POTTERY RIMSHERDS AND THE PETUN

ABSTRACT/*RÉSUMÉ*

7,243 rimsherd fragments from clay pots found on archaeological sites in the historic Petun-Wyandot area of Ontario are recorded by type. Inferences are drawn concerning the relationships of the sites and the evolution of the Petun.

Sept mille deux cent quarante et trois tessons de bord de poterie trouvés sur des sites archaeologiques dans la région historique des Petuns-Wyandots de l'Ontario furent enregistrés selon le classement. On tire des conclusions au sujet du lien entre les sites et l'évolution des Petuns.

INTRODUCTION

J. Norman Emerson wrote that "pottery fragments are .. the most sensitive index to cultural inter-relationships of all materials recovered by excavation" (1968:ii). This paper attempts to investigate historic Petun-*ouendat* movements in Ontario through the pottery fragments, specifically rimsherds, the Petun people discarded, and using the limited data available at the time of writing. It is not a report on rimsherds *per se*. The rimsherds are reported here by "type", following the system originated by Richard S. MacNeish (1952), expanded by others, and in general use in Ontario. The different types for each site are given as numbers, and also percentages to allow the calculation of the Coefficients of Similarity by a method Emerson adopted in Ontario (1956:26-39; 1961:181,185-187; 1968:43-58) and others. That there are problems and shortcomings associated with using these approaches is well-known, and it is not our purpose to discuss them here. If different information is produced by using other systems, so be it. The writer's raw data and all records are available to any researcher wishing to re-analyse it using any alternative approach of their choice. It is certainly expected that future work will change some of the present figures and conclusions.

Most Petun rimsherds, including juvenile miniatures, comply reasonably adequately with the type criteria established by MacNeish (1952) and others following the same system. Judgement was necessarily used in typing rimsherds with "minute variations" (MacNeish 1952:90) from the criteria. The few remaining complete rimsherds deemed untypable were ignored, because on no site do they comprise a significant number. As this process is largely consistent across the entire sample, the overall effect should be negative.

A problem with any method or approach is to determine why sites showing high rimsherd similarities do so (Emerson 1968:21; Ramsden 1977:21-22,58). Within the span of Petun occupation of about a hundred years it is to be expected that some sites relate because they were contemporary, others because they were sequential, and perhaps there were others which do not relate, but appear to do so because they shared parallel development. Because rimsherd data alone has been found inadequate to achieve precision in interpreting relationships within a limited time-span, information available from "other material traits" is added, as recommended by MacNeish (1952:89), James V. Wright (1966:17) *et al.*

In this work, data deduced from glass trade beads on some Petun sites (Garrad 2001) will be included, and sites will be related to their Glass Bead Periods (GBP); also ordered geographically south-to-north, conforming with the evidence that the Petun constantly withdrew and abandoned territories south to north. Borrowing on the work of other researchers and for reasons summarised elsewhere (Garrad 2001), the GBPs used here are:

GBP1: 1580-1600 a.d., (protohistoric, trade goods present in small quantities);
GBP2: 1600-1625/30s a.d.; further refined into Early (GBP2a) and Late (GBP2b):
- **GBP2a** ca.1600-1616 (the date of the visit by Champlain's party 1616), and
- **GBP2b** ca.1617-1625/1630s.

GBP3: 1625/1630s to 1650 a.d.; further refined into Early (GBP3a) and Late (GBP3b):
- **GBP3a** 1625/30s-1641 (includes the first Jesuit Mission and the Iroquois attack on ***Ehwae*** 1640).
- **GBP3b** 1641-1650 (i.e. to the Dispersal), (includes the revived Jesuit Mission 1646-1650).

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To avoid the constant repetition of lengthy site, collection, and pottery type names, the following abbreviations are used in this paper:

Sites by name in alphabetical order of abbreviation

AC	Currie BcHb-18
BM	Bill McConnell BcHb-47
C	Carmichael BcHa-15
CB	Currie-Brack BcHa-13
CR	Connor-Rolling BcHb-3
D	Day BbHa-8
DG	Duggan BcHa-11
E	Edmunds BcHa-43
FG	Grose BcHa-9
G	Glebe BcHb-1
GF	Graham-Ferguson BcHb-7
GR	Graham-Rogers BbGw-2 ("Huron")
HB	Best BbHb-1
HCL	Haney-Cook Lower BcHb-27
HCU	Haney-Cook Upper BcHb-27
HL	Hamilton-Lougheed BbHa-10
HM	Howie BbHa-3
KC	Kelly-Campbell BcHb-10
L	Long BcHb-9
LS	Latimer BbHa-12
MA	McAllister BcHb-25
McE, McE1 & McE2	McEwen BcHb-17
McK	McKenzie-Woodbridge AkGv-2 (sometimes Mackenzie)("Toronto")
McQ	McQueen BcHa-14
MM	MacMurchy BcHb-26
MQC	McQueen-McConnell BcHb-31
MV	Melville BbHa-7
P	Peacock BcHa-5
PB	Paddison-Bellwood BcHa-3
PF	Plater-Fleming BdHb-2
PM	Plater-Martin BdHb-1
PR	Pretty River BcHb-22
RB	Rock Bottom BcHb-20
RI2	Rock Island II (Wisconsin)
SdB	Seed-Barker AkGv-1 ("Toronto")
SM	Sidey-Mackay BbHa-6
W	Weatherall BbHa-17
WB	Bowman BcHa-6
WT	White BcHa-1
WC	White-Coyle BcHa-2
YM	Young McQueen BcHb-19

Collections by name, when abbreviations are used, in alphabetical order

ASC	Archaeological Survey of Canada
ASI	Archaeological Services Inc.
MCTR	Ministry of Culture, Tourism and Recreation, Ontario
MIA	Museum of Indian Archaeology (London Museum of Archaeology)
NAA	Northeastern Archaeological Associates
OAS	The Ontario Archaeological Society
PRI	Petun Research Institute
ROM	Royal Ontario Museum

Pottery Types by name in alphabetical order of abbreviation

AS	Applique Strip
BMG	Blue Mountain Grooved.
BMP	Blue Mountain Punctate
BN	Black Necked
CI	Copeland Incised
DHN	Dutch Hollow Notched
DU	Durfee Underlined
GFR	Genoa Frilled
GRP	Graham Rogers Plain
HI	Huron Incised
IC	Innisfil Collarless
IP	Innisfil Plain
LHC	Lalonde High Collar
LI	Lawson Incised
LM	Lanorie Mixed
LO	Lawson Opposed
LX	Lanorie Crossed
MS	MacMurchy Scalloped
MX	Middleport Criss-Cross
NC	Niagara Collared
OH	Ontario Horizontal
ON	Otstungo Notched
OO	Ontario Oblique
OT	Onondaga Triangular
PN	Pound Necked
RC	Ripley Corded
RD	Rice Diagonal
RI	Richmond Incised
RLC	Roebuck Low Collar
RP	Ripley Plain
SB	Seneca Barbed
SC	Seed Corded
SI	Seed Incised
SN	Sidey Notched
SX	Sidey Crossed
WH	Warminster Horizontal
WX	Warminster Crossed

PETUN AREA, SITES AND COLLECTIONS

The Petun Area

The location of the Petun area is known from a number of contemporary French maps, directional, distance and descriptive information, confirmed by archaeological surveys (Garrad 1975). The Petun, first mentioned in 1616, abandoned their historic area in 1650, having been there perhaps a hundred years. The Petun area contains archaeological sites appropriately datable to the Petun time range, but also the remains of other occupations, earlier (Palaeo, Archaic, Woodland), contemporary (other Wyandot peoples who did not stay to become Petun, also Algonquin/Odawa peoples, whose presence and activities may influence the ceramic samples herein presented) and later (Historic, Ojibwa, settler). The date selected to commence this paper was ca. 1400 a.d., the close of the Middleport substage at which time the beginnings of cultural divergences are thought to have commenced, ultimately leading to historic tribes such as the Petun (MacNeish 1952:85,87,89; Wright 1966:64,66). The Middleport substage Kennedy BcHa-61 site near Creemore, and all earlier sites, are thus excluded from further consideration.

Sites and Collections from the Petun Area

In the following TABLE 1 (pp.4-5) the thirty-six Petun area sites from which the rimsherds have been collected, plus one site (BM) from which no rimsherds have been collected but which is added for the record, are ordered in geographic sequence south-tc-north. Following the site name is the abbreviation given above and used throughout this paper; the total number of rimsherds recorded for the site [ ]; the name of each collection; and the number of rimsherds in the collection ( ).

A date forming part of the collection name, e.g. 1923, indicates the year the rimsherd was first recorded when this is known; a date following the writer's name, e.g. Garrad 1975, indicates the year the rimsherd was obtained by excavation or surface collecting under the writer's licence issued under the Ontario Heritage Act, which took effect in 1975.

The present locations of all mentioned collections and rimsherds are on record with the Petun Research Institute and available to any researcher wishing to undertake a more advanced study.

Not all former or extant Petun collections are included here, nor are all Petun area archaeological sites represented. The published report of William J. Wintemberg's excavation of the Sidey-Mackay BbHa-6 site in 1926 (Wintemberg 1946) does not describe the rimsherds adequately for them to be typed using the MacNeish (1952) system, and the collection is not available for restudy, having been substantially dispersed before being seen by MacNeish (Garrad 1978c). The sample used here was excavated from the site in 1977 (Garrad 1978b). The published account of the archaeological assessment of the Plater-Fleming BdHb-2 site in 1989 by the Museum of Indian Archaeology mentions "typical Petun rimsherds", but provides no data to support this statement (Pearce 1989). The sample used here was excavated in the early 1960s under the direction of the late J. Allan Blair. The Rev. Goodwillie collection in the keeping of the Archaeological Survey of Canada is excluded as of uncertain provenance, as is the McConnell family collection, being mixed from two different occupations on the McConnell farm. The McConnell rimsherds included here were excavated from the McConnell segment of the McQueen-McConnell BcHb-31 site under licence to the writer variously between 1978 and 2000. No rimsherds are known from the later adjacent GBP3b component, the Bill McConnell BcHb-47 site, discovered in 1993, included here where appropriate to complete the record.

The major changes since the last substantial report on Petun pottery (Garrad 1980) are that the two occupations on the McEwen BcHb-17 site are now designated McE1 and McE2; the Haney-Cook BcHb-27 site is now recognised as comprising two GBP2-3a villages, designated Lower and Upper, one or both being *Ekarenniondi* in the Champlain period; and the GBP3 Plater-Martin BdHb-1 site is now recognized as a successor site and the Jesuit St. Mathew.

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MAP: Archaeological Sites Mentioned in the Text (p. 3a)

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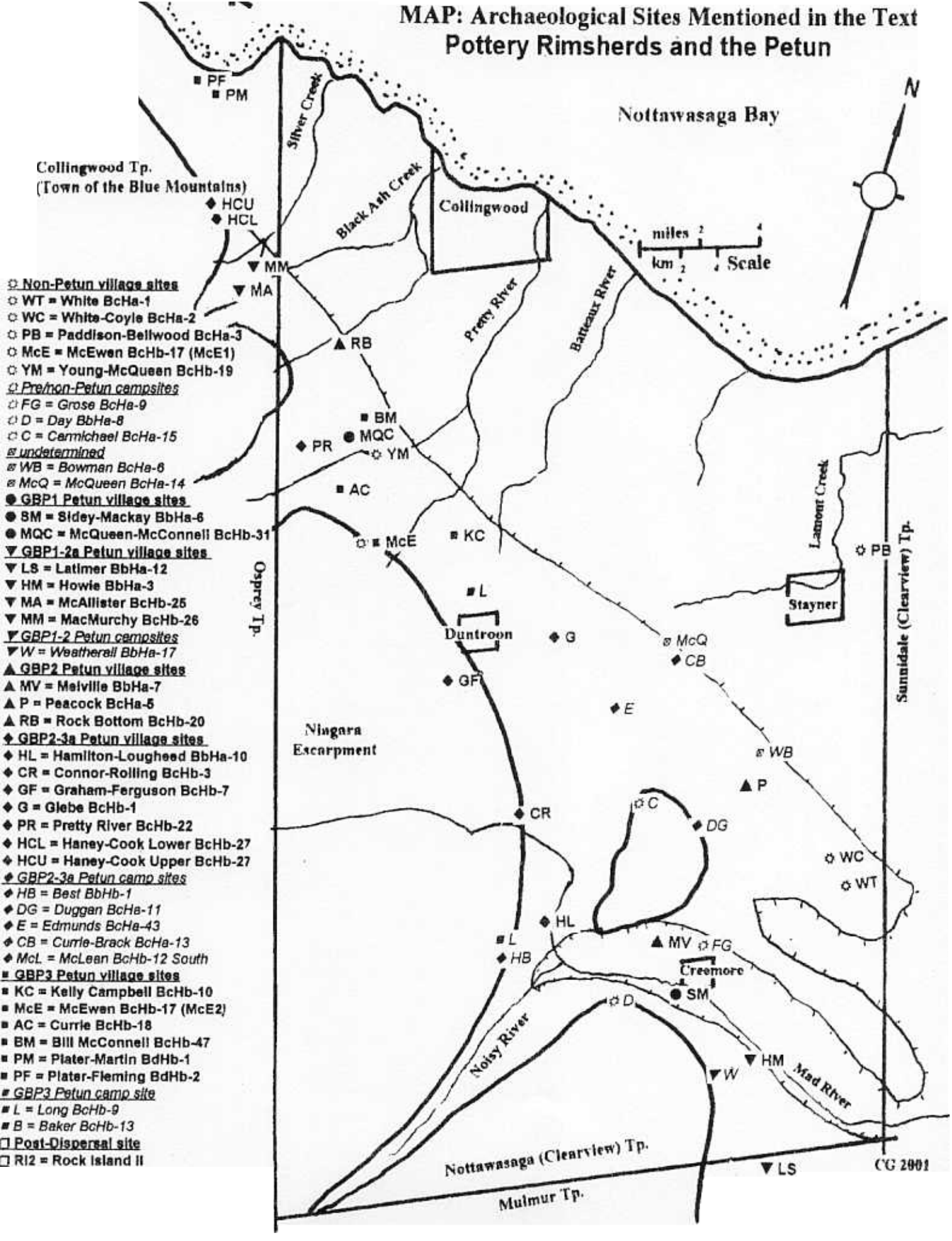
MAP: Archaeological Sites Mentioned in the Text
Pottery Rimsherds and the Petun
Nottawasaga Bay
N
Collingwood Tp.
(Town of the Blue Mountains)
Silver Creek
Black Ash Creek
Collingwood
Pretty River
Batteaux River
miles 2 4
km 2 4 Scale
Lamont Creek
Stayner
Sunnidale (Clearview) Tp.
Osprey Tp.
Duntroon
Niagara Escarpment
Creemore
Noisy River
Mad River
Nottawasaga (Clearview) Tp.
Mulmur Tp.
CG 2001
Non-Petun village sites
WT = White BcHa-1
WC = White-Coyle BcHa-2
PB = Paddison-Bellwood BcHa-3
McE = McEwen BcHb-17 (McE1)
YM = Young-McQueen BcHb-19
Pre/non-Petun campsites
FG = Grose BcHa-9
D = Day BbHa-8
C = Carmichael BcHa-15
undetermined
WB = Bowman BcHa-6
McQ = McQueen BcHa-14
GBP1 Petun village sites
SM = Sidey-Mackay BbHa-6
MQC = McQueen-McConnell BcHb-31
GBP1-2a Petun village sites
LS = Latimer BbHa-12
HM = Howie BbHa-3
MA = McAllister BcHb-25
MM = MacMurchy BcHb-26
GBP1-2 Petun campsites
W = Weatherell BbHa-17
GBP2 Petun village sites
MV = Melville BbHa-7
P = Peacock BcHa-5
RB = Rock Bottom BcHb-20
GBP2-3a Petun village sites
HL = Hamilton-Lougheed BbHa-10
CR = Connor-Rolling BcHb-3
GF = Graham-Ferguson BcHb-7
G = Glebe BcHb-1
PR = Pretty River BcHb-22
HCL = Haney-Cook Lower BcHb-27
HCU = Haney-Cook Upper BcHb-27
GBP2-3a Petun camp sites
HB = Best BbHb-1
DG = Duggan BcHa-11
E = Edmunds BcHa-43
CB = Currie-Brack BcHa-13
McL = McLean BcHb-12 South
GBP3 Petun village sites
KC = Kelly Campbell BcHb-10
McE = McEwen BcHb-17 (McE2)
AC = Currie BcHb-18
BM = Bill McConnell BcHb-47
PM = Plater-Martin BdHb-1
PF = Plater-Fleming BdHb-2
GBP3 Petun camp site
L = Long BcHb-9
B = Baker BcHb-13
Post-Dispersal site
RI2 = Rock Island II

TABLE 1: THIRTY-SEVEN PETUN AREA SITES

in geographical sequence south to north by name; the abbreviation used for each site; the total number of typed rimsherds for each site **[ ]**; the name of each collection; and the total typed rimsherds in each collection ( ).

Latimer BbHa-12 LS **[36]**
Somerville collection (1); Garrad collection (2) (PRI); Garrad 1975 (5), 1976 (8), 1977 (18), 1978 (2) (PRI).

Weatherall BbHa-17 W **[1]**
Garrad 1978 (1) (PRI).

Howie BbHa-3 HM **[29]**
Garrad 2001 (29) (PRI.)

Sidey-Mackay BbHa-6 SM **[424]**
Webster collection (8); Garrad collection (1) (PRI); Garrad excavation 1977 (415) (PRI); (excluded: William J. Wintemberg excavation 1926 ASC, ROM, *et al*).

Grose BcHa-9 FG **[5]**
ASC (3); Fergus Grose collection (2) (PRI).

Melville BbHa-7 MV **[599]**
ASC (17); Blair/Garrad collection (122) (PRI); Garrad 1975 (1), 1976 (4), 1977 (5) (PRI); Garrad excavations 1978 (431), 1984 (19) (PRI).

Best BbHb-1 HB **[2]**
Best collection (2).

White BcHa-1 WT **[373]**
Middlebrook collection (3) (ASC); Webster collection (17); Shropshire excavations 1974 (73) (MCTR); Shropshire 1977 etc. (278); Garrad 1977 (2).

Day BbHa-8 D **[9]**
Day collection (1); Webster collection (4); Hargrave collection (4).

Hamilton-Lougheed BbHa-10 HL **[285]**
Hargrave collection (2); Garrad collection (152) (PRI); Lougheed donation (1)(ROM); Prager collection (45) (PRI); Webster collection (2) ; Garrad 1975 (17), 1976 (17), 1977(1), 1979 (12), 1993 (21), 1999 (15).

White-Coyle BcHa-2 WC **[65]**
ASC collection (9); Garrad collection (1) (PRI); Garrad 1977 (3) (PRI); Shropshire collection (36); Shropshire 1975 (5); Molnar survey 1986 (11) (MCTR).

Duggan BcHa-11 DG **[3]**
ASC (3).

Peacock BcHa-5 P **[55]**
Wintemberg 1923 (3)(ASC); Blair/Garrad collection (31) (PRI); Garrad 1977 (3) (PRI); NAA assessment 1989 (18).

Carmichael BcHa-15 C **[18]**
Garrad collection (13) (PRI); Garrad 1975 (2), 1976 (1), 1977 (1), 1978 (1) (PRI).

Connor-Rolling BcHb-3 CR **[175]**
Garrad collection (14) (PRI); Garrad excavations 1975 (5), 1976 (1), 1977 (1), 1978 (9), 1979 (6), 1980 (116), 1987 (3) (PRI); Christie collection (20).

Bowman BcHa-6 WB **[1]**
Blair/Garrad collection (1) (PRI).

Edmunds BcHa-43 E **[7]**
ASC (4); Garrad collection (2) (PRI); Garrad 1976 (1) (PRI).

Graham-Ferguson BcHb-7 GF **[208]**
Coles, Robertson, Spencer excavations 1975 (30), 1976 (114) (PRI); Garrad excavations 1972 (25), 1973 (6), 1974 (33) (PRI).

Currie-Brack BcHa-13 CB **[12]**
Blair/Garrad collection (9) (PRI); Garrad 1975 (3) (PRI).

McQueen BcHa-14 McQ **[4]**
Blair/Garrad collection (4) (PRI).

Glebe BcHb-1 G **[560]**
ASC (31); Blair excavations (408) (PRI); W.A.Campbell (14) (Collingwood Museum); Garrad collection (103) (PRI); Garrad 1992 (3) (PRI); Mangiacotte collection (1).

Long BcHb-9 L **[1]**
Blair 1952 (complete pot) (MIA).

Paddison-Bellwood BcHa-3 PB **[24]**
Thomas/Blair/Garrad collection (24) (PRI).

Kelly-Campbell BcHb-10 KC **[489]**

Blair donation ca. 1924 (5) (ROM); Blair/Thomas excavation 1954 (33) (PRI); Blair/Thomas collections (24) (PRI); Campbell donation 1923 (5) (ASC); Centennial & Georgian Colleges excavations 1975 (123) (PRI); OAS excavation 1974 (212) (PRI); Garrad (87) (PRI).

McEwen BcHb-17 McE **[66]**

Blair donations (3) (ROM); Garrad collection (15) (PRI); Garrad 1975 (1), 1979 excavation (47) (PRI).

Currie BcHb-18 AC **[4]**

Blair/Garrad 1972, 1974 (2) (PRI); W. G. Wright donation (2) (ROM).

Young-McQueen BcHb-19 YM **[247]**

Coles, Robertson, Spencer excavations 1974 [87], 1975 [99] (PRI); Garrad collection (44) (PRI); Garrad 1975 (8), 1976 (1), 1984 (8) (PRI).

McQueen-McConnell BcHb-31 MQC **[665]**

Blair/Garrad collection (61) (PRI); Garrad 1976 (7), 1977 (5), 1987 (2) (PRI); Garrad excavation 1978 (165), 1995 (87), 1996 (81), 1997 (65), 1998 (49), 1999 (41), 2000 (45) (PRI); OAS excavation 1993 (57) (PRI).

Pretty River BcHb-22 PR **[34]**

Wintemberg 1923 (3) (ASC); Blair donation (2) (ROM); Blair/Garrad collection (1) (PRI); Garrad 1987 (28) (PRI).

Bill McConnell BcHb-47 BM **[0]**

no rimsherds.

Rock Bottom BcHb-20 RB **[163]**

Lougheed collection (3) (PRI); J. T. MacMurchy collection (39); Garrad collection (51) (PRI); Garrad 1975 (18), 1976 (3), 1977 (3), 1987 (30), 2000 (1) (PRI); ASI assessment 2000 (15).

McAllister BcHb-25 MA **[273]**

Jacobs collection (7); Garrad collection (20) (PRI); Garrad excavations 1977 (1), 1978 (47), 1982 (198) (PRI).

MacMurchy BcHb-26 MM **[1,646]**

ASC (13); Blair/Thomas excavation 1952 (35); W.D. Bell 1953 (1,196) (University of Toronto) (numbers and types interpreted from Bell's report) Garrad collection (49) (PRI); Garrad 1977 (316), 1984 (13) (PRI); MacMurchy collection (9); Mangiacotte collection (3); Rykert collection (12).

Haney-Cook Lower BcHb-27 HCL **[122]**

Adams/Cook collection (1) (ROM); Garrad excavations 1977 (34), 1978 (4), 1982 (83) (PRI).

Haney-Cook Upper BcHb-27 HCU **[318]**

Garrad 1974 (6) (PRI); Garrad excavations 1976 (146), 1977 (29), 1978 (94), 1982 (43) (PRI).

Plater-Martin BdHb-1 PM **[193]**

ASI assessment 1989 (2); Garrad collection (90) (PRI); Garrad 1976 (61) (PRI); Georgian College excavation 1975 (25) (PRI); Mangiacotte collection (7); Plater collection (1) (PRI); Thomas excavation 1952 (7) (PRI); (excluded: Rev. Goodwillie collection ASC).

Plater-Fleming BdHb-2 PF **[127]**

Blair excavation 1962, 1963 (118) (PRI); Garrad collection (6) (PRI); Plater collection (3) (excluded: MIA assessment 1989).

RIMSHERD TYPES ESTABLISHED BY OTHERS THAN MACNEISH

Most Petun rimsherds comply adequately with the type criteria established by MacNeish (1952). Additionally, Blue Mountain Grooved (BMG), Blue Mountain Punctate (BMP), Graham Rogers Plain (GRP), Innisfil Collarless (IC), Innisfil Plain (IP) and MacMurchy Scalloped (MS), were among new types named by W. Douglas Bell (1953). Lalonde High Collar (LHC) was named by Frank Ridley (1952), and Copeland Incised (CI) by J. V. Wright (1966:73). Applique Strip (AS), now proposed as a "type", is a globular pot with punctate shoulder and corded body, an outlaring collarless rim with notched lip above a constricted neck which is plain but for a notched appliqué strip, about 1" below the lip. It is distinguished by its grit temper from similar-appearing pottery in Ohio and Wisconsin which has shell-temper (Mason 1976:216). AS rims on the MacMurchy site typed by W.D.Bell as Seed Incised (SI) have been retyped.

Some of Bell's (1953) new types have been accommodated within established types, and changed as follows: Collingwood Collarless to Innisfil Collarless (IC); Collingwood Grooved to Blue Mountain Grooved (BMG); Collingwood Horizontal to Warminster Horizontal (WH); Corded Lip Oblique to Blue Mountain Punctate (BMP); Grey Fabric to Seed Corded (SC); MacMurchy Plain Scalloped to MacMurchy Scalloped (MS) (see later); and some of Bell's Seed Incised to Applique Strip (AS).

In the following, the abbreviated rimsherd names are in the left column in alphabetical order. Abbreviated site names are across the top, in geographical sequence south to north. For each entry the first figure is the actual number of typed rimsherds recorded, the second **in bold** is this number as a rounded percentage of the total rimsherds from the site. p = present but less than .05% of the total.
In the TYPES section below, the first figure is the total number of types on the site, the second **in bold** is this number as a percentage of the total types from the site. The MS figure is repeated to obtain 100%.

	LS	W	HM	SM	FG	MV	HB	WT	D
AS									
BMG									
BMP			1 **4**			1 **p**			
BN			1 **4**	14 **3**		25 **4**		31 **8**	1 **11**
CI								10 **3**	
DHN						23 **4**		1 **p**	
DU				1 **p**					
GFR									
GRP				2 **1**				3 **1**	
HI	8 **22**		3 **10**	122 **29**	3 **60**	198 **33**		103 **28**	3 **34**
IC			1 **4**						
IP				1 **p**		1 **p**			
LHC					1 **20**	3 **1**		71 **19**	
LI	3 **8**		1 **3**	56 **13**		53 **9**		18 **5**	2 **22**
LM									
LO	1 **3**			3 **1**	1 **20**	7 **1**		6 **2**	1 **11**
LX									
MS				10 **2**		20 **3**		1 **3**	
MX				1 **p**					
NC				2 **1**		3 **1**		8 **2**	
OH				1 **p**		1 **p**			
ON						3 **1**			
OO						1 **p**			
OT				1 **p**				31 **8**	
PN						2 **p**		18 **5**	
RC									
RD								1 **p**	
RI									
RLC				1 **p**				1 **p**	
RP	2 **6**		2 **7**	3 **1**		6 **1**			1 **11**
SC									
SI			1 **3**	10 **2**		4 **1**			
SN	22 **61**	1 **100**	19 **65**	186 **44**		235 **39**	2 **100**	36 **10**	
SX				5 **1**		7 **1**		9 **2**	1 **11**
WH				2 **1**				2 **1**	
WX				3 **1**		6 **1**		13 **3**	
Total rims	36	1	29	424	5	599	2	373	9
Types									
"East"				3 **p**		1 **1**		3 **8**	
"Huron"			1 **4**	4 **3**	1 **20**	3 **2**		5 **27**	
"Odawa"			1 **4**			1 **p**			
"South"						1 **4**		1 **p**	
"Toronto"	2 **83**	1 **100**	4 **82**	5 **79**	1 **60**	5 **78**	1 **100**	4 **48**	3 **56**
"West"	3 **17**		2 **10**	6 **16**	1 **20**	7 **12**		4 **14**	3 **44**
MS				1 **2**		1 **3**		1 **3**	
Total types	5	1	8	19	3	19	1	18	6

	HL	WC	DG	P	C	CR	WB	E	GF
AS									
BMG									
BMP	3 **1**			4 **7**		2 **1**			9 **4**
BN	2 **1**	1 **2**			2 **11**	1			
CI		2 **3**			1 **6**				3 **1**
DHN	10 **3**								
DU									
GFR									
GRP		1 **2**		1 **2**		1 **1**			
HI	63 **22**	35 **54**		22 **40**	4 **22**	27 **15**		1 **14**	10 **5**
IC	3 **1**								1 **1**
IP						2 **1**			
LHC					3 **17**				
LI	11 **4**	9 **14**			4 **22**	1 **1**			4 **2**
LM									
LO		2 **3**							
LX	2 **1**								
MS	19 **7**	1 **2**	1 **33**	1 **2**		30 **17**			23 **11**
MX									
NC	2 **1**	1 **1**				3 **2**			
OH	1 **p**								
ON									
OO									
OT									
PN					1 **5**		1 **100**		
RC									
RD	3 **1**								
RI									
RLC									
RP	4 **1**								1 **1**
SB									
SC	1 **p**								
SI	4 **2**								1 **1**
SN	157 **55**	5 **7**	2 **67**	27 **49**	3 **17**	106 **60**	6 **86**	154 **74**	
SX		6 **9**							
WH		2 **3**							1 **p**
WX						1 **p**			1 **p**
Total rims	285	65	3	55	18	175	1	7	208
Types									
"East"	2 **2**								
"Huron"	1 **1**	3 **8**		1 **2**	2 **23**	3 **2**			4 **2**
"Odawa"	1 **1**			1 **7**		1 **1**			1 **4**
"South"	1 **3**					1 **1**			
"Toronto"	5 **80**	4 **72**	1 **67**	2 **89**	3 **50**	3 **76**		2 **100**	3 **80**
"West"	4 **6**	3 **18**			2 **27**	2 **3**	1 **100**		2 **3**
MS	1 **7**	1 **2**	1 **33**	1 **2**		1 **17**	1		1 **11**
Total types	15	11	2	5	7	11	11	2	11

	CB	McQ	G	L	PB	KC	McE	AC	YM
AS									
BMG			2 **p**						
BMP			96 **17**			11 **2**			
BN			3 **1**		2 **8**	5 **1**	13 **20**		7 **3**
CI			1 **p**			3 **1**	2 **3**		9 **4**
DHN			2 **p**			1 **p**			11 **4**
DU									
GFR									
GRP						3 **1**			
HI	2 **17**	1 **25**	62 **11**		4 **17**	69 **14**	28 **42**	1 **25**	58 **23**
IC			4 **1**			3 **1**			1 **1**
IP			2 **p**						
LHC			6 **1**		6 **25**	2 **p**	1 **2**		2 **1**
LI	1 **8**		6 **1**		3 **13**	8 **2**	8 **12**		82 **33**
LM									
LO			4 **1**			1 **p**	2 **3**		6 **2**
LX									
MS			71 **13**		1 **4**	80 **16**			
MX						3 **1**			
NC	1 **8**		7 **1**			4 **1**	1 **2**		3 **1**
OH			2 **p**			2 **p**			14 **5**
ON			3 **1**						
OO									
OT									4 **2**
PN			2 **p**		1 **4**	2 **p**	3 **4**		**1**
RC									
RD			3 **1**			1 **p**	1 **2**		
RI			10 **2**						
RLC									
RP			24 **4**			7 **1**			4 **2**
SB									
SC									2 **1**
SI			3 **1**						14 **5**
SN	8 **67**	1 **25**	240 **43**	1* **100**	5 **21**	272 **56**	3 **4**	3 **75**	13 **5**
SX		1 **25**	2 **p**		1 **4**	1 **p**	2 **3**		7 **3**
WH		1 **25**	5 **1**		1 **4**	3 **1**			1 **1**
WX						8 **2**	2 **3**		8 **3**
Total rims	12	4	560	1*	24	489	66	4	247
Types									
"East"			2 **2**			1 p	1 **2**		1 **2**
"Huron"		1 **25**	5 **3**		2 **29**	6 **6**	3 **8**		5 **10**
"Odawa"			1 **17**			1 **2**			
"South"			2 **2**			1 **p**			1 **4**
"Toronto"	2 **84**	3 **75**	5 **56**	1* **100**	4 **50**	4 **71**	4 **69**	2 **100**	6 **40**
"West"	2 **16**		7 **7**		2 **17**	7 **5**	4 **21**		6 **44**
MS			1 **13**		1 **4**	1 **16**			
Total types	4	4	23		9	21	12	2	19

* = a complete small pot, illustrated by Frank Ridley (1957). Commercial copies made to scale in the 1950s by Blue Mountain Pottery, Collingwood, have a mouth diameter of 3½" (ca.88 m.m.), too small to count as twenty rimsherds as suggested by MacNeish (1952:92). The original pot is in possession of the MIA, London. When last seen on display by the writer it was erroneously labelled "Neutral".

			PR		RB		MA		MM		HCL		HCU		PM		PF	
AS							22	**8**	7	**p**	6	**5**	8	**2**		**1**		
BMG		**p**							28	**2**								
BMP			1	**3**			9	**3**	15	**1**			19	**6**				
BN	18	**2**			2	**1**			11	**1**			1	**1**				
CI																		
DHN	3	**p**					3	**1**	22	**1**			5	**1**				
DU																		
GFR															8	**4**	7	**5**
GRP									11	**1**	1	**1**	2	**1**				
HI	90	**12**	15	**44**	31	**19**	104	**38**	523	**32**	42	**34**	117	**36**	14	**7**	9	**7**
IC	4	**1**			1	**1**	1	**p**	10	**1**			4	**1**	1	**1**	1	**1**
IP	6	**1**			2	**1**			6	**p**	1	**1**	5	**1**				
LHC									28	**2**								
LI	14	**2**			10	**6**	9	**3**	31	**2**	3	**2**	20	**6**	3	**2**		
LM	4	**1**																
LO	1	**p**							2	**p**					1	**p**		
LX																		
MS	10	**1**	2	**6**	2	**1**	29	**11**	58	**3**	14	**12**	14	**4**	46	**24**	15	**12**
MX	1	**p**																
NC	4	**1**		**3**	2	**1**			3	**p**	10	**8**	6	**2**	2	**p**		**1**
OH	1	**p**							1	**p**								
ON									1	**p**								
OO																		
OT					1	**1**												
PN	6	**1**											2	**1**				
RC									1	**p**								
RD	1	**p**							3	**p**	4	**3**	12	**4**	1	**p**		
RI																		
RLC																		
RP	5	**1**	2	**6**	1	**1**			4	**p**	1	**1**	13	**4**	3	**2**	1	**1**
SB																	1	**1**
SC							2	**1**	17	**1**			1	**1**	2	**1**	2	**2**
SI	3	**p**			1	**1**	2	**1**	27	**2**			1	**1**				
SN	485	**75**	13	**38**	106	**65**	90	**33**	806	**49**	29	**24**	86	**27**	93	**48**	73	**57**
SX					1	**p**			4	**p**			1	**1**				
WH	4	**1**			3	**2**			27	**2**	11	**9**	1	**p**	17	**9**	17	**13**
WX	4	**1**					2	**1**										
Total rims	665		34		163		273		1,646		122		318		193		127	
Types																		
"East"	2	**1**			1	**1**			2	**p**	1	**3**	1	**4**	1	**p**		
"Huron"	4	**4**			3	**4**	2	**1**	5	**6**	3	**11**	4	**3**	2	**10**	2	**14**
"Odawa"			1	**3**			2	**11**	2	**1**	1	**5**	2	**8**	1	**1**		
"South"	1	p					1	**1**	1	**1**			1	**1**	2	**5**	2	**6**
"Toronto"	4	**89**	2	**82**	5	**86**	4	**73**	6	**85**	2	**58**	6	**67**	3	**56**	3	**66**
"West"	8	**5**	2	**9**	3	**8**	1	**3**	7	**4**	3	**11**	4	**13**	4	**4**	2	**2**
MS	1	**1**	1	**6**	1	**1**	1	**11**	1	**3**	1	**12**	1	**4**	1	**24**	1	**12**
Total types	20		6		13		11		24	11	19		14		10			

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The varying percentages of pottery types for each site are calculated against each other site to produce the Coefficient of Similarity between each site on a scale of 0 to 200. These are to be found on the following TABLE 3 (p. 9a):
COEFFICIENTS OF SIMILARITY FOR 36 PETUN AREA SITES BASED ON RIMSHERD TYPES.

	LS	W	HM	SM	FG	MV	HB	WT	D	HL	WC	DG	P	C	CR	WB	E	GF	CB	McQ	G	L	PB	KC	McE	AC	YM	MQC	PR	RB	MA	MM	HCL	HCU	PM	PF		GR	Mc
LS	-	122	160	152	50	142	122	78	78	164	80	122	142	94	152	0	150	138	172	94	120	122	92	146	74	166	78	152	132	174	116	146	98	118	118	130	LS	136	10
W	122	-	130	88	0	78	200	20	0	110	14	134	98	34	120	0	172	148	134	50	86	200	42	112	8	150	10	150	76	130	66	98	48	54	96	114	W	106	3
HM	160	130	-	126	20	116	130	54	48	148	44	130	126	68	146	0	150	158	156	70	130	130	76	146	42	150	54	162	114	164	100	132	74	102	120	132	HM	134	7
SM	152	88	126	-	60	176	88	108	96	154	116	92	152	110	130	0	116	110	140	104	126	88	116	136	104	138	104	130	142	150	138	164	122	140	114	112	SM	126	13
FG	50	0	20	60	-	70	0	98	90	44	114	0	80	78	30	0	28	10	34	50	26	0	74	28	94	50	52	24	88	38	76	68	68	72	14	14	FG	30	7
MV	142	78	116	176	70	-	78	110	98	150	112	84	148	106	122	0	106	102	130	102	122	78	112	124	110	128	102	118	152	138	150	160	128	150	106	102	MV	124	13
HB	122	200	130	88	0	78	-	20	0	110	14	134	98	34	120	0	172	148	134	50	86	200	42	112	8	150	10	150	76	130	66	98	48	54	96	114	HB	106	3
WT	78	20	54	108	98	110	20	-	90	82	108	26	82	140	66	10	48	42	68	76	60	20	138	72	126	70	104	62	86	78	90	96	94	104	46	44	WT	58	11
D	78	0	48	96	90	98	0	90	-	56	124	0	68	110	34	0	28	16	50	72	36	0	84	36	126	50	110	34	80	54	74	70	74	92	22	16	D	30	10
HL	164	110	148	154	44	150	110	82	56	-	74	124	148	88	164	0	138	146	154	94	138	110	94	166	66	154	80	148	138	168	136	164	116	130	134	144	HL	148	9
WC	80	14	44	116	114	112	14	108	124	74	-	18	102	96	56	0	42	34	66	88	50	14	96	60	140	64	108	52	108	74	100	94	100	110	42	40	WC	46	12
DG	122	134	130	92	0	84	134	26	0	124	18	-	102	34	154	0	134	158	134	50	112	134	50	144	8	134	10	136	88	132	88	104	72	62	144	138	DG	106	3
P	142	98	126	152	80	148	98	82	68	148	102	102	-	78	136	0	126	120	132	100	126	98	80	136	88	148	56	124	166	138	152	170	122	144	114	116	P	126	10
C	94	34	68	110	78	106	34	140	110	88	96	34	78	-	68	10	62	50	84	78	62	34	152	70	116	78	116	68	78	86	84	88	82	94	52	48	C	66	11
CR	152	120	146	130	30	122	120	66	34	164	56	154	136	68	-	0	148	156	156	80	142	120	84	182	46	150	48	154	124	160	124	144	112	108	148	154	CR	140	7
WB	0	0	0	0	0	0	0	10	0	0	0	0	0	10	0	-	0	0	0	0	0	0	8	0	8	0	2	2	0	0	0	0	0	2	0	0	WB	0	
E	150	172	150	116	28	106	172	48	28	138	42	134	126	62	148	0	-	158	162	78	108	172	70	140	36	178	38	174	104	158	94	126	76	82	110	128	E	134	6
GF	138	148	158	110	10	102	148	42	16	146	34	158	120	50	156	0	158	-	148	60	134	148	64	158	24	158	32	168	106	152	110	124	86	90	136	150	GF	120	5
CB	172	134	156	140	34	130	134	68	50	154	66	134	132	84	156	0	162	148	-	84	112	134	92	146	62	168	62	164	116	178	106	136	102	104	114	130	CB	138	8
McQ	94	50	70	104	50	102	50	76	72	94	88	50	100	78	80	0	78	60	84	-	74	50	92	80	64	100	64	76	100	92	100	104	116	102	82	90	McQ	78	9
G	120	86	130	126	26	122	86	60	36	138	50	112	126	62	142	0	108	134	112	74	-	86	80	150	42	108	52	122	126	124	120	128	104	116	136	132	G	118	7
L	122	200	130	88	0	78	200	20	0	110	14	134	98	34	120	0	172	148	134	50	86	-	42	112	8	150	10	150	76	130	66	98	48	54	96	114	L	106	3
PB	92	42	76	116	74	112	42	138	84	94	96	50	80	152	84	8	70	64	92	92	80	42	-	86	100	76	88	80	84	96	90	96	96	102	76	72	PB	74	10
KC	146	112	146	136	28	124	112	72	36	166	60	144	136	70	182	0	140	158	146	80	150	112	86	-	50	140	58	154	124	156	126	146	112	108	152	158	KC	142	7
McE	74	8	42	104	94	110	8	126	126	66	140	8	88	116	46	8	36	24	62	64	42	8	100	50	-	58	112	46	96	62	92	82	88	106	26	24	McE	46	11
AC	166	150	150	138	50	128	150	70	50	154	64	134	148	78	150	0	178	158	168	100	108	150	76	140	58	-	56	174	126	168	116	148	98	104	110	128	AC	134	8
YM	78	10	54	104	52	102	10	104	110	80	108	10	56	116	48	2	38	32	62	64	52	10	88	58	112	56	-	52	62	74	70	76	66	88	40	34	YM	64	12
MQC	152	150	162	130	24	118	150	62	34	148	52	136	124	68	154	2	174	168	164	76	122	150	80	154	46	174	54	-	106	172	98	134	86	96	122	138	MQC	136	7
PR	132	76	114	142	88	152	76	86	80	138	108	88	166	78	124	0	104	106	116	100	126	76	84	124	96	126	62	106	-	120	160	148	136	152	106	106	PR	106	10
RB	174	130	164	150	38	138	130	78	54	168	74	132	138	86	160	0	158	152	178	92	124	130	96	156	62	168	74	172	120	-	114	152	102	118	124	140	RB	140	9
MA	116	66	100	138	76	150	66	90	74	136	100	88	152	84	124	0	94	110	106	100	120	66	90	126	92	116	70	98	160	114	-	148	152	156	112	104	MA	102	11
MM	146	98	132	164	68	160	98	96	70	164	94	104	170	88	144	0	126	124	136	104	128	98	96	146	82	148	76	134	148	152	148	-	128	142	130	126	MM	136	11
HCL	98	48	74	122	68	128	48	94	74	116	100	72	122	82	112	0	76	86	102	116	104	48	96	112	88	98	66	86	136	102	152	128	-	148	112	108	HCL	80	11
HCU	118	54	102	140	72	150	54	104	92	130	110	62	144	94	108	2	82	90	104	102	116	54	102	108	106	104	88	96	152	118	156	142	148	-	92	84	HCU	90	12
PM	118	96	120	114	14	106	96	46	22	134	42	144	114	52	148	0	110	136	114	82	136	96	76	152	26	110	40	122	106	124	112	130	112	92	-	166	PM	114	6
PF	130	114	132	112	14	102	114	44	16	144	40	138	116	48	154	0	128	150	130	90	132	114	72	158	24	128	34	138	106	140	104	126	108	84	166	-	PF	122	5
	LS	W	HM	SM	FG	MV	HB	WT	D	HL	WC	DG	P	C	CR	WB	E	GF	CB	McQ	G	L	PB	KC	McE	AC	YM	MQC	PR	RB	MA	MM	HCL	HCU	PM	PF		GR	Mc

TABLE 3: COEFFICIENTS OF SIMILARITY FOR 36 PETUN AREA SITES BASED ON RIMSHERD TYPES

Interpretation of the meaning of the above percentages depends on such considerations as sample adequacy, and the significance of Coefficients of Similarity

Sample Adequacy

The number of rimsherds sufficient to represent the site occurs when the addition of more rimsherds has no effect on the percentages of types. This may or may not be a finite number (Emerson 1956:24, 1968:iii; MacNeish 1952:92). Previous tables indicates that the smaller sites are obviously inadequately represented, but that the major sites excepting AC, PR and BM are probably adequately represented.

Coefficients of Similarity

The similarity of sites, or rather the similarity of collections of rimsherds from sites, which is presumed to be the same, can theoretically be calculated in several ways. The Coefficients of Site Similarity system developed by George W. Brainerd and W. S. Robinson using percentages of rimsherds, adopted in Ontario by J. Norman Emerson (1956:26; 1961:185-186,197; 1968:41) and described by J. V. Wright (1966:19-20), is used here. Coefficients calculated for the Petun area sites are attached (TABLE 3 p.9a), and extend through the entire possible range of from zero (no relationship) to 200 (identical). Within this range there are different levels of significance. As mentioned above, concern that coefficients derived from this technique are "of very ambiguous or dubious significance, unless the reason for similarity between sites is already known" (Ramsden 1977:58) will be met by including external information, especially evidence for the dates of sites derived from glass trade beads where available, and by testing the calculated Coefficients for significance.

A Theoretical Test for Significance.

William A. Ross found little reliability consistency in the various tests used prior to 1976 to determine where on the 0-200 scale a Coefficient becomes significant. The method he used was to count the number of times each Coefficient figure appeared, to detect clusters, preferably broad-based clusters. He found three clusters which peaked at Coefficients 115,120 and 140, dividing the 0-200 scale into four (Ross 1976:35-37). Applying this technique to TABLE 3 (p.9a), three broadly based clusters were also found, similarly dividing the 0-200 scale into four ranges, but with peaks at Coefficients 50, 112 and 150,. These are interpreted as follows:

0 to 49 is assumed to indicate No Significant Similarity, 50 to 111 Some Similarity,
112 to 149 Moderate Similarity, 150 to 200 High Similarity.

Using 150 to commence High Similarity instead of Ross' 140 appears to be safely conservative because identicalness as measured by comparing two collections from the same site, was calculated elsewhere at 151 (Emerson 1968:82) and 154 (Garrad 1978a:30).

Before considering the implications of individual inter-site calculations, a test was devised to view each site against the other thirty-five collectively in an attempt to identify patterns and anomalies which might aid the identification of Petun sites. This approach was based on the premise that each of the nine contemporary Petun villages recorded by the Jesuits in 1639, for example, should have a High Similarity to the other eight, and to its own individual predecessor ancestor site, but perhaps a high but lesser Similarity with the other ancestral sites belonging to the same group, and No or Some Similarity to other sites not in the group.

The Coefficients of Similarity for each site were placed appropriateiy into the four ranges on a graph (not reproduced here). The following observations emerged:

(1) 28 of the 36 sites had similarities to at least one other site in the High Similarity range (150-200). These are: LS, W, HM, SM, MV, HB, HL, DG, P. C, CR, E, GF, CB, G, L. PB, KC, AC, MQC, PR, RB, MA, MM, HCL, HCU, PM, PF. These are presumed to be Petun sites, although C and PB are elsewhere rejected (TABLE 6:18,19).

(2) All the above sites except three peak in the Moderate Similarity range and continue into the High Similarity range. The three anomalous sites, E, AC, and MQC, peak in the Some Similarity range (50-111), and continue through the intervening Moderate Similarity range (112-149) but at a lower level into the Highest Similarity range. The significance of this as applied to E, AC and MQC is not presently apparent.

(3) The eight sites which do not appear at all in the High Similarity range, FG, WT, D, WC, WB, McQ, McE and YM, may be further divided. WB exists only in the No Significant Similarity range and, based on its present sample, is certainly not a Petun site. FG, WT, D, McQ and YM all peak heavily (17 and up) in the Some Similarity range (50-111)

with little representation (3 or below) in the next Moderate Similarity range, and none at all in the High Similarity range, and are probably not Petun sites. WC and McE also peak heavily in the Some Similarity range but are better represented in the Moderate Similarity range. At this time, WC remains anomalous, perhaps because it appears to be later than the other sites. McE is explained as having a non-representative sample, being mixed from two occupations (dubbed McE1 and McE2). The pottery from both occupations cannot be separated and are all assigned to McE1 because it overwhelmingly indicates a GBP1 occupation in McE1, but red glass Ia1 type trade beads and other late material on this site indicates the second occupation was in GBP3b (McE2)(Garrad 2001:11,16). McE2 was therefore a Petun site in the Jesuit period at that time, but the earlier McE1 was not.

(4) Not readily explainable with the Petun area is the consistent High Similarity between early southern local sites and sites considerably further north. For example, the highest Similarity of the two most southerly, adjacent and contemporary sites, LS and HM, which appear to be GBP1 or GBP1-2a, is inexplicably to the remote GBP2 site RB.

PETUN ORIGINS and DISTANT RELATIONSHIPS

It is expected that the Petun were composed of diverse groups with differing origins and diverse distant relationships. To distinguish distant from local relationships, the terms "Distant Relationships" and "Local Similarities" will be used.

As discussed above, eight sites lack any High Local Similarity relationships (TABLE 3 p. 9a). These sites, FG, WT, D, WC, WB, McQ, McE1 and YM, are all pre-historic or proto-historic (GBP1), having no, or few, trade goods, with the possible exception of WC, which appears to be a little later and may extend into GBP2a. WT, WC, WB, and McQ cluster closer to Huronia on the lowlands east of and somewhat geographically remote from the later Petun sites on the moraines further west. All these sites are regarded as non-Petun.

Based on the pottery types of his devising, Richard S. MacNeish originally included `Petun' with `Huron' in a suggested Toronto area Black Creek-McK-SdB ("Toronto") sequence movement to SM (1952:87). Later (1976:91), he wondered if the Petun developed *in situ*, but also considered James V. Wright's placement of Black Creek and SdB into a `Southern Division', and SM into a separate `Northern Division' line of development, both of which then "fused" to create the historic Petun generally and the MM site specifically (Wright 1966:69,74). The recorded dualism of the Petun at first seems sympathetic to something like this scenario, but the High Local Similarity of SM and MM, which were at least partly contemporary, does not support their evolving from very separate and different origins. These early proposals stem from SM and MM being at the time the only two Petun sites for which any data were available, and the use of non-representative figures for SM (Garrad 1978c). Fusion sites have HI and SN totalling more than 50% (Wright 1966:76). As shown in a following TABLE 4 (p.13), there are both "fusion" and non-fusion sites in the Petun area. Wright's criterion handily distinguishes the Petun from the non- and pre-Petun sites.

Of the pottery types found on Petun sites (TABLE 2 pp.6-9) MacNeish (1952) proposed that LI, LO, MX, OH, OO, and PN were "Neutral"; NC, RC, and RP were "Erie"; BN, HI, SC, SI, SN, SX, WX, and WH were "Huron", composed of two groups here divided, the southerly group being here called "Toronto" (BN, HI, SC, SI, SN, SX) and the northerly "Huron" (WX, WH); DHN, and SB are "Seneca"; GFR, and RI "Cayuga"; DU, LM, LX, OT, and RLC "Onondaga"; ON, and RD "Mohawk". Wright proposed that Southern Division sites ("Toronto") had a combined frequency of BN, HI, LI and LO of 43% or more; that PN, LI, LO and OO were evidence of "a Middleport ancestry" ("West"), and that the Northern Division ("Huron") types were CI, LHC, HI, BN and SN, but noted that BN and HI also were dominant and SN present in the Southern Division (1966:70-71,73-74). These three types are here regarded as indicative of "Toronto", but their simultaneous or later presence in "Huron" may create misleading results.

Emerson suggested SN developed from HI, and SX and WX from BN, but otherwise generally concured (1968:87-90). W. D. Bell (1953) named types GRP, IC and IP for the "Huron" group, as did Ridley (1952) LHC, and Wright (1966:73) CI. Bell suggested that BMG (three sites only) was derived from Middleport LI, and BMP (12 sites, all periods), from Fort Ancient or further south-west, possibly related to OO. MacNeish (1952:34) regarded MS as a variant of HI, and therefore related to "Toronto" and, later, "Huron". Bell established it as a separate type, and it is so regarded here because of its wide distribution in the Petun area, where it seems to have an increasing relationship to the Algonquin/Odawa. It lasted into the post-Dispersal, but where it began is unknown and therefore it is not assigned to any particular origin. It is not possible to know if it exists elsewhere without re-analysing those collections in which it was regarded as HI.

The ancestry of the grit-tempered AS on the five adjacent sequential northern sites is also unknown. Possibly similar appliqué strip types in Michigan and Ohio are shell-tempered (Mason 1976:216). As non-Iroquoian style pots, AS and BMP are both assigned to "Odawa". BMP at the Huron Auger site was demonstrably made of different clay from the

"Huron"-style pots, but an association with Ohio clays and implied Ohio ancestry was not demonstrated (Jarvis n.d.). GFR in Huronia is associated with the Wenro (Hawkins 1992:80, Ridley 1973), formerly from the south. Its presence on the two most northern Petun shore-side sites is explained as the result of a recorded historic event, the migration to these sites of the Bear/Turtle people from Ossossane, among whom the Wenro were adopted (Garrad & Steckley 1998, Steckley 1982,1985).

Bell (1953) thought the MM site had no St. Lawrence Iroquois "Grenville focus" Roebuck rimsherd types, and therefore that it was not derived from McK in "Toronto". Ramsden, however, found the MM and McK sites were "closely linked", with St. Lawrence Iroquois ("East") traits present at both MM and SM (Ramsden 1977:167, 259). Emerson (1961:183) accepted Bell's interpretation that the MM site had a separate "underlying prehistoric component" which he did not include in his calculations. Wright (1966:75) went further and stated the MM site was "stratified", yet at the same time "late historic". However, Bell (1953) stated the occupation was continuous, and it is here accepted as a single, uninterrupted occupation, extending from GB1 into GBP2a (Garrad 1978a).

Summarising the above, it has been proposed that many pottery types indicate ancestral origins and former connections. Thirty-six of the thirty-seven pottery types recognized in the Petun area, the exception being MS, presently unassignable any origin, seemingly suggesting that the Petun variously had "Distant Relationships" to:
"West", (Neutral, Erie, Middleport): BMG, LI, LO, MX, NC, OH, OO, PN, RC, RP;
"Toronto", (Black Creek, Humber Valley, McK, SdB): BN, HI, SC, SI, SN, SX;
"Huron": CI, GRP, IC, IP, LHC, WX, WH;
"South", (Seneca, Cayuga): DHN, GFR, RI, SB;
"East", (Onondaga, Mohawk, Roebuck, St. Lawrence): DU, LM, LX, ON, OT, RD, RLC;
"Odawa": AS, BMP.

The TABLE 4: PETUN DISTANT RELATIONSHIPS follows on page 13.

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MACMURCHY SCALLOPED (MS) POTTERY

Before W. D. Bell established MacMurchy Scalloped as a separate type it was regarded as a variant of HI, having "pointed castellations with their apexes about 1 or 2 inches apart" (MacNeish 1952:34), elsewhere described as multiple castellations, scalloping, undulating (Emerson 1954:72-74, 1955). Bell (1953) observed of one of his specimens "Its most distinctive trait is the scalloped, uncastellated lip .. scalloped every half inch, all around the rim". On another he found "the scallops and the 'lands' between them were of equal width, three quarters of an inch". From others he observed "Scallops appear every three-quarters of an inch on the shortest collars, every inch and a half on the highest". Bell initially established two types, MacMurchy Scalloped and MacMurchy Plain Scalloped, and the writer followed with MacMurchy Scalloped Notched and MacMurchy Scalloped Plain Notched, but as more variations appeared it became impractical to continue creating new types accordingly, and we concluded it best to recognize that the type has two characteristics, one the scallops, two, a diversity of other traits and attributes. All the variations were then collapsed back into one type, MacMurchy Scalloped (MS). The writer cannot accept these points or peaks as castellations, because castellations of the period always are associated with a specific decoration below, usually an abrupt change from the decoration elsewhere on the collar. On MS this change does not occur.

MS is recorded on 21 Petun area sites, on all GBP2 and GBP2-3a sites, and on 13 of the 15 sites known or suspected of having an Odawa/Algonquin presence, and also, together with variants of disputed ancestry, in the post-Dispersal ca. 1651-1653 Petun/Odawa occupation at the RI2 site, Wisconsin (Mason 1986:164-166,171-172). In Ontario there are also variants, such as in the peaks (frequency, size, shape - sometime flat at MM; Bell 1953), lip treatment (plain, notched, cord impressed), extent of collar development and height, collar decoration (plain, incised, stamped; dextral, vertical, and sinistral, or crossed, sometimes all on the same collar), degree of constriction of neck, decoration of shoulder (usually punctated) and body (plain, corded, cordmarked).

Details of each site's Distant Relationship may be found in TABLE 2: RIMSHERDS BY SITE, TYPE, PERCENTAGE and DISTANT RELATIONSHIPS (pp. 6-9). The same data is now presented in the following TABLE 4: PETUN DISTANT RELATIONSHIPS (p. 13) with the sites re-arranged by GBP as presently understood (Garrad 2001). GBPs will be re-examined further later in this work in the added light of rimsherd data. The ten small sites not included here: W, FG, HB, D, DG, WB, E, CB, McQ, and L, will be examined in TABLE 6 (pp. 16-23). The reliability of Relationships proposed from just one type, or a few types, must be judged accordingly.

The figures for Total Types are whole numbers **in bold**; those for the Distant Relationship areas, also MS and F, are percentages. MS, unassigned a Distant Relationship, is included so that the percentages always total 100%. p = present but less than .05%. PP = Pre-Petun or not Petun. GBP = Glass Bead Period. F = "Fusion Figure" (percentages for HI and SN added together). All McE rimsherds are assigned to McE1.

Site	**Total Types**	"East"	"Huron"	"Odawa"	"South"	"Toronto"	"West"	MS	
PP/GBP1									
WT	**18**	8	27	0	p	48	14	3	38
C	**7**	0	23	0	0	50	27	0	39
PB	**9**	0	29	0	0	50	17	4	38
McE1	**12**	2	8	0	0	69	21	0	46
YM	**19**	2	10	0	4	40	44	0	28
GBP1									
HM	**8**	0	4	4	0	82	10	0	75
SM	**19**	p	3	0	0	79	16	2	73
MQC	**20**	1	4	0	p	89	5	1	87
GBP1-2a									
LS	**5**	0	0	0	0	83	17	0	83
WC	**11**	0	8	0	0	72	18	2	61
MA	**11**	0		11	1	73	3	11	71
MM	**24**	p	6	1	1	85	4	3	81
GBP2									
MV	**19**	1	2	p	4	78	12	3	72
P	**5**	0	2	7	0	89	0	2	88
RB	**13**	1	4	0	0	86	8	1	84
GBP2-3a									
HL	**15**	2	1	1	3	80	6	7	77
CR	**11**	0	2	1	1	76	3	17	75
GF	**11**	0	2	4	0	80	3	11	79
G	**23**	2	3	17	2	56	7	13	54
PR	**6**	0	0	3	0	82	9	6	82
HCL	**11**	3	11	5	0	58	11	12	58
HCU	**19**	4	3	8	1	67	13	4	63
GBP3									
KC	**21**	p	6	2	p	71	5	16	70
AC	**2**	0	0	0	0	100	0	0	100
PM	**14**	p	10	1	5	56	4	24	55
PF	**10**	0	14	0	6	66	2	12	64

Observations on the above Table:-

(1) The above figures extend across the entire available percentage range of 0 to 100. In the case of AC, this is undoubtedly because of the inadequate sample

(2) Which numbers indicate different levels of significance is not known. All numbers above zero must have proportional significance. As it is useful to describe significance in blocks, Distant Relationships are assigned to percentage numbers as follows:

No Distant Relationship = 0; Low Distant Relationship = p,1 to 24 inclusive; Some Distant Relationship 25 to 55; Moderate Distant Relationship 56 to 74; High Distant Relationship 75 to 100, inclusive.

These blocks are arbitrary, simply based on halving (to achieve a maximum 100 instead of 200) the rimsherd Coefficients of Similarity, and have no claim to be measured or particularly significant.

(3) All five Pre- or non-Petun PP/GBP1 sites, WT, C, PB, McE1, and YM, cluster nicely in their Distant Relationships, having the highest relationships to "Huron" and "West", the lowest to "Toronto" and none at all to "Odawa", and all fall below the Fusion Figure. Excavations at the WT and YM sites produced European metal, so both, if not all five, may be GBP1. However, none of them have successor sites among the Petun, and are interpreted as having removed from the area as new peoples arrived to become the Petun. This removal was apparently peaceful.

(4) McE1 fits reasonably into the PP/GBP1 block but is the most deviant, having the highest "Toronto" and F figure, and the lowest "Huron". It is probably contaminated by GBP3b pottery from the later re-occupation.
(5) J. V. Wright suggested that the 'major diagnostic' of sites resulting from the theoretical fusion of Southern and Northern Divisions of the Ontario Iroquois (Wyandot), (here termed Fusion Sites), is that they possess HI and SN in percentages which, combined, reach or exceed 50% of the total pottery, and that this 50% or more , here termed the Fusion Figure, is met on "all the historic sites, be they Huron or Petun"(1966:76). This certainly applies to the Petun samples. As shown in Column F, the Fusion Figure handily serves to separate the Pre-Petun/non-Petun sites, which collectively average 38%, well below the Fusion Figure of 50%, from the later historic (late GBP1 to GBP3) Petun sites, which average 74%. By this definition, the earlier five PP/GBP1 sites are seen to be "Northern Division" sites, but all succeeding Petun sites are Fusion Sites.
(6) Notwithstanding the above conclusion, the YM site stands out for having the lowest Distant Relationship to "Toronto" of all Petun area sites, but the highest among the early sites to "South", the highest of all Petun area sites to "West", with a Low Distant Relationship to "Huron". While these relationships are between pottery types and not necessarily people, these figures may suggest YM was the product of the in-movement of a (Neutral ?) western group that interacted minimally with the Huron, and then dispersed elsewhere, having no successor in the Petun country.
(7) The SM site, which has long been advocated as the result of actual migration north from the McK site in the Humber Valley (i.e. "Toronto"), has a High Distant Relationship to "Toronto" at 79%. If both this figure and the migration theory are correct, presumably all sites with an equal or higher Distant Relationships also result from actual migrations north from "Toronto". These include the contemporary GBP1 HM (82%) and MQC (89%), the GBP1-2a LS (83%), and MM (85%), the GBP2 P (89%) and RB (78%), the GBP2-3a HL (80%), GF (80%), PR(82%), and GBP3 AC (100%). These are unlikely to all be separate migrations, the later sites being more probably locally descended from the original migrants. Likely, the migrations north from "Toronto" were more of a continual process over some years rather than two (Emerson *et al)* or three (Ross 1976:vi) specific events. For more on the subject of the possible migration from "Toronto", see ON THE :POSSIBLE TORONTO AREA ORIGIN OF THE PETUN, (p.15). The AC figure is subject to correction when a larger sample is obtained
(8) All Petun Relationships "East" are either zero or Low. Whether this was actually so, or is the result of mis-use of the data, is unknown. The SM site, presumed heir to a movement from Roebuck-St. Lawrence (Wintemberg 1946:182) via McK (Emerson 1954:239-240, 249-255), is unique in having three eastern pottery types (DU, OT, RLC), a combination that occurs on no other site, although totalling less than 1%. The GBP2-3a HCU (4%) and HCL (3%) sites are unique in having the highest (but still Low) relationship "East", but these figures result from only one type (RD), not present at SM, and to make a supposition based on only one type raises the question of reliability. The RD type is also entirely responsible for apparent "East" relationships to McE1 and KC, and partly so to MQC, MM, HL, and G. The OT type, present at SM, WT, YM, and RB, may be more certainly a measure of relationships "East".
(9) Relationships with "Huron" show a distinct pattern, highest among the early FG, WT, C, McQ, PB and YM, lower among earlier Petun sites, but rising somewhat in GBP3. The higher figures for the late PM and PF may result from the same Ossossane Huron migration to these two sites that brought the GFR pottery. The difference between HCL (11%) and HCU (3%), twin adjacent sites, is the presence of WH at HCL. On all other Petun sites except PM and PF, WH does not exceed 3%. The rise to 9% at HCL continues to successor PM (9%) and PF (13%) confirming the continuity, and possibly relates to the Huron alliance.
(10) A relationship with "Odawa" is found on 14 of the 36 Petun area sites. It begins in GBP1 and continues until the Dispersal. To what extent this indicates an actual Algonquin/Ottawa presence on the 14 sites is uncertain. From other evidence, Algonquin/Odawa presences are recognized at HCU, HCL, HL, CR, PM and PF sites, suspected at MA, MM and G, and could exist at the other indicated sites (HM, MV, P, PR, KC). The apparent decline in the Relationship from a high of 17% at the GBP2-3a G site, to zero at GBP3 PF may be misleading, simply due to the Odawa adoption of Petun pottery. As noted previously, 13 of the 14 sites having Relationship to "Odawa" have MS pottery, the significance of which is presently unknown. The proposal that the Petun (and pre-Petun) moved into Odawa territory with their consent is neither supported nor negated by these figures. It might be expected that actual intercourse with the Odawa in Petun villages, and particularly Odawa winter residence in Petun villages, took some time to become established.
(11) In the thirteen instances of relationship to "South", nine rely solely on the minor presence of a single pottery type, DHN, which may not be sufficient evidence. At G, the DHN is accompanied by RI, and at PM by GFR. The latter, however, did not arrive from the south but from "Huron".
(12) The presence of "South" (Wenro) type GFR at PF and PM (and no other Petun sites), accompanied at PM by related "South" type SB and at both sites by "Huron" WH, is interpreted as caused by a recorded historical event, the migration in March 1649 across Nottawasaga Bay to these two shore-side sites of the people from Ossossane and area, including a number of recently-adopted Wenros, originally from the south, and who are associated with the GFR type (Garrad & Steckley 1998).
(13) Relationships "West" are always Low except that in the earliest period, C (27% "West" pottery) and YM (44%) reach the Some Relationship level, possibly suggestive of actual migration. Among the later Petun sites, it is noted

that SM has 16% "West" pottery, yet is thought to have migrated from Toronto. No other contemporary or later site, except the anomalous WC (17%), reaches this figure, but a Low Distant Relationship "West" accompanies all the sites showing High Distant Relationship "Toronto". An explanation might be that "Toronto" sites carry with them a lingering previous "West" ancestry, as is noted in the case of SdB (Burgar 1998)..

(14) Because not all pottery types can be identified with equal confidence (especially plain types), judgement is necessary in accepting relationships and conclusions based on one or a few types.

ON THE POSSIBLE TORONTO AREA ORIGIN OF THE PETUN

J. Norman Emerson, using pottery types and Coefficients of Similarity, concluded there was a McK-SM relationship resulting from actual migration, and that both McK and Seed-Barker (SdB) sites contributed to SM and MM, the latter via Graham-Rogers (GR). He calculated Coefficients of Similarity of 143 for McK-SM, 122 SdB-SM, 120 McK-MM, 88 SdB-MM, and 122 between SdB and McK (1961:187-188,193-200). William A. Ross, also using pottery types and Coefficients of Similarity, concluded "There were a minimum of two and perhaps three migrations north from the Toronto area at different periods of time. The latest appears to have been part of the group known historically as the Petun". One of these proposed migrations involved the SdB, McK and SM sites, part of which "merged with one tribe of the historic Petun" and shows expression in sites such as MM, HL and MV. Ross calculated Coefficients of Similarity of 147 for McK-SM, 124 SdB-SM, and 118 McK-MM, compared with 124 between SdB and McK (Ross 1976:vi-vii, Appendix). Ramsden used rimsherd attributes rather than types, but similarly concluded that sites of the "MacMurchy group" (which includes SM), were substantially derived from the "Mckenzie group" (McK, Downsview, Aurora) and "Seed-Barker group" (SdB, Boyd) in the Humber valley (Ramsden 1977:165,167,175,179,214). J.V. Wright also placed McK, SM, GR and MM in a stream leading to Petun (Wright 1966:75, 101, 150).

All these proposals are potentially jeopardised by the use of MacNeish's non-representative figures for SM. Excavations at SM in 1977 demonstrated the figure for SN at SM should be 44% rather than MacNeish's 24%. The significance of this change is demonstrated by calculating a Coefficient of Similarity for Garrad's (1978b) revised figures to MacNeish's (adjusted) (1952:30), which is only 142, and to Wright's (1966:150) only 126. It has been noted elsewhere that SM is not the only site in the Ontario sequence misrepresented to MacNeish, and misleading subsequent researchers (Garrad 1978c).

To confirm the propcsed SdB/Boyd and McK/Downsview/Aurora dual origin for the Petun using any system is not simple. No rimsherd seriations are available for the "Toronto" Downsview, Aurora and Boyd sites. Rimsherd numbers and percentages are given by MacNeish for McK (Woodbridge) (226 rimsherds in 10 types) and SdB (Seed) (355 rimsherds in 11 types) (1952:30) but in neither case do the percentages given total 100%. Emerson (1961:194) found 15 types instead of MacNeish's 10 in the same 226 McK rimsherds, and 20 types instead of 11 in the same 355 SdB rimsherds, in each case plus "miscellaneous". This indicates that Emerson adjusted some of the types, or as he put it "Certain liberties were taken with the data which I consider justified" (1961:184). Ross (1976:Appendix) uses 224 and 347 rimsherds respectively, but divides them into 17 and 21 types, and does not provide his percentage calculations. His figures compare to MacNeish's (corrected percentages) for the same collection at a coefficient of 168 for McK, 176 SdB, confirming the problem of rimsherd seriation typing by different researchers. Wright (1966:148) also has 17 and 21 types but in each case adds a "miscellaneous" category. Robert W. C. Burgar, working at the SdB site and noting the low-level relationship of SdB to SM suggested by the earlier researchers, wonders if the small collection then used was really representative of the site and that the current collection might show "that Seed-Barker(SdB) is directly ancestral to Sidey-Mackay"(SM)(Burgar 1998:1). This does not seem probable, yet a Relationship to SM exists at the Some Similarity level, and there are shared "East" pottery types.

Using Wright's rimsherd seriation figures for McK, SdB, and Graham-Rogers (GR) (thought to be intermediate between SdB and MM) (1966:148) against the major early Petun area sites, no Coefficients of Similarity are achieved in the High Similarity range. All McK and GR relationships to Petun sites are in the Moderate Similarity range (112-149)(italics). All SdB relationships are in the lower Some Similarity range (50-111), as follows:-

TABLE 5: HIGHEST COEFFICIENTS OF SIMILARITY
for McK, SdB, and GR vs. Certain Early Petun Sites

McK *SM 132, MV 132, HCU 128, WC 124, YM 120, MA 118, MM 116, WT 112, HCL 112,*
SdB YM 106, MV 104, SM 100, McE 100, WC 98, WT 96, HCU 94, D 90
GR *HL 148, KC 142, CR 140, RB 140, CB 138, LS 136, MQC 136, MM 136, HM 134, E 134, AC 134, SM 126, P 126, MV 124, PF 122, GF 120, G 118, PM 114*

Although at 132 rather than Emerson's 143, the Similarity between McK and SM (and SM's successor MV) is the highest of any Petun site relationship to McK. Both McK and GR have Moderate Similarities to a number of Petun sites, including both SM and MM. Although Similarities to SdB are lower, nevertheless, two of the three St. Lawrence "East" types found at SM (DU, OT, RLC) occur at both SdB (DU, RLC but not OT), and McK (DU, OT but not RLC). The problem may well be that figures used for the "Toronto" sites are not representative.

From the data then available, Robert W. C. Burgar noted that while the relationship of SdB to SM is low, there is no other more likely candidate site. This remains true even though both YM and MV have now produced higher Coefficients as they are ineligible (YM's "Toronto" relationship is too low; MV is GBP2 and too late), leaving SM still the leading and only Petun candidate. Burgar's suggestion that the low relationship from SdB to SM is partly because only a segment of the SdB population moved to SM (Burgar 1998) must also be considered. The movement of partial populations, too few in number and pottery to carry a convincing identification of their original site, would be difficult to detect by the methods here used, and would perhaps justify a different approach.

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COMBINED INTERPRETATIONS FOR PETUN AREA SITES

The above Tables allow a number of interpretations and observations without reference to other data. However, as noted above, the inclusion of external data which might help to explain relationships and chronology is desirable. Where included it is (enclosed); site data are generally from Garrad (1975), and GBP data from Garrad (2001). Sites are consistently ordered geographically south-to-north. Dates, when known, are given as GBP (Glass Bead Period): GBP1 1580-1600 a.d., (protohistoric); GBP2a 1600-1616 (early historic, Champlain); GBP2b 1616-25/30s; GBP3a 1625/30s-1640 (early Jesuit, Iroquois attack); GBP3b 1640-1650 (includes late Jesuit to Dispersal). Collection size is given [ ] as a measure of credibility of the collection. "Lalonde" may refer both to a Huron cultural period ca. 1450-1550, and to the pottery type (LHC) characteristic of this culture period. Distant Relationship data are taken from a forgoing Table (p.13). High Local Similarity figures (a coefficient of 150 and up) are given in **bold**. Moderate Local Similarity figures (Coefficients of 110-149) are given in *italics*. Low Local Similarity figures are not given, but may be seen on TABLE 3: COEFFICIENTS OF SIMILARITY FOR 36 PETUN AREA SITES BASED ON RIMSHERD TYPES (p.9a), from which all Coefficients are taken.

TABLE 6: SITE INTERPRETATIONS USING RIMSHERD AND OTHER DATA.

LS [36]: (small village) High Distant Relationship to "Toronto", Low to "West". High Local Similarities to **RB 174; CB 172; AC 166; HL 164; HM 160; SM 152; CR 152; MQC 152; and E 150,** Moderate to *KC 146; MM 146; MV 142; P 142; GF 138; PR 132; PF 130; W 122; HB 122; DG 122; L 122; PF 122; G 120; HCU 118; PM 118; and MA 116.* LS has a High Distant Relationship to "Toronto", accompanied by a Low Distant Relationship to "West". This is a typical pattern among other Petun sites and probably reflects an ancestral earlier "West" origin for sites which later coalesced in "Toronto" and then migrated north.
LS is the most southern of all Petun area sites, with a High Similarity to nearby and presumably contemporary GBP1 SM and HM, also to later GBP2-3a HL and CR, but only moderate to the intervening GBP2 MV. Four High and ten Moderate Local Similarities are to remote northern sites of all GBP continuing to the last and most northerly PM and PF. This same pattern is seen with the neighbour sites HM and SM. It may result from arriving migrations from the south ("Toronto") passing through LS and other similarly established villages in the southern part of the Petun area during their progress further north.
Interpretation: a small GBP1 or GBP1-2 village, newly or perhaps part newly arrived from the Toronto area, a satellite of adjacent GBP1 SM. Possibly did not participate in the removal from SM to GBP2 MV, but rejoined the parent stock at the next stage, GBP2-3a HL/CR.

W [1]: (camp site, geographically close to HM) Apparent High Distant Relationship (100%) to "Toronto", no others, with High Local Similarities to **HB 200; L 200; E 172; AC 150; and MQC 150**, and Moderate to *GF 148; DG 134; CB 134; HM 130; RB 130; LS 122; CR 120; PF 114; KC 112; and HL 110,* based on insufficient sample. The collection is inadequate to support the supposed high and numerous Similarities to remote northern sites. The Moderate Local Similarity to closest neighbour HM is more believable.
Interpretation: campsite related to adjacent GBP1-2 HM.

HM [29]: (small village) High Distant Relationship to "Toronto", Low to "Huron", "Odawa" and "West". High Local Similarities to **RB 164; MQC 162; LS 160; GF 158; CB 156; E 150; and AC 150**, Moderate to *HL 148; CR 146; KC 146; MM 132; PF 132; W 130; HB 130; DG 130; G 130; L 130; P 126; SM 126; PM 120; MV 116; and PR 114.* The relationship to the Odawa results from the presence of BMP pottery, its earliest occurrence. Other than to nearby LS, High Local Similarities are to remote northern sites. Similarities to local sites SM, MV and HL are only Moderate.
Interpretation: a GBP1-2 village formed by an independent GBP1 group, possibly Algonquin/Odawa, not particularly from nearby SM, who allied with contemporary LS, but may have subsequently removed to MQC in the north.

SM [424]: (large GBP1 village, dated by Wright (1966:75) as "somewhere around the latter half of the 16th century ... early historic"). High Distant Relationship to "Toronto", Low to "East" (St. Lawrence Iroquois DU, OT, RLC, a combination unique to SM), "Huron" (GRP, IP, WH, WX, but LHC is totally absent) and "West" (6 types). High Local Similarities to **MV 176; MM 164; HL 154; LS 152; P 152; and RB 150,** Moderate to *PR 142; CB 140; HCU 140; AC 138; MA 138; KC 136; CR 130; MQC 130; HM 126; G 126; HCL 122; E 116; PB 116; WC 116; PM 114; PF 112; C 110; and GF 110.*
The more significant High Local Similarities appear to be with local LS, presumed successor GBP2 MV (reciprocated), continued to HL. Other High and all but one Moderate Local Similarities are to remote northern sites, the exception being nearby HM.
Interpretation: Large GBP1 village newly arrived from the Toronto area. Later removed to nearby GBP2 MV.

FG [5]: (prehistoric, Lalonde, based on 20% LHC) Moderate Distant Relationship to "Toronto", Low to "Huron" and "West". The only Local Similarity is Moderate to *WC 114,* based on an inadequate sample.
Interpretation: pending a larger sample, a pre-Petun Lalonde extension from Huronia without predecessor or successor. Not a Petun site.

MV [599]: (large, cosmopolitan village, GBP2 from glass trade beads). High Distant Relationship to "Toronto", Low to "East" (ON), "Huron" (IP, LHC, WX), "Odawa" (BMP), "South" (DHN) and "West" (7 types). High Local Similarities to **SM 176; MM 160; PR 152; HL 150; MA 150; and HCU 150,** Moderate to *P 148; LS 142; RB 138; CB 130; AC 128; HCL 128; KC 124; CR 122; G 122; MQC 118; HM 116; WC 112; PB 112; WT 110; and McE 110.* Shares High Local Similarity (reciprocated) with presumed predecessor GBP1 SM (not confirmed by clay pipes, shell or cherts) and to presumed successor HL. Earlier "Toronto" ancestry still apparent. High similarities with northern Petun sites MM, PR, MA and HCU may be partly explained by a shared Algonquin/Odawa presence (all have BMP pottery). The appearance of new clay pipe, shell and chert types compared with predecessor SM suggests that other new people joined those who had moved from SM to MV, possibly from the south (DHN) or west (OC, PN). This was the southernmost large GBP2 village and presumed capital at the time of the arrival of Samuel de Champlain in 1616.
Interpretation: A large, cosmopolitan GBP2 principal village site, successor to GBP1 SM. Removed to GBP2-3a HL.

HB [2]: (cornfield campsite, near and related to HL). Apparent High Distant Similarity (100%) to "Toronto", no others, based on inadequate sample. High Local Similarities to **W 200; L 200; E 172; AC 150; and MQC 150,** Moderate to *GF 148; DG 134; CB 134; HM 130; RB 130; LS 122; CR 120; PF 114; KC 112; and HL 110.* Shows only a low Moderate Similarity to adjacent presumed parent HL, the two rimsherds are therefore not representative.
Interpretation: campsite related to adjacent GBP2-3a HL.

WT [373]: (village, GBP1, Lalonde (19% LHC), ca. 1550, one European copper item). No High or Moderate Distant Relationships, and no High Local Similarities. Some Distant Relationship with "Huron" (CI, GRP, LHC, WH, WX) and "Toronto", Low "East" (OT, RD, RLC), "South" (DHN) and "West" (LI, LO, NC, PN). Moderate Local Similarities to *C 140; PB 138; McE 126; MV 110; SM 108; WC 108; YM 104; and HCU 104.* This site has the highest percentage of "East" pottery and the second highest "Huron" pottery, caused by a 19% presence of LHC, one of four sites with a similar percentage (PB 25%, FG 20%, WT 19%, C 17%), none of which are believed to be "Petun" because LHC does not exceed 2% on the six Petun sites on which it has been found (MV, G, KC, McE, YM and MM). No local successor site is evident. This is a mature late-Lalonde site, and may have come from, and returned to Huronia, the departure possibly related to the arriving Patens, but there is no evidence that this was other than peaceful.
Interpretation: a Huron late Lalonde/GBP1 village without predecessor or successor in the area. Not a Petun site.

D [9]: (prehistoric, cornfield camp site). No High Distant Relationships or Local Similarities. Moderate Distant Relationship with "Toronto", Some to "West" (LI, LO, RP) and to no others. Moderate Local Similarities to *McE 126; WC 124; C 110; and YM 110.* Pottery implies connections to the south (BN, LI, LO). Collection unlikely to be representative.
Interpretation: a prehistoric occupation, from the south, without successor. Not Petun.

HL [284]: (large cosmopolitan village, GBP2-3a from glass trade beads). High Distant Relationship to "Toronto", Low to "East" (LX, RD), "Huron" (IC), "Odawa" (BMP), "South" (DHN) and "West" (LI, NC, OH, RP). High Local Similarities to **RB 168; KC 166; LS 164; CR 164; MM 164; SM 154; CB 154; AC 154; and MV 150,** Moderate to *HM 148; P 148; MQC 148; GF 146; PF 144; E 138; G 138; PR 138; MA 136; PM 134; HCU 130; DG 124; HCL 116; W 110; HB 110; and L 110.* High Local Similarities appear to nearby predecessor GBP2 MV site, contemporary satellite CR site, and ancestral SM site and successor KC site. High Local Similarities to remote northern RB, and MM, and Moderate to P, GF, PF, G, PR, MA, PM, HCU and HCL sites, may be partly due to a shared "Odawa" connection, also to HL's "principal village" status. That the similarity with predecessor GBP2 MV is not even higher may perhaps be explained by the continuing arrival of "West" (Neutral ?) people. As the southernmost village in the GBP2-3a period, the time of the commencement of the Jesuit "Mission of the Apostles" in 1639, it is recognized as the principal village ***EHWAE***, the Jesuit "St. Peter & St. Paul" (Garrad 1997), and as such abandoned in early 1640s.
Interpretation: Large GBP2-3a village, with a nearby contemporary satellite CR, successor to GBP2 MV, and earlier SM, with even earlier "Toronto" ancestry still apparent. Later removed to GBP3 KC.

WC [65]: (small village, GBP1, possibly to GBP2a, from European trade goods). No High Distant Relationships or Local Similarities. Moderate Distant Relationship to "Toronto", Low to "Huron" (CI, GRP, WH) and "West" (LI, LO, NC). Moderate Local Similarities to *McE 140; D 124; SM 116; FG 114; MV 112; and HCU 110,* all remote sites. WC is located on a trail to Huronia and is east of the principal Petun area. Origins not clear, it has no ancestral or successor site. Possibly a transient group migrating from south and west, who later moved on to Huronia.
The trail used by Champlain from the Nottawasaga River to the MV site appears to pass through this village, suggesting it was still in existence at that time.
Interpretation: GBP1, possibly to GBP2a, village with no local ancestor or successor. Probably not a Petun site.

DG [3]: (small campsite). Moderate Distant Similarity to "Toronto", no others. Apparent High Local Similarity to **GF 158; and CR 154**; Moderate local similarities to *KC 144; PM 144; PF 138; MQC 136; W 134; HB 134; E 134; CB 134; AC 134; L 134; RB 132; HM 130; HL 124; LS 122; and G 112.* Both High Local Similarities are to GBP2-3a sites, but the sample of three rimsherds is not certainly representative.
Interpretation: small campsite, possibly GBP2-3a.

P [52]: (small village, GBP2 from the brass/copper. Thought to be new arrivals because local chert sources are not exploited). High Distant Relationship to "Toronto", Low to "Huron" (GRP), and "Odawa" (BMP). High Local Similarities to **MM 170; PR 166; SM 152; and MA 152,** Moderate to *MV 148; HL 148; AC 148; HCU 144; LS 142; RB 138; CR 136; KC 136; CB 132; HM 126; E 126; G 126; MQC 124; HCL 122; GF 120; PF 116; and PM 114.* Shares an unexplained reciprocal highest Local Relationship with remote GBP1-2a MM, and an "Odawa" relationship with three of the four High Local Similarity sites and at least ten of the seventeen Moderate Similarity sites.
Interpretation: GBP2 small village of people newly arrived from "Toronto", possibly Algonquin, using southern and "Huron" style pottery. May have moved to the PR site.

C [18]: (prehistoric (?) Lalonde (17% LHC) camp site). Some Distant Relationship to "Toronto" and "West" (LI, PN), Low to "Huron" (CI, LHC). One High Local Similarity to **PB 152**; Moderate Local Similarities to *WT 140; McE 116; YM 116; SM 110; and D 110.* These sites are geographically remote, PB at 18 km, FG 7, WT 11. C is one of four sites with a high percentage of LHC (PB 25%, FG 20%, WT 19%, C 17%) and consequent relationship to "Huron". C is not a Petun site, may have been abandoned when Petuns arrived, and moved/returned to Huronia.
Interpretation: prehistoric Huron Lalonde camp site, not a Petun site.

CR [175]: (large village, GBP2-3a from glass trade beads). High Distant Relationship to "Toronto", Low to "Huron" (GRP, IP, WX), "Odawa" (BMP), "South" (DHN) and "West" (2 types). High Local Similarities to **KC 182; HL 164; RB 160; GF 156; CB 156; DG 154; MQC 154; PF 154; LS 152; and AC 150,** Moderate to *E 148; PM 148; HM 146; MM 144; G 142; P 136; SM 130; PR 124; MA 124; MV 122; W 120; HB 120; L 120; and HCL 112.* A socially well placed village with numerous connections. Highest relationships are to successor KC and twin HL, followed by ancestral (?) LS, partly contemporary RB and GF, later AC and PF. Lies in territory abandoned in the early 1640a, so cannot be later than GBP3a, but it can be the Jesuit "St. Andrew" (Garrad 1997)..
Interpretation. large mature GBP2-3a village, companion to HL, moved with it to KC.

WB [1]: (campsite ?) 1 rimsherd only, no other data. Apparent High Distant Relationship (100%) "West", no others, based on one PN rimsherd, an inadequate sample.
Interpretation: none, sample too small

E [7]: (campsite, sample too small to be meaningful). High Distant Relationship to "Toronto" (100%), no others. Apparent High Local Similarities to **AC 178; MQC 174; W 172; HB 172; L 172; CB 162; GF 158; RB 158; LS 150; and HM 150,** Moderate to *CR 148; KC 140; HL 138; DG 134; PF 128; P 126; MM 126; SM 116; and PM 110*, based on an inadequate sample. Appears to be well established, with similarities to eighteen Petun area sites of all periods. Lies in territory abandoned in 1640s, therefore not later than GBP3a.
Interpretation: campsite, GBP2-3a.

GF [207]: (village, GBP2 from glass trade beads, but GBP2-3a using other data). High Distant Relationship to "Toronto", Low to "Huron" (CI, IC, WX, WH), "Odawa" (BMP) and "West" (LI, RP). High Local Similarities to **MQC 168; HM 158; DG 158; E 158; KC 158; AC 158; CR 156; RB 152; and PF 150**, Moderate to *W 148; HB 148; CB 148; L 148; HL 146; LS 138; PM 136; G 134; MM 124; P 120; SM 110; and MA 110.* The GF site is geographically interposed half-way between GBP2-3a CR and GBP3 KC, and therefore presumably contemporary with both, and moved with CR to KC. Contemporary or later sites to the north are KC, AC, RB, MA, MM, PM, PF the nearest of which is KC. In its Distant Relationships GF fits best into the GBP2-3a site cluster, with nearby CR, and is therefore somewhat later than the glass beads indicate.
GF may have been in existence as early as Champlain's 1616 visit.
As the site contemporary with and immediately north of CR (= Jesuit St. Andrew), GF would have been the Jesuit "St. James" (Garrad 1997).
Interpretation: A small GBP2-3a village, Odawa presence.

CB [12]: (campsite). High Distant Relationship to "Toronto", Low to "West" (LI, NC), no others. Apparent High Local Similarities to **RB 178; LS 172; AC 168; MQC 164; E 162; HM 156; CR 156; and HL 154,** Moderate to *GF 148; KC 146; SM 140; MM 136; W 134; HB 134; DG 134; L 134; P 132; MV 130; PF 130; PR 116; PM 114; and G 112*, based on an inadequate sample, which suggests similarities to sites of all periods but predominantly GBP2-3a or earlier. Situated at the eastern edge of the Cornhill Moraine, as are earlier WT, WC, WB, and McQ, which are possibly not Petun sites. Whether CB is or is not a Petun site will require a more representative sample to determine.
Interpretation: campsite, probably GBP2-3a.

McQ [4]: (campsite); High Distant Relationship to "Toronto", Some to "Huron" No High Local Similarities Moderate Local Similarity to remote *HCL 116 only*, based on an inadequate sample.
Interpretation: none, other than campsite.

G [559]: (village on trail to Huronia, GBP2-3a from glass trade beads). Moderate but borderline Some Distant Relationship to "Toronto", Low to "East" (ON, RD), "Huron" (IC, IP, LHC, WH), "Odawa" (BMP), "South" (DHN, RI) and "West" (BMG, LI). The only High Local Similarity is to **KC 150.** Moderate Local Similarities to *CR 142; HL 138; PM 136; GF 134; PF 132; HM 130; MM 128; SM 126; P 126; PR 126; RB 124; MV 122; MQC 122; LS 120; MA 120; HCU 116; DG 112; and CB 112.* Highest "Odawa" relationship of all Petun area sites, but this is based on only one type (BMP). The only High Local Similarity is with later GBP3 KC, its presumed successor. Moderate Local Similarities to no fewer than nineteen sites. No evident suggestion of a single origin. G may have been in existence as early as Champlain's 1616 visit. Geographically the closest village to Huronia in 1639 and the first reached by the Jesuits, therefore the Jesuit "St. Thomas".
Interpretation: GBP2-3a village, mixed populations of several origins, Odawa/Algonquin presence, removed to KC.

L [1*]: (a single pot, GBP3b from accompanying glass trade beads and proximity to GBP3 KC). Apparent High Distant Relationship (100%) to "Toronto", no others. Local High Similarities to **W 200; HB 200, E 172; AC 150 and MQC 150,** Moderate to *GF 148; DG 134; CB 134; HM 130; RB 130; LS 122; CR 120; PF 114; KC 112; and HL 110.* Sample inadequate for these figures to be meaningful. Adjacent to, and on the trail to, contemporary KC
Interpretation: A GBP3b feature, related to nearby KC.

PB [24]: (village at extreme NE on trail to Huronia, no trade goods). Some Distant Relationship to "Huron" (25% LHC, 4% WH) and "Toronto", Low to "West". The only High Local Similarity is reciprocal to **C 152.** Moderate Local Similarities to *WT 138; SM 116; and MV 112.* This site has the highest percentage of "Huron" pottery, with 25% LHC, and fits, as does its reciprocal and only High Local Similarity site C, into a group of four sites with a similar percentage (PB 25%, FG 20%, WT 19%, C 17%). These four are distinguished from Petun sites on which LHC, if it occurs at all, does not exceed 2%. Situated north-east of the later Petun sites on the Lamont Creek trail to Huronia. No local successor site, therefore probably moved to Huronia with WT and C and did not stay to become Petun.
Interpretation: Prehistoric or GBP1 village, not Petun, moved/returned to Huronia.

KC [489]: (large cosmopolitan village, GBP3 from glass trade beads). High Distant Relationship to "Toronto", Low to "East" (RD), "Huron" (GRP, IC, LHC, WH, WX), "Odawa" (BMP). "South" (DHN) and "West" (LI, LO, MX, NC, OH, PN, RP). High Local Similarities to **CR 182; HL 166; GF 158; PF 158; RB 156; MQC 154; PM 152; and G 150**, Moderate to *LS 146; HM 146; CB 146; MM 146; DG 144; E 140; AC 140; SM 136; P 136; MA 126; MV 124; PR 124; W 112; HB 112; L 112; and HCL 112.*
The diversity of "West" pottery is probably explained by the continuing arrival of "West" (Neutral) people. The highest local relationship to CR is reciprocal, and an ancestry from partly contemporary CR, HL, GF, and G, and a relationship with wholly contemporary PF and PM, is clear. KC is the fifth GBP3a site north from HL, and corresponds to the central or fifth site on the Jesuit 1639 (GBP3a) list (Garrad 1997). It is also the southernmost GBP3b site As such, and from other evidence, it corresponds with ***ETHARITA***, the Jesuit "St. Jean the Evangelist", the principal Petun Wolf village, transferred in the 1640s from HL, and destroyed by the Iroquois in 1649.
Interpretation: large GBP3 principal village with numerous contacts to other sites and allies.

McE [66]: (two occupations: a GBP1 village (McE1), from rimsherds and other evidence; a later, smaller GBP3b re-occupation (McE2) from glass trade beads, European goods, and proximity to GBP3 KC). No High Distant Relationships or Local Similarities. Moderate Distant Relationship to "Toronto", Low to "East" (RD), "Huron" (LHC, WX) and "West" (4 types). Moderate Local Similarities to *WC 140; WT 126; D 126; C 116; YM 112, and 110 MV.*
Ceramicly, McE relates to neighbour KC only at the lowest of the "Some Similarity" range, yet the glass trade beads indicate McE and KC are contemporary in GBP3b. The evidence of the pottery (supported by conical clay pipe bowl and chert projectile point styles) is therefore in conflict with the evidence of the glass trade beads, supplemented by European brass, iron trade axe and pinch-face effigy pipe fragments. The interpretation is that this site is unique in the Petun area in having two separate occupations, (dubbed McE1 and McE2), and that the archaeological sample is mixed from them both.
Compared with nearby KC, McE has considerably higher BN, HI, LI and LO, but very much lower SN. McE has the most BN (20%), far exceeding the next higher sites D (11%) and C (11%). At 12% LI, McE compares with GBP1 sites SM (13%), WC (14%) and PB (13%). At 3% LO, McE compares with GBP1 WT (2%), WC (3%), and YM (2%), and GBP1-2 LS (3%) and MM (2%). At 4% SN, McE compares with GBP1 WC (7%) and YM (5%). In all, the balance favours GBP1 or earlier for the first occupation, the village. That it has no High Local Similarities to any of these sites may be because the mainly GBP1 (or earlier) McE1 ceramic sample is somewhat contaminated from the later GBP3b McE2.
The second (GBP3b) occupation does not appear to be substantial and is interpreted as an extension from KC, within whose cornfield range the McE site lies. It may have been predominantly a seasonal corn harvesting camp site, but there is a reference vaguely suggesting that people were residing here during the winter of 1649, so it is regarded as a small village at that time.
Interpretation: a ca. GBP1 village, reoccupied as a smaller village in GBP3b, at that time contemporary to nearby GBP3 KC.

AC [4]: (small village, trade goods, assigned to GBP3 by Kearsley (1997:5) because of pinch-face effigy pipe characteristics, and by Garrad because of a GBP3 axe in the Collingwood Museum, both believed to be probably from here. Wintemberg's description (1923) suggests a fairly rich site of some longevity). Apparent High Distant Relationship (100%) to "Toronto", no others. Apparent High Local Similarities to **E 178; MQC 174; CB 168; RB 168; LS 166; GF 158; HL 154; W 150; HM 150; HB 150; CR 150; and L 150,** Moderate to *P 148; MM 148; KC 140; SM 138; DG 134; MV 128; PF 128; PR 126; MA 116; and 110 PM.* None of these figures are reliable because of the small and inadequate sample, half of which, the unprovenienced W. G. Wright collection in the Royal Ontario Museum, is not absolutely certainly from here. AC is located in the Pretty River Valley near to GBP1 MQC (highest reciprocal High Local Similarity), GBP1 YM (Some Similarity), GBP2-3a PR (Moderate Local Similarity) and GBP3 BM (no pottery). Also High Local Similarity with fairly close GBP2 RB, and distant earlier GBP1-2 LS and HM, GBP2a-3 HL, CR, and GF, suggesting an origin from these southern sites. Possibly removed to BM in GBP3b. AC is eligible to be the Jesuit "St. James & St. Philip" (Garrad 1997). Work is needed to confirm the present interpretations.
Interpretation: A GBP3a village. Pending a more representative sample, accepting the suggestion of some longevity, there appear to be two principal possibilities: (i) a local development as the GBP3 successor to MQC via PR in the Pretty River Valley, the Local Similarity at only the Moderate level to predecessor PR being not immediately explainable except that the PR site is anomalous (ii) a southern origin as one of the chain of sites which extends north-westward from HL.

YM [247]: (village, GBP1, trade goods). Some Distant Relationship to "Toronto" and "West" (6 of the 10 "West" types). Low Distant Relationships to "East", "Huron" and "South". No High Local Similarities. Moderate Local Similarities only to *C 116; McE 112; and D 110.* YM is a unique site, with no local High Local Similarities to any Petun site, and no area ancestor or successor. YM has the highest connection of all area sites to "West" (LI, LO, NC, OH, PN, RP).

with the highest area percentage of LI (33%). There is no evidence the YM people were absorbed into nearby contemporary GBP1 MQC, or later GBP2 RB, or GBP2-3a PR. The nearest Local Similarity is Moderate to prehistoric C, some 20 km distant, which also lacks any successor in the Petun area. Perhaps when the adjacent MQC people arrived the YM people moved on, or perhaps fragmented, becoming in part PR.
Interpretation: A GBP1 village of arrivals from the west, perhaps briefly via "Toronto", who either left the area when the Petuns arrived, or fragmented to become untraceable.

MQC [665]: (large village GBP1). High Distant Relationship to "Toronto" , Low to "East" (LM, RD), "Huron", (IC, IP, WH, WX), "South" (DHN) and "West" (8 of the 10 "West" types: BMG, LI, LO, MX, NC, OH, PN, RP). High Local Similarities to **E 174; AC 174; RB 172; GF 168; CB 164; HM 162; CR 154; KC 154; LS 150; W 150; HB 150; and L 150,** Moderate to *HL 148; PF 138; DG 136; MM 134; SM 130; P 124; G 122; PM 122 and MV 118.* MQC has the highest reliable relationship to "Toronto" of all sites with adequate samples. A socially well established village with a diverse range of High Local and Moderate Local Similarities to many other villages, from the most southern to the most northern sites, and through all GBPs. Of these, the closest geographically and northerly is GBP2 RB, a presumed successor. Similarity to closer GBP2-3a PR (*q.v.*) is only at Some Local Similarity level for reasons not understood.
Interpretation: A large, cosmopolitan GBP1 village with many connections, representing a migration from "Toronto", possibly via HM and LS, mixed with other influences, continued partly to RB, and perhaps partly to other Pretty River Valley sites.

PR [31]: (village, GBP2-3a from glass trade beads) High Distant Relationship to "Toronto", Low to "Odawa" (BMP) and "West" (NC, RP). High Local Similarities to **P 166; MA 160; MV 152; and HCU 152,** Moderate to *MM 148; SM 142; HL 138; HCL 136; LS 132; G 126; AC 126; CR 124; KC 124; RB 120; CB 116; and HM 114.* PR is regarded as anomolous because it is geographically located near to, immediately upstream from, and is logically the successor to, nearby GBP1 MQC, but the relationship between these two sites is only at a Low Local Similarity level because of PR's much higher HI, MS, NC, RP, much lower SN, and the presence of BMP. The four remoter sites with High Local Similarity to PR, especially earlier GBP1-2a MA (reciprocated), all share an "Odawa" relationship based partly on BMP, and also the enigmatic MS type, the significance of which is not yet understood. The anomolous position therefore probably relates to the Odawa/Algonquins in some way. The presumed "Odawa" pottery type BMP occurs at PR and eleven other Petun area sites, perhaps suggesting that Odawa/Algonquin people, or different bands, with BMP, may have wintered in different years in different villages, presumably of their choosing and negotiation. The resulting effect on the pottery sample may be erratic. Local Similarities tend to be to remote earlier or contemporary sites and not particularly meaningful. No evident successor, perhaps therefore not yet found, or not recognized, yet generally PR's relationships speak to the same earlier southern origin and progression to later more northern sites as do other Petun sites.
HI is the principal cause of the low relationship between MQC (12%) and PR (44%). It was determined experimentally that if the percentage of HI at PR is progressively reduced there is a corresponding rise in the relationship with MQC, and that a High Local Similarity is achieved when the HI at RB is reduced to 10%. This is a matter of 13 rimsherds, one pot. Given that the PR sample is only 34 rimsherds, the anomaly may simply be due it not being representative, correctible by further work.
Notwithstanding the above, both the temporal (to GBP2-3a from the glass trade beads), and geographic (north of St. James & St. Philip) placements suggest PR site may have existed both at the time of Champlain (1616) and of the Jesuits, and that it was the village the Jesuits named for St. Bartholomew.
Interpretation: A large GBP2-3a village, possibly partly the result of a movement from GBP2 MV, but the sample is in doubt. Logically related to nearby earlier MQC. A substantial (?) Algonquin/Odawa presence. If the PR people remained in the Pretty River Valley they may have moved to the nearby GBP3 AC or BM sites; alternatively north to MA and HCU. Data on this site is insufficient to determine which.

BM [0]: (small village, GBP3 from the glass trade beads and an iron trade axe). This entry is included here to complete the record. No rimsherds have yet been found at BM, and very little pottery generally, consistent with GBP3b. The glass beads suggest a late GBP3b occupation, possibly the end result of the northward movement when the sites south of KC were abandoned ca. 1642, and KC became overcrowded. As a GBP3b occupation it would not have appeared on the earlier Jesuit list of villages, but would have existed in the late 1640's mission period.
Interpretation: a small GBP3b refugee settlement.

RB [160]: (village, GBP2 from trade goods. The glass trade beads suggest connections to partly contemporary PR and HCU, also post-Dispersal RI2)). High Distant Relationship to "Toronto", Low to "East" (OT), "Huron" (IP, IC, WH) and "West" (LI, NC, RP). High Local Similarities to **CB 178; LS 174; MQC 172; HL 168; AC 168; HM 164; CR 160; E 158; KC 156; GF 152; MM 152; and SM 150,** Moderate to *PF 140; MV 138; P 138; DG 132, W 130; HB 130; L 130;*

G 124; PM 124; PR 120; HCU 118; and MA 114. A well established site with many connections. Eleven of twelve High Local Similarities, and eight of twelve Moderate Local Similarities are to sites further south, of all GBP, perhaps suggesting a multiple southern origin including MQC. To the north, the only High Local Similarity is to the partly contemporary GBP1-2a MM site, with only a Moderate Local Similarity to the nearer GBP1-3a MA, perhaps somehow because MA has Odawa and RB does not. Moderate relationships might suggest RB moved ultimately to GBP3 PM and PF, perhaps via HCU.
Interpretation: A GBP2 village, successor to MQC, perhaps moved via HCU to GBP3 PM and PF.

MA [273]: (village, GBP1-2a from glass trade bead, and proximity to MM). High Distant Relationship to "Toronto", Low to "Huron" (IC, WX), "Odawa" (AS, BMP), "South" (DHN) and "West" (LI). High Local Similarities to **PR 160; HCU 156; P 152; HCL 152; and MV 150,** Moderate to *MM 148; SM138; HL 136; KC 126; CR 124; G 120; LS 116; AC 116; RB 114; PM 112; and GF 110*. The relationship to "Odawa", based on AS and BMP, is the second highest of any Petun area site. Shares a reciprocal highest similarity with partly contemporary PR, and an "Odawa" relationship with all High Local Similarity sites, and six of the ten Moderate Local Similarity sites. Origin not clear, perhaps from MV, but High Local Similarities to nearby GBP2-3a HCU and HCL further north suggests later location. Shares only moderate relationship to its nearby contemporary twin site, MM, partly because of the much lower "Odawa" connection there. MA would have existed at the time of Champlain's 1616 visit but was possibly preparing to move north to HCL/HCU at the time.
Interpretation: GBP1-2a village, with a substantial Algonquin (Odawa ?) presence. Probably moved from PR and continued to HCL, HCU.

MM [1643]: (large village, GBP2 per glass trade beads, GBP1-2a from other data). High Distant Relationship to "Toronto", Low to "East" (ON, RD), "Huron" (GRP, IC, IP, LHC, WH), "Odawa" (AS, BMP), "South" (DHN), and "West" (7 of 10 "West" types: BMG, LI, LO, NC, OH, RC, RP). High Local Similarities to **P 170; SM 164; HL 164; MV 160; and RB 152,** Moderate to *AC 148; PR 148; MA 148; LS 146; KC 146; CR 144; HCU 142; CB 136; MQC 134; HM 132; PM 130; G 128; HCL 128; E 126; PF 126; and GF 124*. Shares High and reciprocated Local Similarity with P, based on similar "Toronto" connections (High and Similar HI and SN numbers) rather than the Algonquin/"Odawa" presence on both sites. High Local Similarity to the distant southern sequence GBP1 SM; GPB2 MV; GBP2-3a HL; and RB; a moderate connection to the Pretty River cluster MQC, PR, AC, and to nearby contemporary twin MA site. Moderate Local Similarity to all four later and successive sites further north, GBP2-3a HCL and HCU, GBP3 PM and PF, presumably indicating the probable successor sites.
As to the date of the MM site, its excavator, W. D. Bell, wrote: "the site must have been first occupied in the late prehistoric times, before French trade goods were available. Occupation was continuous however, lasting into the early historic period" (Bell 1953). A continuous occupation from the late prehistoric period into the early historic (GBP2a) period cannot omit the proto-historic period (GBP1) in between. The recorded increase in the amount of European goods during the lifetime of the site and the three glass beads (two of which are a GBP2 type), which were found in the upper levels, is consistent with the site commencing in GBP1 and terminating in GBP2a. If the site had continued further into GBP2 there would have been many more glass trade beads (the minimally excavated GBP2 MV site produced 45). A the opposite extreme, the suggestion that the MM site is "late historic .. 1650" (Wright 1966:75, 101) cannot be supported as too late. The same arguments apply to the adjacent contemporary twin MA site. Both villages would have been in existence at the time of Champlain's 1616 visit, but possibly preparing to move to HCL/HCU.
Interpretation: Large GBP1-2a village, at least partly originating in the southern sequence commencing at GBP1 SM. Removed north to nearby GBP2-3a HCL and HCU and from there on to GBP3 PM and PF.

HCL [122]: (village, GBP2-3a from glass trade beads). No High Distant Relationship, Moderate Distant Relationship to "Toronto", Low to "East" (RD), "Huron" (GRP, IP, WH), "Odawa" (AS), and "West." (LI, NC, RP). The only High Local Similarity is to **MA 152**. Moderate Local Similarities to *HCU 148; PR 136; MV 128; MM 128; SM 122; P 122; HL 116; McQ 116; CR 112; KC 112; and PM 112*. The High Local Similarity to nearby GBP2 MA suggests an immediate origin, and perhaps the Moderate Similarity to nearer MM does too. Other Moderate Local Similarities to principal southern sites suggests the previous history back to "Toronto", a Relationship still High, but diminishing compared to the sites of the southern Petun sequence. That the Local Similarity to the adjacent contemporary twin HCU site is only Moderate is partly due to their being eight fewer pottery types at HCL , and different percentages of WH and MS. The Local Similarity to the nearby northern presumed successor GPB3 PM site is also only Moderate, and to its twin PF even less. HCL may have been in existence, perhaps under construction, at the time of Champlain's 1616 visit. Although it extended into early GBP3a, HCL was not known to the Jesuits because it was abandonned and the shift to PM and PF completed before their arrival.
Interpretation, GBP2-3a village, twin to HCU, an Algonquin (Odawa ?) presence. Derived from MA, possibly also MM, and moved to PM and/or PF.

HCU [318]: (village, GBP2-3a from glass trade beads). Similar to related smaller twin HCL, No High Distant Relationships; Moderate Distant Relationships to "Toronto", Low to "East" (RD), "Huron" (GRP, IC, IP, WH), "Odawa" (AS, BMP), "South" (DHN) and "West" (LI, NC, PN, RP). High Local Similarities to **MA 156; PR 152; and MV 150** only. Moderate Local Similarities to *HCL 148; P 144; MM 142; SM 140; HL 130; LS 118; RB 118; G 116 and WC 110.* HCU shares an Algonquin (Odawa ?) Distant Relationship to all three High Local Similarity sites and five of the nine Moderate Local Similarity sites. The High Local Similarity to earlier GBP1-2a MA, partly contemporary PR, and Moderate Local Similarity MM, may suggest origins. The Local Relationship to adjacent contemporary twin HCL (q.v.) is only Moderate, and to the northerly presumed-successor GBP3 PM and PF is only at Some Local Relationship level, yet both have an Odawa presence and are eligible as successor sites. This suggests that the assumption of conservative "traditional and culture bound" (Emerson 1968:87) continuity in pottery making breaks down at this time, compounded by the introduction of new pottery types at PM and PF (q.v.), the supplanting of pottery by European metal vessels, and, possibly, a change in the relationship with the seasonally visiting Odawa/Algonquin.
As with its twin HCL, HCU may have been in existence, perhaps under construction, at the time of Champlain's 1616 visit. Although deemed to be GBP3a, it was not known to the Jesuits because by their 1639 arrival the shift to PM and PF had already occured.
Interpretation: the last large, and most northerly, GBP2-3a village, adjacent to smaller contemporary twin HCL. Part derived from the Mad River sequence, and GBP2 MV, via MA and possibly MM. Significant Odawa/Algonquin presence may have left the Patensarea after the site was abandoned, others went to successor PM and PF.

PM [186]: (large, cosmopolitan village, near Georgian Bay shore, GBP3 from glass trade beads).
Moderate to marginal Some Distant Relationship to "Toronto", Low to" East" (RD), "Huron" (IC, WH), "Odawa" (AS), "South" (DHN, GFR) and "West" (LI, LO, NC, RP). High Local Similarity to **PF 166; and KC 152** only. Moderate Local Similarities to *CR 148; DG 144; GF 136; G 136; HL 134; MM 130; RB 124; MQC 122; HM 120; LS 118; SM 114; P 114; CB 114; MA 112 and HCL 110.* The Highest Local Similarity is to adjacent contemporary smaller satellite PF (reciprocal), and to the more distant but contemporary KC, both of which might be expected. Moderate relationship with many earlier sites of all GBP, including the nearby presumed ancestor HCL. No single origin. At PM the drop in HI is balanced by a rise in MS. Pottery generally is noticeably in short supply on this site, but trade goods are abundant. This confirms the suggestion (at HCU) that during late GBP3 the traditional ceramic continuity which makes the typing/coefficient system work for other sites was collapsing. The rise in the connection to "Huron" and "South", shared with PF, may result from the arrival of Huron refugees carrying GFR and WH pottery. This site and adjacent PF are the last in the Petun sequence and without local successors, because it was from them that the Petun departed west on abandoning the entire historic Petun area in 1650 to distant (Wisconsin) successor RI2.
As the last-but-one site in the north of the Petun country, PM coincides with the last-but-one entry on the south-to-north 1639 list of Jesuit names as "St. Matthew", the Petun ***EKARENNIONDI*** (Garrad 1997).
Interpretation: The most northerly large GBP3 village, part derived from HCL, with Algonquin (Odawa ?) and Huron refugees. No successor site in the Petun area due to the Dispersal. Removed to western Upper Great Lakes.

PF [127]: (smaller village, near Georgian Bay shore, GBP3 from glass trade beads and proximity to PM). No High Distant Relationships. Moderate Distant Relationships to "Toronto", Low to "Huron" (IC, WH), "South" (GFR, SB) and "West" (NC, RP). High Local Similarities to **PM 166; KC 158; CR 154; and GF 150,** Moderate to *HL 144; RB 140; DG 138; MQC 138; HM 132; G 132; LS 130; CB 130; E 128; AC 128; MM 126; P 116; W 114; HB 114; L 114; and SM 112.* . Notwithstanding the lack of any indicated "Odawa" relationship, other evidence indicates there was an Odawa/Algonquin presence on the PF site. That it is not reflected in pottery, unless the rise of MS is so explained, may be because by GBP3b the Odawa, and also the Petun, had either substantially adopted local pottery, or European metal vessels, or both. Pottery is in noticeably short supply on both PM and PF sites, a GBP3b characteristic, suggesting it was no longer being made in such quantities as formerly. This, and the replacement of native pottery by European wares, resulted in the breakdown in the rimsherd typing system used in this paper.
The apparent rise in relationship "South" at both PF and PM is misleading, being partly because of the presence of GFR, associated with the New York Wenro people. Its arrival at PF and PM was the result of the migration of Ossossane Hurons, among whom Wenro refugees were living, in March 1649.
PF's High Local Similarity to nearby contemporary larger twin PM is reciprocal. Other High Local Similarities are to contemporary KC and partly contemporary CR and GF. PF has Moderate Local Similarities with no fewer than sixteen sites, all but one of which are earlier. A logical origin from nearby earlier GBP2-3a HCU and HCL is not supported by Similarity figures but is accepted on other evidence. PF has no local successor site but continues at RI2. As the most northerly GBP3 village, PF had the last name on the 1639 Jesuit list, "St. Simon & St. Jude" (Garrad 1997).
Interpretation: The most northerly and last GBP3 village, related to nearby contemporary PM. No successor site in the Petun area due to the Dispersal of 1650. Removed to RI2.

That the stratified RI2 site contained a post-Dispersal refugee Petun/Odawa occupation ca. 1651-1653 was first recognized by presence of 'bear jaw tools' similar to those found on the PM and PF sites. Excavations by Drs. Ronald J. and Carol Mason of Lawrence University, Wisconsin, 1969-1973 found a number of such tools, accompanied by pottery which included HI, MS and SN, corresponding to the three dominant types at PM and PF. One HI pot is "indistinguishable from those .. from the Sidey-Mackay site .. in the collections of the National Museum of Man, Ottawa". A SN pot "agrees closely .. with sherds from the Sidey-Mackay site" (Mason 1986:164,173, 181-184). This is the last known "Petun" pottery, presumably carried from PM and PF when these sites were abandoned in 1650. Other rimsherds, which were dubbed "like HI" and "like MS", appear to represent a melding of imported Petun area and local ceramic traditions and traits because of shallow scallops, corded/fabric impressed lips, cord-wrapped stick impressed lips and collars, and corded bodies, which on pre-Dispersal Petun sites would be regarded as "Odawa", or at least Algonkian. Notched appliqué pottery, which may or may not relate to AS, was found associated with the Petun/Odawa/Huron material (Mason 1986:216-7). A pot typed MS but with a cordmarked body was thought by J. V. Wright to be "an Algonquian copy of Huron(Petun) style pottery", but J. N. Emerson found it an acceptable Huron(Petun) variant (Mason 1986:163-166, 171-173). Given that a characteristic of MS is variation, both authorities could well be correct, although the seeming pre-Dispersal association of MS with "Odawa" in the Petun country would seem to favour Wright's opinion. This raises the unanswerable question of how much "Petun" pottery was actually made by the Odawa, particularly when the Petun manufacture of pottery declined in GBP3b. No evidence of pottery-making was found at the RI2 site, so it seems that the MS and other Petun area types at RI2 had been made in, and brought from, the Petun homeland, perhaps as much by the Odawa as the Petun, and that Petun, Algonquian, and local Upper Lakes pottery-making techniques and traditions merged before becoming extinct.

FURTHER CONCLUSIONS

(1) It is affirmed that the term "Petun" did not, at least initially, reflect "a social reality, which should find a corresponding reflection in the archaeological materials" (Ramsden 1977:3, 8). The various Wyandot groups which moved from the west and south into the future Petun area in the late 15th and early 16th centuries did not arrive together, but were relatively unrelated, few, and of multiple origins. These were substantially displaced by a series of much larger migrations of Wyandot peoples from the south which commenced about the middle of the 16th century, to become the Petun. These also were without a collective prehistory and were not the product of a consistent line of development (Garrad 1980:105; Ramsden 1977:8). Those that stayed together in the new homeland inferentially reorganised themselves politically, to forge a new tribal society, the Petun. Those who found this unacceptable either fragmented to several sites, or moved away, leaving no successor sites.

(2) The Petun were not the product of a single migration from the south ("Toronto" = Humber Valley). A pattern of several migrations is seen. Once established, the Petun villages continued to receive migrants, each bringing pottery which reflected their specific ancestry. Those who originally moved to the historic Petun area, and those who subsequently joined them there, all became collectively "Petun".

(3) Once established, two, if not three, separate but contemporary progressions of villages commenced. The sequence in the south part of the Petun country involves principal villages GBP1 SM, GBP2 MV, GBP2-3a HL, and GBP3 KC, with associated LS, HM, CR, GF, G and McE. This collective emerged into history as the Petun Wolf. In the Pretty River Valley the GBP1 MQC site seems to have displaced YM, to be followed by GBP2 RB and GBP2-3a PR, and on to GBP3 AC and BM, but the evidence for this hypothesis is scant. If the Pretty River Valley cluster of site represented a group separate from the Wolf to the south and the Deer to the north, this was not mentioned in 1647 when the Jesuits said the Petun were two nations, the Wolf and the Deer. The Petun tribal system at this time could well have been a two moiety (Wolf and Deer) three-phratry system, or perhaps by 1647 the remaining people in the Pretty River Valley were regarded as of no consequence. Further north (Blue Mountains) the GBP1-2a MA and MM seem ancestral to GBP2-3a HCL and HCU, then on to GBP3 PM and PF, these convincingly the Petun Deer. The role of the Pretty River Valley sites in both the local sequence and the Deer sequence is not yet clear. All Petun sites are "fusion" sites as defined by Wright (1966:76). In 1650 all the surviving Petun abandonned the area and moved to the western upper Great Lakes, an event known as the Dispersal. The most certainly known post-Dispersal successor site is the RI2 in Wisconsin, dated ca. 1651-1653.

(4) An added factor in understanding 'Petun' pottery is the presence of Algonquins, particularly the Odawa, who in GBP2 began cohabiting (seasonally ?) with the Petun, and came to be a major presence in some villages, if not dominating them. This applied to the more northern of the Wolf villages, and to all of the Deer villages. From the absence of "Odawa" pottery on the PF site, which has a recognized Odawa occupation, it is speculated that the Odawa had wholly adopted Petun pottery, and also European metal kettles, in GBP3. Yet the evidence at the post-Dispersal RI2 site is that the Odawas were making their own variants of Petun pottery, blending HI and MM with their

own cording techniques. If it was at Rock Island that the Petun finally gave up making their own pottery in favour of European metal vessels, the possibility exists that the last "Petun" pottery was actually made by the Odawa.

(5) Villages visited by Champlain in 1616 occur in GBP2a; eligible sites appear to be MV, WC, GF, G, PR, RB, MA, MM, HCL, HCU. Villages named by the Jesuits in 1639 on the commencement of their Mission of the Apostles are in GBP3a; eligible sites are HL, CR, GF, G, KC, AC, PR, PM, PF. Villages which were part of the revived Mission 1646-1650 are in GBP3b: eligible sites are KC, McE2, BM, PM, PF. "Wolf" villages at the time were KC and McE2; "Deer" villages were PM and PF. The status of BM is unknown.

(6) There is still work to be done. Many samples need to be enlarged, particularly from the related PR (31 rims), AC (4 rims) and BM (no rims) village sites, in order to better understand the sequence in the Pretty River Valley and whether the people became a part of the Petun Deer, or were, in fact, a separate group, a third cluster, neither Wolf nor Deer, but, as Caroline Walker described them, "the People in Between" (Walker 1999:318, 324).

(7) Despite the admitted problems, inconsistencies, inherent untenable assumptions, proneness to error, uncertainty in confidently identifying some pottery types, and other criticisms advanced by scholars to the methodology employed above, it seems that using a rimsherd seriation "type" approach, and its coefficient and origin extensions, does produce data which seems sensible and more likely than not to be meaningful. The system appears to break down in GBP3b, presumably because pottery was being displaced by imported European metal vessels and the loss of traditional skills, such as pottery making, due to disease epidemics.

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