooking.

On the assumption that different ceramic motifs relate to specific family groups, and that these stylistic complexes were passed on from mother to daughter, two theoretical models of possible residential structure were postulated (see Hayden: this volume). The first suggested that if ceramic motif complexes showed minimal variation from hearth to hearth within the house, yet considerable variation compared to the assemblage of the site, a matrilocal pattern of residence could be inferred. On the other hand, the presence of distinguishable complexes of motifs in association with the different hearths would suggest that different women had been brought in or that different families had come together to form the household. In this case a more random and homogeneous spread of types across the site would be expected. A third alternative, which should be entertained, is that the production of ceramic types is governed by processes other than those which determine familial residence patterns, and that conclusions concerning patterns of residence drawn from them may be invalid.

The original research design called for a computerized nearest neighbour analysis of the data, to define artifact clusters and provide a statistical measure of the relationships among them (see Whallon 1974). As no suitable program could be developed or adapted to handle the data without considerable modification this format was abandoned in favour of a less sophisticated form of analysis, which, it is hoped, though preliminary, will provide some insight into the internal composition of a Huron longhouse.

The first step in this phase of study was to plot the distribution of the rims on the floor of the structure. The ceramics were seen to fall into two distinct groupings on either side of a line projected across the house through Units N32-E58 and N34-E60. Seventy-six and six-tenths per cent of the pottery occurred in the west end of the structure, designated Area A – three times the amount recovered from Area B, toward the eastern end of the longhouse. In the partially excavated central area rimsherds were virtually absent (Fig. 1).

Within each area, micro-patterns of ceramic distribution were noted. To delineate these, a map was prepared of the distribution of rims on the floor in class intervals of 3 (Fig. 2). Two clustering patterns emerged; the first represented by concentrations of rims within roughly a two-metre radius of each of the house's axial hearths; the second by high density concentrations in restricted areas

Fig. 1

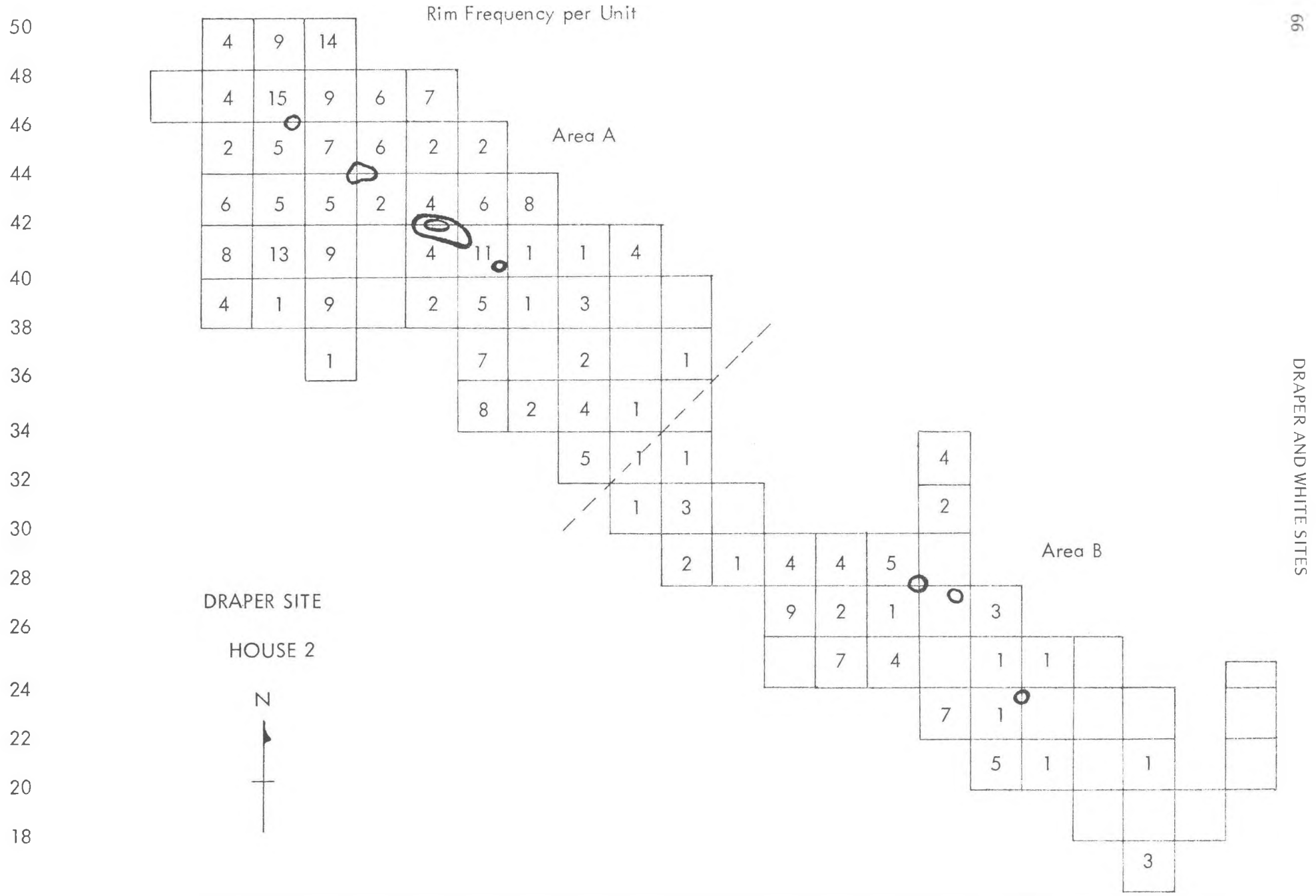
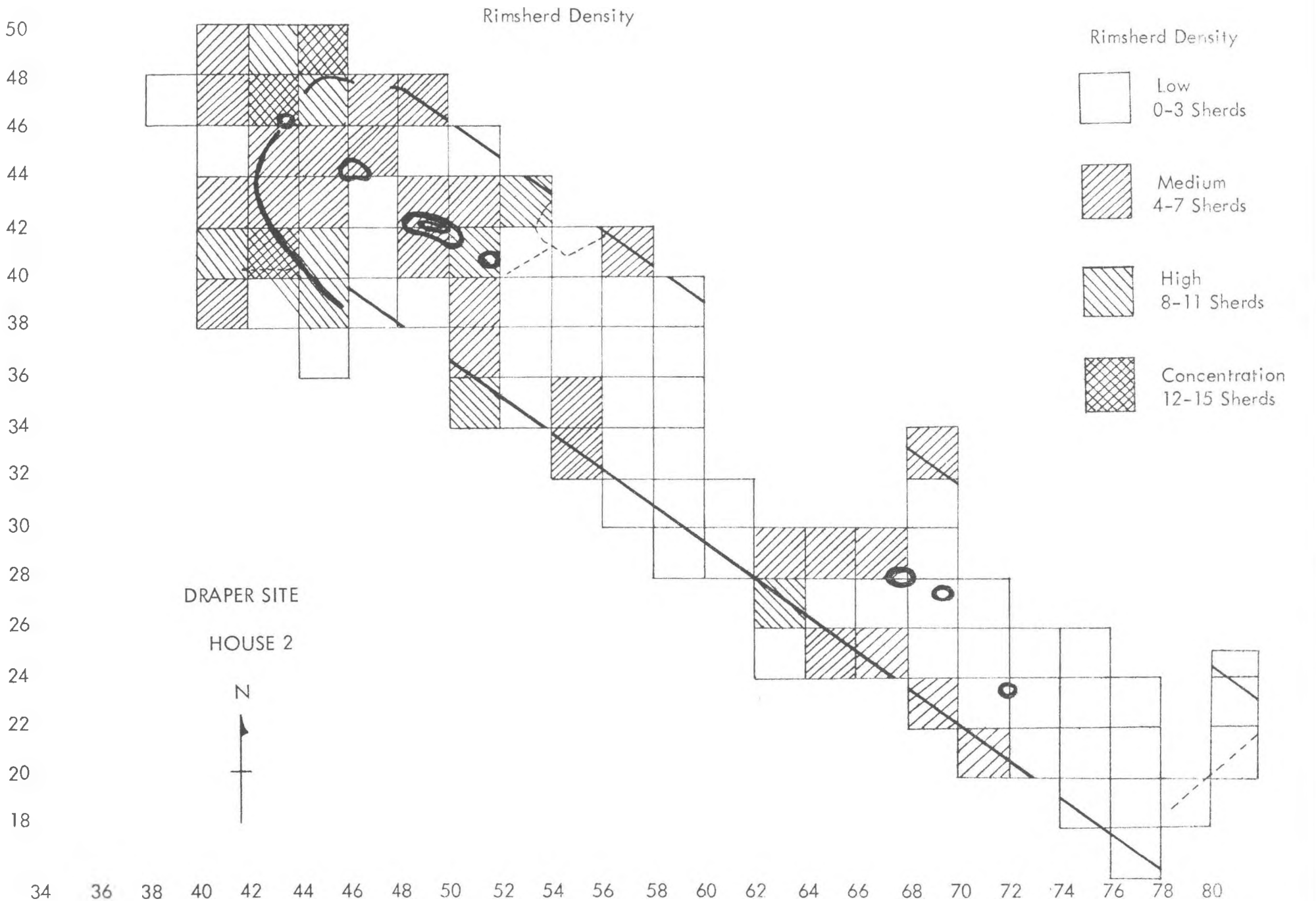

Rim Frequency per Unit
Area A
Area B
DRAPER SITE
HOUSE 2
N
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80

Fig. 2


Rimsherd Density
Rimsherd Density
Low
0-3 Sherds
Medium
4-7 Sherds
High
8-11 Sherds
Concentration
12-15 Sherds
DRAPER SITE
HOUSE 2
N
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80

along the interior of the house wall, interpreted as sweeping middens. These middens were roughly 3 metres apart, and extended the length of the house on either side of each of the central hearths. This bilateral symmetry suggested that there were non-random processes in operation, governing the patterning of refuse disposal in the house, which might aid in the delineation of family activity areas around each hearth, and their relationships.

Ceramic concentrations were also present outside the house, in a large midden to the north of a possible doorway in the west end wall, and in what has been interpreted as a latrine pit behind a partition against the south wall (see Hayden: this vol.). Similar middens probably exist at the far end of the house as well, but these have yet to be excavated.

Due to the great disparity of ceramic concentration in the two areas (which was only in part due to the presence of the two middens outside the west end of the house), the frequency of each pottery type in each area was compared (Table V). With the exception of a few types of low

Table V Comparative Frequencies of Pottery Types Area A—Area B

type	Area A		Area B	
	f	%	f	%
LO	2	0.9	0	0.0
LI	17	7.2	2	2.7
PN	20	8.5	13	17.8
NC	4	1.7	2	2.7
WC	23	9.8	3	4.1
SN	6	2.6	6	8.2
HI	24	10.2	6	8.2
WH	1	0.4	0	0.0
SI	1	0.4	0	0.0
SC	3	1.3	2	2.7
BN	95	40.4	25	34.2
OT	3	1.3	4	5.5
DU	1	0.4	1	1.4
RL	3	1.3	4	5.5
RD	3	1.3	0	0.0
MS	29	12.3	5	6.8
totals	235	100.0%	73	99.8%

frequency restricted to Area A, (Lawson Opposed, Warminster Horizontal, Seed Incised, and Rice Diagonal), all types were represented in both areas. In terms of percentage frequency, Black Necked was by far the most prevalent type in both areas, accounting for 40.4% of the pottery in Area A, and 34.2% of the Area B material. A comparison of the other types, however, shows some interesting differences. In Area A, miscellaneous types were of second preference (12.3%), followed by Huron Incised (10.2%), and Warminster Crossed (9.8%). In Area B, the second most popular type was Pound Necked (17.8%), followed by Huron Incised and Sidey Notched (8.2% each). Miscellaneous types accounted for only a small part of the total in this area, compared to Area A (6.8%). Although there were no gross differences apparent, the differential distribution of many types suggested that certain types or groups of types might be related to particular hearths and/or middens. On the basis of these results, however, it was anticipated that the associations would be in terms of relative frequencies rather than presence or absence of specific pottery types in the hearth and midden areas.

In an attempt to quantify these relationships, the occurrence and frequency of each pottery type was determined for each midden and for an area within approximately a 2 metre radius of each hearth (the area of concentration was approximated by a 4 metre square, except in the case of linear hearth C, and was sufficiently accurate for the purposes of this analysis). It was anticipated that as the middens displayed bilateral symmetry with respect to individual hearths, there would be distinct clusters of sherds on either side of each hearth, reflecting two-family occupancy, as in the historic period (Tooker 1967:40). However, the distribution of material plotted around the hearths showed that it was concentrated at each end, with the central area on either side swept clear (Fig. 5). Though attesting to 2-family occupancy, this also indicated that as the sherds from each area had been mixed together, the comparison of hearths would yield only basic information concerning possible social affiliations among families. This was necessary to the analysis, however, in order to determine the relationships between the hearths and the wall middens. Middens could be expected to reflect the ceramic makeup of the individual living areas from which they were derived. To illustrate activity relationships between wall middens and hearths, a flow diagram was prepared in which trends toward increasing sherd density were represented by arrows. The diagram (Fig. 3) showed that 'pathways' of higher rim density linked middens with the hearths between middens.

The total rim frequency and number of types present around each hearth decreased steadily down the length of the house from west to east (Table VIa). Although the distribution of rimsherds through the excavation levels indicated that only a single occupation zone was present in House 2 (Fig. 6), this evidence suggested that the hearths at the east end of the structure (E-G), may have been utilized for only a brief period(s) of time. Alternately, the low rim density at the east end of the house may have represented continual utilization throughout the house's occupation by only a few people, perhaps for specialized purposes, or perhaps only during the winter months when the people returned from the summer out-camps. The small size of the middens in the east end indicates that the paucity of rims does not relate to greater house-cleaning efficiency. A plot of the distribution of sherds around each

Fig. 3
Rim Density Flow Diagram

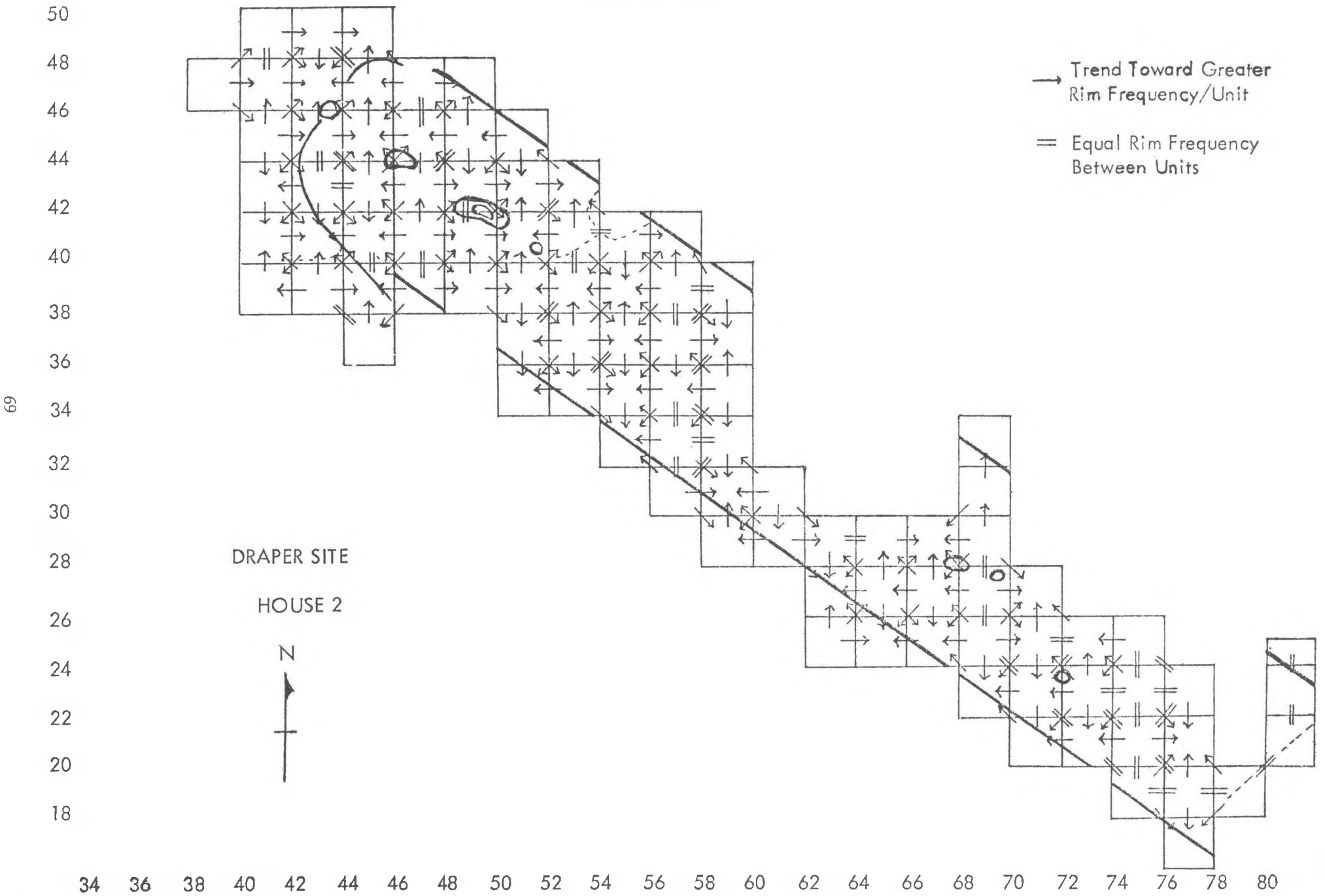


Table VIa Pottery Type — Hearth Associations

	hearth													
	A		B		C		D		E		F		G	
type	f	%	f	%	f	%	f	%	f	%	f	%	f	%
LO	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LI	3	9.4	2	10.0	2	7.7	1	5.6	0	0.0	0	0.0	0	0.0
PN	0	0.0	2	10.0	4	15.4	1	5.6	1	16.7	0	0.0	0	0.0
NC	1	3.1	0	0.0	0	0.0	0	0.0	0	0.0	1	33.3	0	0.0
WC	3	9.4	2	10.0	1	3.8	0	0.0	0	0.0	0	0.0	0	0.0
SN	0	0.0	0	0.0	1	3.8	2	11.1	0	0.0	0	0.0	0	0.0
HI	7	21.9	1	5.0	2	7.7	2	11.1	1	16.7	0	0.0	0	0.0
WH	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SI	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SC	1	3.1	1	5.0	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0
BN	10	31.3	6	30.0	11	55.6	10	55.6	2	33.3	2	66.7	1	50.0
OT	1	3.1	1	5.0	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0
DU	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
RL	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
RD	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MS	6	18.8	5	25.0	5	19.2	2	11.1	0	0.0	0	0.0	1	50.0
totals	32	100.8%	20	100.0%	26	99.8%	18	100.1%	6	100.1%	3	100.0%	2	100.0%

Table VIb Pottery Type — Midden Associations

	SM midden													
type	1		2		3		4		5		6		7	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
LO	2	9.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LI	1	4.5	1	5.6	2	13.3	2	22.2	0	0.0	0	0.0	1	9.1
PN	1	4.5	3	16.7	1	6.7	2	22.2	4	23.5	4	40.0	2	18.2
NC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
WC	0	0.0	2	11.1	0	0.0	0	0.0	2	11.8	0	0.0	1	9.1
SN	0	0.0	0	0.0	0	0.0	0	0.0	3	17.6	0	0.0	1	9.1
HI	1	4.5	1	5.6	1	6.7	0	0.0	1	5.9	1	10.0	0	0.0
WH	0	0 0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SI	1	4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SC	1	4.5	0	0.0	0	0.0	0	0.0	0	0.0	1	10.0	0	0.0
BN	10	45.5	8	44.4	10	66.7	4	44.4	6	35.3	3	30.0	5	45.5
OT	1	4.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
DU	0	0 0	0	0.0	0	0.0	0	0.0	1	5.9	0	0.0	0	0.0
RL	0	0.0	0	0.0	1	6.7	0	0.0	0	0.0	0	0.0	1	9.1
RD	2	9.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
MS	2	9.1	3	16.7	0	0.0	1	11.1	0	0.0	1	10.0	0	0.0
totals	22	99.8%	18	100.1%	15	100.1%	9	99.9%	17	100.0%	10	100.0%	11	100.1%

	NM midden									
type	1		2		3		4		5	
	f	%	f	%	f	%	f	%	f	%
LO	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LI	4	8.7	0	0.0	0	0.0	0	0.0	1	25.0
PN	2	4.3	0	0.0	3	37.5	0	0.0	0	0.0
NC	2	4.3	0	0.0	0	0.0	0	0.0	0	0.0
WC	11	23.9	1	7.7	1	12.5	0	0.0	0	0.0
SN	3	6.5	0	0.0	0	0.0	0	0.0	0	0.0
HI	6	13.0	2	15.4	1	12.5	3	60.0	0	0.0
WH	0	0.0	0	0.0	0	0.0	1	20.0	0	0.0
SI	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
SC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
BN	11	23.9	7	53.8	3	37.5	1	20.0	2	50.0
OT	0	0.0	1	7.7	0	0.0	0	0.0	0	0.0
DU	0	0.0	1	7.7	0	0.0	0	0.0	0	0.0
RL	0	0.0	0	0.0	0	0.0	0	0.0	1	25.0
RD	1	2.2	0	0.0	0	0.0	0	0.0	0	0.0
MS	6	13.0	1	7.7	0	0.0	0	0.0	0	0.0
totals	46	99.8%	13	100.0%	8	100.0%	5	100.0%	4	100.0%

hearth through the excavation levels showed hearths B, C, and D to be contemporaneous in their occupation. Hearth E appears to have been established at about the same time as those in Area A, but was abandoned long before the others, for reasons unknown. The occupation of hearth F overlaps that of E. After it fell into disuse, hearth G was built, and used for a very short period of time prior to the termination of occupation of the longhouse. Hearth A, a well developed feature, through which the end wall-trench of the house had been dug, obviously belongs to an earlier structure lying beneath House 2. That it appears to be largely contemporaneous with hearth B results from the mixing of material from the midden above it (NM1) with its upper levels (Fig. 7a-b).

It may appear from the graph that there is a hiatus in the occupation at about levels 7 8; however the ceramic material from the lower levels came from garbage filled pits dug in the floor, and displacement of material through foot traffic and natural processes.

An examination of the distribution of the various types upwards through the excavation levels showed some interesting trends which may be indicative of stylistic change in ceramics through the period of occupancy of Structure 2 (Fig. 6). As can be seen from the graph, Black Necked and Pound Necked material tended to concentrate toward the lower levels as did Sidey Notched and Sidey Crossed, while Huron Incised, Lawson Incised, and the miscellaneous types increased in frequency closer to the surface. This is of interest in light of Wright's observation that the decrease in popularity through time of Black Necked type was accompanied by an increase in Huron Incised (Wright 1966:71). Warminster Crossed on the other hand, had a relatively uniform distribution throughout the excavation levels.

Considerable differences in the percentage frequencies of the various pottery types present around the hearths were noted. Although Black Necked was present in the highest frequency in all but one of the six hearth areas, the less common types showed variations in occurrence and frequency which suggest that there may have been complexes of preferred types related with specific residence locations. These could not be determined from the mixed samples of the hearth areas, but might be determined through a study of the related midden deposits.

In an attempt to determine the strength of relationship among the hearths, middens, and combinations thereof, statistical tests of association were applied to the data. The main technique employed was the coefficient of similarity (c.f. Robinson 1951; Brainerd 1951). Although this procedure has long been recognized for its usefulness in the seriation of Ontario Iroquois sites (c.f. Emerson 1968), it has not preveiously been employed in this area to determine the spatial relationships among ceramic assemblages, or at a level other than that of inter-site comparison (though a similar study of lithic assemblages was performed in the southern United States – see Johnson 1967). The rationale for its use in spatial analysis is that in House 2, where the effect of temporal change on the ceramics can for all intents and purposes be considered nonexistent, and where a well defined areal distribution is demonstrable, all differences expressed by the coefficients will be expressions of spatial association (A.E. Tyyska personal communication). Though not allowing as detailed comparisons to be made as other methods such as nearest neighbour analysis (Whallon 1974), which would have to have been computerized in order to handle the large quantity of data, it is considered sufficient for the purposes of this preliminary analysis.

The coefficients of similarity for the hearths are presented in Table VIIa. When ordered by the double link clustering technique (Renfrew and Streud 1969), the hearths were found to bear relatively strong linear relationships, indicative of their over-all basic affinity. However, two clusters of hearths could be distinguished, one consisting of hearths C and D (coefficient of similarity 130), the other of B and A (included to demonstrate the degree of continuity between House 2 and the one beneath it) with a coefficient of 120.7. The A–B cluster was relatively closely related to the C–D cluster at a third order of magnitude, and F with D at the fourth. Hearths E and G were less closely related to the main clusters, E with C, and G with B. It is interesting to note the very low indices of correlation among the three hearths at the east end of the structure (Fig. 8).

Table VIIa Coefficients of Similarity – Hearths

	A	B	C	D	E	F	G
A	–	120.7	101.7	96.7	112.1	69.5	20.7
B	120.7	–	114.0	93.2	109.4	60.8	67.5
C	101.7	114.0	–	130.0	112.8	104.6	32.0
D	96.7	93.2	130.0	–	100.0	111.2	33.3
E	112.1	109.4	112.8	100.0	–	71.6	35.0
F	69.5	60.8	104.6	111.2	71.6	–	0.0
G	20.7	67.5	32.0	33.3	35.0	0.0	–

While groups of seemingly related hearths could be roughly defined, little information was to be gained concerning possible residential affiliations of the ceramics, due to the degree of mixing of material from the living areas around the hearths. This mixing was reflected in the overall low correlations among hearths.

The wall middens, however, showed more significant correlations with one another, both positive and negative (Table VIIb). As mentioned above, their symmetrical

Fig. 4
Location of Hearth and Midden Areas

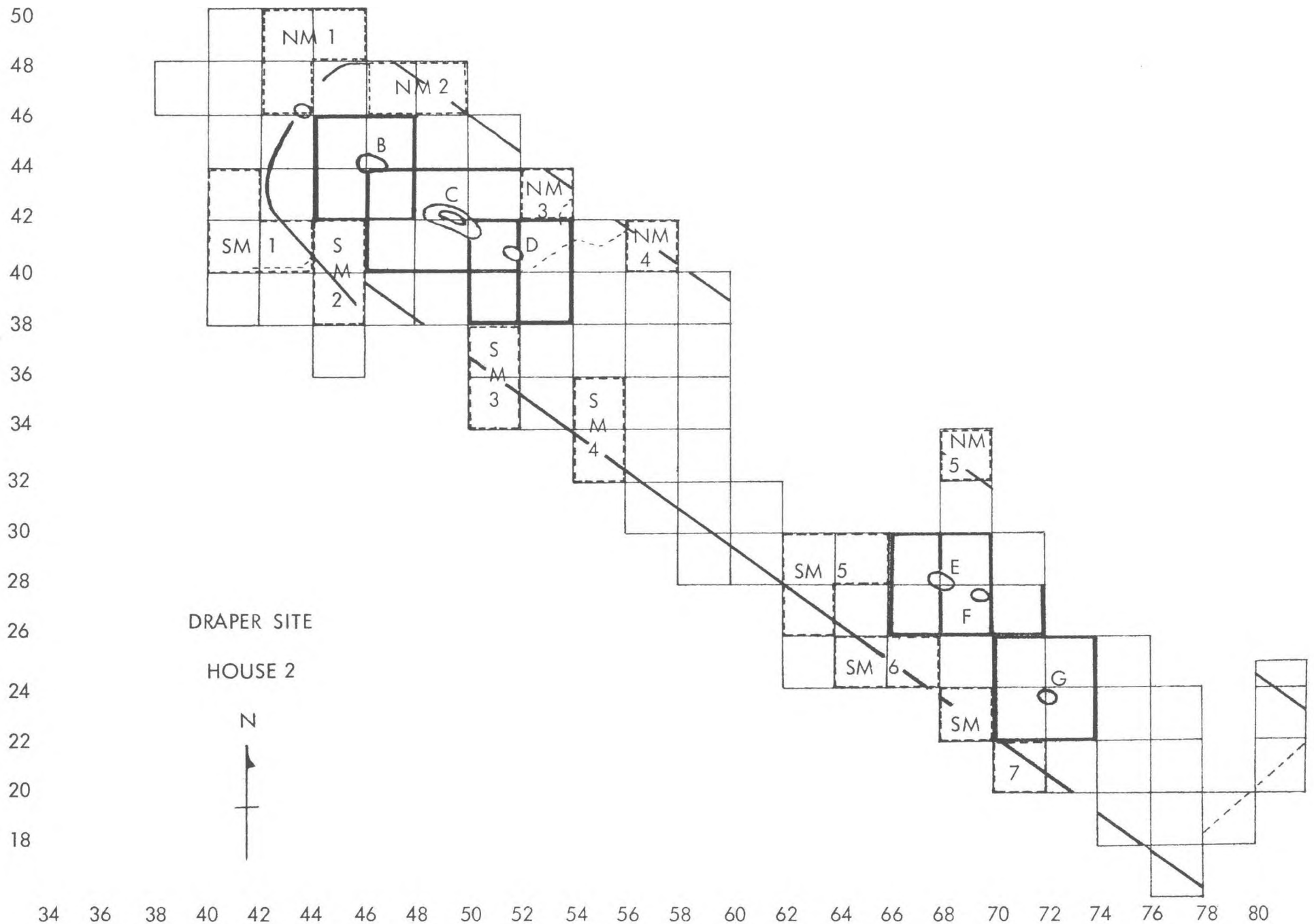


Fig. 5

Distribution of Pottery in Hearth Areas

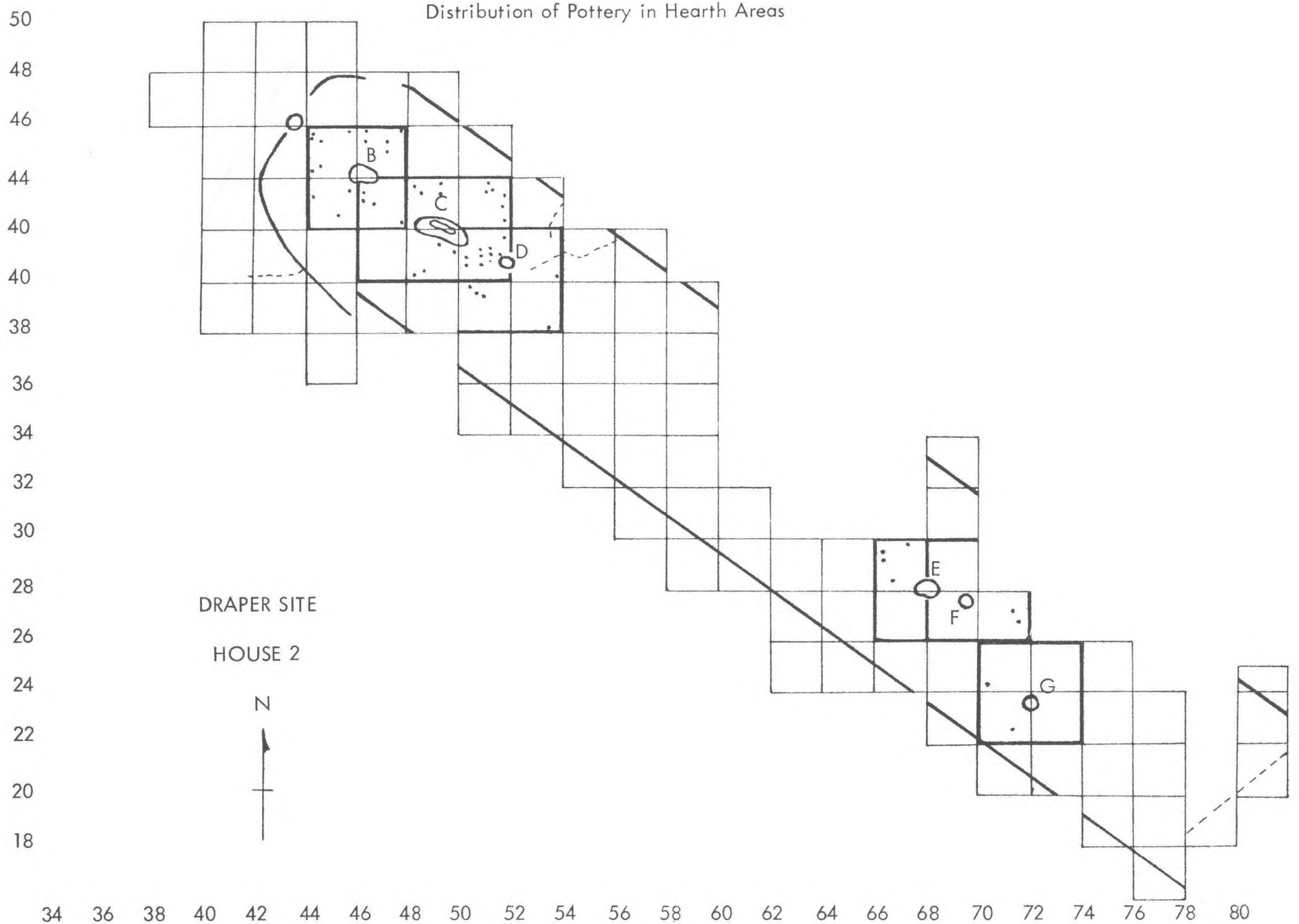


Fig. 6
Distribution of Pottery Types Through Excavation Levels

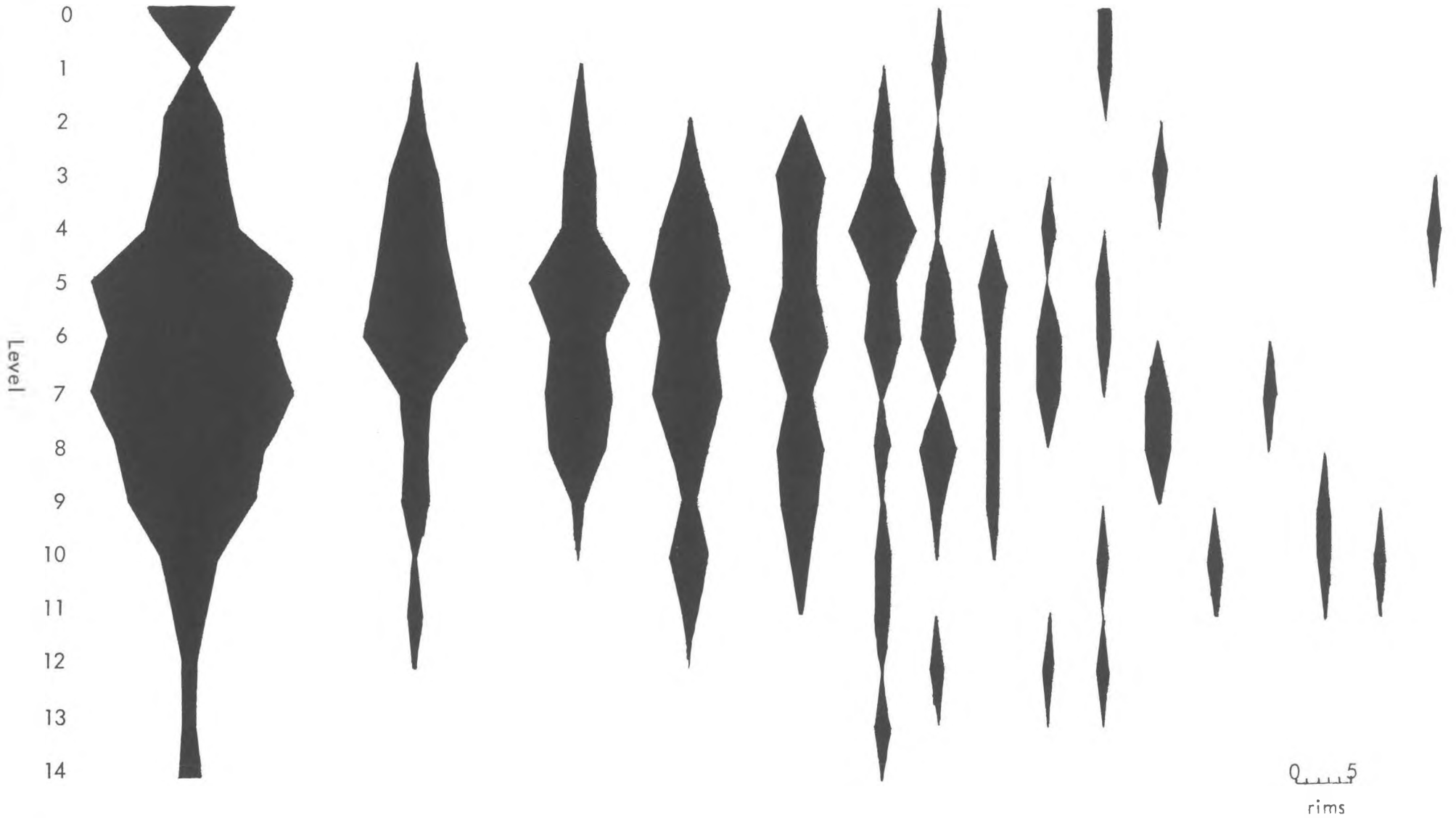


Fig. 7A

Distribution of Ceramics in Each Hearth Area Through Excavation Levels

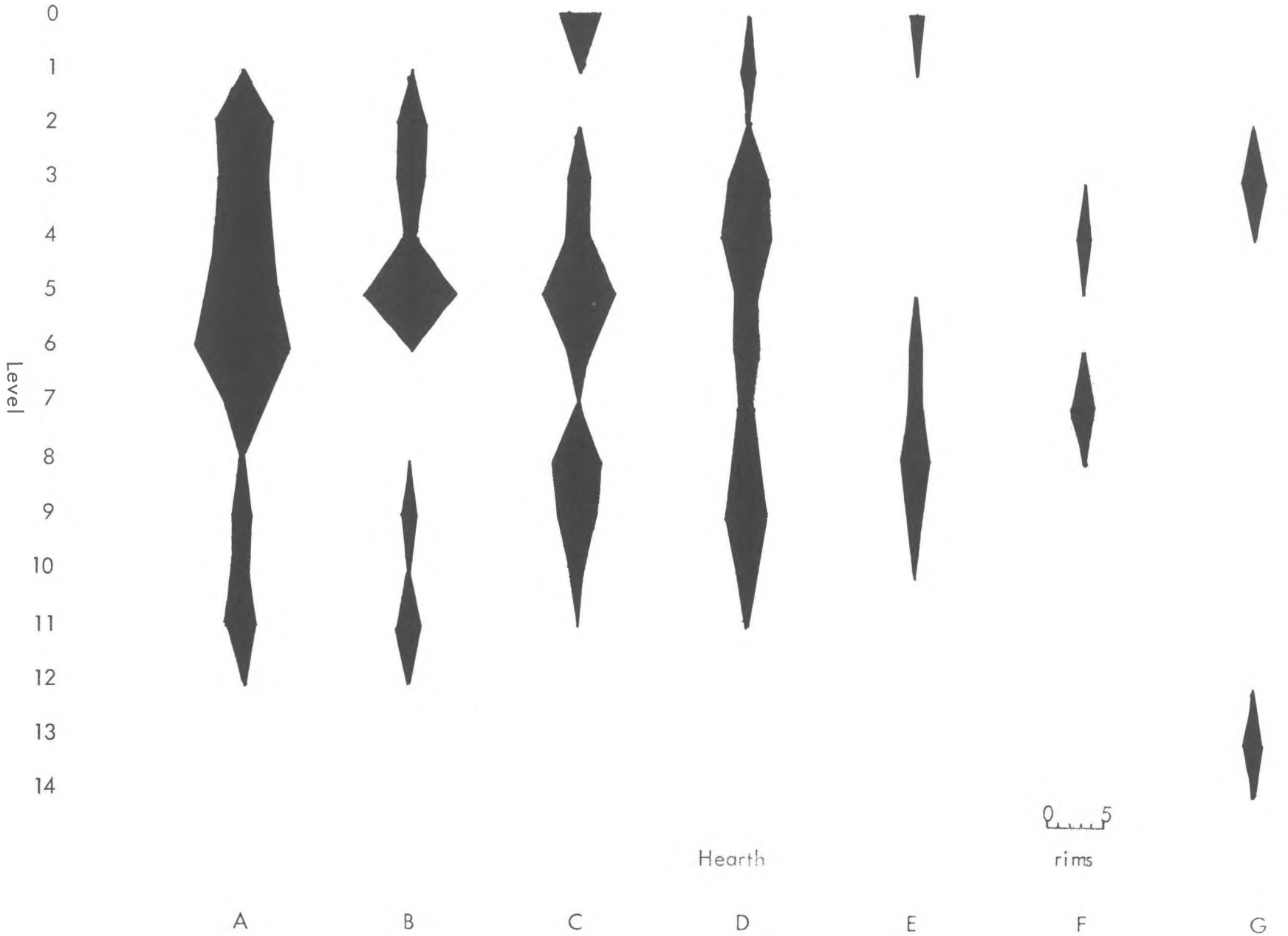
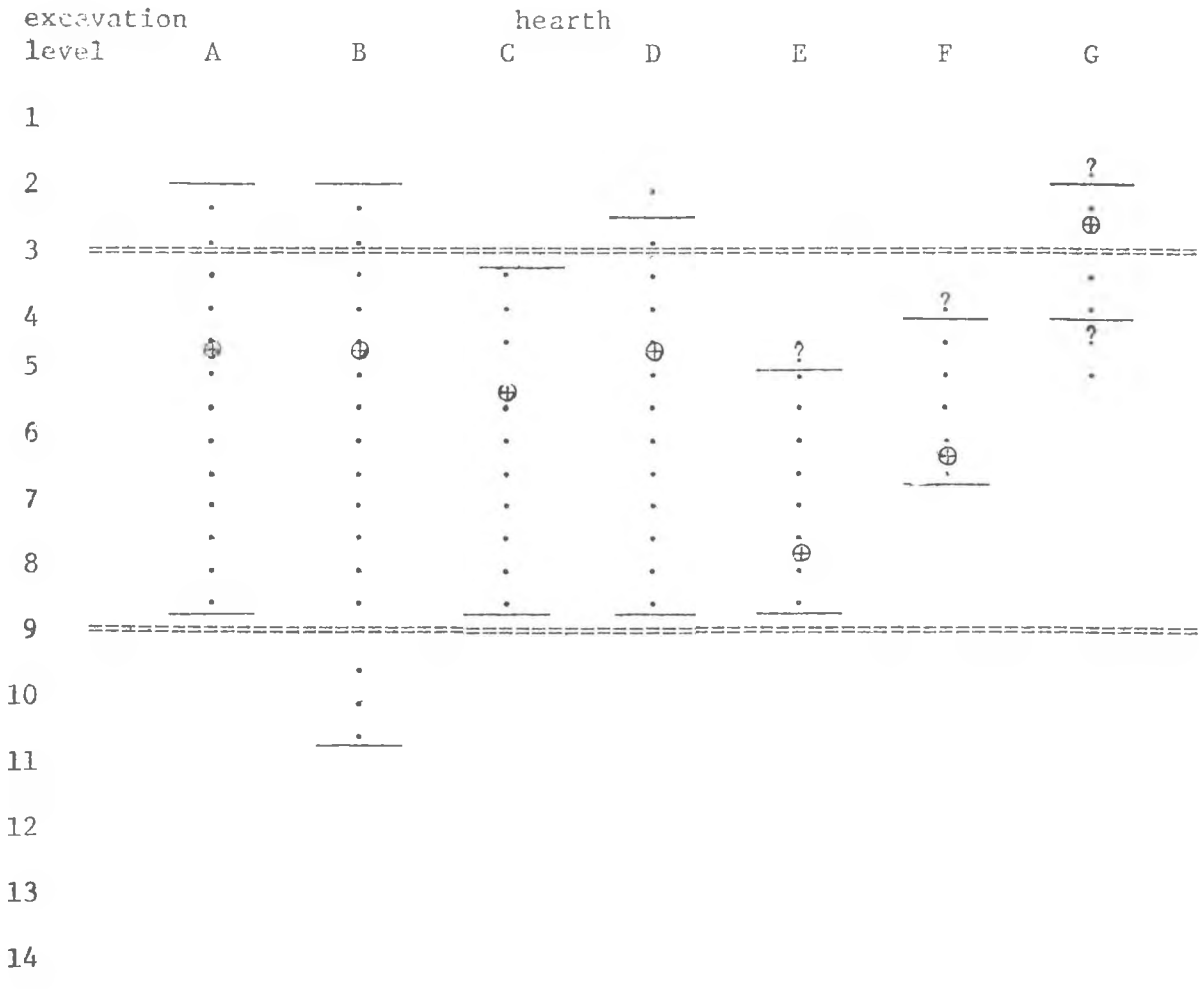


FIGURE 7B - SCHEMATIC DIAGRAM OF HEARTH OCCUPATION LEVELS



==== upper and lower limits of occupation level in House 2 (10 & 90% of total ceramic assemblage)

____ approximate upper and lower limits of hearth occupation levels (10 & 90% of each hearth complement, excluding surface material)

⊗ 50% cumulative of ceramics around each hearth

Table VIIb Coefficients of Similarity — Middens

	NM 1	2	3	4	5
NM1	—	89.2	100.5	82.2	78.8
2	89.2	—	110.6	70.8	100.0
3	100.5	110.6	—	52.5	87.5
4	82.2	70.8	52.5	—	40.0
5	81.4	100.0	87.5	40.0	—
SM1	78.8	109.0	96.5	49.0	100.0
2	101.0	115.4	141.8	51.2	116.3
3	87.2	121.0	120.2	53.0	140.0
4	73.8	88.8	131.9	40.0	133.2
5	104.8	106.0	153.2	51.8	70.6
6	76.4	105.4	157.5	70.0	87.0
7	112.0	106.4	142.1	40.0	127.5

	SM 1	2	3	4	5	6	7
NM1	78.8	101.0	87.2	73.8	104.8	76.4	112.0
2	109.0	115.4	121.0	88.8	106.0	105.4	106.4
3	96.5	141.8	120.2	131.9	153.2	157.5	142.1
4	49.0	51.2	53.4	40.0	51.8	70.0	40.0
5	100.0	116.3	40.0	133.2	70.6	70.0	127.5
SM1	—	115.8	118.0	106.8	88.6	87.0	109.0
2	115.8	—	124.6	134.5	137.4	104.6	151.6
3	118.0	124.6	—	128.8	95.8	73.4	136.0
4	106.8	134.5	128.8	—	115.0	104.4	143.4
5	88.6	137.4	95.8	115.0	—	118.8	143.4
6	87.0	104.6	73.4	104.4	118.8	—	96.4
7	109.0	151.6	136.0	143.4	143.4	96.4	—

Table VIIc Coefficients of Similarity — Hearths/Middens

	hearths A	B	C	D	E	F	G
NM1	116.9	103.8	96.7	102.7	82.4	57.5	13.0
2	111.5	86.4	107.6	129.8	112.8	107.6	0.0
3	112.9	110.0	125.9	108.4	125.0	75.0	0.0
4	103.4	60.0	75.4	62.4	73.4	40.0	0.0
5	91.0	80.0	100.0	111.2	66.6	100.0	0.0
SM1	93.7	115.0	111.6	136.2	102.6	95.5	0.0
2	104.5	131.2	145.4	122.4	111.2	88.8	0.0
3	95.6	120.8	126.6	147.0	93.3	133.4	49.9
4	82.1	50.0	130.8	158.1	116.7	88.8	0.0
5	93.9	110.0	128.4	122.3	89.6	70.6	50.0
6	86.9	100.0	116.2	112.3	111.2	70.0	0.0
7	108.8	130.5	149.0	133.6	96.0	100.1	0.0

arrangement down the length of the house showed that they were related to specific hearth living areas, and had accumulated during house cleaning activities. The relationships were invariably clear, however, especially in the east area, where three high density concentrations merged together along the south wall, and the north wall had only been partially exposed. In order to qualify the relationships, the coefficients of similarity were calculated for each hearth and midden combination (Table VIIc). This did not clarify the problem, however, but emphasized the inherent similarity of ceramic distribution across the floor, and each coefficient had to be divided by a proximity factor (the distance between the hearth and midden being compared— (see Table VIIIb)[1] in order to compensate for this. The resultant proximity index for each hearth and midden is presented in Table VIIIa. As anticipated, most of the middens have close associations with the hearth living areas adjacent to them (Fig. 9). In the rare instances where one midden appears to have been utilized by two groups, as in the case of NM3 and SM2, very close affiliation between the two is inferred. The associations of hearths and middens in Area B is still not clear, though it appears that concentration SM6 is most closely related to hearth E, and NM5

Table VIIIa Index of Association — Hearths & Middens

	A	B	C	D	E	F	G
NM1	58.5	23.6	12.1	8.9	2.6	1.7	0.4
2	25.3	19.7	18.6	14.4	4.0	3.6	0.0
3	11.3	14.9	27.4	28.5	5.8	3.3	0.0
4	7.3	5.3	9.4	15.6	3.4	1.7	0.0
5	3.2	3.1	4.5	6.0	14.5	21.7	0.0
SM1	18.7	27.4	17.7	14.8	3.6	3.1	0.0
2	16.3	31.2	31.6	18.8	4.3	3.2	0.0
3	7.4	11.8	17.3	33.4	5.1	6.6	2.1
4	4.8	3.5	12.2	21.4	8.3	5.6	0.0
5	3.5	4.5	6.2	7.2	17.9	10.4	5.3
6	2.9	3.7	5.0	5.7	30.9	14.0	0.0
7	3.2	4.2	5.4	5.5	19.2	20.0	0.0

Table VIIIb Feature — Feature Distance (Metres)

	hearths A	B	C	D	E	F	G
NM1	2.0	4.4	8.0	11.5	31.6	33.2	36.2
2	4.4	4.4	5.8	9.0	28.4	30.0	34.4
3	10.0	7.4	4.6	3.8	21.4	22.8	27.2
4	14.2	11.4	8.0	4.0	21.4	23.0	22.8
5	28.4	25.8	22.0	18.4	4.6	4.6	9.2
SM1	5.0	4.2	6.3	9.2	28.4	30.4	33.8
2	6.4	4.2	4.6	6.5	25.6	27.4	31.2
3	13.0	10.2	7.0	4.4	18.2	20.2	23.6
4	17.0	14.2	10.7	7.4	14.0	15.8	19.2
5	27.2	24.2	20.6	17.0	5.0	6.8	9.4
6	30.0	27.0	23.4	19.8	3.6	5.0	6.6
7	34.2	31.4	27.8	24.2	5.0	5.0	3.0

[1] The proximity factor converts the coefficients of similarity from an independent variable to one dependent on the distances between hearths and middens. It was developed to aid in determining the differential relationships of hearths and middens when the variable of distance (or proximity) was introduced.

and SM7 with the north and south living areas of hearth F respectively. The relationships of hearth G remain unclear.

The contents of the middens were compared with one another, revealing statistical associations which could be inferred to represent relationships among the living areas from which they were derived. From the contents of the wall middens, 12 groups (i.e. 'families' or 'women') could be recognized, living on the north and south sides of hearths A, B, C, D, F, and a probable but unrecognized hearth located in the central area of the house, either in the unexcavated area (see Hayden: this volume), or among the ash-filled pits and post-molds on the edge of this area (which from the midden locations would seem more probable). Hearth E appears to have had only a single resident family, apparently on the south side near the midden, though this is unclear from the distribution of sherds around the fireplace (Fig. 10).

Two groups of most similar families were identified: family 3, on the north side of hearth C, and family 9 of hearth E; and families 4 and 11, on the south sides of hearths C and F respectively. These each have coefficients of over 150 (75% similarity). Families 3 and 4 relate with one another at the 140 coefficient level (70% similarity), and 8 is associated with 11 but not with 4. Families 3 and 5 (the latter north of hearth D), and 4 and 2 (south of B) appear to have shared middens NM3 and SM2 respectively, suggesting close familiar relationships between them.

Families 6 and 10 have second order (140 level) relationships with each other, but appear unrelated to the others. Families 1, 12, and 7 (the latter occupying with family 8 the 'hearth' in the central area) all have low coefficients of similarity with each other and the other family groups.

If coefficients of similarity above the 150 level are assumed to represent samples derived from the same population (see Emerson 1968•81; Ramsden n.d.), eight family groups can be postulated: 1; 3, 5 & 9; 2, 4 & 11; 6; 7; 8; 10; and 12. The high correlation between the 3–5–9 group and the 2–4–11 group (about 140), is probably indicative of second order familiar relationship. The same applies for families 11 and 8 and 6 and 10, resulting in a reduction in the number of separate lineages to five.[2]

The patterning of ceramics in the 3–5–9 and 2–4–11 groups appears to represent matrilocal residence groups, assuming that coefficients of similarity greater than 150 represent shared learning experience between the two females, i.e. that they are sisters, and that coefficients between, say, 140 and 150, represent the motif complex of a daughter, which could be expected to differ slightly from that of her mother due to the influences of stylistic change (c.f. Deetz 1965).

Table IX Pottery types Associated with Living Areas (in order of preference)

Living Area	type	Living Area	type
1	BN	7	HI
	HI		BN,WH
	WC,OT,DU,MS		
		8	BN
2	BN		LI,PN
estimated	PN,MS		MS
	WC		
	LI,HI	9	PN
			BN
3	BN,PN		HI,SC,MS
	WC,HI		
		10	BN
4	BN		LI,RL
	PN,MS		
	WC	11	BN
	LI,HI		PN
			LI,WC,SN,RL
5	BN,PN		
estimated	WC,HI	12	?
6	BN		
	LI		
	PN,HI,RL		

[2]Although inferences extracted from the data beyond these tentative conjectures are even more fraught with uncertainty and logical gymnastics, it is tempting to try for a further extension of the interpretation. Interpreting the data as above, Women at locations 9 and 3, (and probably 5 as well, though the relationship is not clear) could be considered sisters of the first generation, and 4, 11, and probably 2, daughters of Woman 3. Woman 8, related to 11 but not to 4, may be the daughter of that woman, in a third generation.

It is interesting to note that hearth E was occupied as early as but not before hearths B,C, and D, and abandoned early for some reason (hence the interpretation that Woman 9 is of the eldest generation), and that hearth F, where 11 resided, was slightly later than E. It is possible that Woman 9 and 3 are one and the same, and that she moved to the west end of the house to occupy hearth C with her daughter. A slight stylistic-temporal difference could explain why 3 and 11 are closely related, yet 9 and 11 are not. This could be extended into the third generation as well (see Fig. 11b). The fact that in each instance the members of the elder generation of this family resided north of the hearth, and those of the younger generation to the south, is perhaps pertinent, for it would tend to indicate a culturally controlled behaviour pattern, possibly based on age or status, governing residence. This could hold true for families 6 and 10 as well, though the evidence is somewhat tenuous.

Some evidence of possible stylistic elaboration is present, in the number of types present in the two generations of family 3–4. In the former, only four types, Black Necked, Pound Necked, Warminster Crossed, and Huron Incised, were present. In the latter, this same basic core group was retained, but Lawson Incised and miscellaneous types were added (Table IX). A similar situation held true for families 10 and 6; the former had only three types, Black Necked, Lawson Incised, and Roebuck Low Collar, whereas in 6 the complement had been increased to five with the addition of Pound Necked and Huron Incised. This suggests that 10 may have been ancestral to family 6, the younger generation being characterized by a slightly greater diversity of pottery types.

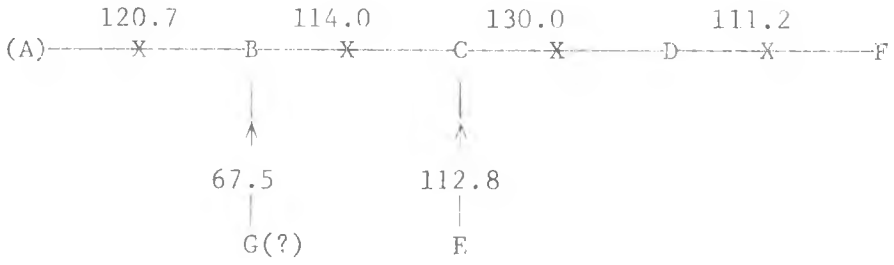


Fig. 8 Schematic diagram of hearth relationships.

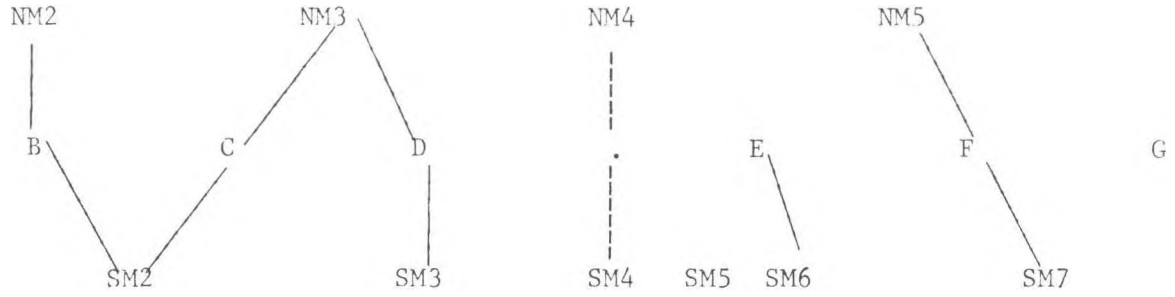


Fig. 9 Schematic diagram of hearth–midden relationships (based on indicies of association).

Most of the hearth residential areas, with the exception of family 7, are related with one another above the 50% level. This indicates all shared the same basic repertoire of types, which would suggest the possibility that the household was composed of members of a supra-family group such as a clan. Basic groups of types ran through the families (the Black Necked, Pound Necked, Huron Incised group in the 9–3–4 family group, the expanded repertoire of 4–11 of Black Necked, Pound Necked. Warminster Crossed and Lawson Incised, and the Black Necked, Lawson Incised, Roebuck Low Collar combination of 6 and 10), and were not exclusive to any one lineage. There were, however, differences in frequency of occurrence, emphasizing once again the basic relationships of the families to one another.

The two large dump areas outside the west end of the structure had only low correlations (few over 50%) with the wall middens, indicating that mixing was taking place. It appears that these were communal repositories, used, unlike the small sweeping middens, by more than one family, suggesting that two patterns of garbage disposal, one restricted to the sweeping away of material from the family living area, the other involving active transport of material outside of the house into designated areas, were present. Thus there were two optimally efficient solutions (one large scale and one small scale) in dealing with problems of garbage disposal.

The spatial distribution of the castellations was of interest, although with such a small sample it was difficult to draw any concrete conclusions from it. There is a definite tendency for the castellations to cluster; 81.6% were associated with the hearths and middens, and only 18.4% were found on the floor. Of the former, 22.4% were within the hearth areas, and 59.2% were found in middens. The distribution of the castellations, too, indicates a non-random pattern of garbage disposal (Table III, Fig. 12).

There are some interesting associations of castellation types with hearths which undoubtedly relate to the distribution of pottery types. The Round castellation was associated exclusively with hearth A, the Developed Pointed type with hearth B, the Pointed type with C, and Developed Rounded with hearth D. The Scalloped lip

Fig. 10

Family Living Areas

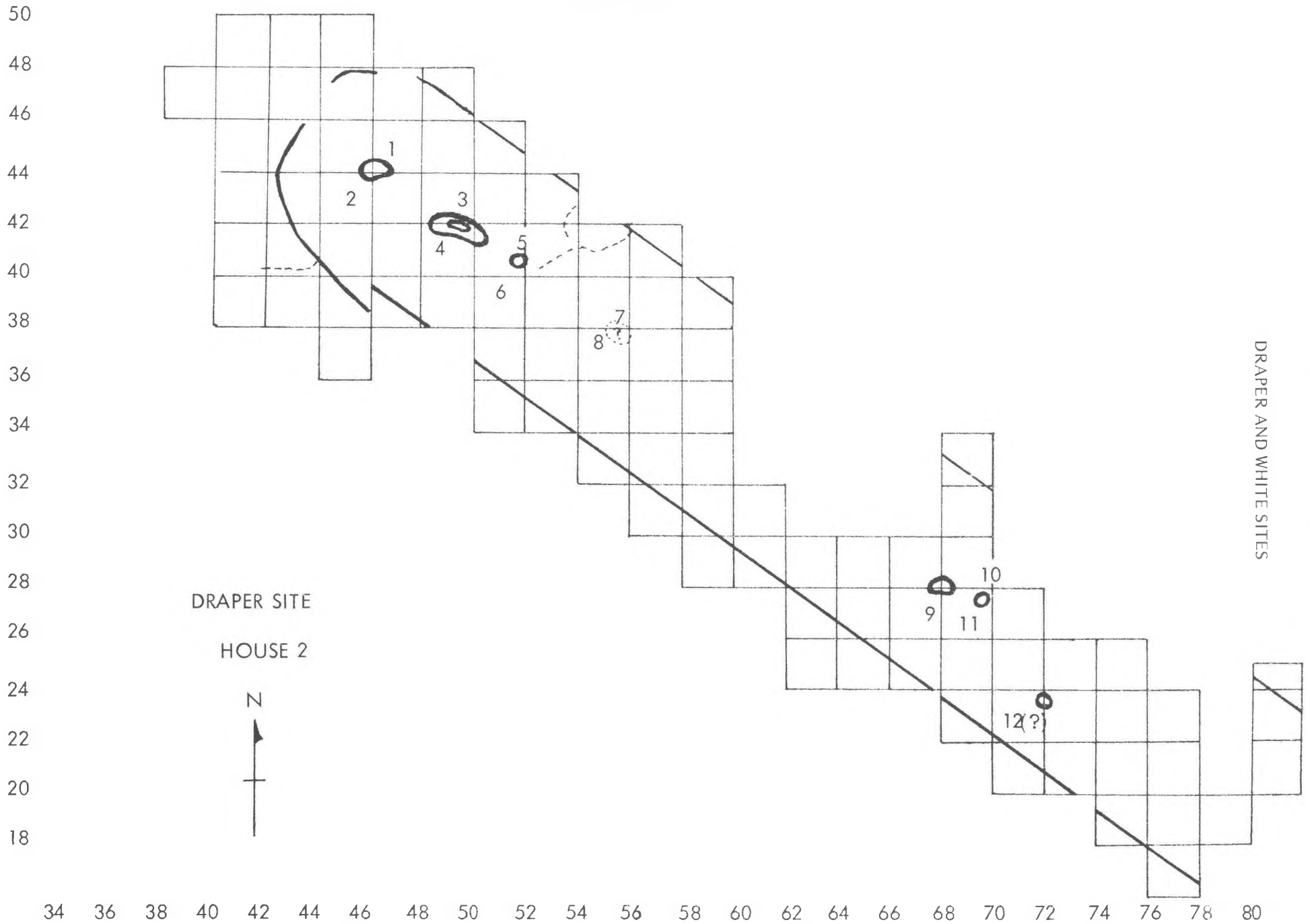


FIGURE 11A - SCHEMATIC DIAGRAM OF MIDDEN RELATIONSHIPS

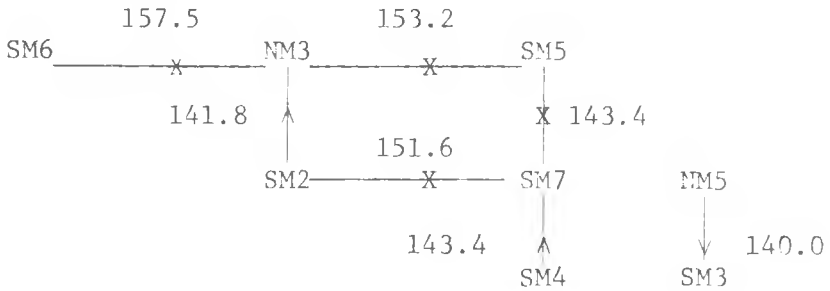
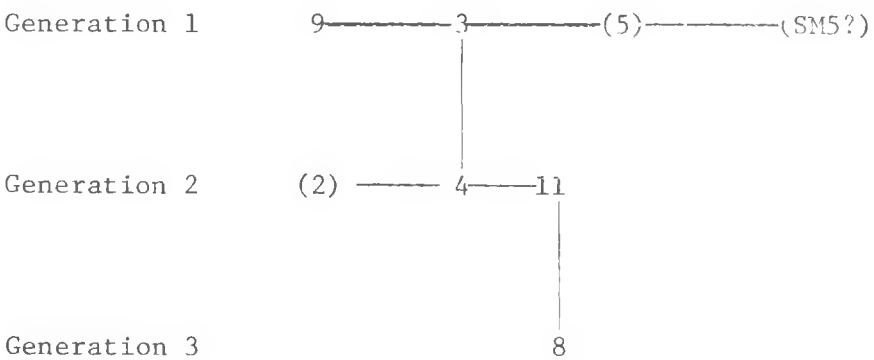


FIGURE 11B - SCHEMATIC DIAGRAM OF LINEAGE RELATIONSHIPS



(12)

7

1

10—6

Fig. 12

Distribution of Castellations

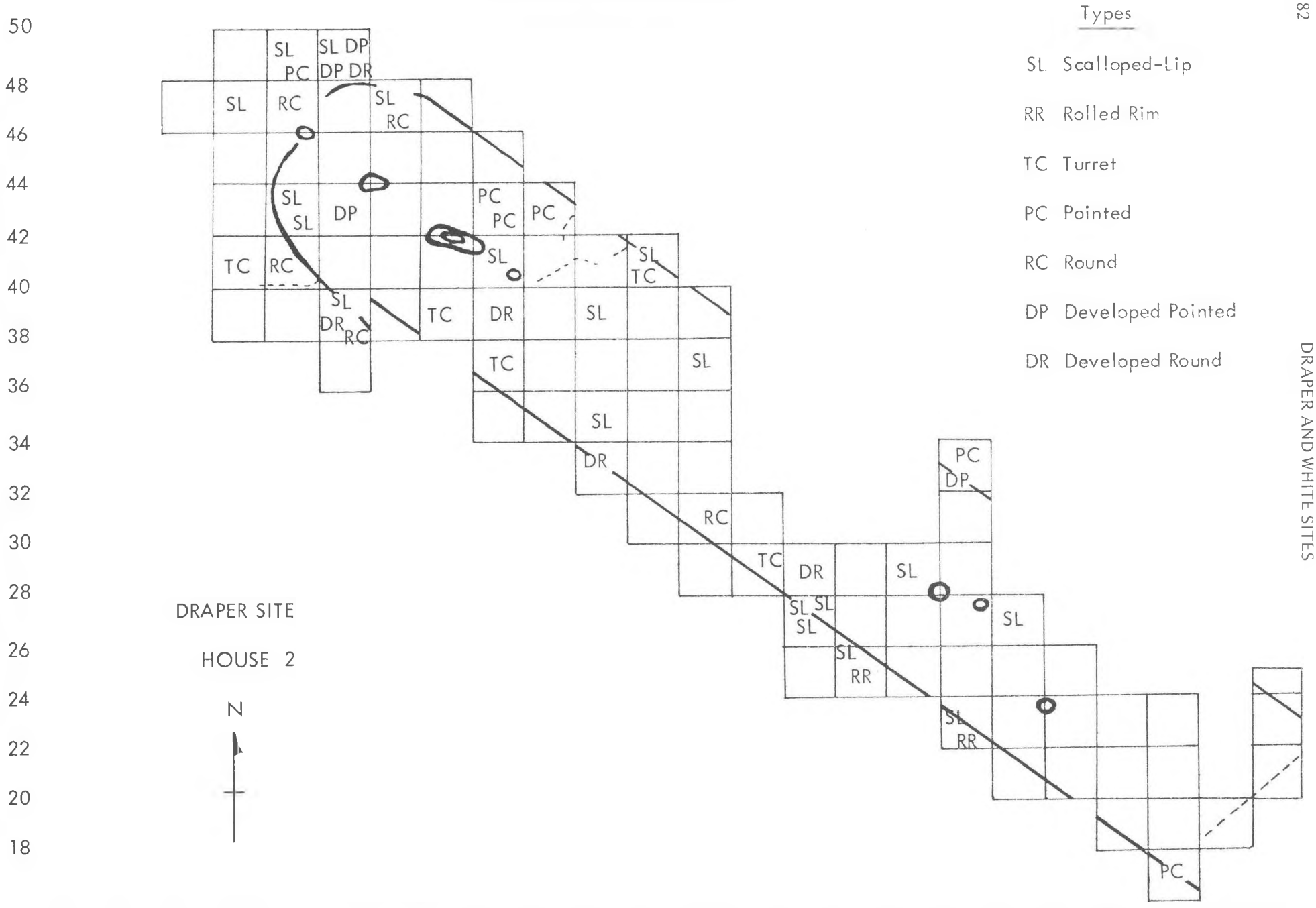
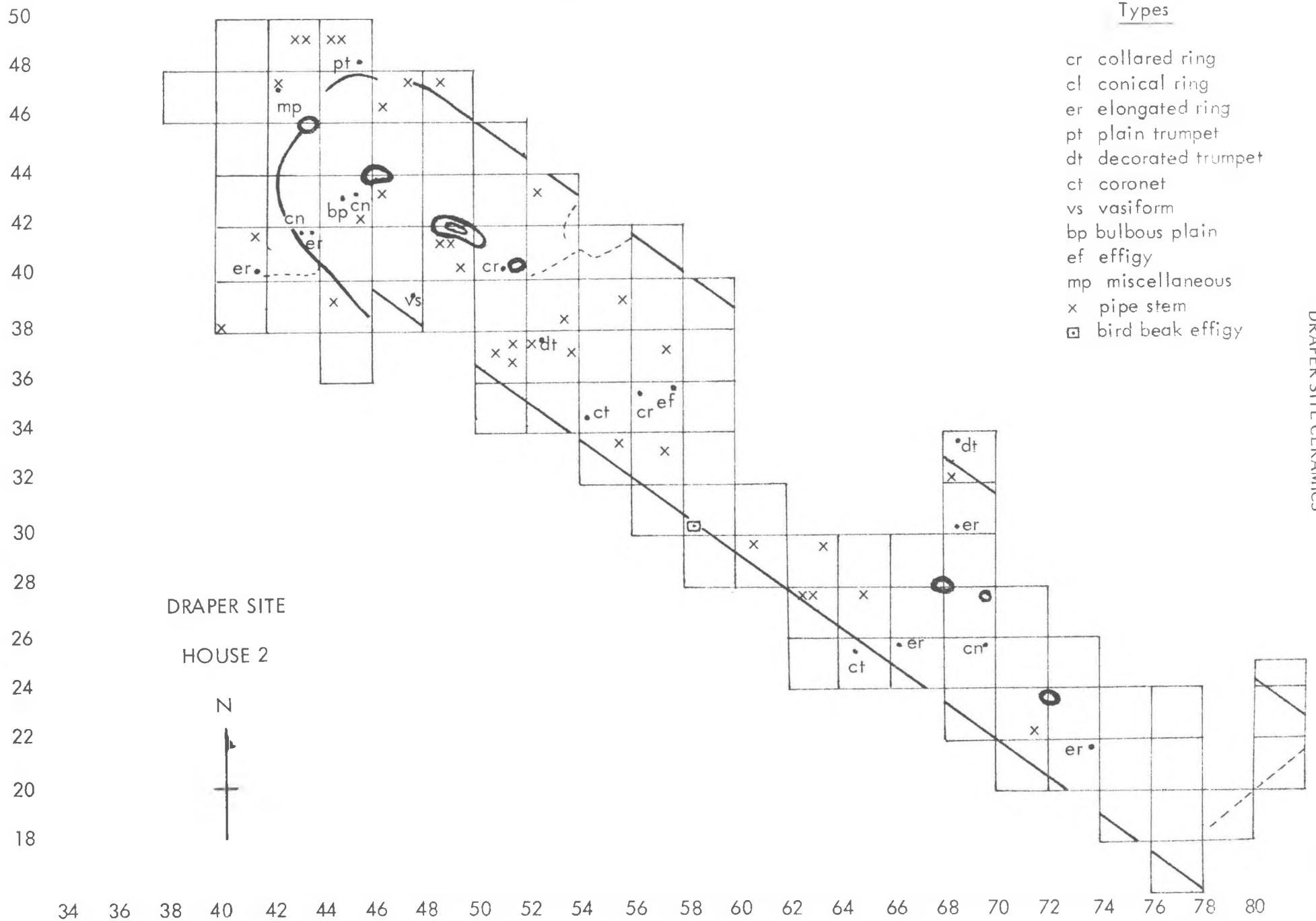


Fig. 13

Distribution of Pipes



castellation, a Draper Diagnostic (see Ramsden 1968), was present in the vicinity of hearths B, C, D, E, and F.

Among the middens, only those along the north wall of the house yielded Pointed and Developed Pointed varieties. Rounded castellations were restricted to the middens outside the house, and to NM2 and SM2 (although there were scattered occurrences of all three on the floor). The Rolled rim was exclusive to the east end of Structure 2. There were no apparent associations of types with specific hearths or families.

The distribution of pottery pipes within House 2 appeared to some extent to reflect patterns of male related activities. Of the 55 bowl, stem and mouthpiece fragments found, 50% were associated with the middens, 25.5% with the open floor area, and 23.6% with the hearths. 74.5% of the pipes were found toward the west end of the house, and only 25.5% in Area B, reflecting the same 3:1 ratio of distribution exhibited by the pottery. In each area there was a definite tendency for the pipes to occur in clusters on the south side of the hearth line, 69.1% occurring between the hearths and the south wall of the house. The pipes and stems were found to coincide with areas of bone, wood, and lithic manufacture (see Ferguson: this volume), while in areas of "food preparation" none were found. It is interesting to note that in the historic period, among the traditional male activities were chipped and ground stone implement manufacture, wood working, and bone working (Trigger 1969:36). The evidence of the pipes would tend to support the delineation of these activity areas. There were no recognizable associations with hearths or wall middens which would correlate with residential patterns (Table IV, Fig. 13).

One interesting aspect of the distribution of pipes was that a number of stem and bowl fragments were scattered on the periphery of the clear area east of hearth D, and that the only effigy pipe from the house, a crudely fashioned, possibly unfired, unidentifiable animal whose body formed the bowl and whose legs were represented by triangular arrangements of three small punctates, was found there as well. A well-modelled ceramic bird's beak which, while rather large to have been part of a pipe, may have been part of a dance mask, was discovered lying along the wall on the edge of this space. This evidence would tend to support the interpretation that the cleared space was a recreational area (see Ferguson: this volume).

In conjunction with the distributional analysis, a technological study of interior carbonization on the rims was performed. 48.5% of the rims in Structure 2 bore traces of utilization as cooking vessels. Of these, 20.8% were Black Necked, 7.1% Pound Necked, and 5.2% Huron Incised. It is interesting that only 3.6% of the miscellaneous rims were encrusted, suggesting, perhaps that some of these at least were trade vessels. Only three types, Lawson Opposed, Niagara Collared, and Seed Incised bore no evidence of having been used as cooking pots, and these were of very low frequency in the house (Table 10).

Besides typology, there are two ceramic indicators which shed light on the nature of Areas A and B; proportion of carbonized sherds in each area and the average sherd size in each area. If both areas are domestic residential areas, these indicators should be very similar for the two areas. If on the other hand, area B was non-residential, and used only for special occasions, one might reasonably expect differences.

Of the ceramics found in Area A, 43.8% were carbonized (this constituted 33.2% of the total ceramic assemblage in House 2). Twenty and four-tenths per cent of these were Black Necked, 6.0% Huron Incised, and 5.1% Pound Necked. This is quite different from the distribution in Area B, where 64.4% of the rims were carbonized. When the average sherd size is examined throughout the structure, (Figs. 14, 15) it is found that the mean size is exactly the same for both areas (2.6 cm average longest dimension). Moreover, in both areas, the larger sherds have a strong tendency to occur along the walls, and in the sweeping middens. It therefore appears that the two areas are very similar in terms of function and trampling activity. The greater proportion of sherds with carbon on them in the east end is interesting. The probable explanation for this skewing as well as the low concentrations of material at the east end of the house, is that it was not occupied continuously throughout the year. Ethnohistorians record that during the historic period the large Huron villages were largely depopulated from early spring till December, when the people were away at smaller hunting or fishing camps, or tending to the fields (Tooker 1967:71-72). That this part of the house was occupied only during the winter months would explain the low concentration of material present and greater use of hearths and cooking wares. In contrast, the western hearths seem to have had continual occupation by groups of people left behind. Perhaps these people were responsible for looking after the local fields and defending the village during the summer months. It is possible, too, that those individuals left behind when the others left in the spring moved to the upper end of the house until the fall. (If this was the case the possibility of determining familiar relationships on the basis of attribute analysis is doubtful.)

In any event, the above indicators certainly do not seem to support the notion of the east end serving only as an occasional ceremonial area. Of further interest regarding the sherd sizes, is the central corridor of activity (high rates of trampling), which continues out the northwest end, at the site of the postulated "doorway". Similar below average sizes occur at the formally recognized door around the northwest corner, and in the central section of the

Table X Carbonization on Rimsherd Interiors

	House 2		Area A			Area B		
type	f	%H2	f	%A	%A -H2	f	%B	%B -H2
LO	0	0.0	0	0.0	0.0	0	0.0	0.0
LI	7	2.3	6	2.6	1.9	1	1.4	0.3
PN	22	7.1	12	5.1	3.9	10	13.7	3.2
NC	0	0.0	0	0.0	0.0	0	0.0	0.0
WC	9	2.9	8	3.4	2.6	1	1.4	0.3
SN	6	1.9	3	1.3	1.0	3	4.1	1.0
HI	16	10.7	14	6.0	4.5	2	2.7	0.6
WH	1	0.7	1	0.4	0.3	0	0.0	0.0
SI	0	0.0	0	0.0	0.0	0	0.0	0.0
SC	2	1.3	1	0.4	0.3	1	1.4	0.3
BN	64	42.7	48	20.4	15.6	16	21.9	5.2
OT	4	2.7	1	0.4	0.3	3	4.1	1.0
DU	2	1.3	1	0.4	0.3	1	1.4	0.3
RL	5	3.3	1	0.4	0.3	4	5.5	1.3
RD	1	0.7	1	0.4	0.3	0	0.0	0.0
MS	11	7.3	6	2.6	1.9	5	6.8	1.6
totals	150	48.5%	103	43.8%	33.2%	47	64.4%	15.1%

%H2/%A/%B: proportion of carbonized rims to total rim sample of House 2/(n=308)/ Area A (n=235)/ Area B (n=73).
%A-/%B-H2. proportion of carbonized rims in each area to total House 2 rimsherd assemblage (n=308).

south wall, where posthole preservation was poor, and where there may well have been one or more entrances.

Examining the sherds with carbon deposits in more detail, it can be seen that no major type was expressly used for either cooking or storage. Different preferences were again seen to occur between the east and west areas, Huron Incised being preferred over Pound Necked in Area A. Differential selection for cooking or storage purposes was probably on the basis of vessel size rather than stylistic attributes. Unfortunately rim diameters were not recorded in the initial analysis of the Draper ceramics, and no further study can be made of the problem at this time.

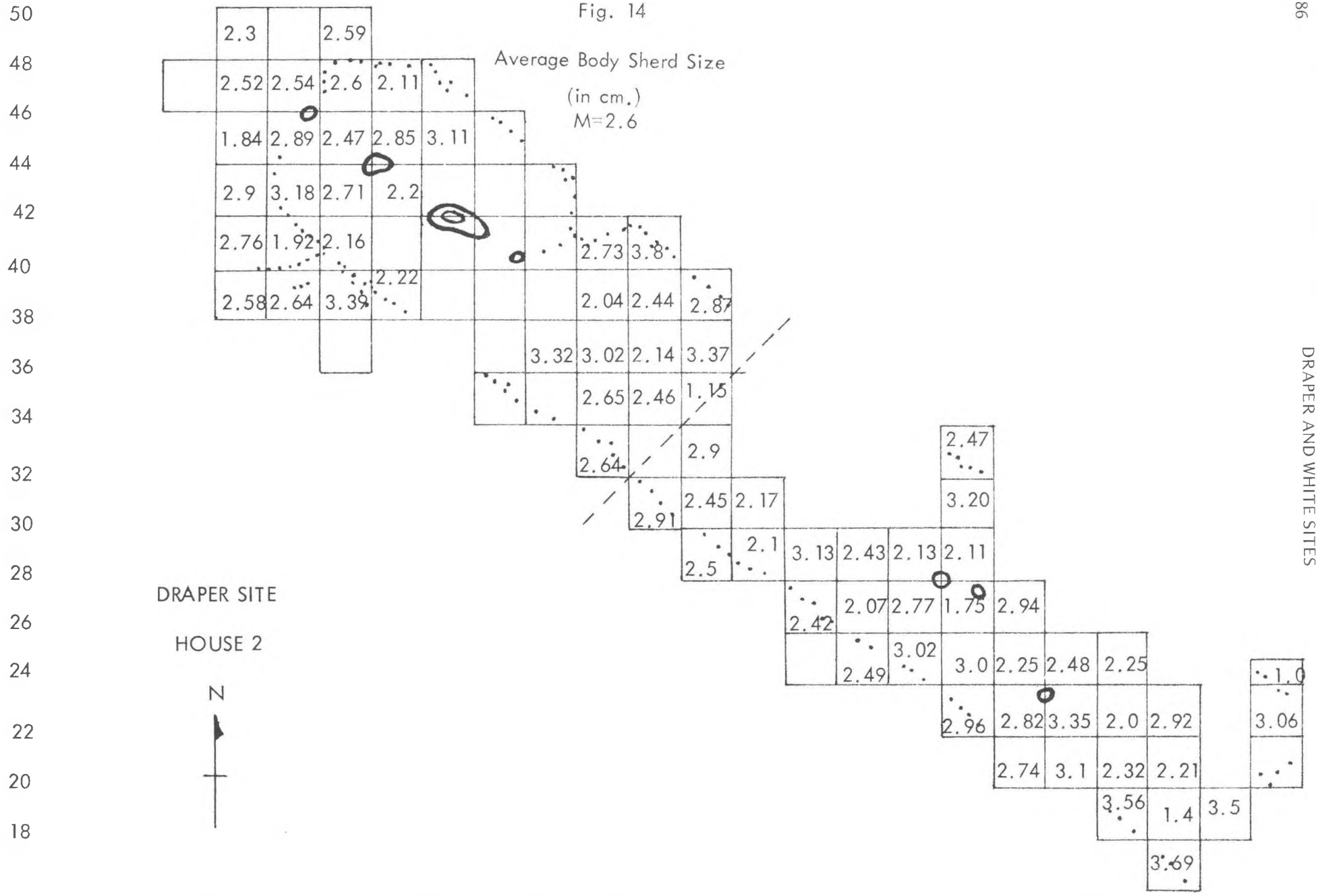
House to Site Comparisons

In the final stage of analysis, the pottery found in Structure 2 was compared with that recovered from Structure 1 and the area of the 1972 Ontario Archaeological Society excavations at the north end of the Draper site. Comparisons were also made with the results of Donaldson's and Wright's tests in the 1960's, and with Ramsden's results (see Donaldson 1962; Wright 1966, Ramsden 1968; Ramsden n.d.). The aims of this phase of the study were to determine possible differences in the ceramic assemblages of the north and south ends of the site which might be attributed to temporal variation, or which might allow inferences to be made concerning social structure within the village community.

Draper was occupied at a crucial period in Iroquois prehistory when, for reasons still largely unclear, but probably dependent to some extent upon an expanding resource base, there was a marked increase in village size. Two models of settlement growth have been proposed (see Hayden: this volume): a simple growth model, and one in which settlement increase was due to the necessity of increasing defences against some external stress. It was hypothesized that if the former were the case at Draper, there would be minimal ceramic typological variance between house structures; if the latter were true, however, more heterogeneous assemblages would be expected, reflecting the coalescence of small villages or groups, each, perhaps, with their own complex of ceramic variants.

Statistical comparisons of the samples showed some interesting differences between House 1 and 2 (Table XII). Unfortunately, the frequencies of only the seven major types in Structure 1 were available for comparison, limiting interpretations somewhat (see Ramsden n.d.). Black Necked and Huron Incised, the two predominant types on the site, both showed significant dissimilarities. In House 1, Huron Incised was much more popular than in House 2, while in the case of Black Necked the opposite was true. This is especially significant in light of Wright's observation that as Black Necked decreased in frequency through time, Huron Incised increased (Wright 1966:71). This would suggest that Structure 2 may be the earlier of the two longhouses and that future examination of the ceramic assemblages from other houses may reveal trends of ceramic

Fig. 14


Average Body Sherd Size
(in cm.)
M=2.6
DRAPER SITE
HOUSE 2
N
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80
2.3 2.59
2.52 2.54 2.6 2.11
1.84 2.89 2.47 2.85 3.11
2.9 3.18 2.71 2.2
2.76 1.92 2.16
2.58 2.64 3.39 2.22
2.73 3.8
2.04 2.44 2.87
3.32 3.02 2.14 3.37
2.65 2.46 1.15
2.64 2.9
2.91 2.45 2.17
2.5 2.1 3.13 2.43 2.13 2.11
2.47
3.20
2.42 2.07 2.77 1.75 2.94
2.49 3.02 3.0 2.25 2.48 2.25
2.96 2.82 3.35 2.0 2.92
2.74 3.1 2.32 2.21
3.56 1.4 3.5
3.69
1.0
3.06

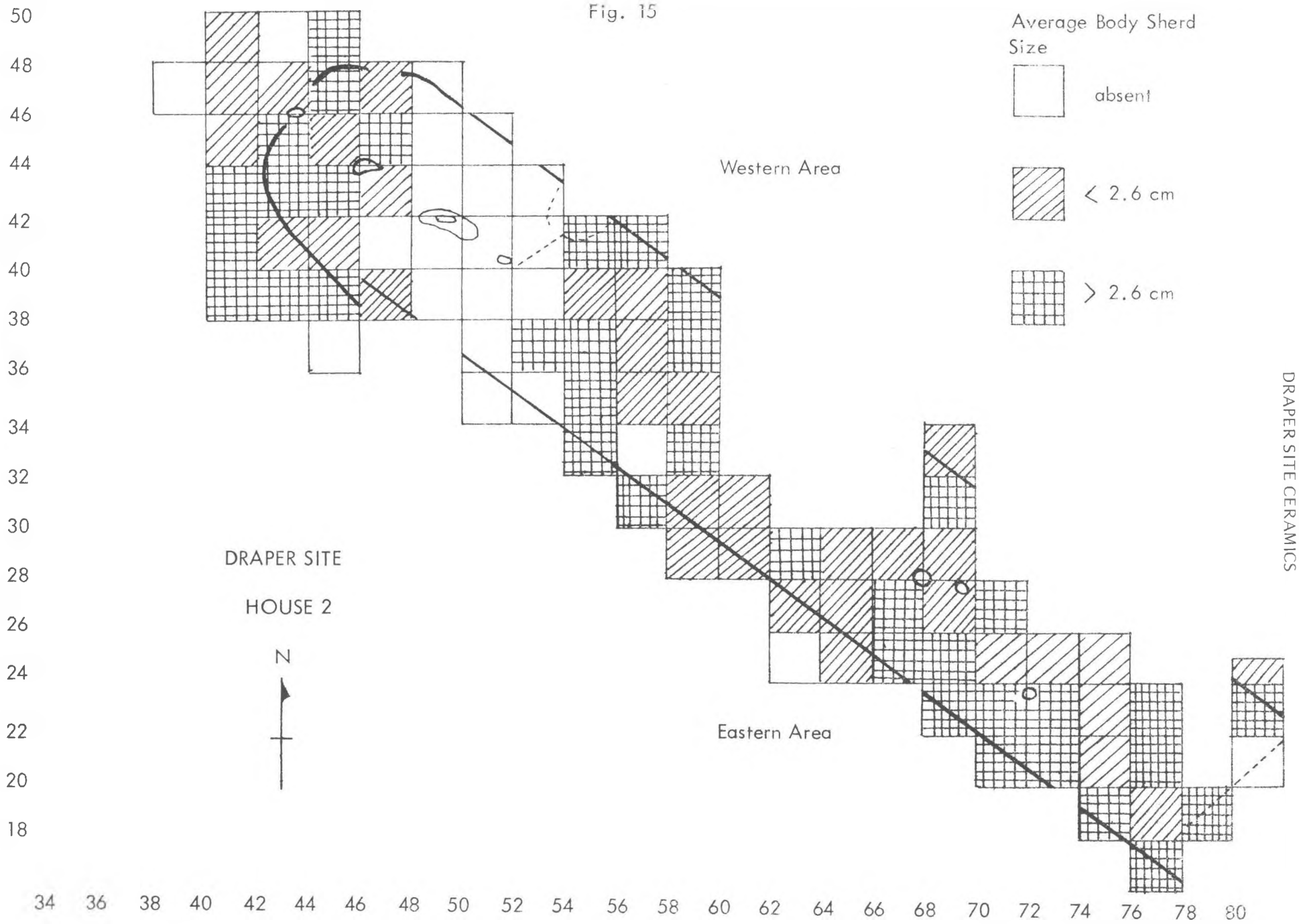


Fig. 15
Average Body Sherd Size
absent
< 2.6 cm
> 2.6 cm
Western Area
Eastern Area
DRAPER SITE
HOUSE 2
N
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
18
34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80

Table XI Comparative Frequency of Pottery Types House 1– House 2

type	House 1		House 2	
	f	%	f	%
LI	4	3.1	19	7.8
PN	3	2.3	33	13.5
WC	8	6.3	26	10.6
SN	8	6.3	12	4.9
HI	29	22.7	30	12.2
SC	1	0.8	5	2.0
BN	75	58.6	120	49.0
totals	128	100.1%	245	100.0%

Table XII CHI-Square Correlation – House 1 – House 2

type	Chi-square	p
LI	2.4	.10
PN	1.7	.10
WC	1.5	.20
SN	0.09	.75
HI	6.9	.005 (significant)
SC	0.2	.10
BN	3.1	.05 (significant)

p values calculated for Chi-2 at 1o of freedom

change through the period of occupation of the site.

Chi-square values were calculated for the types from House 2 and in the area of the 1972 excavations. Two types showed marked dissimilarities Huron Incised being more prevalent across the site than in House 2 and the opposite being true for Lawson Incised; further evidence for an early position of the house in the temporal sequence. As would be expected from widespread sampling, there were more miscellaneous types in the site sample than in the House 2 assemblage. In addition, there were potentially significant fluctuations in the frequencies of many types, and a number of minority types present at the north end of the site were absent from Structure 2. These included Lalonde High Collar, Syracuse Incised, Wagoner Incised, Ripley Plain, Middleport Oblique, and Ontario Horizontal (the latter being recognized in a midden test trench in a probable longhouse to the south of House 2, but not present in the House 2 assemblage). Rice Diagonal and Durfee Underlined, which together accounted for 1.6% of the sample, were present in House 2 but absent elsewhere (Tables XIII, XIV).

The evidence indicates that differences exist in the ceramic assemblages of different houses, some of them statistically significant, which have not been detected in the course of random testing and excavation. Coefficients of similarity calculated for the results of the present analysis compared with those of Donaldson and Wright (in Wright 1966), and Ramsden (1966; n.d.), were all considerably below Ramsden's suggested level of intra-site similarity of 150, whereas comparisons of the material

Table XIII Comparative Frequency of Pottery Types House 2 – Site Area Tests

type	1966		1968		1972		House 2	
	f	%	f	%	f	%	f	%
LO	16	2.0	9	1.0	6	1.4	2	0.7
LI	41	5.0	20	2.3	10	2.3	19	6.2
PN	57	7.0	33	3.7	10	2.3	33	10.7
NC	8	1.0	16	1.8	2	0.5	6	2.0
WC	114	14.0	51	5.8	42	9.7	26	8.4
SN	48	6.0	53	6.0	25	5.8	12	3.9
HI	139	17.0	103	11.7	70	16.2	30	9.7
WH	1	0.1	5	0.6	6	1.4	1	0.3
SI	8	1.0	14	1.6	2	0.5	1	0.3
SC	1	0.1	24	2.7	11	2.6	5	1.6
BN	286	35.0	319	36.2	173	40.1	120	39.0
OT	16	2.0	12	1.4	4	0.9	7	2.3
DU	0	0.0	10	1.1	0	0.0	2	0.7
RL	8	1.0	21	2.4	5	1.2	7	2.3
RD	0	0.0	3	0.3	0	0.0	3	1.0
LH	24	3.0	12	1.4	4	0.9	0	0.0
OH	16	2.0	9	1.0	2	0.5	0	0.0
SY	0	0.0	6	0.7	2	0.5	0	0.0
RP	0	0.0	1	0.1	1	0.2	0	0.0
WI	0	0.0	1	0.1	1	0.2	0	0.0
MS	33	4.0	159	18.1	55	12.7	34	11.0
totals	816	100.2%	881	100.0%	431	99.9%	308	100.1%

modified from Wright 1966; Ramsden 1968; Ramsden n.d. (freq. in 1966 approximated from % freq.)

Table XIV Chi-Square Correlation House 2 – 1972 Excavations

type	Chi-square	p
LO	1.3	.20
LI	6.0	.01 (significant)
PN	0.03	.80
NC	2.5	.10
WC	0.4	.50
SN	1.4	.20
HI	6.5	.01 (significant)
WH	1.2	.25
SI	0.1	.75
SC	0.4	.50
BN	0.1	.75
OT	1.4	.20
DU	0.9	.30
RL	0.8	.30
RD	2.2	.10
LH	1.4	.20
OH	0.2	.50
SY	0.2	.50
WG	0.03	.80
MO	0.03	.80
RP	0.03	.80
MS	0.03	.80

from random and midden excavations with one another produced consistently higher values (see Ramsden n.d. and Table XV). This reinforces the probability that though testing may indicate an overall homogeneity of ceramics across the site, important variations may exist between house structures which could affect considerably the results

of testing and the interpretations concerning both internal and external site relationships made from them.

Table XV Coefficients of Similarity House 2 with Previous Draper Site Excavations

	1966	1968	1972	1973 (H2)
1966	—	163	156	148
1968	163	—	169	142
1972	156	169	—	142
1973 (H2)	148	142	142	—

Sources: Wright 1966; Ramsden 1868; Ramsden n.d.

The castellation assemblage of House 2 was slightly more restricted than that of the 1972 excavations, however none of these was considered significant statistically. Differences in the frequency of castellations probably correlate with differences in pottery types. They appear to have no social or kinship affiliations.

Table XVII compares the distribution of the various pipe forms across the site. It is interesting to note that

Table XVI Comparison of Castellation Frequencies House 2 — 1972 Excavations.

type	1972		House 2	
	f	%	f	%
SL	23	40.4	22	44.9
RR	3	5.3	2	4.1
TC	5	8.8	5	10.2
PC	3	5.3	6	12.2
DP	4	7.0	4	8.2
DR	4	7.0	5	10.2
RC	6	10.5	5	10.2
N&G	5	8.8	0	0.0
NC	3	5.3	0	0.0
NH	1	1.8	0	0.0
totals	57	100.0%	49	100.0%

modified from: Ramsden n.d.

while Collared Ring was the most frequently encountered type across the site and in the area around Structure 1, it was only of third importance in Structure 2. Conversely, Elongated Ring type, most popular in House 2 , was of minimal importance elsewhere on the site, and was not found at all in the area of the OAS excavations. Of the complex of 14 styles recognized at Draper, House 2 had 9 (64.3%), and the area adjacent House 1 produced 6 (42.9%). They shared only 4 types. As can be seen in Table XVIIIb, the differences in the distribution of the two major types in Structure 2, Elongated Ring and Conical

Table XVII Comparison of Pipe Frequencies House 2 — Previous Excavations

type	1968		1972		House 2	
	f	%	f	%	f	%
CR	17	24.3	9	28.1	2	10.5
CN	1	1.4	0	0.0	3	15.8
IR	7	10.0	6	18.8	0	0.0
ER	7	10.0	0	0.0	5	26.3
CP	2	2.9	5	15.6	0	0.0
DT	0	0.0	1	3.1	1	5.3
ST	7	10.0	0	0.0	0	0.0
PT	11	15.7	3	9.4	2	10.5
TT	1	1.4	0	0.0	0	0.0
VS	1	1.4	1	3.1	1	5.3
BP	0	0.0	0	0.0	1	5.3
HE	1	1.4	0	0.0	0	0.0
EF	0	0.0	0	0.0	1	5.3
CT	0	0.0	0	0.0	2	10.5
MP	15	21.4	7	21.9	1	5.3
totals	70	99.9%	32	100.0%	19	100.1%

modified from. Ramsden

modified from: Ramsden 1968; Ramsden n.d.

Table XVIIIa Chi-square Correlation of Major Pipe Types — House 2 & 1972 Excavations

type	Chi-square	p
ER	7.5	.005 (significant)
CN	4.2	.025 (significant)
PT	0.12	.70
DT	0.13	.70
VS	0.13	.70
BP	0.07	.75
EF	0.07	.75
IR	2.5	.10
MP	0.03	.80

Table XVIIIb Chi-square Correlation of Significantly Different Types with 1968 Excavations

type	Chi-square	p
ER	2.17	.10
CN	0.05	.80

Ring, were significantly different from the area in the north of the site. Although the sample is too small to draw any but the most tentative conclusions, the indication is that real differences exist in the pipe assemblages of different houses, which may well relate to their social composition. Assuming matrilocality and rules of exogamy, for example, males entering the community through marriage alliances might be expected to bring their individual, family,

or perhaps clan-related pipe style with them, accounting for both intra- and inter-house variability. If, as Trigger contends, pipes were produced for the village by a small group of artisans, it might be possible to build a case for clan or even familial stylistic affiliations (see Trigger 1969: 35). The relatively restricted range of types present supports this to a degree.

To summarize, the ceramic evidence indicates that both stylistic and temporal differentiation occurs between House 2 and other areas of the site. It is not possible with the amount of comparative data available to determine the degree to which either of these affect the artifact assemblages, nor whether they derive from within, or resulted from the influx of motif complexes belonging to peripheral groups which came together at Draper in response to some external threat. These problems crucial to the interpretation of the role of the site in prehistory will hopefully be clarified through future excavation.

Summary

The study of the ceramics on the House 2 living floor allowed the reconstruction of the basic pattern of family residence units and interpretation of aspects of social interaction within a Huron longhouse. Perhaps the greatest significance of the analysis was that it provided evidence which corroborated to a considerable extent the observations of the European explorers and missionaries who described the social organization of the Huron during the historic period. If the interpretations made here are correct, they imply, then, a significant temporal depth for the institutions of the historic period huron.

It was possible, for instance, to demonstrate utilization by 2 families of most of the hearths in the house, and the presence of at least 11, and possibly as many as 14 nuclear families, giving an approximate estimate of household size of between 45 and 70 individuals, assuming an average family size of 4 or 5 people (see Tooker 1967:40). At the extreme limit of our present potential for interpretative resolution, we can suggest the presence of two or three generations within 2 of the family groups, on the basis of their first and second order ceramic relationships, implying at least partial matrilocality (see Trigger 1969: 56). These inferences are highly tentative, and perhaps too speculative at this point. It appears that the families of the household were loosely affiliated with one another, probably along kinship lines, and perhaps at the level of the clan, considering the high degree of correlation among their ceramic assemblages (see Trigger 1969.55).

The presence of pipes in areas set aside for lithic, wood, and bone working substantiates in an archaeological context the ethnographic evidence that the manufacture of projectile points, ground stone implements, beads, wooden artifacts including bowls, bows and arrow shafts, and snowshoes, and articles fashioned from bone, was performed by the men of the house (Trigger 1969:36). It seems clear from the distribution of these activity areas that they were not related to the hearth or family, and provide strong evidence that the household functioned as a single economic unit (Trigger 1967: 41 footnote). This notion is especially substantiated by Ferguson's results (this volume) and its theoretical importance underlined by Hayden (this volume).

During the historic period, the larger villages of the Huron consisted of small groups of people, either clans or clan segments, who lived together in different sectors of the community (Trigger 1969:55). That differences in the frequencies of certain styles of pipes and pottery vessels were encountered in different excavation areas at Draper infers that the village may have been organized along basically the same lines as those visited by the Europeans in the historic period. Future excavation may reveal the presence of groups of longhouses closely related ceramically in various areas of the site from which interpretations of this type can be drawn.

It is possible, however, that some of the differences noted are the result of temporal variation in the ceramics. That House 2 appears to have been occupied earlier than the house at the north end of the site may tend to suggest that the original village was located in the southern area of the site, and that it expanded across the ravine to encompass the north plateau at some stage in its history. However, considerably more information will have to be collected concerning both individual houses and areal settlement patterns in both areas before this can be demonstrated. The analysis of the ceramics from the 1973 excavations represents at best a first approximation of the basic social and residential patterns of House 2, subject to revision and expansion as more sophisticated analytical techniques are developed, and as intra- and inter-site comparative data of equal calibre becomes available. Many questions remain unanswered, concerning the internal organization of the house and its relationship to the Draper village community, which will only be answered by the detailed, problem oriented excavation of other houses on the site. Hopefully, having demonstrated that interpretations of residential and social structure can be derived from an examination of the patternings of ceramics on a longhouse floor, this report will serve as a basis for future research into this important and long neglected aspect of Iroquois prehistory in Ontario.

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APPENDIX A

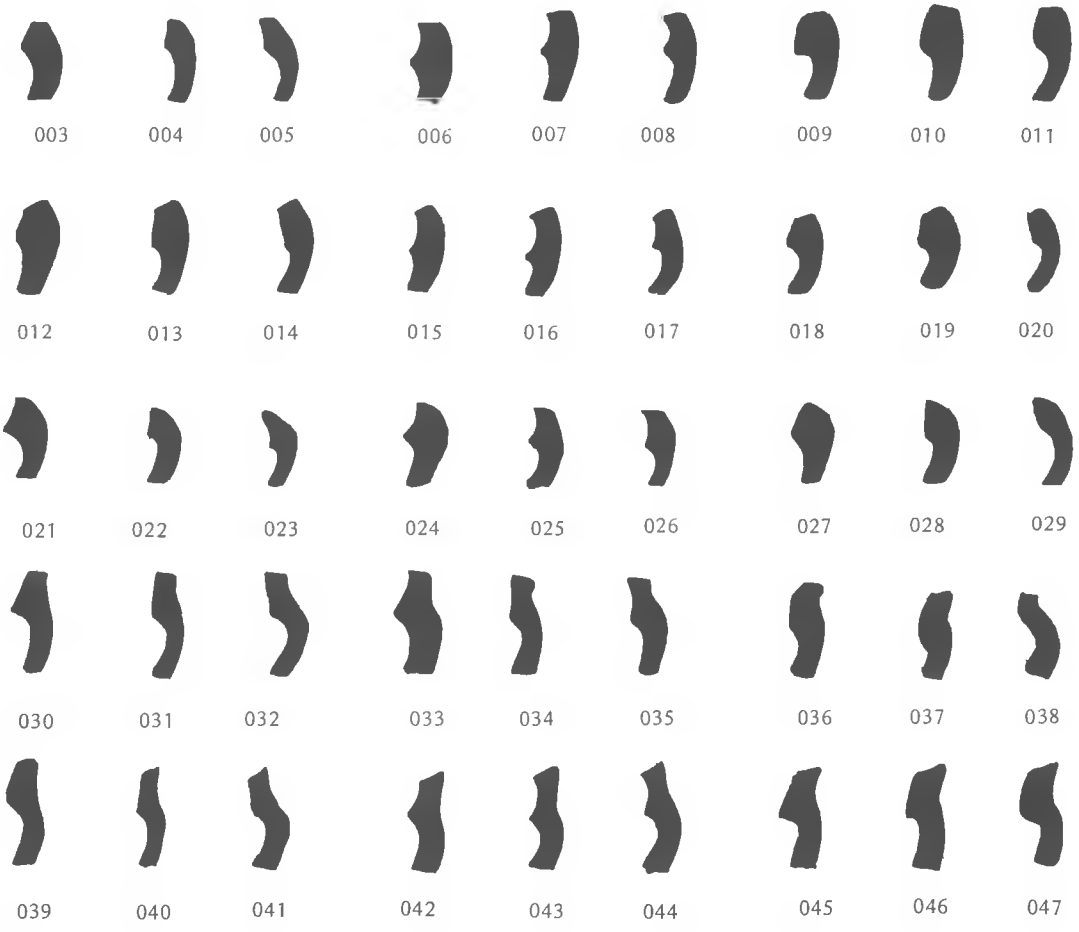
DRAPER CERAMIC ANALYSIS COMPUTER CODING FORMAT

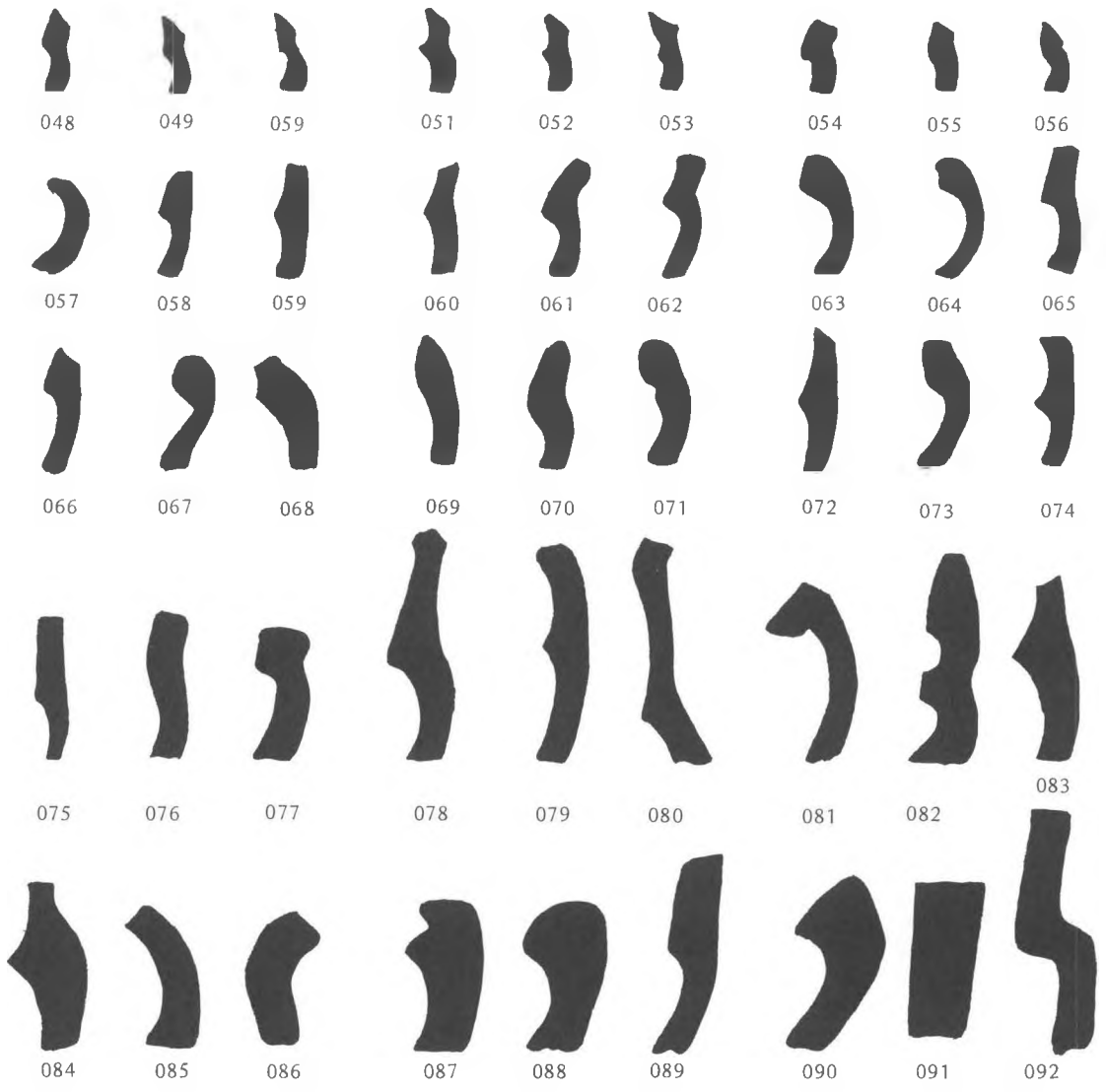
Draper Ceramic Analysis Computer Coding System

card column	variable code	variable identification
1– 6	SQ	excavation unit identification (in metres) north-east stake
1– 3	SQV	north–south coordinate of excavation unit
4– 6	SQH	east-west coordinate of excavation unit
7– 8	SSQ	subsquare identification number 00 not applicable 01–16 subsquare numbers (see attached sheet)
9–10	LEV	3 cm excavation level 00 not applicable 01–17 3 cm arbitrary levels
11	MAT	material identification 0 ceramic pipe 1 ceramic pot
12–13	STRID	structure identification number 01–49 middens 50–99 houses 50 House #1 51 House #2
14–16	FEATNO	feature number 000 not applicable
17	FEATYP	feature type 0 not applicable 1 hearth 2 3 burial 4 5
18	SOIL	soil horizon 0 not applicable
19	KARD	card number (if data extends to second card)
20	STYPE	sherd type 1 2  3  4 neck 5 neck and shoulder
†!–23	POTYPE	pottery type (after MacNeish) 000 unanalyzable for type
	LO	001 Lawson Opposed
	LI	002 Lawson Incised
	PN	003 Pound Necked
	NC	015 Niagara Collared
	WC	018 Warminster Crossed
	SN	019 Sidey Notched
	HI	020 Huron Incised
	WH	021 Warminster Horizontal
	SI	022 Seed Incised
	SC	024 Sidey Crossed
	BN	025 Black Necked
	OT	041 Onondaga Triangular
	DU	042 Durfee Underlined
	RL	043 Roebuck Low Collar
	RD	049 Rice Diagonal
	MS	058 Miscellaneous (includes Draper Group 1 & 2)
24–26	RIMPRO	rim profile 000 not applicable 001 unanalyzable 002 miscellaneous 003–092 see attached sheet
27–29	COLMOT	external collar motif 000 not applicable 001 unanalyzable 002 miscellaneous 003 undecorated 004–045 see attached sheet
30–31	NKMOT	external neck motif 00 not applicable 01 unanalyzable 02 miscellaneous 03 undecorated 04–20 see attached sheet
32–33	LIPMOT	lip motif 00 not applicable 01 unanalyzable 02 undecorated 03–08 see attached sheet
34–35	INMOT	interior rim motif 00 not applicable 01 unanalyzable 02 undecorated 03 –08 see attached sheet
36–37	CASTYP	castellation type 00 not applicable 01 unanalyzable 02 no castellation 03 untyped miscellaneous 04–10 see attached sheet
38	INCARB	interior carbon deposit 0 not applicable 1 unanalyable 2 absent 3  4  5  6 
39–40	SHMOT	shoulder motif 00 not applicable 01 unanalyzable 02 undecorated 03 miscellaneous 04–06 see attached sheet

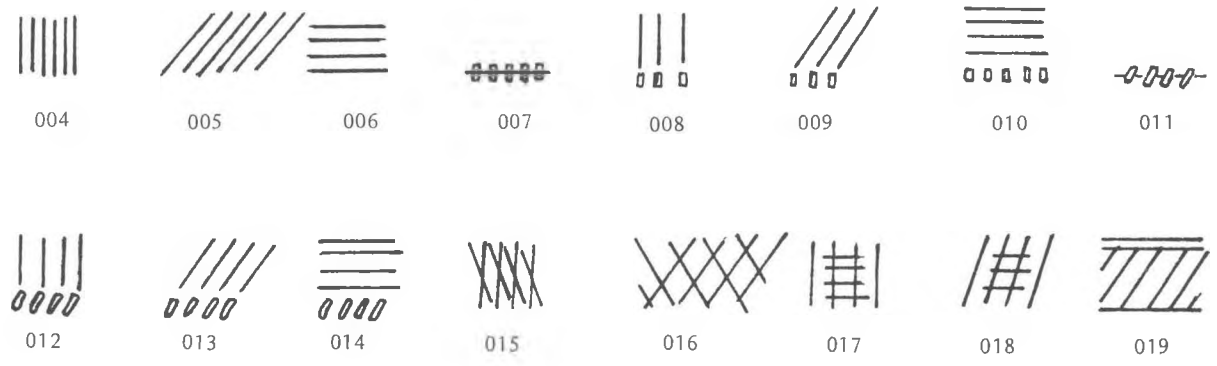
card column	variable code	variable identification
41–42	SHPRO	shoulder profile 00 not applicable 02 unanalyzable 02 miscellaneous 03–05 see attached sheet
43	BODSUR	body surface 0 not applicable 1 unanalyzable 2 miscellaneous 3 smooth and plain 4 smooth and decorated 5 textured
44–45	COLHT	collar height (in mm) 00 unanalyzable
46–47	COLTH	collar thickness (in mm) 00 unanalyzable
48–49	EXCR	colour, exterior surface 00 unanalyzable 01 miscellaneous 02 brown 03 black 04 orange 05 grey-black 06 orange-brown 07 grey 08 tan 09 grey-orange 10 brown-black 11 white 12 black-orange 13 exterior carbon deposit
50–51	INCR	colour, interior surface same criteria as above
52–54	RIMDIA	rim sherd diameter 00 not applicable 01 unanalyzable

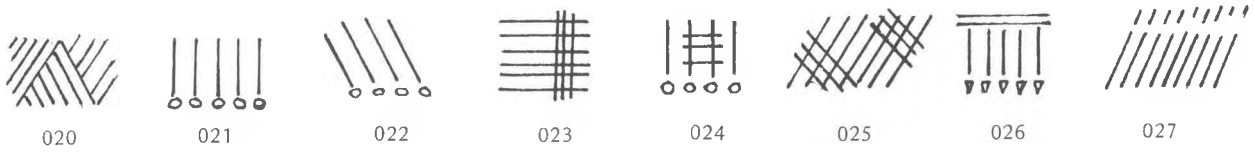
Rim Profile



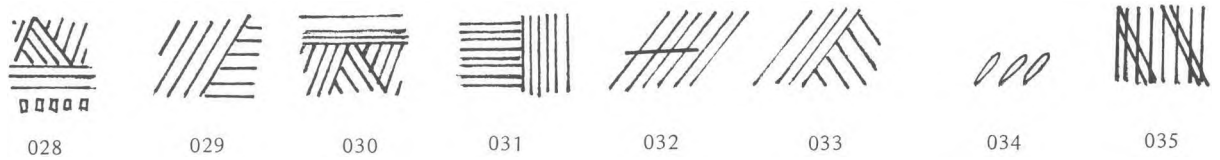


Collar Motif

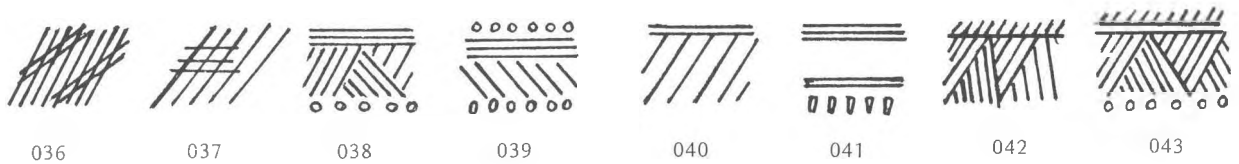




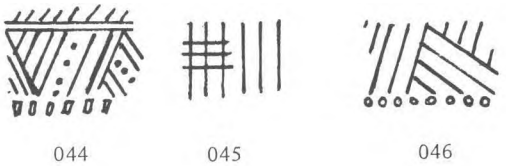
020 021 022 023 024 025 026 027



028 029 030 031 032 033 034 035



036 037 038 039 040 041 042 043



044 045 046

Neck Motif

04 05 06 07 08 09 10 11

12 13 14 15 16 17 18 19 20

Lip Motif

03 04 05 06 07 08

Interior Motif

03 04 05 06 07 08

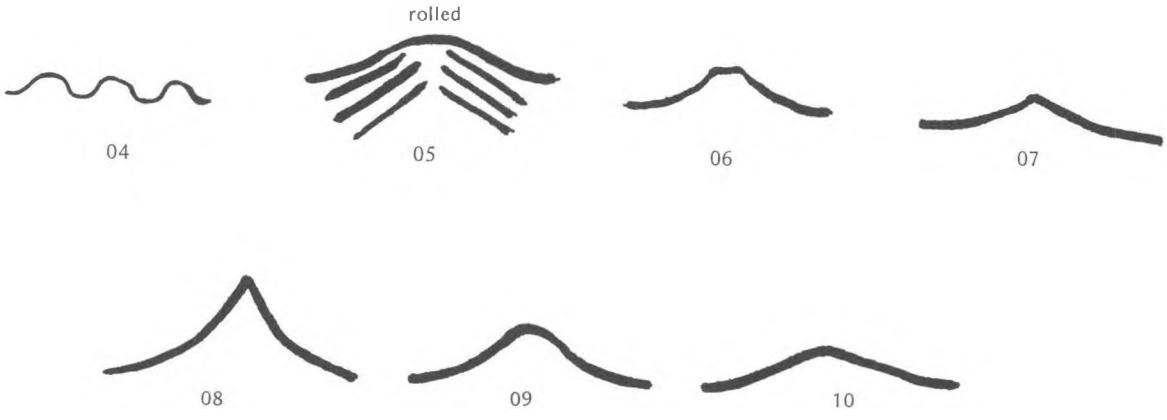
Shoulder Motif

04 05 06

Shoulder Profile

03 04 05

Castellation Type



04 05 06 07

08 09 10