KENYON & FOX

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NEWSLETTER OF THE LONDON CHAPTER, ONTARIO ARCHAEOLOGICAL SOCIETY

DECEMBER, 1982 82-9

Chapter Christmas Party!

Just a reminder to BAAF (bring along a friend), BYOB (no explanation required), etc.; but most importantly, come out to the potluck party in Thamesford. That's Saturday, December 4 at 8:00 P.M. (turkey provided...).

To the London Chapter 1982 Executive:

President	Jim Keron
Vice-President	Paul Lennox
Secretary	Ted Rowcliffe
Treasurer	George Connoy

OUR THANKS!

the detailed data provided in Dr. Kenyon's report in order to investigate the meaning of this spatial patterning. During the process we were able to verify and clarify certain artifact identifications through review of the Grimsby Cemetery collection held by the Museum of the Woodland Indian in Brantford, courtesy of Mr. Tom Hill and his staff. Additional useful information was provided by Dr. Mary Jackes of Edmonton who presented a paper on "Historic Neutral Burial Practices" at the recent Canadian Association for Physical Anthropology meet in Guelph. The result of our labours is presented below.

THE GRIMSBY CEMETERY - A SECOND LOOK

IAN KENYON AND WILLIAM FOX

The Grimsby site (AhGv-1) was a seventeenth century Historic Neutral cemetery situated in what is now the Town of Grimsby near the south shore of Lake Ontario (W. Kenyon, 1982: xvi). Salvage excavations conducted by Dr. Walter Kenyon of the Royal Ontario Museum over the fall and winter of 1976-77 uncovered a series of 55 graves distributed in an oval area aligned east-west (W. Kenyon, 1982: 8 and Figure 144). A wide variety of burial modes are represented ranging from single articulated to large multiple bundle interments (Jackes, n.d.a); many graves being furnished with "items that ... were poured into the graves with a lavish hand" (W. Kenyon, 1982: 226).

The numerous artifact descriptions contained in over a century of Ontario Iroquoian studies have allowed identification of temporally sensitive (usually stylistic) attributes among the various tool forms recovered from archaeological sites. For instance, Native ceramic decorative trends, when combined with available radiocarbon dates, now allow researchers to assign most vessels (or rim sherds) a temporal provenance $\pm$ 50 years with considerable confidence. The same holds true, at times to a lesser degree, regarding pipes, chert projectile points, etc. Other artifacts, particularly of European manufacture and characteristic of the historic period (post 1615 A.D.) are argued to have the greatest chronological sensitivity, reflecting in part the only moderate success of early European entrepreneurs in providing a totally acceptable product for the local Native market.

The reported distribution of specific glass bead forms across the cemetery created an initial impression that there may have been a considerably longer period of cemetery use than the 1640-1650 A.D. estimate proposed by Kenyon (1982: 226). Certain necklaces such as those associated with Grave 47 (Kenyon, 1982: Plates 149, 150) were seen to be similar to those recovered from reputedly early seventeenth century Neutral cemeteries such as Shaver Hill (Fitzgerald, n.d. b) and Smith. Other graves such as 23 produced red tubular glass beads which are not reported on early seventeenth century Neutral sites. Study of other artifact associations appeared to support this hypothesized longevity, encouraging our supplementary analysis.

THE GLASS BEADS

In Walter Kenyon's Grimsby report the glass beads are analysed according to the detailed typology devised by the Kidds (1970). At Grimsby, 75 Kidd types and 43 new types were identified, there were over 5000 beads in all. In the following section this mass of data is boiled down by studying only those graves with a glass bead sample of 25 or greater, and by collapsing the Kidd bead varieties into fewer types. The number of types was reduced by lumping together certain formally distinct but similar appearing Kidd bead varieties. For example, the red round "type" (#2, Figure 7) consists of a number of Kidd types, which are differentiated on the basis of (probably minor) variations in the colour tint of their cores. Certain rare types, not found in two or more of the graves under study, are dropped from the following analysis. In all, 19 graves and 26 glass bead types (Figure 7) are considered below (Table 2).

We would first like to approach the site "blind", proceeding as if nothing were known of the chronology of 17th century trade goods. That is, we will see what sort of bead association patterns can be internally generated from the Grimsby data alone, and only then turn to broader comparisons.

With its numerous, well-documented graves, Grimsby presents a good example of the "classical" archaeological problem of grave lot seriation. Many numerical techniques have been devised for seriation (Marquardt, 1978); the one used here is known as "reciprocal ordering" (Orloci, 1975) or "reciprocal averaging" (Hill, 1973). Reciprocal ordering is an eigenvector technique which simultaneously (reciprocally) assigns numerical scores to the graves (or sites) as well as to the bead types, so that a chronological order for both can be determined. Of course, as with other seriation methods the results are valid only if the primary variation between graves (or sites) is due to change through time rather than to some other dimension, e.g. marked differences in social status. The scores for the 19 Grimsby graves range from -.59 to +.34, although, like other seriation techniques, reciprocal ordering does not reveal if the negative or positive end is the earliest. The high correlation (+.97) between grave scores and bead type scores indicates that there is a strong "gradient" or linear relationship underlying the variation among the grave lots at Grimsby. A low correlation would have indicated a randomness of association between bead types and little patterned variation among the grave lots.

Are the graves with high and low scores randomly distributed over the site, or is there some spatial patterning? Once again there are a number of techniques available to answer this question (Orton, 1980); the one employed here is trend surface analysis (TSA). Using multiple regression, TSA attempts to fit a smoothed surface or contouring to a series of data points distributed over a two-dimensional surface. In this case, the data points are the reciprocal order scores for the graves and their spatial position within the cemetery. For Grimsby a second-order or quadratic surface "accounts" for 66.4% of the variation in the grave scores. Figure 1, which illustrates the quadratic surface, displays a strong southwest/northeast gradient in the grave score contours. Incidently, the reciprocal order / trend surface procedure described above was selected a priori, in fact, before one of us had even seen the Grimsby report.

The internal evidence from Grimsby, then, suggests that there is some ordering to the graves based on bead type distributions, and that this ordering is related to spatial location within the cemetery - but is this a reflection of an underlying

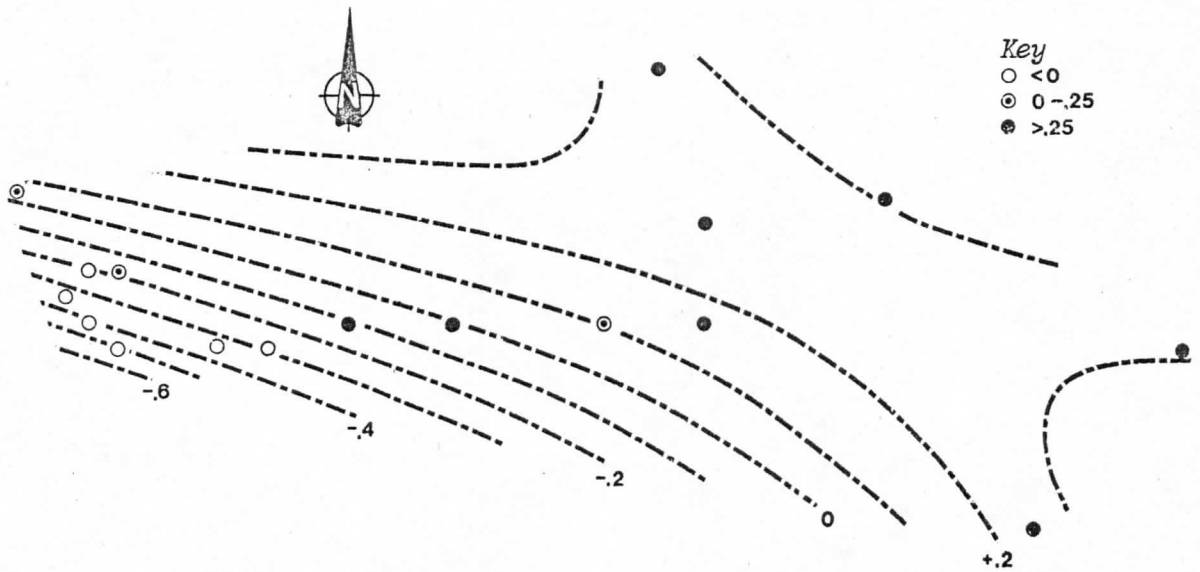


Figure 1: Quadratic Trend Surface of Reciprocal Order Scores for Graves. Symbols show spatial location of graves within cemetery; key gives grave score values. Note: features 6,8,11 plotted as one point, all have intermediate scores.

chronological gradient or the result of some non-temporal factor? Two recent papers (Fitzgerald, n.d.; Kenyon and Kenyon, n.d.) have attempted to define a glass bead chronology for Neutral sites. In Kenyon and Kenyon three glass bead periods (called I,II, and III) were identified, each having a distinctive set of beads with relatively little overlap between them. Period I beads are quite diverse, but Period II has a rather standardized set of ovoid, tubular and round beads of solid white, blue or black glass. In Period III, there are three principal types: turquoise round, red round (both cored and not cored) and red tubes (mostly not cored). The latest period was divided into two subperiods (IIIa and IIIb) based on the frequency of a single bead type, the red tubular (#1). It was shown that 5 Huron-Petun sites historically documented as having been destroyed or abandoned in the years 1649-50 had frequencies of red tubes ranging from 15% to 35%, while apparently earlier sites had lesser percentages of this type.

Now, since the three periods defined for the Ontario Iroquois have relatively distinct sets of beads, it follows that if two or more of these periods are represented at Grimsby this may be reflected by internal clustering patterns. That is, if there is some time depth to the cemetery, one should see early styles of beads associated with other early styles, and late styles with other late styles. On the other hand, if the site is late and short term, as suggested by Walter Kenyon (1982:226), one might still expect to see some early bead types ("heirlooms") but they would be found in association with late types.

Cluster analysis (Orton, 1980; Sneath and Sokal, 1973; Everitt, 1974) of the 26 Grimsby bead types yields 3 main classes or groupings of beads, hereafter arbitrarily called A, B and C. In Figure 2, bead types falling into the same cluster have similar distributions among the graves, with bead types linked at higher levels (towards the left of the graph) being more alike in their distribution than those linked at lower levels (towards the right). Another

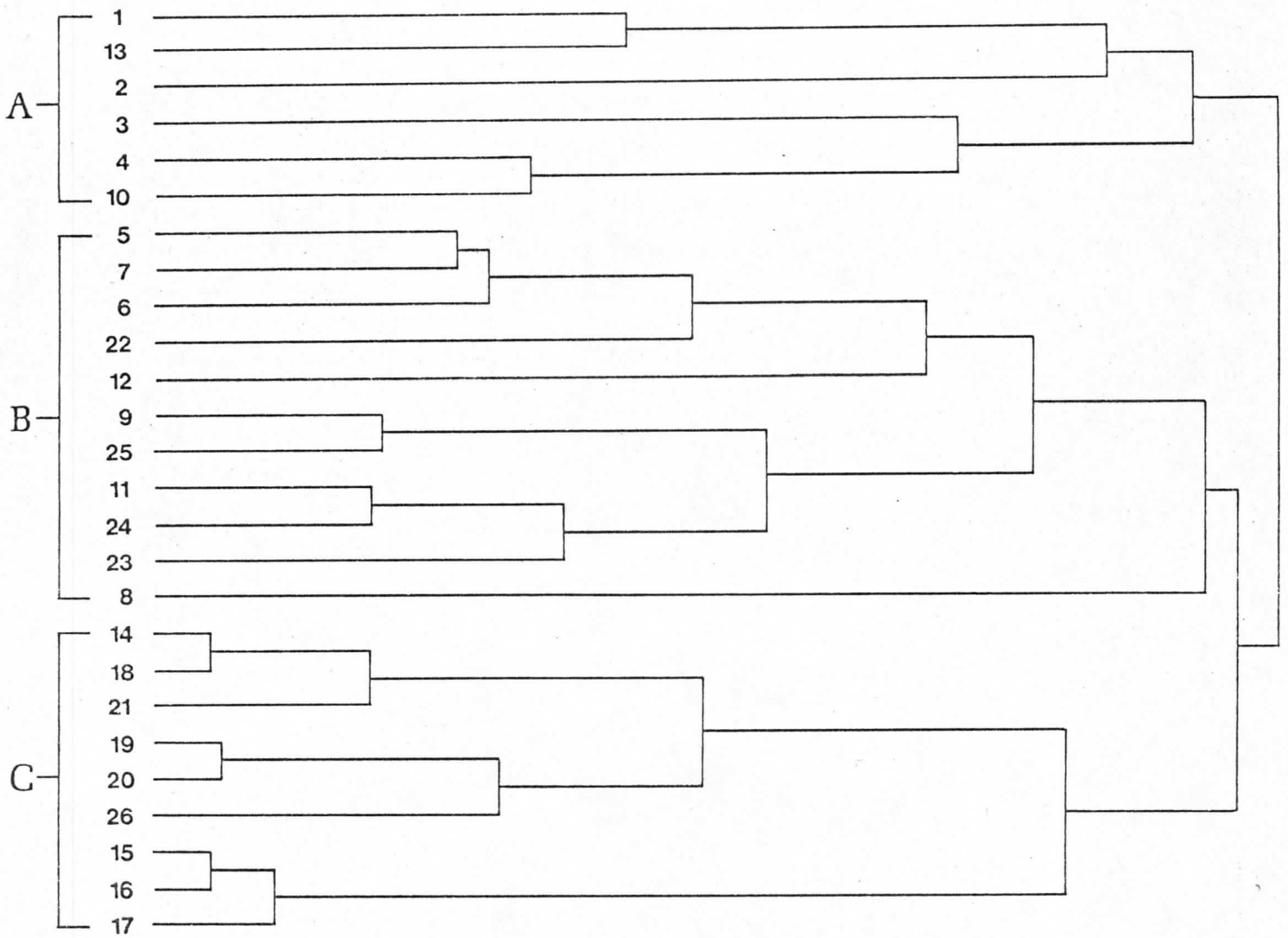


Figure 2: Dendrogram of Bead Type Cluster Analysis. Bead type numbers given on left. (Group average clustering of correlation coefficients).

way of showing these distributional relationships is factor analysis, and a plot of the first two factor loadings is given in Figure 3. In this graph, bead types having similar distributions will have points that plot close together. For ease of comparison, the three groups found by cluster analysis are outlined by joining the outside points with a line (these polygons are called "convex hulls"). The results of the cluster and factor analyses are closely related to the reciprocal ordering procedure described earlier. Group A types have mean reciprocal order scores of +.194 (range +.04 to +.335); group B, a mean of -.165 (range -.599 to -.012); group C, a mean of +.014 (range +.003 to +.058). So groups A and B are composed of types that are at the opposite ends of the seriation, with group C being somewhere in between. In the factor analysis, the first factor seems to be differentiating group C from the other two groups, with the second factor differentiating group A from B. The bead groups revealed by the clustering of distributional patterns at Grimsby are easily interpretable according the chronology derived from other sites. The cluster analysis was successful in reconstituting the bead sets diagnostic of Periods II and III: cluster B is composed of types characteristic of Period II; clusters A and C are mostly Period III types. The relative frequencies of bead types in clusters

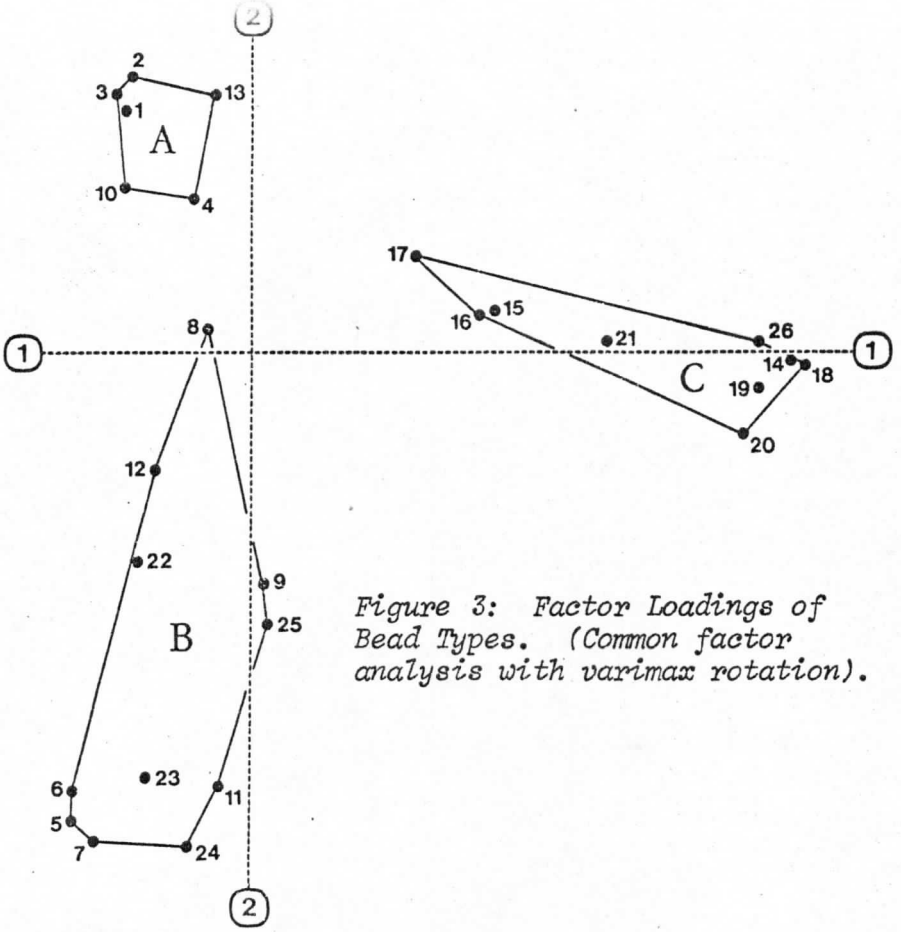


Figure 3: Factor Loadings of Bead Types. (Common factor analysis with varimax rotation).

A and B are much the same as one would find in habitation sites of the appropriate periods. The C group beads are another matter. With one minor exception (#21), the C group consists of polychrome beads, whereas the other late cluster (A) has only monochrome beads. The high percentage of polychrome beads of cluster C is unlike that reported for any known 17th century Ontario Iroquois habitation site. Even at Grimsby the group C beads are a localized phenomenon, composing the majority of bead types only in the spatially associated features 6, 8 and 11.

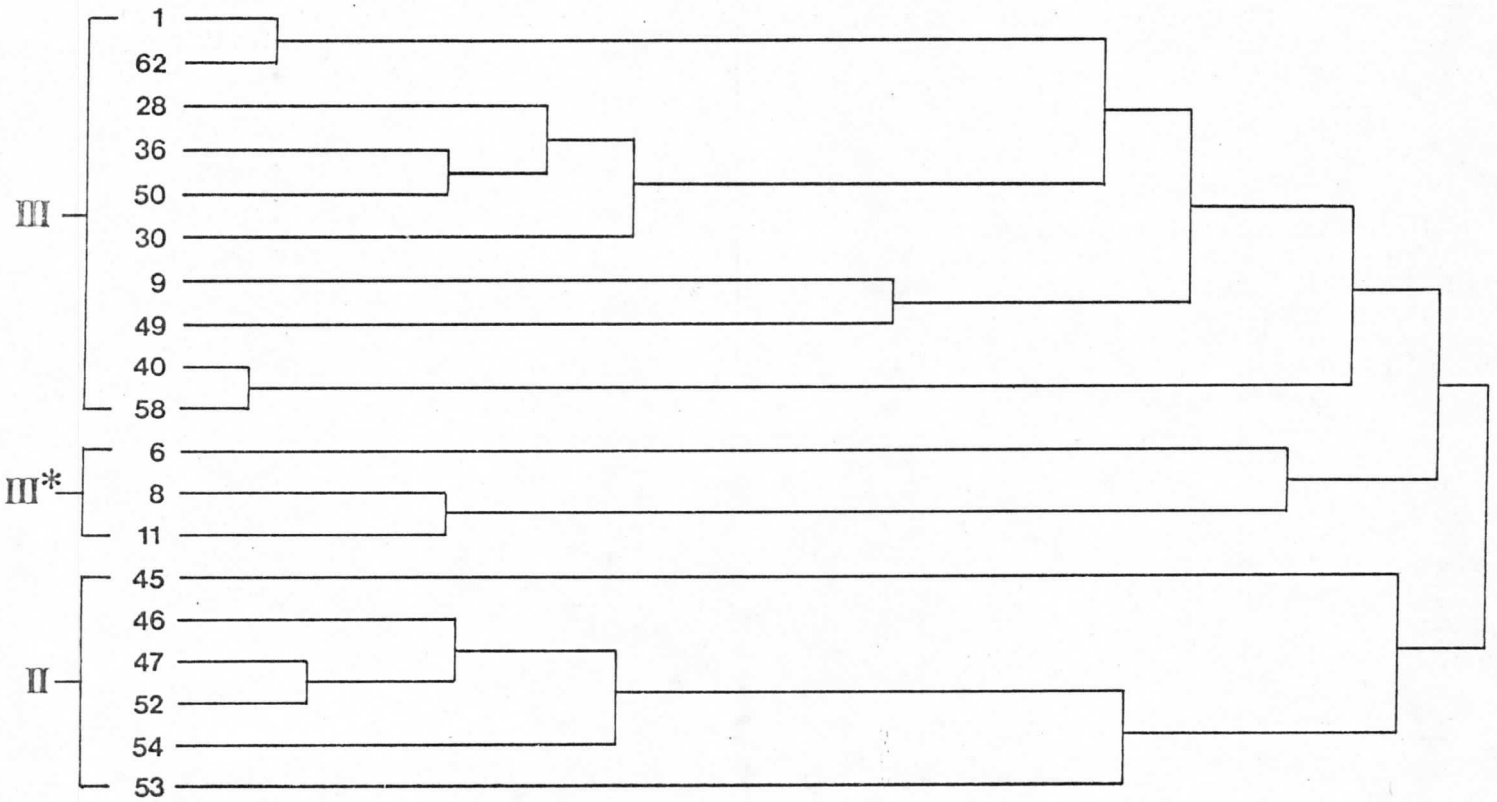


Figure 4: Dendrogram of Grave Cluster Analysis. Grave numbers given to left. (Group average clustering of city-block distances).

A cluster analysis of the graves (Figure 4) yields three main groups. Six graves can be identified as Period II, all of the graves having assemblages dominated by the solid white, blue or black beads of ovoid, tubular or round shapes, so characteristic of this period (group B beads). The other 13 graves are assignable to Period III, but these fall into two clusters consisting of 10 graves (labelled III on Figure 4) and 3 graves (III*), this last group being characterized by the anomalous assemblage of polychrome beads (group C). The 10 cluster III graves are mostly dominated by the turquoise round (#3), red round (#2) and red tubular (#1) beads characteristic of Period III, although in Graves 9, 49 and 50 cored blue round beads (#4) are fairly common. The association between the three grave groups and the three bead groups, as derived from cluster analysis, is given in the following table (the percentages are the average for each grave cluster):

Table 1: Grave/Bead Group Associations

		Grave Groups			
		II	III*	III	Number of Bead Types
Bead Groups	B	99.3%	4.4%	5.2%	11
	C	.5%	89.1%	.7%	9
	A	.2%	6.5%	94.0%	6
Number of Graves		6	3	10	

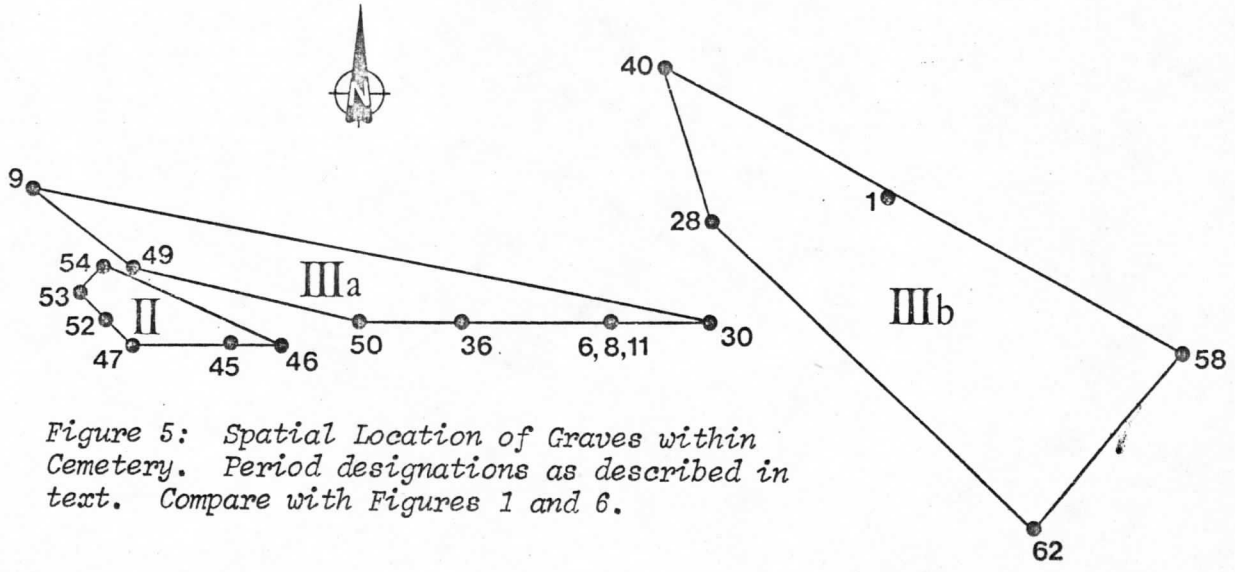


Figure 5: Spatial Location of Graves within Cemetery. Period designations as described in text. Compare with Figures 1 and 6.

In Figure 5 the spatial location of the 19 graves is shown. Using the method of "convex hulls" graves assigned to Periods II, IIIa, and IIIb are outlined. The distinction between II and III was clearly revealed by cluster analysis, although the distinction between IIIa and IIIb was not. As mentioned earlier, the subdivision of Period III is based solely on the percentage of one indicator type, the red tubular (#1). Following the criterion used in Kenyon and Kenyon (n.d.), the Grimsby graves are assigned to Period IIIa if the frequency of red tubular forms is less 10%, and to Period IIIb if it is over 15%. The strong spatial zoning at Grimsby is evident in Figure 5; there is no overlap in the convex hulls of the three periods. The earliest graves are to the southwest, the middle period (IIIa) graves in the centre, and the late (IIIb) graves to the northeast.

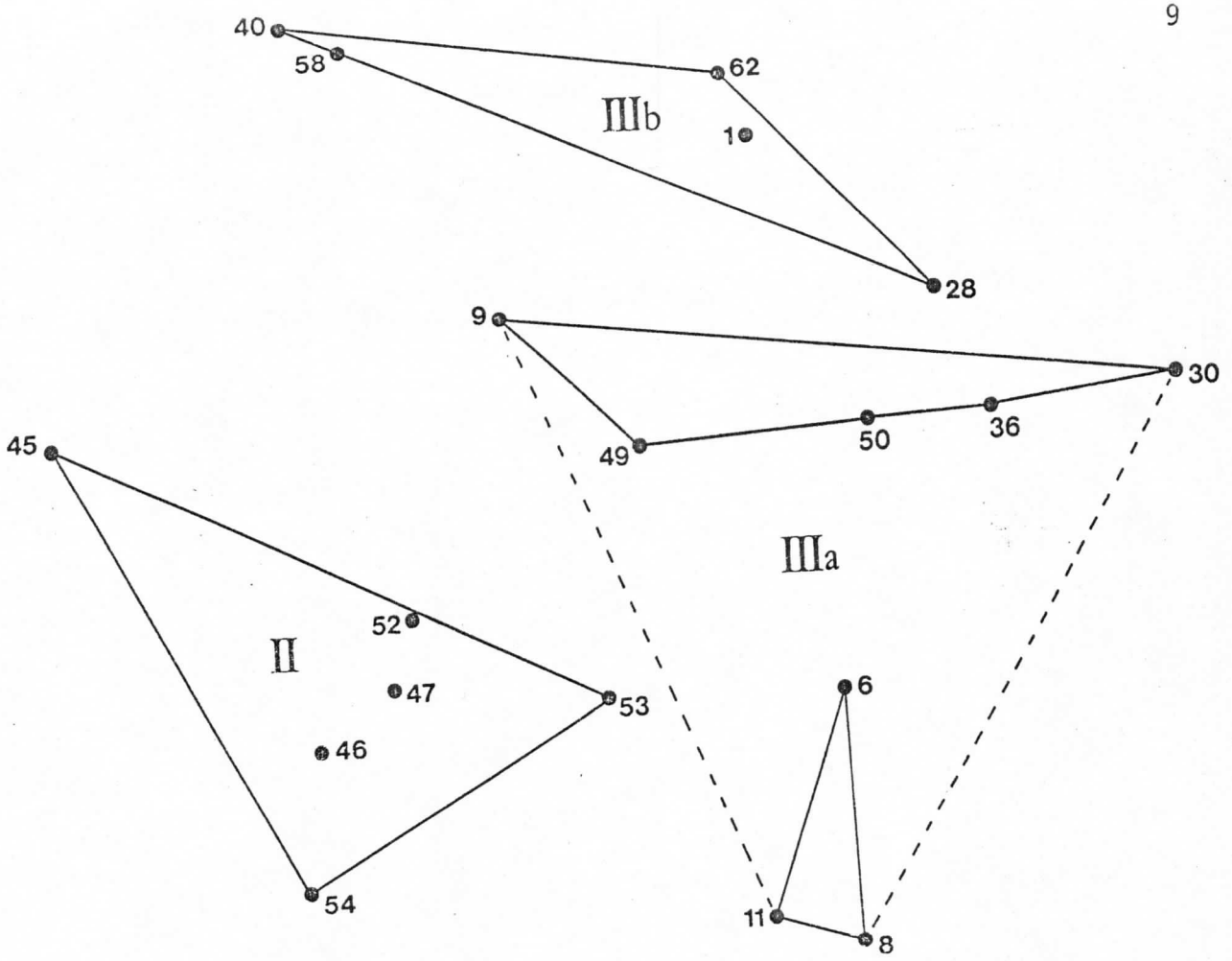
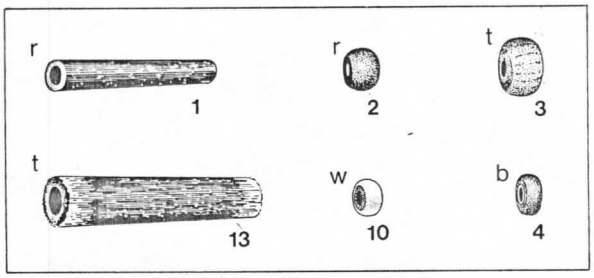
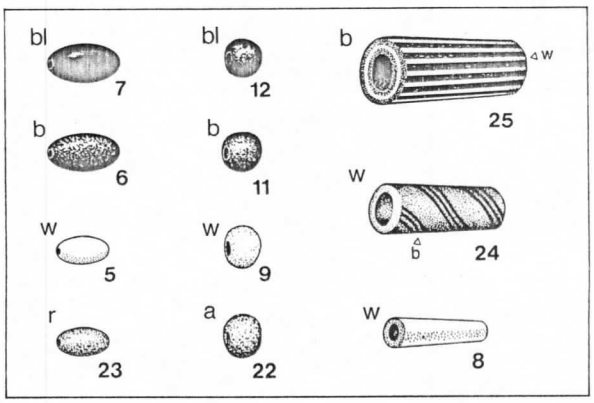


Figure 6: Nonlinear Mapping of Graves. (Magic factor = .35, 34 iterations).

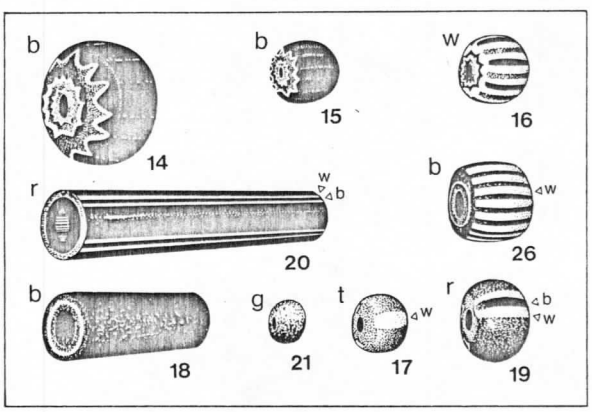
If Figure 5 depicts spatial location, Figure 6 shows typological "location". Figure 6 is generated by a "nonlinear mapping" program (NLM for short), a multidimensional scaling technique developed by Sammon (1969). NLM attempts to "map" the accrued differences (or typological distances) between objects (the graves in this case) on to only 2 dimensions, so that the relationship between the study objects can be more readily visualized than a table full of numbers. Since the typological distances based on all 26 dimensions of variation (i.e. the 26 bead types) are being collapsed into only two dimensions, there is neccessarily a certain amount of distortion introduced, 6.4% in this example. In the NLM plot the distances between the graves or data points should closely but not exactly replicate the distances or differences summed over all 26 bead types, so that graves close together on the graph have similar bead type percentages. This "mapping", it should be emphasized, rests only on the percentage differences between graves and takes no account of their actual spatial location. Superimposed on the NLM plot are convex hulls delimiting the graves previously assigned to Periods II, IIIa, and IIIb. The NLM nicely separates the Period IIIa and IIIb graves, and the "special" feature cluster (6,8,11) from the other IIIa graves. A comparison of Figures 5 and 6 shows the broad congruence between the map of spatial location and the NLM of typological distance. Both in real space and typological space the IIIa graves are intermediate between the Period II and IIIb ones. At Grimsby, then, there is a strong space-time relationship: the cemetery growing out towards the northeast from a small, early nucleus of graves.



A



B



C

Figure 7: Bead Type Illustrations. Numbers to lower right of illustrations are the type numbers used in the present study. Upper case letters to extreme right are the groups found by cluster analysis. Lower case letters to upper left denote body colour of beads, stripe colours indicated by arrows. Beads shown at approximately actual size. Drawings taken from Kenyon and Kenyon (n.d.)

Colour Abbreviations:

w = white

t = turquoise

b = blue

bl = black

r = red

g = green

a = amber

KIDD VARIETY NUMBERS FOR BEAD TYPES USED IN PRESENT STUDY

1. Red Tubular (Ia1, Ic1, Ic'1, IIIa1)
2. Red Round (IIa1, IIa2, IVa1, IVa2, IVa3, IVa5, IVa6, IVa8, IVa*)
3. Turquoise Round (IIa36, IIa37, IIa40, IIa41, IIa46, IIa47, IIa48, IIa*)
4. Blue Round - Cored (IVa17, IVa19, IVa*)
5. White Ovoid (IIa15)
6. Blue Ovoid (IIa32, IIa57, WIc11)
7. Black Ovoid (IIa8)
8. White Tubular (Ia4, Ia5, Ia6)
9. White Round (IIa9, IIa13, IIa14, IIa16)
10. White Round - Cored (IVa11, IVa13, IVa14)
11. Blue Round (IIa55, IIa56)
12. Black Round (IIa6, IIa7)
13. Turquoise Tubular (Ia11, Ia12, Ia14)
14. Facetted Star (IIIk3, IIIm1, IIIm*)
15. Round Star (IVk4)
16. "Candy" Star (IVn2, IVn3, IVn5)
17. Turquoise Round - Striped (IIb56, IIb57)
18. Compound Blue Tube (IIIa9, IIIa12)
19. Red Round - Striped (IIbb1, IIbb2, IIbb*)
20. Red Tubular - Striped (IIIbb2, IIIbb3)
21. Round Green (IIa26)
22. Round Amber (IIa*)
23. Red Ovoid (IIa60)
24. White Tubular - Striped (Ib'2)
25. Blue Tubular - Striped (IIIb9)
26. Blue Round - Striped (IVb29, IVb31, IVb34)

Table 2: Percentages of Bead Types by Grave. This is a re-ordered data matrix using grave and bead type clusters as outlined in the text.

		BEAD PERIODS																		
		II						IIIA*			IIIA					IIIB				
	GRAVE NO.	53	52	47	46	54	45	6	8	11	30	36	50	49	9	1	62	28	58	40
	BEAD TYPE																			
	5. White Ovoid	.9	27.7	29.2	27.5	5.6	10.1	-	-	.7	-	-	-	-	-	-	-	-	-	-
	6. Blue Ovoid	17.0	41.0	50.3	65.0	85.2	.3	3.0	-	-	-	-	-	-	-	-	.8	-	-	-
	7. Black Ovoid	.9	5.8	6.5	-	3.7	-	-	-	-	-	-	-	.2	-	-	.1	-	-	-
	23. Red Ovoid	-	3.5	.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9. White Round	50.5	2.3	3.2	-	1.9	-	-	-	-	-	.1	.1	35.6	.2	-	-	-	-	-
	11. Blue Round	27.5	17.9	6.5	-	1.9	-	8.1	-	.7	-	.1	.1	.7	13.8	-	-	-	-	-
B	12. Black Round	-	-	-	-	1.9	-	-	-	-	-	-	-	-	.2	-	-	-	-	-
	8. White Tube	-	-	-	-	-	89.2	-	-	.7	-	-	-	-	-	-	-	-	-	-
	24. White Tube - Striped	.5	.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	25. Blue Tube - Striped	.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	22. Round Amber	-	.6	2.2	7.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	19. Red Round - Striped	.9	-	-	-	-	-	-	.8	11.6	-	-	-	3.2	-	-	-	-	-	-
	20. Red Tube - Striped	.5	-	-	-	-	-	-	-	2.0	-	-	-	.2	-	-	-	-	-	-
	26. Blue Round- Striped	-	-	-	-	-	-	5.2	-	5.4	-	.1	-	1.0	-	-	-	-	-	-
	21. Round Green	-	-	-	-	-	-	-	3.1	.7	-	-	-	-	-	-	-	-	-	-
C	18. Comp. Blue Tube	-	-	-	-	-	-	-	1.2	1.4	-	-	-	-	-	-	-	-	-	-
	14. Fac. Star	.5	-	1.1	-	-	-	4.4	78.0	69.4	-	.2	-	.7	-	-	1.2	-	-	-
	15. Round Star	-	-	-	-	-	-	54.8	9.3	-	-	.3	-	-	-	-	-	-	-	-
	16. Candy Star	-	-	-	-	-	-	17.8	.8	.7	-	-	-	-	-	-	-	-	-	-
	17. Turq. Round - Striped	-	-	-	-	-	-	.7	-	-	-	.3	.1	-	-	-	-	-	-	-
	4. Blue Round - Cored	-	-	-	-	-	-	.7	6.2	1.4	.7	1.3	25.9	33.9	58.5	-	-	-	10.3	
	10. White Round - Cored	-	-	-	-	-	-	-	-	-	-	1.3	-	-	4.3	-	2.1	-	-	-
	13. Turq. Tube	-	-	-	-	-	-	-	-	.7	.7	.1	.2	1.2	-	-	.6	2.8	-	3.4
A	3. Turq. Round	-	.6	.5	-	-	.3	.7	.8	2.0	-	32.1	17.5	7.8	15.0	68.3	74.3	8.3	-	-
	2. Red Round	-	-	-	-	-	-	4.4	-	2.0	98.6	63.7	55.8	14.1	-	15.4	3.1	63.9	-	-
A	1. Red Tube	-	-	-	-	-	-	-	-	.7	-	.3	.2	1.2	7.9	16.3	17.8	25.0	89.7	96.6

THE STONE BEADS

Review of the archaeological literature clearly indicates a change in bead style from the discoidal form of prehistoric times to the often rectangular tubular styles characteristic of the seventeenth century. Pendergast (1966) describes discoidal specimens manufactured of yellow mudstone and black slate from several prehistoric St. Lawrence Iroquois villages. His 1981 article suggests that discoidal clay forms display a similar temporal distribution from the fifteenth century into the late protohistoric period.

Discoidal sandstone beads have been reported from the late sixteenth century Petun Sidey-Mackay village (Fox, 1979a), while a single black slate specimen was identified on the contemporary Huron Maurice village (Fox, 1979 c: 83). Red siltstone/slate beads of rectangular tubular form were being produced by c. 1620 A.D. on Collingwood area villages (Fox, 1980:93) and catlinite examples were just beginning to appear (Fox, 1979 b). Significantly, the early Haney-Cook catlinite specimen is discoidal in form, as opposed to the thin rectangular tubular style characteristic of succeeding decades and so well represented on the late seventeenth century Ottawa Lasanen site in St. Ignace, Michigan (Cleland, 1971: 144). The discoidal form continues to be popular among the Huron into the third decade of the century, as evidenced by the fact that the tubular red siltstone product of the Petun area was cut into disk-shaped sections on the Robitaille village (Fox, 1979 c). However, by this time tubular forms predominate and the use of stone other than red in colour had virtually been abandoned.

Amongst the Neutral Confederacy, similar bead style trends are in evidence. Four discoidal, but no tubular red slate beads are reported by Fitzgerald (n.d.a: 194) from the early seventeenth century (c. 1610-20 A.D.) Christianson village. A red slate disk and no tubular forms have been recovered from the contemporary Smith cemetery. On the later (c.1630-1640A.D.) Walker village, all five finished stone beads reported by Wright (1981:67) and the single example illustrated by Fox (1980: Figure 8-10) are rectangular tubular in form. Hamilton, a roughly contemporary village in the Beverly cluster, produced four red slate beads (three rectangular tubular and one large, thick discoidal specimen), plus two thin rectangular tubular catlinite beads (Lennox, 1981: 255). Excavation of a burial on the terminal Neutral Hood village uncovered two thin rectangular tubular catlinite beads with notched corners strung with tubular red glass beads (Lennox, n.d.: 94). Late catlinite forms and no discoidal beads were recovered during recent salvage excavations on the Cooper Historic Neutral cemetery in Brantford (Warrick, n.d.).

At the Grimsby cemetery, we find the earlier discoidal form included in Graves 45 and 52, both of which fall within the Period II cluster as defined by glass bead styles. Tubular siltstone beads are represented by two examples from the Period II Grave 46; however, the remainder derive from Graves 11, 36, and 49 of Period IIIa. The only definite catlinite specimens in the Museum of the Woodland Indian collection come from Graves 9 and 11 (Period IIIa). Illustrations and descriptions in Kenyon (1982) plus those included in the more extensively illustrated collection catalogue suggest that additional catlinite beads from Period III graves are held in the R.O.M. collection. The two stone beads from Grave 9 are both thin tubular catlinite specimens which were found strung with red tubular glass beads (Kenyon, 1982: Plate 36). A thin triangular tubular red siltstone bead from Grave 11 displays the corner (edge) notching characteristic of late catlinite forms and is associated with an unusual catlinite bi-concave

cylindrical disk bead. Finally, a thin rectangular tubular red stone bead from Grave 49 may be catlinite and is associated with an assemblage of tubular stone beads reminiscent of the aforementioned Huron Robitaille village collection.

THE SHELL BEADS

Study of the Museum of the Woodland Indian collection concentrated on various discoidal forms, as well as the "wampum" style discussed by Wray and Schoff (1953). Small (c. 6 mm dia.) white and purple disk beads and large (c. 10 mm dia.) white discoidal specimens, which probably roughly equate with Kenyon's (1982) "discoidal (thin)", "purple" and "discoidal(thick)" types, respectively, were plotted by grave. No differential distribution correlating with the periods defined on the basis of glass bead styles was evident. Small cylindrical or true wampum style specimens as identified in the M.W.I. collection and photographs included in the extensive Grimsby Cemetery collection catalogue are limited to the Period IIIb mass Grave 62 and other graves in the eastern Period III zone of the cemetery (4, 14, 18, 20,and 35). Aberrant, slightly larger (earlier?) beads were recovered from Graves 11 and 36 (Period IIIa). Elsewhere in Neutralia, several thousand white and purple shell wampum style beads were found in association with late tubular catlinite and red glass forms in the Cooper cemetery (Warwick, n.d.).

OTHER ARTIFACTS

Much artifact analysis remains to be accomplished. Nevertheless, a few additional observations are presented concerning the distribution of temporally sensitive grave offerings. Four limestone effigy pipes were recovered. These distinctive elbow style pipes were manufactured on Collingwood area villages from c. 1620-1649 A.D. (Fox, 1979 c: 81). The three excavated from specific contexts all derive from Period III graves (28, 36, 62) and include a classic "beret capped" human specimen from Grave 36 (Kenyon, 1982: Plate 125). Finally, a brief review of iron axe and knife style distributions indicate that these artifacts too will conform with the temporal pattern expressed by bead types.

Projectile point chert types are primarily local Silurian varieties as might be expected, however there were two surprises - one the extreme rarity of Onondaga chert and two, the utilization of Haldimand chert in a point cache associated with Grave 19. The latter is a first among Historic Neutral assemblages and indicates communication with the country just west of the lower Grand River valley, a poorly understood Historic Neutral tribal area.

CONCLUSIONS

The foregoing analysis suggests strongly that the Grimsby cemetery was in use from c. 1615, perhaps until the demise of the local Neutral tribe some time shortly after 1650 A.D. Data derived from a variety of temporally sensitive artifact classes argue for the progressive expansion of this cemetery from a "core area" in the southwest corner, outward to the northeast. The spatial and temporal extent of the Grimsby cemetery stands in contrast to other documented Neutral examples such as Shaver Hill, Smith, David Butters, Cooper and Van Son (White, 1968), arguing that its form is not "typical" as suggested by Jackes(n.d.a: 2). The only structurally comparable known site is the poorly documented Walker village cemetery(Ridley, 1961: 16).

While our analysis has been superficial and limited in its objective, the results illustrate plainly the vast quantity of invaluable data contained in the two Grimsby cemetery collections. Future studies integrating artifact and osteological information from this evidently sacred site should provide unparallelled insights into Historic Neutral mortuary tradition and perhaps, spiritual concepts.

REFERENCES

Cleland, C. (ed.)
1971 The Lasanen Site - An Historic Burial Locality in Mackinac County, Michigan. *Michigan State University Museum Anthropological Series* Vol. 1 No. 1 East Lansing.

Everitt, B.S.
1974 *Cluster Analysis* London.

Fitzgerald, W.R.
n.d.a. *Lest the Beaver Run Loose: The Early 17th Century Christianson Site and Trends in Historic Neutral Archaeology* M.A. thesis submitted to McMaster University, 1981.

n.d.b. *A Refinement of Historic Neutral Chronologies: Evidence from Shaver Hill, Christianson and Dwyer* Manuscript on file at McGill University, Montreal.

Fox, W.A.
1979 a Lithic Tools from the Sidey-Mackay Site (BbHa-6) *Arch Notes* 79-2: 6-11, Toronto.

1979 b Lithic Tools from the Haney-Cook Site (BcHb-27) *KEWA* 79-9: 2-8, London.

1979 c An Analysis of An Historic Huron Attignawantan Lithic Assemblage *Ontario Archaeology* No. 32: 61-88, Toronto.

1980 Miskwo Sinnee Munnidominug *Archaeology of Eastern North America* Vol. 8: 88-98, Ann Arbor.

Hill, M.O.
1973 Reciprocal Averaging: an Eigenfactor Method of Ordination *Journal of Ecology* Vol.61: 237-251.

Jackes, M.K.
n.d.a. *Historic Neutral Burial Practices* Paper presented to the 10th annual meeting of the Canadian Association for Physical Anthropology, Guelph, November 1982.

n.d.b. *The Osteology of the Grimsby Site* Manuscript submitted to the Royal Ontario Museum, Toronto.

Kenyon, I and T. Kenyon
n.d. *Comments on 17th Century Glass Trade Beads in Ontario* Manuscript prepared for the Glass Trade Bead Conference, Rochester, June 1982.

Kenyon, W.A.
1982 *The Grimsby Site A Historic Neutral Cemetery* Archaeological Monograph of the Royal Ontario Museum, Toronto.

Kidd, K.E. and M.A. Kidd
1970 A Classification System for Glass Beads for the Use of Field Archaeologists *Canadian Historic Sites: Occasional Papers in Archaeology and History* No. 1: 45-89, Ottawa.

Lennox, P.A.
1981 The Hamilton Site: A Late Historic Neutral Town *National Museum of Man Mercury Series* Paper No. 103: 210-403, Ottawa.

n.d. *The Hood Site: A Historic Town of 1640 A.D.* Manuscript submitted to the Ontario Heritage Foundation, 1978.

Marquardt, W.H.
1978 Advances in Archaeological Seriation *Advances in Archaeological Method and Theory* Vol. 1: 257-314.

Orloci, L.
1975 *Multivariable Analysis in Vegetation Research* The Hague.

Pendergast, J.F.
1966 Three Prehistoric Iroquois Components in Eastern Ontario *National Museums of Canada Bulletin 208* Ottawa.

1981 Distribution of Iroquoian Discoidal Clay Beads *Ontario Archaeology* No. 36: 57-72, Peterborough.

Ridley, F.
1961 *Archaeology of the Neutral Indian* Port Credit.

Sammon, J.W.
1968 A Nonlinear Mapping for Data Structure Analysis *IEEE Transactions on Computers* Vol. C-18 No.5: 401-409.

Sneath, P.A. and R.R. Sokal
1973 *Numerical Taxonomy: The Principles and Practice of Numerical Classification* San Francisco.

Warrick, G.A.
n.d. *A Report on the Archaeology of the Cooper Sites* Manuscript submitted to the Ontario Heritage Foundation, 1982.

White, M.E.
1968 A Re-examination of the Historic Iroquois Van Son Cemetery on Grand Island *Anthropological Contributions Bulletin of the Buffalo Society of Natural Sciences* Vol. 24: 1-48, Buffalo.

Wray, C. and H. Schoff
1953 A Preliminary Report on the Seneca Sequence in Western New York, 1550-1687 *Pennsylvania Archaeologist* Vol. 23 No. 2: 53-63, Honesdale.

Wright, M.J.
1981 The Walker Site *National Museum of Man Mercury Series* Paper No. 103: 1-209, Ottawa.

Note to Readers:

The Grimsby Site A Historic Neutral Cemetery is available through the Royal Ontario Museum Shop or their Publication Services (100 Queens Park, Toronto) at a cost of $35.00 (prepaid plus 10% for handling).