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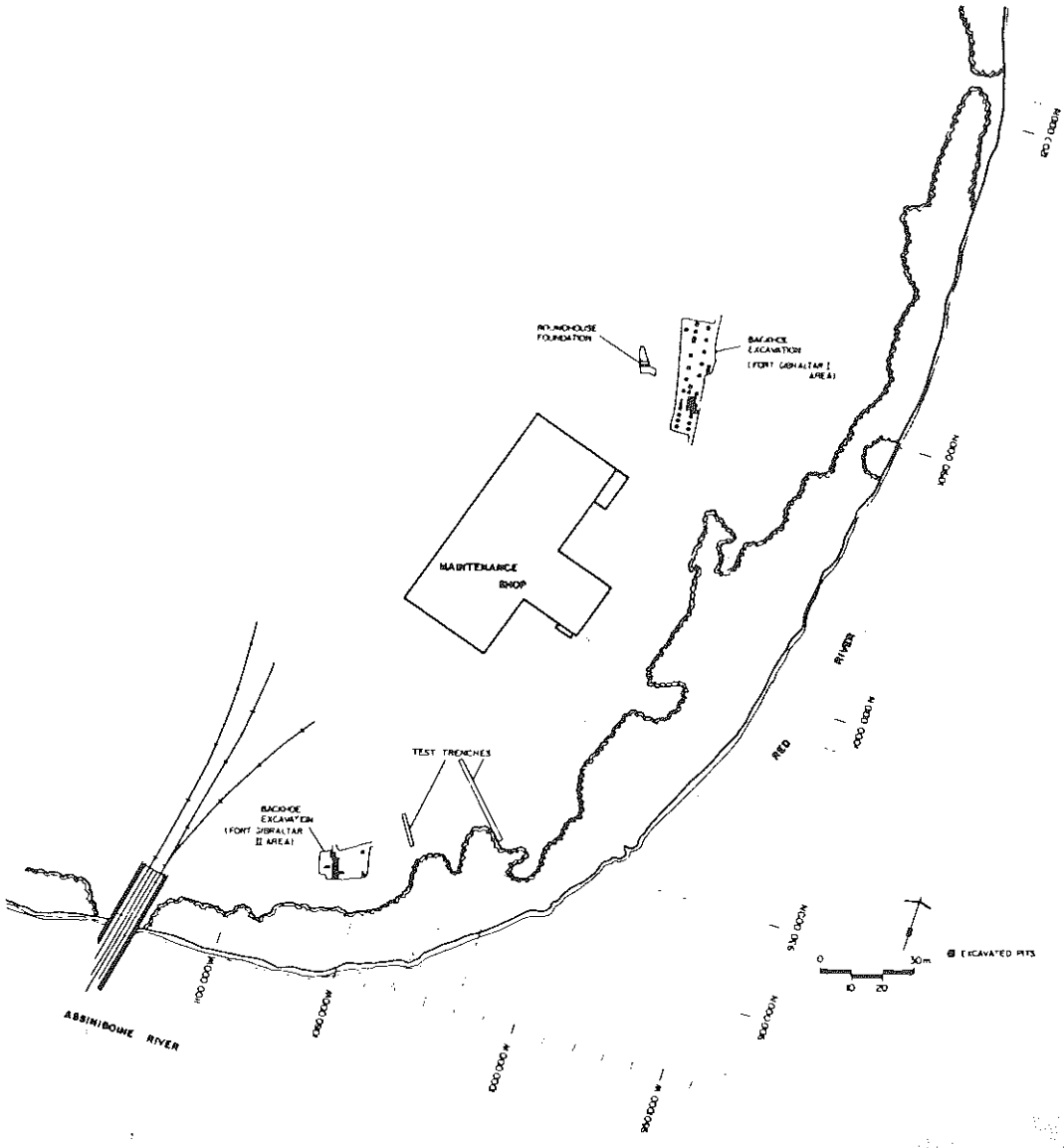
Manitoba Archaeological Quarterly



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Editor's Notes

Undoubtedly those subscribers to the Quarterly who live in or near Winnipeg have heard about The Forks -- 90 acres of land at the junction of the Red and Assiniboine rivers that have been turned over by CN Rail to Canadian Parks Service and The Forks Renewal Corporation for redevelopment. As the intersection of major north/south and east/west river systems, The Forks has been an important "meeting place" prehistorically and historically. In 1989, Canadian Parks Service will open its portion of the redevelopment, The Forks National Historic Park, which will be the first of many projects in this location to focus upon the province's heritage as revealed by archaeological investigations. This issue of the Quarterly contains a paper which discusses the first professional archaeological excavations to be conducted at The Forks.

P.M.B.

Contributors

S. BIRON EBELL is an archaeologist with the Canadian Parks Service in Winnipeg. In 1984, he participated in the initial excavation of the lands that were to become the national park at The Forks. It is hoped that his report will be the first of many to detail the prehistory of this important location.

A.P. BUCHNER, archaeologist with the Historic Resources Branch, Manitoba Culture, Heritage and Recreation, initiated a multi-year project to salvage information from the rapidly eroding Lockport Site. During the 1985 excavations, domesticated corn was recovered from the site, making it the first archaeologically documented recording of prehistoric horticulture in the province.

VOLKER JOHNAS AND LYNN LELOND, archaeology students at Brandon University, participated in Brandon University's 1986 archaeological field activities which investigated, in part, the Johnas Site (see Volume 12 No. 1 of the Quarterly). The papers included in this volume are laboratory analyses of ceramics recovered from the site by the Johnas family and the 1986 field crew.

THE RED AND ASSINIBOINE RIVERS IN SOUTHERN MANITOBA: A LATE PREHISTORIC AND EARLY HISTORIC BUFFER ZONE?

by

S. Biron Ebell

Introduction

As Marvin Harris has pointed out, band and village warfare tend to disperse populations. Having neither the political mechanisms nor the resources necessary to feed captives or patrol captured lands, the antagonist populations will generally avoid contentious areas containing disputed resources. As Harris (1977: 38) put it:

> One of the most important benefits of this dispersion - a benefit shared by both victor and vanquished - is the creation of a "no man's land" in areas normally providing game animals, fish, wild fruits, firewood and other resources. Because the threat of ambush renders them too dangerous for such purposes, these "no man's lands" play an important role in the overall ecosystem as preservers of plant and animal species that might otherwise be permanently depleted by human activity.

An historic North American example of the "no man's land" is described by Hickerson as a "buffer zone". It existed between the Chippewa and the Eastern Dakota in Minnesota from 1780 to 1850 (Hickerson 1965). This area of open forest was the preferred browse of the Virginia or white-tailed deer, a resource sought by both Native groups. So fierce was the competition for deer that no permanent villages were maintained within this zone, and only large well-armed hunting parties dared to venture there.

In 1820, a peace treaty between these two Native groups opened the buffer zone to free hunting. By 1838, the state of aggression had resumed because uncontrolled hunting had depleted the deer population, bringing famine to both the Dakota and the Chippewa. The buffer zone was re-established as a result of renewed hostilities. This permitted the deer population to increase to previous levels, allowing the subsistence requirements of both the Chippewa and the Dakota to be met Watrall 1968: 85).

Watrall (ibid.) tested Hickerson's buffer zone hypothesis using prehistoric data to determine if the zone had existed prior to European influence. Assuming that recent environmental fluctuations had been minimal, he compared the frequency of historic and protohistoric sites from the buffer zone with those occurring outside it. Testing the data statistically, he found that the evidence supported the hypothesis that the buffer zone had existed prior to European contact (but see Michlovic 1980).

With these observations in mind, the following paper will focus on the junction of the Red and Assiniboine rivers in downtown Winnipeg, Manitoba (Figure 1). Using new archaeological information, observations obtained from previous archaeological surveys of the lower Red River, and ethnohistoric data derived from fur trade journals, it will be demonstrated that a "buffer zone" or "no man's land" similar to that described by Hickerson and Watrall existed on the lower Red River in Manitoba (cf., Ray 1974: 18).

Archaeology at the Forks

In 1984, Environment Canada, Canadian Parks Service, Archaeological Services, conducted test excavations in two areas near the confluence of the Red and Assiniboine rivers (Figure 2). These tests were necessary in order to: (1) provide archaeological input into the thematic development of the new national historic park that is planned for the area; (2) determine the nature and scope of the heritage resources present; and (3) obtain study specimens and expose earthbound features that could be used in park interpretation.

Geography, Geology and Environment

The confluence of the Red and Assiniboine rivers - the Forks - occurs within the central lowlands of Manitoba at an elevation of 228.6 m above sea level. In the Winnipeg area, both rivers lie in a broad flat valley composed of lacustrine glacial Lake Agassiz clays.

The riparian vegetation of the Red and Assiniboine rivers has changed considerably since first recorded by fur traders. In 1800, Alexander Henry the Younger observed that the woods on the riverbank were almost impenetrable, with some of the trees being enormous (Coues 1965: 49). Only 50 years later,

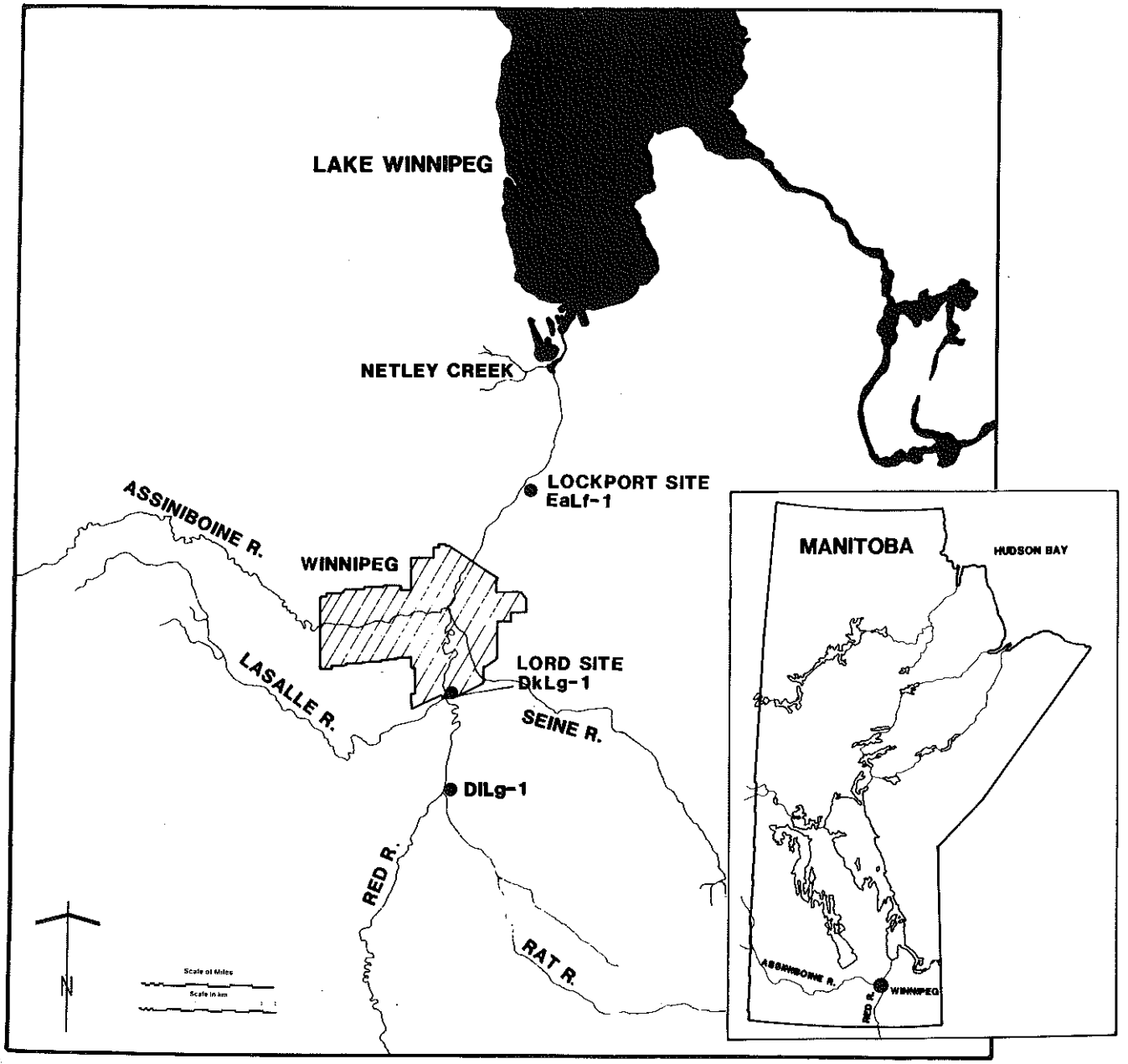


Figure 1. The Location of the Red and Assiniboine Rivers in Winnipeg, Manitoba, Canada.

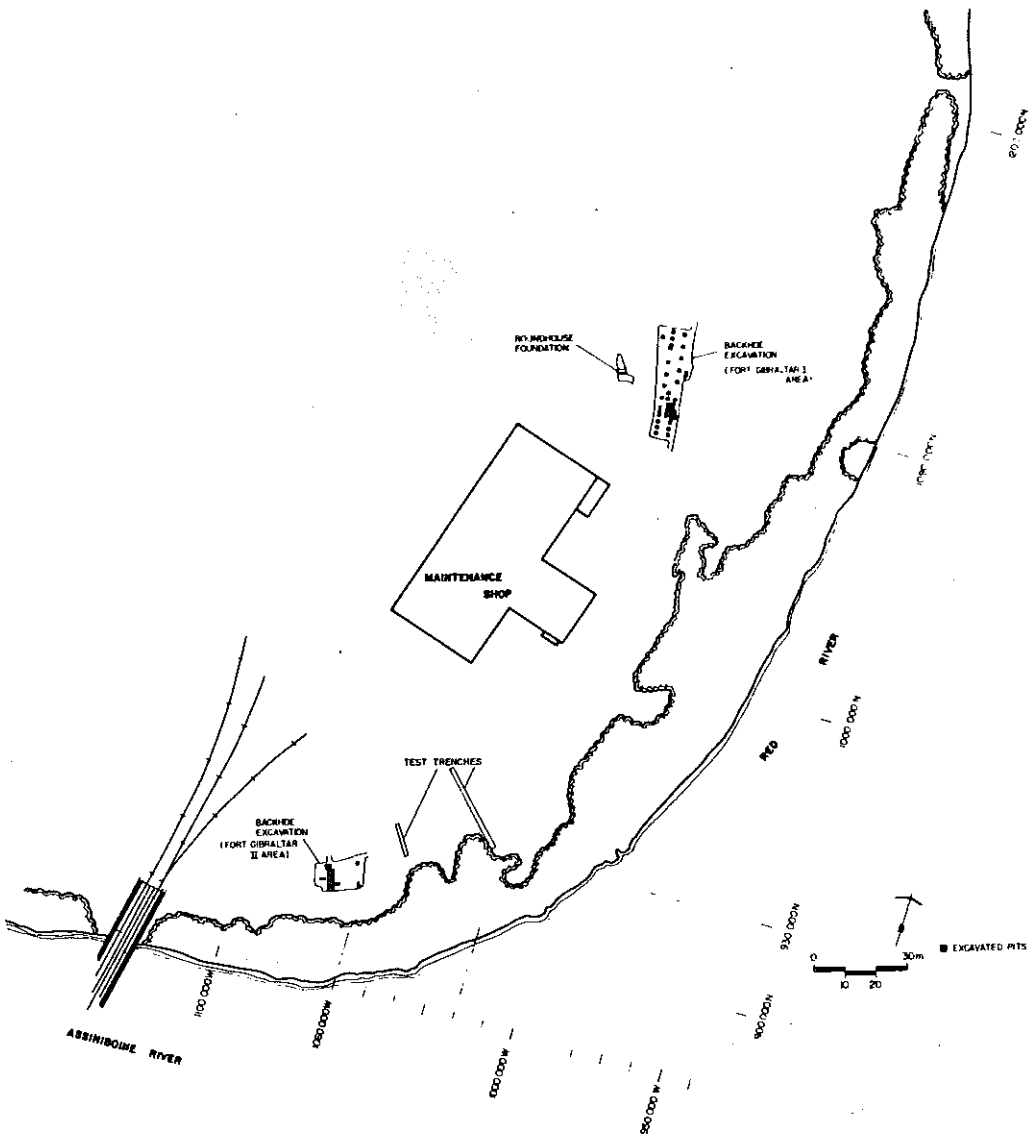


Figure 2. Map Locating Canadian Parks Service Excavations at the Red River Junction. Prehistoric artifacts and features were recovered in the Fort Gibraltar II area.

photographs show the riverbank to be devoid of most vegetation (Guinn 1980: 12-13). Today the riverbanks are no longer exploited for fuel or building materials, and the lower terrace near the water's edge supports poplar, ash, willow, box elder or Manitoba maple, and oak.

The Red River lies along the eastern edge of a tall grass prairie peninsula extending northward into the mixed woods or parkland. In the past, this peninsula was the habitat for animal species native to both grassland and forest environments. As well, fish were plentiful in the rivers (Ray 1974: 29). Ray (1974) proposed that an annual cyclical pattern of resource exploitation was employed by human populations moving both north and south out of the parkland into the forests and onto the grasslands to hunt game animals in the spring and summer. These hunters then followed the game animals back into the shelter of the parkland to spend the winter. Such game species included bison, moose, pronghorn antelope, white-tailed (Virginia) deer and woodland caribou.

Summary of the Structural History of the Forks to 1852

Fur trade journals and other historic accounts confirm that at least three fur trading establishments had existed at the Forks prior to 1821. Although there may have been a French presence at the south end of Lake Manitoba as early as the 1690s, it was not until 1737 that the French trader and explorer Pierre Gaultier de Verennes, Sieur de la Verendrye arrived at the Forks. In the summer of 1738, M. de Larmarque, a business associate of La Verendrye's, left his friend M. de Loviere at the Forks to build a fur trade post in response to urgent requests by Cree and Assiniboine Indians (Burpee 1927: 308). Apparently the trading post, known as Fort Rouge, was short-lived and its location remains a mystery today (see Guinn 1980).

Although used extensively as a rendezvous by fur companies from Montreal and Hudson Bay, there appeared to have been no permanent structures present at the Forks until the NorthWest Company constructed Fort Gibraltar in 1810. It was subsequently destroyed by the Selkirk settlers in 1816 and then rebuilt by the Northwest Company in 1817. Portions of this latter structure remained in existence until 1852 (see Guinn 1980 for a comprehensive land use history of the Forks).

Forks Archaeological Field Techniques

Although the sites of Forts Gibraltar I and II were believed to be on federal land, it had been suggested in an early newspaper account that both forts were eroding or had already eroded into the Red River as early as 1871 (Bell 1932). Archaeological tests were conducted to establish the reliability of this report.

Mechanized auger tests demonstrated that structural remains were still intact in two areas (Kwan 1984). A backhoe was used to strip away as much as two metres of 19th and 20th century railroad fill and debris to expose what was believed to be the ground surface existing prior to industrial development. Substantial remains of historical structures were encountered in both of the areas that could contain Forts Gibraltar I and II.

Stratified in situ prehistoric deposits were found beside and below footings and cellar remains exposed in the area nearest the mouth of the Assiniboine River (see "Fort Gibraltar II" area in Figure 2). These excavations were designated 21K3 by Environment Canada, Canadian Parks Service. Using a backhoe, approximately one metre of overburden was removed from the area. An exploratory trench 45 to 50 cm wide was dug by hand along the excavation's west wall, exposing 19th century fur trade and railroad artifacts and features. In addition, a total of one 1m by 1 m unit, one 2 m by .5 m unit, and ten 2 m by 1 m units were excavated, exposing a total area of 22 m^2. These units were excavated in natural strata using hand tools to facilitate the interpretation of depositional events. Prehistoric artifacts were recovered from all but two of the excavation units. One unit was not completed and 19th or 20th century railroad construction had destroyed the prehistoric deposits in the other. No prehistoric remains were found in situ in the Fort Gibraltar I area excavations.

Excavation Results

Nine prehistoric occupation levels were found between 90 and 150 cm below the present ground surface. For the most part, the layers containing the occupation debris were discontinuous because 19th and 20th century construction, as well as natural riverbank erosion, had disturbed them.

Level 1: The earliest prehistoric level occurred 150 cm below the present ground surface. It consisted of a discontinuous compact organic layer containing fish bones, fish scales, charcoal and artifacts (Figure 3). The artifacts consisted of

sherds from a Blackduck ceramic vessel (Figures 4a and 5a), a Knife River Flint uniface and six pieces of lithic detritus. Charcoal from this level was assayed by the Saskatchewan Research Council in Saskatoon. The unadjusted age of the sample was 1105 +/- 160 years B.P. (A.D. 845; S-2565). Descriptive details of the artifacts recovered from this and other prehistoric levels can be found in Appendix 1.

Level 2: Only two artifacts were recovered from this stratum. These lay directly on the surface of a black-stained clay containing white ash. A cord-roughened ceramic sherd and a bipolar core that may be a pièce esquillé (MacDonald 1968: 85) were recovered. In addition, seven unidentified mammal bone fragments were recovered, some of which were charred.

Levels 3 and 4: Both of these zones were composed of thin black humic soils containing a few mammal bones. These may be the remains of cultural deposits disturbed by flooding, or they may be located on the periphery of prehistoric activity areas.

Level 5: The excavation unit exposing this cultural level was isolated horizontally from the main excavation block. Without an interconnecting stratigraphic section, it is impossible to determine if it contained a discrete occupational event, or if it related in some way to one of the other occupation levels. A total of 39 ceramic sherds were recovered, including one small Blackduck rimsherd, five probable Blackduck neck and body sherds, and 33 cord-roughened body sherds (see Figures 4B and 5B).

Level 6: The artifacts were enclosed in a matrix of brown-stained grey clay that lay directly on light brown sand. Because 16 of the 18 ceramic sherds recovered could be joined, it is probable the underlying brown sand was a stable ground surface.

The ceramic sherds were cord-roughened on the exterior surface and are probably from the base of a large globular Blackduck vessel. In addition to the sherds, some fish bone, a clam shell and a few mammal bones were recovered.

Level 7: Although this occupation level was partially disturbed by 19th century building construction, the occurrence of intact features and cord-roughened pottery sherds that could be joined suggest that impact on the cultural deposits was minimal. The feature consisted of 17 post moulds. Each measured approximately 7 cm in diameter and extended approximately 10 cm into the ground. In one area, the sand deposits overlying Level 7 were swirled directly over the post moulds. This suggests the posts

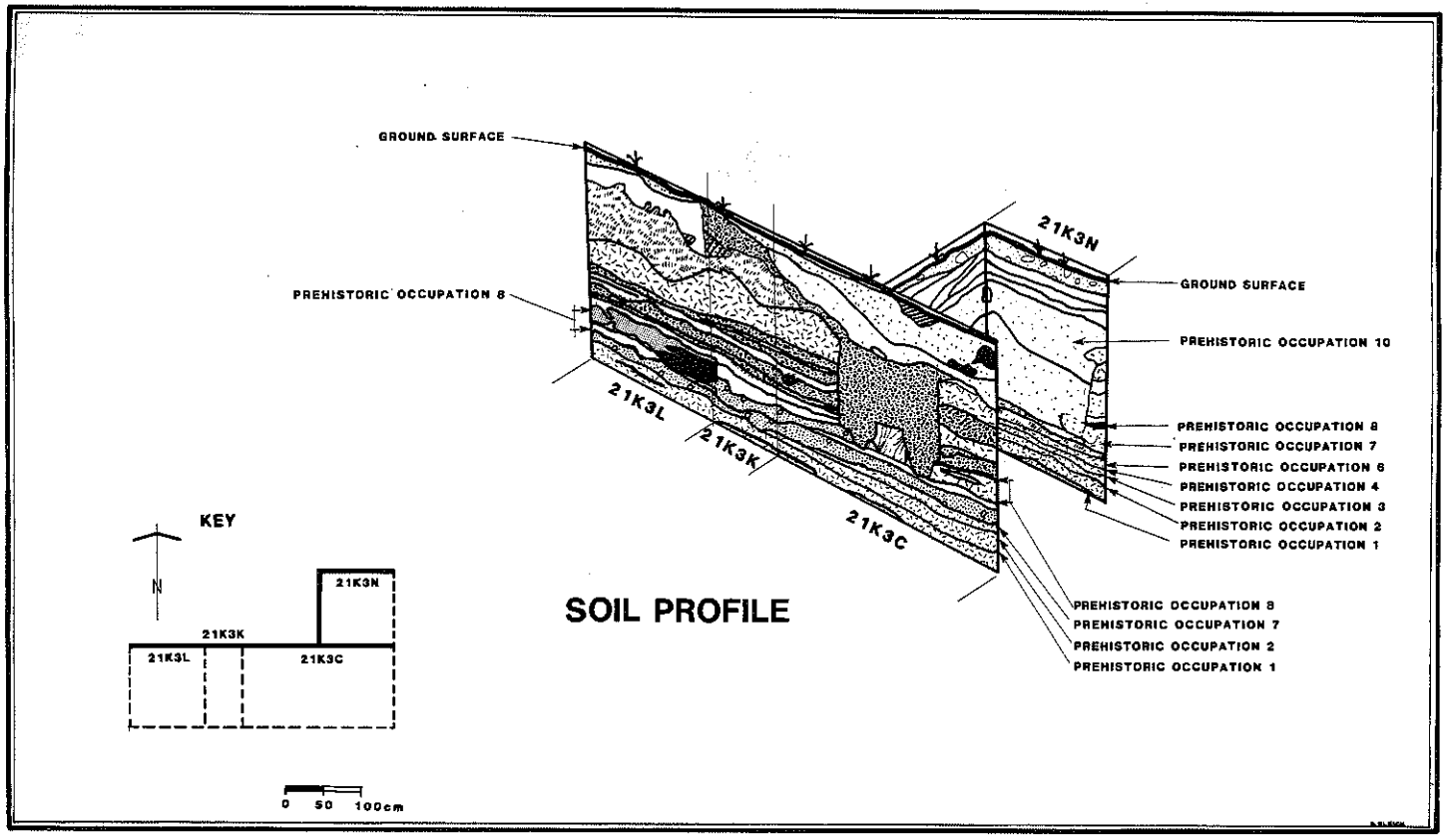


Figure 3. Stratigraphic Cross Section of Deposits Exposed at 21K3. Vertical locations of the various prehistoric levels are indicated.

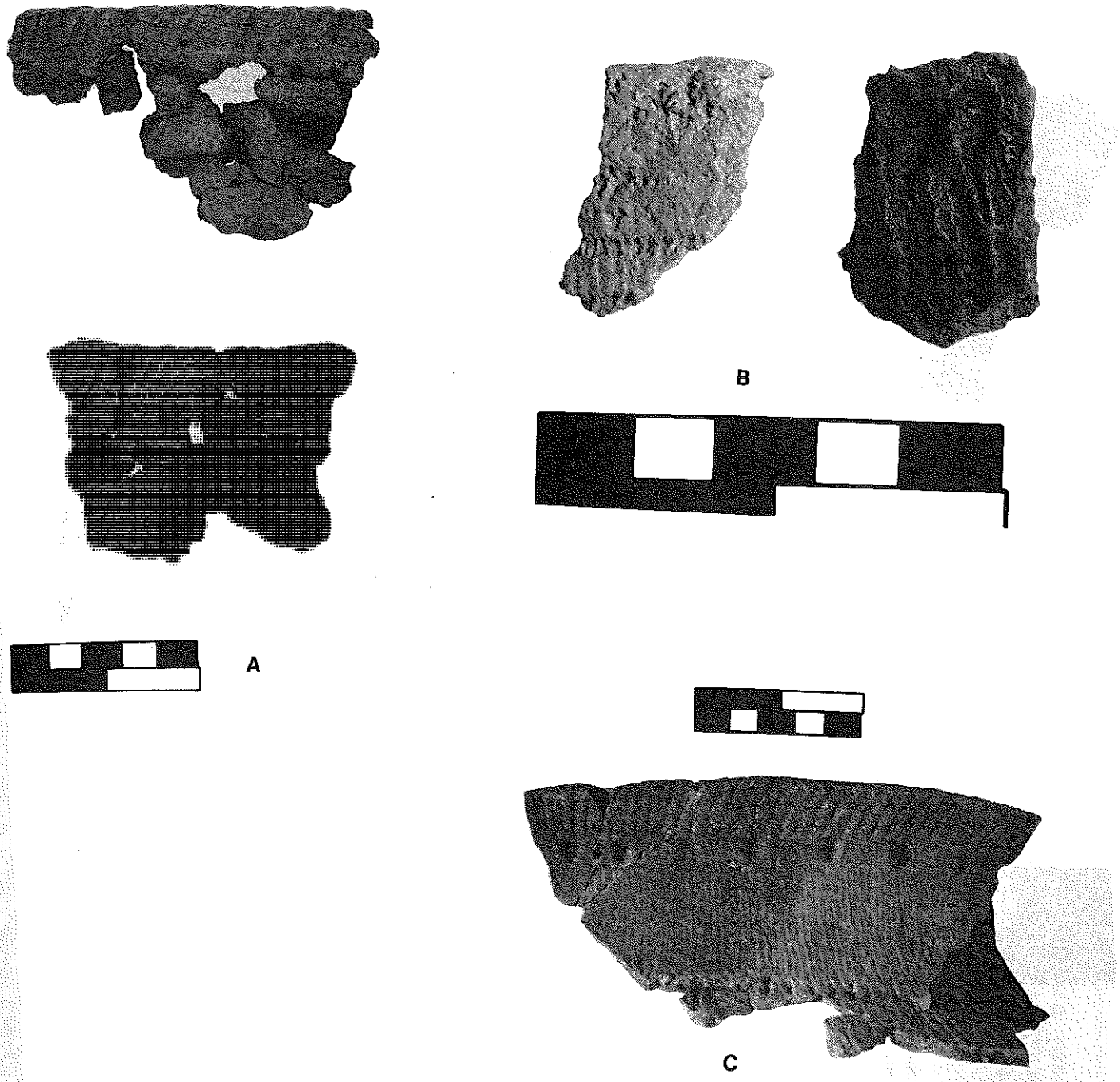


Figure 4. Ceramics from the Forks: A, Prehistoric Level 1; B, Prehistoric Level 5; C, Prehistoric Level 8.

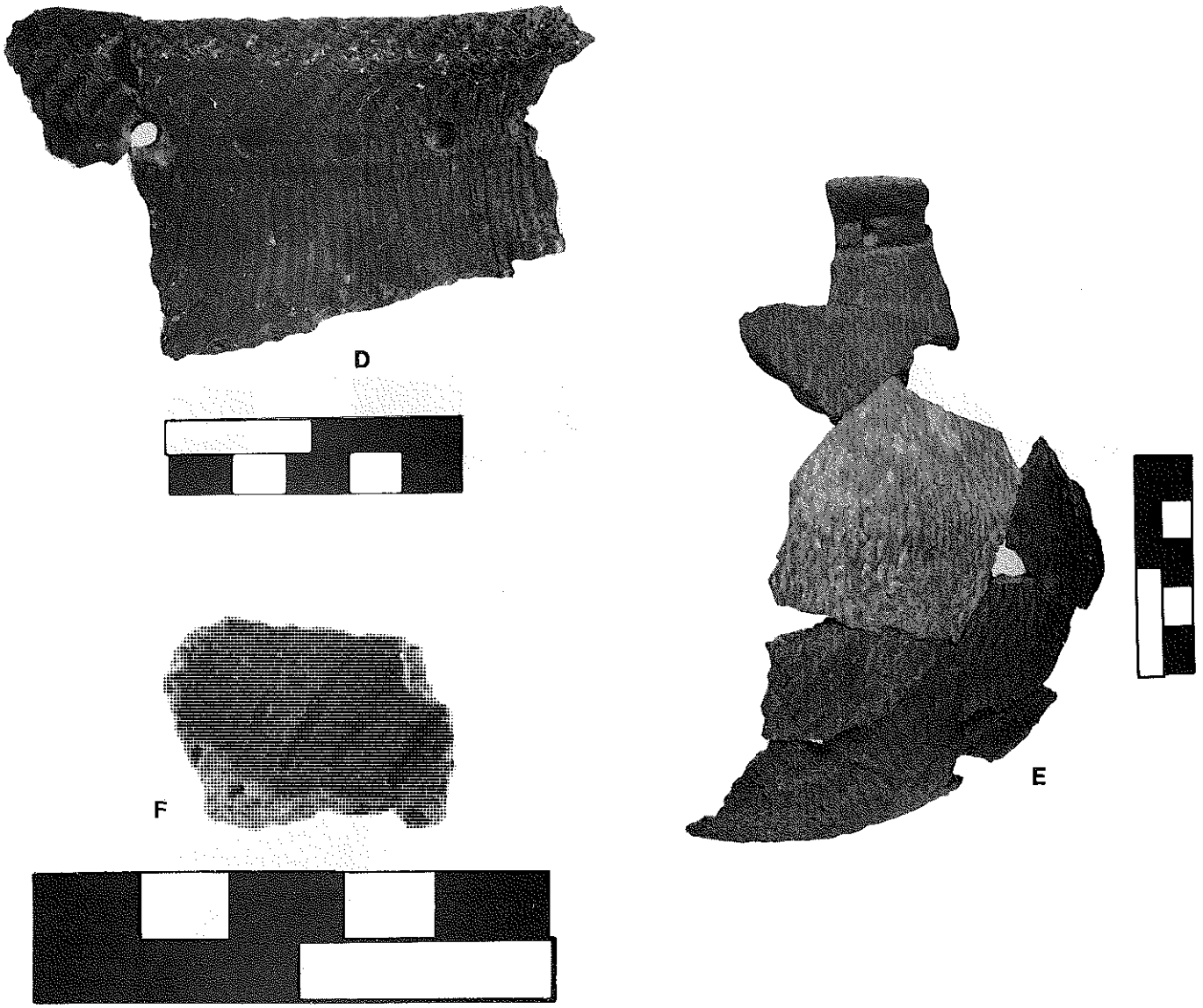


Figure 4. Ceramics from the Forks: D, E and F, Prehistoric Level 8.

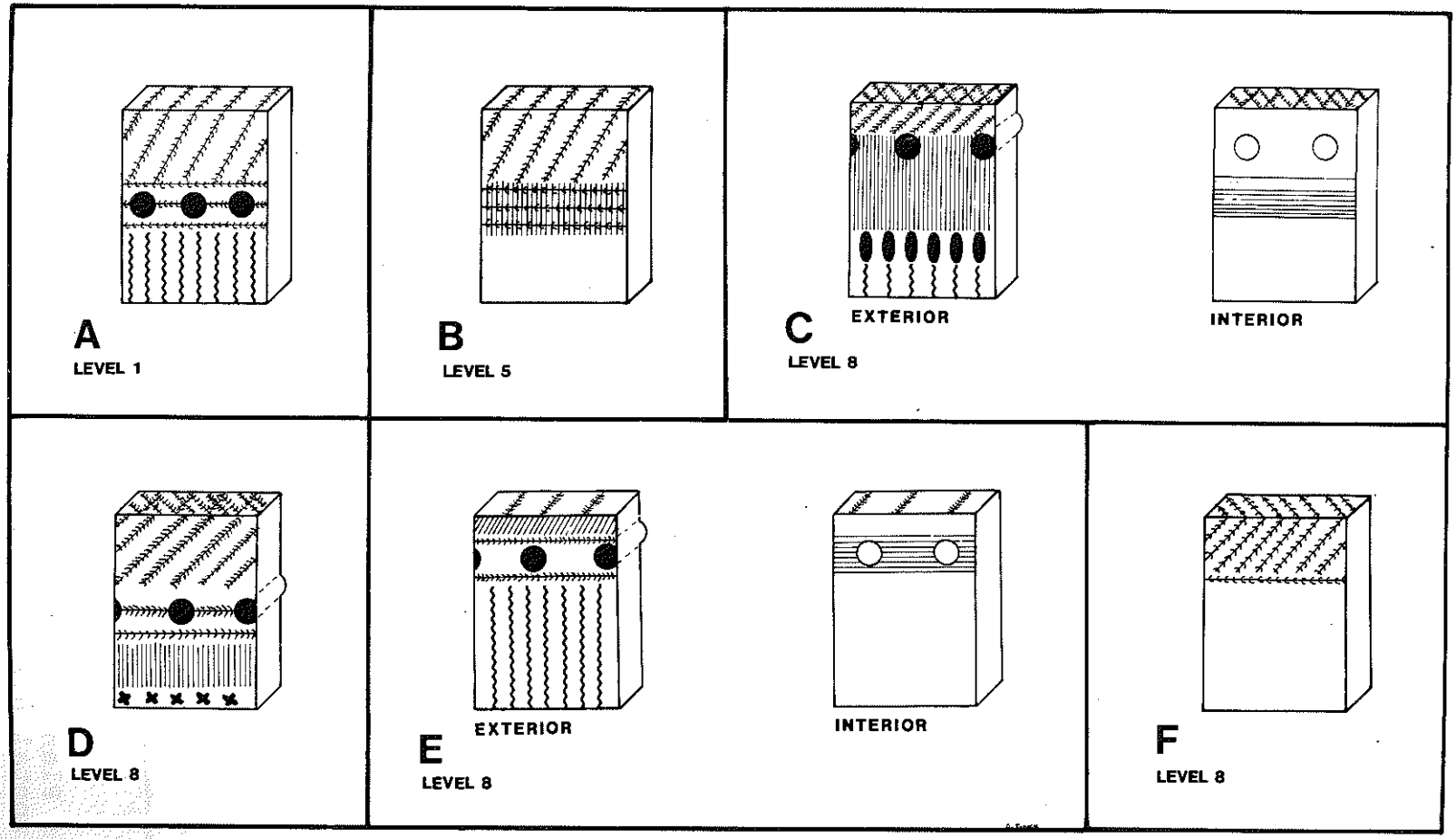


Figure 5. Schematic Summary of Prehistoric Ceramic Decorative Motifs: A, Prehistoric Level 1; B, Prehistoric Level 5; C,D,E and F, Prehistoric Level 8.

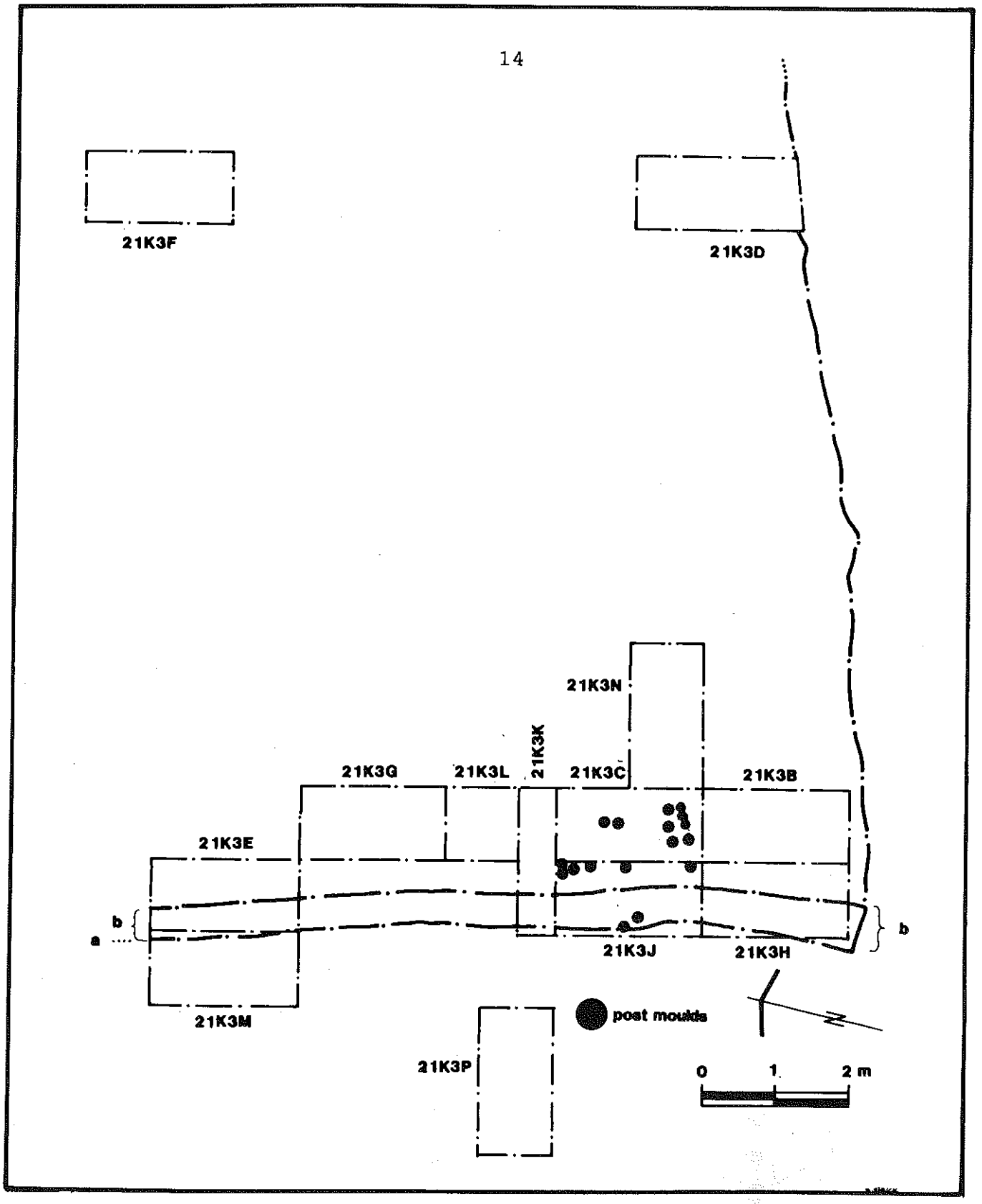


Figure 6. Floor Plan of Prehistoric Level 6 Showing the Horizontal Distribution of the Post Moulds.

may have been standing when the riverbank was flooded. There seems to be no discernable pattern in the horizontal distribution of the posts (see Figure 6). The cord-roughened ceramics associated with these post features suggest their possible association with Blackduck.

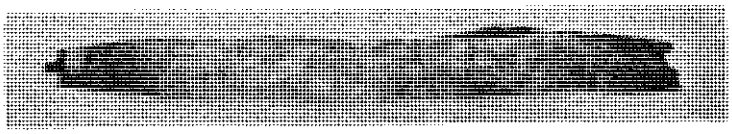
Level 8: Although 19th century building construction had destroyed some of this occupation level, portions of at least four Blackduck vessels (Figures 3 and 4), a bone awl or spatula (Figure 7), two radiocarbon samples and some faunal remains were recovered in association with a hearth.

Two charcoal samples were analyzed by the Saskatchewan Research Council. They obtained unadjusted ages of 1225 +/- 160 years B.P. (A.D. 725; S-2563) and 1440 +/- 165 years B.P. (A.D. 510; S-2564).

Level 9: In situ deposits from the most recent prehistoric level were recovered from an area less that 0.5m^2 which had not been disturbed by 19th and 20th century construction. One small triangular projectile point (Figure 7) made from local white Selkirk chert was recovered near a cluster of fire-cracked stones contained in a charcoal stained sand deposit.

Archaeological Summary

Excavations revealed nine stratigraphic layers containing the artifacts and refuse of prehistoric peoples. Five of the deposits contained Blackduck ceramic sherds. Although the dates obtained for two of these levels are reversed in terms of their stratigraphic position (see Table 1), a weighted mean age of 1253 +/- 93 years B.P. or A.D. 697 was obtained from all three C-14 dates (cf., Tisdale 1978: 115). With three dates obtained from samples that stratigraphically bracket all but the most recent prehistoric layer, it is probable that this date is the best estimate of the Blackduck occupations at the Forks. The high sigma values obtained for all three carbon samples suggest there may be something wrong with them. Although the strata containing the prehistoric occupations appeared pristine, it is possible that dead carbon could have been introduced into the sample from railroad refuse that consisted of coal dust, ash or fuel oil. None of these were noted on or near the surface directly above the excavations. It is thus necessary to use these dates with caution. However, the weighted mean is presently the earliest Blackduck date in Manitoba, predating the Lord Site (DkLg-1) in St. Norbert, 15km south of the Forks, by less than 100 years (Syms 1977: 102; Kroker 1974).



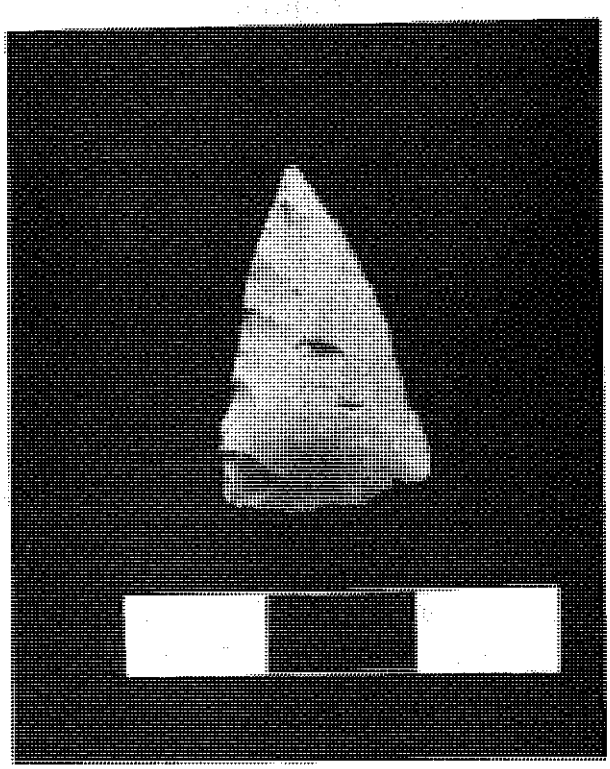


Figure 7. Bone Artifact from Level 8; Projectile Point from Level 9.

Table 1.

Radiocarbon Ages (Uncorrected) Obtained by the Saskatchewan Research Council from Charcoal Associated with the Blackduck Occupations at the Forks and Lord Sites.

Forks Occupation Number	SRC Lab Number	Age	Date
8	S-2563	1225 +/- 160 B.P.	A.D. 725
8	S-2564	1440 +/- 165 B.P.	A.D. 510
1	S-2565	1105 +/- 160 B.P.	A.D. 845
	Weighted Mean	1253 +/- 93 B.P.	A.D. 697
Lord Site	S-625	1170 +/- 90 B.P.	A.D. 780

There is a striking similarity between the Level 8 ceramics from the Forks and the five Blackduck vessel rim fragments recovered from the Lord Site. These similarities include such features as splayed rims, vertical brushing, horizontal and oblique cord-wrapped object impressions, and interior decoration. Cross-hatched cord-wrapped object impressions do not appear on the lips of the Lord Site vessels. Given the temporal and spatial proximity of these two sites, such similarities should be expected.

Because archaeological data are less than abundant for the Red River, a statistical test similar to Watrall's (1968) cannot be conducted at this time. However, considering the environment and its resource potential, it is amazing that only 16 prehistoric sites have been reported between the Forks of the Red and Assiniboine rivers and the Rat River 30 km to the south. In addition to the excavations at the Forks and Lord sites, two riverbank surveys have been conducted. Five prehistoric sites were recorded on the Red River in Winnipeg south of the Forks (Dickson 1979; 1986: pers. comm.) and nine sites were recorded in the Rural Municipality of Ritchot south of the city (Callaghan 1984). Of these, only one site, DjLg-1 at the junction of the Rat and Red rivers, demonstrated any great time depth with Duncan and Sonota points, and Laurel and Blackduck ceramics having been

recovered from the surface of the cultivated field (Ebell 1983). As well, very few prehistoric sites or isolated artifact recoveries from Winnipeg have been reported to the Manitoba Museum of Man and Nature over the last seven years (Syms 1987: pers. comm.).

This apparent paucity of prehistoric sites on the Red River may be accounted for in a number of ways. Low site visibility is undoubtedly a factor in the city and may have biased the Ritchot Survey, as many of the sites could have been buried deeply in river silts. Callaghan's assessment of the situation may be cogent though, when he states, "It is felt that the paucity of sites in the municipality is a cultural phenomenon. That is, that the pattern we see of few and small sites reflects some cultural pattern of the prehistoric peoples involved" (1984: 24). It may be that this pattern of "few and small sites" reflects the settlement pattern one should expect to find in a "no man's land".

The Red River No Man's Land - A Hypothesis of Resource Management

Because the environment of the Red and Assiniboine rivers is so rich in resources, one should expect to find extensive evidence of prehistoric occupation at the Forks. But this is apparently not the case. The narrow temporal span indicated by the C-14 dates suggests that eight of the nine occupations were short term events spread over more than 300 years. Given the resource potential of the Forks, this under-utilization of the site by prehistoric peoples is somewhat surprising. This impression is confirmed somewhat, in that prehistoric remains were not recovered from the much larger excavations in the Fort Gibraltar I area (Figure 2).

A contrasting view of resource utilization on the Red River is found at the Lockport Site (EaLf-1), 26 km north of Winnipeg (MacNeish 1958). Recent excavations have revealed Blackduck artifacts in association with bell-shaped storage pits, fish bones, scapula hoes, "exotic" ceramics and evidence of corn horticulture that date between A.D. 1200 and 1400 (Buchner 1985). It is not known at this time whether horticulture was introduced by the makers of the "exotic" ceramics, or whether the predictable fish resources at the site made it possible to lead the relatively sedentary life necessary to engage in plant husbandry.

By the time LaVerendrye arrived at the Forks in 1737, it seems that any evidence of aboriginal horticulture had

disappeared. From his journals, one finds that hostilities between the Sioux and Saulteaux were well underway (Burpee 1927). The Sioux and Assiniboine were similarly engaged, possibly since their separation prior to 1640 (Ray 1974: 6). It is probable that the constant threat of Sioux hostility was the cause for an alliance among the Assiniboine, Saulteaux and Cree. The Cree and Assiniboine entreatment to LaVerendrye to build a fort at the Forks may have been a political move to tip the regional balance of power in their favour (Burpee 1927: 250-251; Guinn 1980: 22).

After LaVerendrye's departure from southern Manitoba, there is a blank in the political history of the Forks until the arrival of the NorthWest Company trader, John MacDonell. In his 1793 recollection of life on the Red River, MacDonell noted that Riviere aux Morts - now Netley Creek, north of Selkirk - was said to have received its name as a result of the massacre of Assiniboine, Cree and Saulteaux by a Sioux war party around 1780 (MacDonell 1985: 79; Coues 1965: 41). Further, he observed that the banks of the Red River and a considerable distance inland were "very little frequented except by war parties being a road to war between the Saulteaux and their enemies the Sioux who are ever at variance" (MacDonell 1985: 80).

John Tanner affirmed this assessment of the Forks area. In passing the junction around 1797, he noted it was "a place much frequented by the Sioux war parties, where they lie concealed and fire upon such as are passing" (James 1965: 38, quoted in Kelly 1984).

By 1800 the Forks had become a dispatch area and rendezvous for both Hudson's Bay and NorthWest Company men. In his journal, Alexander Henry the Younger provided an insight into the political complexity of the area, even at that late date. Awaiting his arrival at the Forks were 40 Saulteaux with supplies, who advised him that they had been at war with the Sioux the previous summer and warned him that he should expect to be attacked on his way south to Pembina. The Saulteaux were in such a state of alarm at this time that they were digging entrenchments for the security of their families (Coues 1965:55).

With the threat of aggression apparently ever present, it is surprising to note in the journals that anyone lived at the Forks at all. However, LaVerendrye's trip across the Savanne Portage and down the Rosseau and Red rivers to Fort Maurepas in 1737 proved to be uneventful. On nearly every day of the trip, he encountered friendly Natives who offered him provisions. Upon his arrival at Fort Maurepas, he found Cree waiting for him and "two villages of Assiniboine situated at the great fork of the

Red River" (Burpee 1927:243-244). On his return to the area in 1738, he found "...ten cabins of Cree, including two war chiefs" waiting for him at the Forks (Burpee 1927: 298). It seems on those occasions the Sioux were not a threat.

John MacDonell's 1793 account noted two lodges of Indians situated at the Forks (1965:110). In 1797 he again mentioned that both the Forks and Netley Creek were favourite spots for Indian encampments, with the Saulteaux generally being found there (1985:79-80).

On his way to Pembina in 1797, Charles Jean Baptiste Chaboillez noted the presence of a Chippewa (Saulteaux) tent at the Forks. In 1798, he stated that Indians had been encamped there for a month (Hickerson 1959: 278; 288).

The journals often provide contradictory accounts of life at the Forks. On one hand, there seems to have been the very real danger of attack. On the other hand, the Assiniboine, Cree and Saulteaux seem to have lived with impunity at the Forks and well up the Red River into what is now North Dakota. Although by their nature, fur trade and exploration journals provide a sketchy and synchronic view of places and events, they do suggest that the lower Red River, including the Forks, was often a dangerous place to live. Given available data, it is difficult to demonstrate that the area was a buffer zone similar to that in Minnesota as described by Hickerson. Harris' more generalized concept of a "no man's land" may be more applicable. Historically it was certainly contentious land and, as such, pressures on various animal species could have been reduced by ongoing aggression.

Summary and Conclusions

The archaeological data available for the area between the forks of the Red and Assiniboine rivers and the junction of the Rat River with the Red indicate that no large permanent villages existed on the riverbanks in this area. On the contrary, all sites - even those containing multiple components - seem to be the remains of brief fishing, hunting or foraging stops. This settlement pattern reflects one usually associated with contested areas of high resource potential, similar to that outlined by Hickerson (1965), Watrall (1968) and Harris (1977). Resources may have been concentrated at the major tributary confluences in sufficient quantities to make camping there worth the risk.

The apparent long term occupation of the Lockport Site may reflect a period of social stability or military superiority that existed between A.D. 1200 and 1400. However, by the time LaVerendrye arrived in 1737, the Forks and apparently most of the lower Red River remained an area of contention, a situation lasting well into the 19th century. Additional research at the Forks could clarify the dates for the Blackduck components there. Testing sites at the junctions of major tributaries, such as the Rat River, and conducting more surveys at the mouths of the rivers such as the LaSalle and Seine, could provide further data to be used to test the validity of the hypothesis that a no man's land existed in the lower Red River valley.

Acknowledgements

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APPENDIX I

DETAILED ARTIFACT DESCRIPTIONS

Level 1 Artifacts

Ceramics: Two restored sections of a vessel were recovered (Figures 4A and 5A). These sherds exhibit decorative elements from the lip, neck and upper body of the vessel. The following is a descriptive summary of the vessel's physical and metrical attributes.

The lip is 9.5 mm thick and the rim has an external diameter of 16 cm. Widely spaced right-oblique parallel cord wrapped object (CWO) impressions decorate the flattened lip surface. A band of right-oblique parallel CWO impressions encircle the rim below the lip. Three parallel horizontal CWO impressed lines encircle the neck with the centre line interrupted by punctates placed at regular intervals along its length. The cylindrical punctate cavities retain central nipples in the bottom. Below the third horizontal CWO impressed line, a row of tri lobate stamps -- probably made using the end of a cord-wrapped object -- encircles the base of the neck. The rim displays no evidence of splaying. The body of the vessel is vertically cord-roughened. A schematic decorative summary is illustrated in Figure 5A.

Lithics: Of the seven lithic artifacts recovered, only one is a formed tool. It was made on a rectangular secondary decortication flake of Knife river Flint (Clayton et al. 1970). Both lateral edges are unifacially retouched on the dorsal side. Wear along these edges is minimal, with some crushing present (cf. Wheat 1979: 92). The remaining six lithic artifacts consist of five small Knife River Flint retouch flakes and a minute rectangular tabular piece of grey quartzite.

Level 8 Artifacts

Ceramics: Four vessels are represented by restored rim and body sections (Figures 4 and 5).

Vessel 1 (Figures 4C and 5C) consists of two restored sections which exhibit a sample of all decorative elements. The rim is estimated to be 24 cm in diameter and the lip ranges from 10.5 mm to 1.5 mm thick. Cross-hatched CWO impressions decorate the lip surface, and a band of parallel right-oblique CWO impressions encircles the rim below the lip. A horizontal row of widely spaced (22 mm) hemispherical punctates (7.0 mm in diameter) encircles the neck with a punctate occurring on every fifth CWO impression. Vertical parallel striae (brushing) extend from the vessel lip to the base of the neck. Both the oblique CWO and the punctates are superimposed over the striae. Below this is a horizontal row of shallow oval punctates that encircles the neck, separating the brushed zone from the vertically cord-roughened body. Punctate bosses displaying fingerprints and coarse horizontal striae occur on the inside of the neck. The rim is strongly splayed.

Vessel 2 (Figures 4D and 5D), represented by two conjoined rimsherds, probably contains a sample of all of the decorative elements that would have been found on the entire vessel. The rim diameter is 20 cm, with lip thickness varying from 12 to 14 mm. As with Vessel 1, the lip surface is flattened and covered by close and sometimes overlapping cross-hatched cord-wrapped object impressions. A band of parallel right-oblique linear CWO impressions and two horizontal parallel CWO impressed lines encircle the neck. Between the horizontal CWO lines is a horizontal row of punctates (10 mm intervals; 5 mm diameter), producing low profile internal bosses. One punctate perforates the vessel wall and may have been drilled. A zone of vertical striae extends from the upper horizontal CWO impressed line to the base of the neck. Both the lower CWO impressed line and the punctates are superimposed over the brushing. A horizontal row of shallow trilobate stamps encircle the neck base. The rim is

strongly splayed. Body treatment cannot be determined with certainty, but it is probably vertically cord-roughened.

Vessel 3 (Figures 4E and 5E) is represented by a restored section extending from the rim to the base. Based on this sample, the vessel is known to be globular with a constricted neck and slightly splayed lip. Body thickness is extremely variable with numerous concavities about the size of thumb or finger marking the interior surface. In contrast, the exterior surface is vertically cord-roughened and even, although the cord marks tend to be bunched at the base. The exterior surface glistens with small flecks of biotite, probably from granite temper incorporated into the paste. A thick coating of charred residue -- probably food -- encrusts the interior. A sample of this residue has been collected pending chemical or physical analysis that may determine its nature. The lip thickness is 6.3 mm, but the diameter cannot be ascertained. The vessel is 17 cm high. The lip is decorated with widely-spaced right-oblique cord-wrapped object impressions, and right-oblique linear incisions encircle the vessel rim below the lip. Two parallel CWO impressed lines encircle the vessel neck on either side of widely spaced (15 - 16 mm) punctates (5 mm diameter). Coarse horizontal striae occur inside the neck.

Vessel 4 (Figures 4F and 5F) is represented by a single rimsherd. The lip is flattened and decorated with left-oblique cord-wrapped object impressions. Below the lip is a band of parallel right-oblique linear CWO impressions. The sherd is broken along a horizontal CWO line that probably encircled the vessel neck. The decorative motif essentially replicates the upper part of the rim segments recovered from Occupation 1, except that the CWO impressions on the lip are oriented in the opposite direction.

Lithics: Of the 33 lithic artifacts recovered, only one appears to have functioned as a tool. It is an olive coloured chert secondary decortication flake with steep unifacial retouching occurring along one edge. The remaining artifacts are detritus from biface or uniface manufacture or repair.

Bone Artifacts: An awl or spatula made from a sliver of bone is polished on the lateral edges and on one surface. It tapers toward one end (Figure 7).

Fauna: A small sample of fish and mammal remains was recovered. The faunal analysis is not yet complete.

THE GEOCHRONOLOGY OF THE LOCKPORT SITE

by

A.P.Buchner

The Lockport Site (EaLf-1) is situated on the east bank of the Red River just north of Winnipeg. The deeply stratified deposits contain the remains of four distinct cultures spanning the late Archaic to Protohistoric periods. The results of five radiocarbon assays based on samples collected during the 1984 field season have previously appeared in the Manitoba Archaeological Quarterly (Buchner 1986: 72-73). A more complete suite of dates is now available, which more accurately approximates the time-depths of these manifestations as well as the duration of the horticultural interlude at the site.

A fairly representative two-metre deep profile is illustrated as Plate 1, with the soil constituents, dates and the vertical extent of the cultural materials superimposed. Additional information on the (uncorrected) dates is provided in Table 1.

The basal culture at Lockport is represented by material attributable to the Larter Phase and the time-depth of this manifestation is tightly controlled radiometrically. Larter Phase artifacts are restricted to Bed H, the base of which was dated to 1350 B.C. This date was based on a large sample of charcoal which lay at the base of the bed and which, in some cases, appears to have been trampled into the top of the underlying pre-occupational Bed I. A date of 565 B.C. was derived from the bone gelatin fraction of bison vertebrae in Bank Exposure 6. Located near the middle of Bed H, this sample was "sealed" above and below (180 and 200 cm below surface, respectively) by continuous layers of charcoal. The termination of the Larter occupation is closely approximated by the date of 365 B.C. derived from a bone sample at the interface of Beds G and H.

The beginning of the Middle Woodland Period is more poorly dated by radiometric means than any other, although the stratigraphy demands an estimate more recent than 365 B.C. Since the 1984 season, considerably more ceramic material has been derived from Bed G, thus confirming its Woodland affiliation. Many of the decorated sherds are similar to MacNeish's (1958:

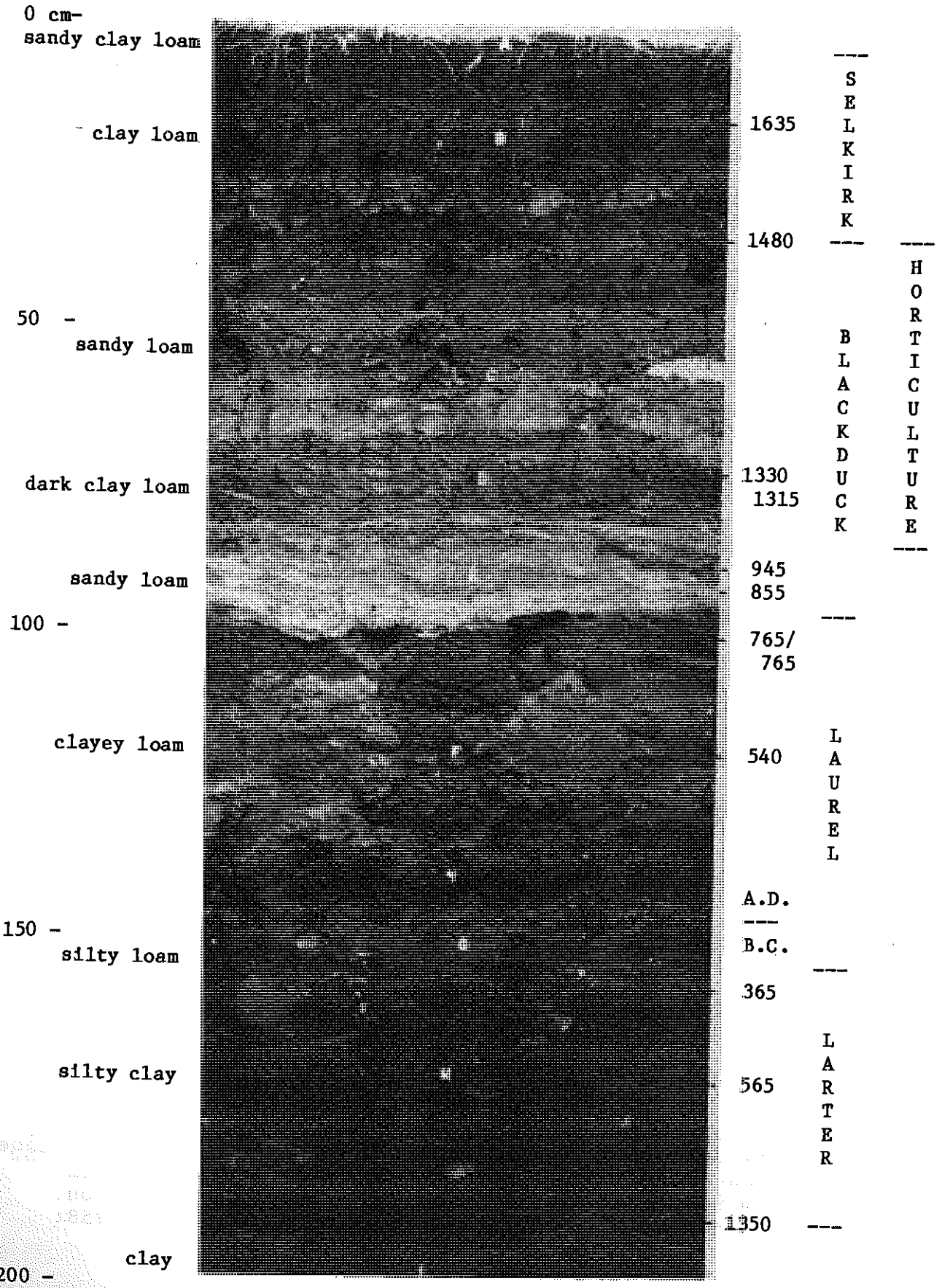

Plate 1. Representative Soil Profile from the Lockport Site.

145-150) Lockport Linear type and cognate thick and crudely decorated sherds are often among the earliest Middle Woodland varieties in stratified contexts (Buchner 1982: 54). Interpolation of the dates and estimates of rates of soil deposition suggest a date of approximately 200 B.C. for the initiation of the Laurel occupation at Lockport. It is extremely unlikely that this estimate is more than 100 years in error in either direction. By and large, Laurel artifacts are restricted to Bed F. A bone date of A.D. 540 estimates the "climax" of this culture, while two dates, both A.D. 765, approximate its final tenure at the site. As a date of A.D. 855 was derived from a sample just above the Laurel/Blackduck interface, a date of A.D. 800 seems appropriate for the transition between the cultures.

Table 1

The Lockport Site Radiocarbon Dates

Bed	Age	Lab Number	Date	Year	Unit	Weight	Material
B	315 +/- 235	S-2852	AD 1635	1986	N132W37	12.3 gm	Charcoal
*B/C	470 +/- 270	S-2850	AD 1480	1986	N124W34	8.0 gm	Charcoal
D	620 +/- 105	GX-10866	AD 1330	1984	N175W43	40.0 gm	Charcoal
#C-E	635 +/- 90	S-2849	AD 1315	1986	N124W35	24.5 gm	Charcoal
*E/F	1005 +/- 280	S-2851	AD 945	1986	N125W34	17.0 gm	Charcoal
*E/F	1095 +/- 250	S-2853	AD 855	1985	N147W33	95.0 gm	Charcoal
*E/F	1185 +/- 255	S-2848	AD 765	1986	N123W33	22.2 gm	Charcoal
*E/F	1185 +/- 255	S-2854	AD 765	1986	N131W39	9.1 gm	Charcoal
F	1410 +/- 290	GX-10865	AD 540	1984	N142W36	155.0 gm	Gelatin
*G/H	2315 +/- 85	GX-10864	BC 365	1984	N122W36	785.0 gm	Gelatin
H	2515 +/- 140	GX-10863	BC 565	1984	Exp 6	216.0 gm	Gelatin
*H/I	3300 +/- 295	S-2847	BC 1350	1986	N125W34	111.9 gm	Charcoal

*Bed designations consisting of two letters separated by a "/" indicate that the samples were taken from the interface of the two.

#Bed D was not present in the unit from which this sample was taken. Hence Bed C cannot be distinguished from the identical Bed E.

Selkirk:	A.D. 1840 - Contact
Blackduck:	A.D. 832 (averaged) - A.D. 1480
Laurel:	B.C. 200 (interpolated) - A.D. 832
Larter:	B.C. 1350 - B.C. 365

The Blackduck compnent is unuestionably the richest of the four at Lockport. Dates of A.D. 855 and 945 pertain to the earlier phases of this culture, the remains of which occur in Beds C, D and E. Beds C and E consist of an identical sandy loam and may only be distinguished from one another by Bed D, which is discontinuous across the site. Thus the date of A.D. 1315 can be attributed to a generalized C/D/E stratum, although its exact affiliation cannot be specified. The layer from which it was recovered, however, seems to be contemporaneous with Bed D, as a date from the latter bed (A.D. 1330) is essentially identical. The termination of the Blackduck occupation at the site is closely approximated by a date of A.D. 1480 from the interface of Beds B and C.

Although the horticultural episode at Lockport occurs entirely within the Blackduck component, the time depths of these two phenomena are not entirely coterminous. The scapulae hoes, carbonized corn kernels, milling stones, bell-shaped and bark-lined storage pits, Initial Variant Middle Missouri Tradition pottery styles and other evidence of horticulture are vertically distributed from the interface of Beds B and C downward to the middle of Bed E. Although the former is reliably dated, the age of the latter may only be interpolated. The beginnings of farming at Lockport must be more recent than the dates of A.D. 855 and 945 (which approximate the initial period of deposition of Bed E), but older that A.D. 1330 (the mid-phase period of deposition of Bed D). A date of A.D. 1200 (or possibly as early as 1150) is believed to be a conservative estimate of the initiation of this new subsistence enterprise, one which certainly terminated by A.D. 1500. A large sample of the 21 scapulae hoes thus far reported for Lockport were recently submitted to the AMS lab at Simon Fraser University. This, plus pending SRC dates from charcoal associated with hoes and corn refuse, will undoubtedly serve to place these estimates on firmer ground. Nonetheless, it is probably not coincidental that the apparent peak in population at the site occurs within Bed D -- the time of the horticultural florescence at Lockport.

The occupational sequence at Lockport ends with the Selkirk Phase, the remains of which are confined to Bed B. A single date of A.D. 1635 was associated with this component. The general lack of early Historic Period material in association with aboriginal remains at the site suggests that Lockport had by-and-large been abandoned as a campsite by the time that Europeans were a significant presence in the region.

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A DESCRIPTION OF THE JOHNAS SITE RIM SHERDS

by

Volker Johnas

Introduction

The Johnas Site, DkMd-11, is situated north of the Assiniboine River valley, north-northeast of the town of Oak Lake, Manitoba (Figure 1). The site, a settlement covering about 2.4 hectares is located on a sandy soil which contains very sandy knolls. The region is highly modified by agriculture, but there are numerous natural wooded areas which consist of aspen, maple and oak trees. Fruit-bearing bushes in the area are saskatoon, chokecherry and wild raspberry. In low lying areas there are willows and large cattail patches.

The area is reasonably well drained into the Assiniboine River which is found approximately three kilometres to the south. An unusual geographic feature is a sharp, high, shale ridge about three kilometres to the west, along which Bailey's Creek flows into the Assiniboine River. Numerous potholes and intermittent flowing waterways characterize the landscape adjacent to the site, and the immediate terrain is quite flat with occasional knolls and low areas. The general topography is quite variable and rolling, due to the site's proximity to the Assiniboine valley and Bailey's Creek.

General physiographic features place this site in the Souris Plain of the Western Upland area of Manitoba. The biome division is Aspen Parkland (Rowe 1972), highly modified by agriculture, but located very near the Prairie division.

A large collection of artifacts consisting of ceramics, lithic tools and other debitage has been surface collected from the site over a number of years by Uwe Johnas. This collection was turned over to Brandon University's Archaeology Laboratory Analysis class for evaluation. An assemblage of 38 rim sherds has been analyzed for this report.

Purpose

The purpose of this paper is to describe the ceramic rim sherds from the Johnas Site collection and to place them in historical perspective by comparing them with other assemblages.

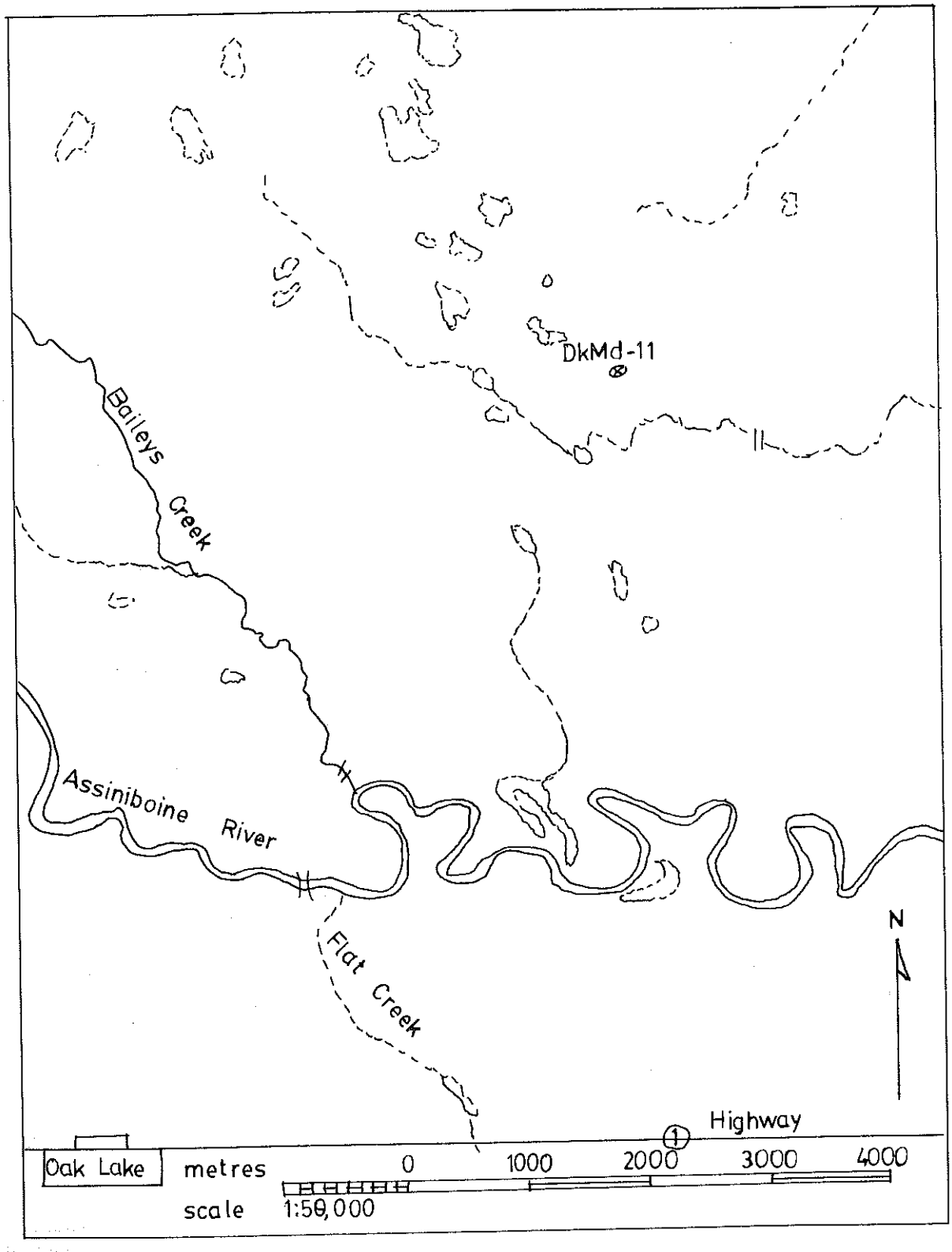

Figure 1. Johnas Site Locale.

The Johnas Site ceramic assemblage displays many similarities to already defined wares such as Saskatchewan Basin (Byrne 1973); Riggs, Le Beau and Knife River wares of North Dakota (Ahler and Swenson 1985); Blackduck ware to the east (Carmichael 1977; Tisdale 1978) and Talking Crow ware of South Dakota (Smith 1977). Time assignments can be made to the late prehistoric and protohistoric periods -- 850-1700 A.D. for Saskatchewan Basin Complex (Byrne 1973) and ca. 1650-1750 A.D. for the Coalescent (Ahler and Swenson 1985).

Description

In order to delineate the variations in rim style, decorative motif and construction methods employed in the manufacture of the vessels discussed, this report will be descriptive. Because Blackduck is the only readily identifiable ware described in the literature, classifications are assigned following Hamilton et al. (1981).

Sherds S-136, S-140, S-123, S-138 and S-128 appear to be rims, but are incomplete; therefore, no analysis will be made of them. They are consistent with the remainder of the collection in their surface finish and design, which include cord-wrapped-object impressions, fabric impressions and trailing.

Sherd S-139 (Figure 2) is a thickened S-rim shape. The decorative motif is jab and drag in horizontal and vertical designs on the exterior and lip, respectively. A finger punctate in the interior has caused a boss on the rim's exterior.

An example of pseudo castellation is exhibited on sherd S-134 (Figure 2). It has a slightly excurvate profile with no additional decorations or markings.

Three sherds, S-135, S-112 and S-126 (Figure 3), have short lip-to-neck distances with sharp neck angles. Each is differently decorated. Sherd S-135 has cord-wrapped-object impressions oriented from right to left on a very slightly rounded lip. Horizontal striations almost totally eradicate fabric impressions on the exterior. Sherd S-112 has a similar lip shape, but the cord-wrapped-object impressions are oblique left to right. These cord-wrapped-object impressions differ from others in this collection. A very fine cord appears to have been wrapped around another cord, which in turn was wrapped around a tool such as a twig or small bone. The rim exterior has horizontal and oblique incised patterns. Rim sherd S-126 has a flat lip decorated with a wavy trailed line. It contains

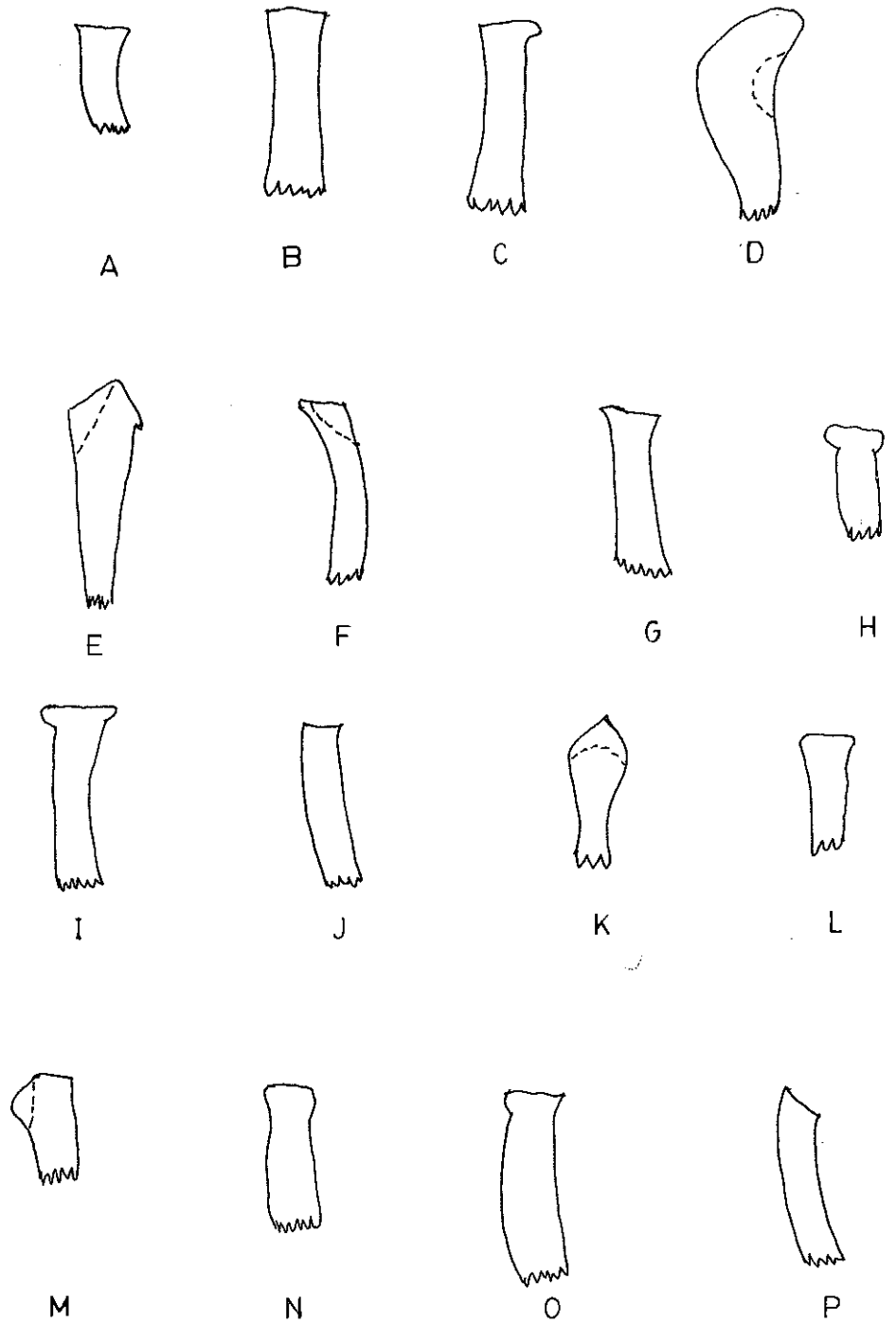

Figure 2. Rim Profiles from Johnas Site: A, S-116; B, S-131; 127, 106, 121, 114; C, S-118, 119; D, S-139; E, S-105; F, S-108; G, S-132; H, S-113; I, S-117; J, S-107; K, S-134; L, S-130; M, S-111; N, S-120; O, S-125; P, S-133.

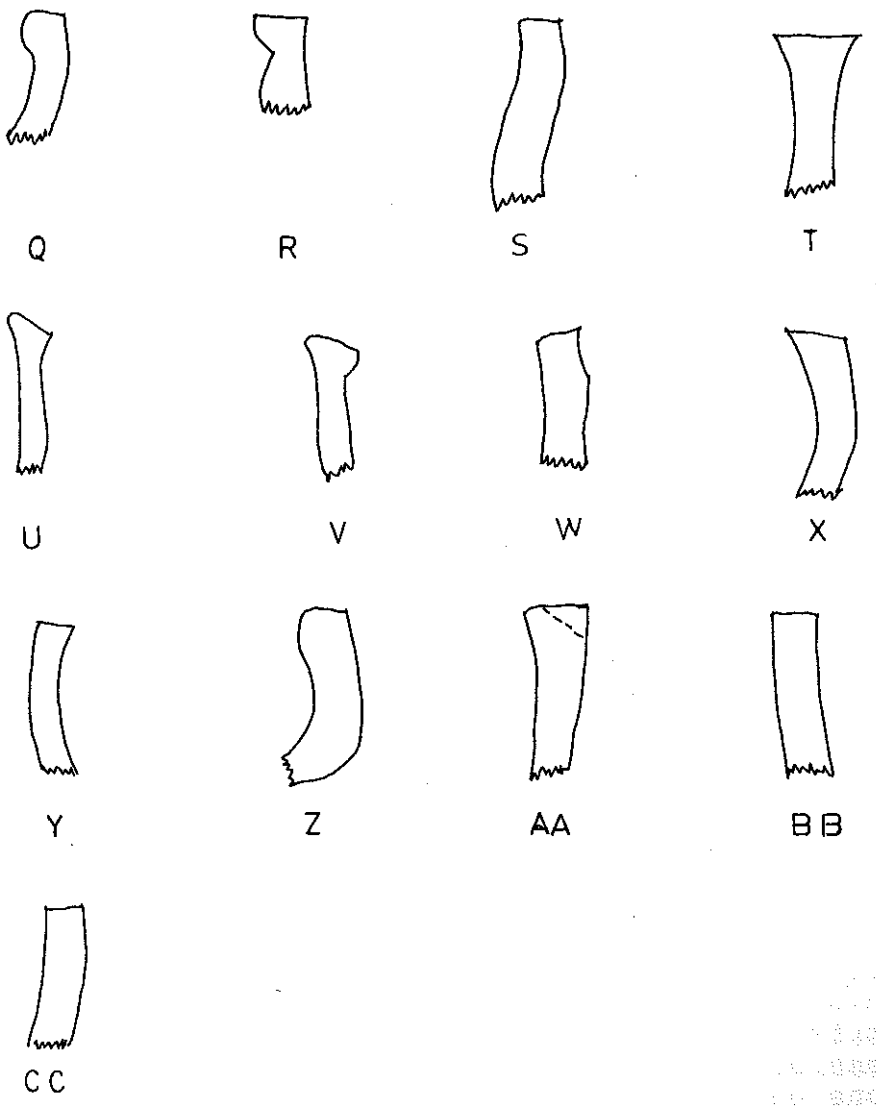

Figure 3. Rim Profiles from Johnas Site: Q, S-112; R, S-132; S, S-182; T, S-124; U, S-110; V, S-109; W, S-115; X, S-126; Y, S-141; Z, S-135; AA, S-129; BB, S-122; CC, S-137.

irregular fabric impressions with no attempt at obliteration.

Rims S-125, S-121, S-108, S-105 (Figure 2) and S-110, S-115, S-127 (Figure 3) are slightly excurvate, with each sherd exhibiting different markings. S-125 is a large sherd with small tool impressions on its plain lip. The exterior has vertical fabric impressions partially obscured by horizontal striations. Vertical combing is the predominant feature of sherd S-108. It is smoothly finished and made of a fine clay. The interior has tool impressions which produced bosses on the exterior and pushed the lip out at a sharp angle. Sherd S-105 shows hardly any curvature at all. The rim exterior has irregular fabric impressions, which are slightly smoothed over. The lip is somewhat splayed with tool impressions that produced a very angular lip profile. The exterior is darkened, but the interior is clean and bright (7.5 yr 6/6 on the Munsell colour chart). S-121 and S-115 are very plain sherds. These rims bear smoothed-over fabric impressions with plain, slightly outsloping lips. S-110 has a plain insloping lip with engraving on its exterior. S-127 has vertical cord impressions on the rim and sharp oblique cord impressions oriented left to right on the lip.

Sherd numbers S-133, S-119 (Figure 2) and S-132 (Figure 3) are plain lipped, incipient "S" fabric impressed rims. These three are similar to S-122 (Figure 3), which has cord-wrapped-object impressions on its interior, and S-118 (Figure 2), which has an oblique tool impression oriented from left to right. S-117 (Figure 2) shares the same exterior treatment, but has a T-shaped lip with tool impressions on its interior.

Vertically, the group of rims consisting of numbers S-109, S-141, S-113, S-116, S-129, S-106, S-111, S-131 and S-130 (Figures 2 and 3) are quite short, giving a definite "S" profile. However, the rim profile is the only common characteristic of these ten sherds. S-120 has an almost completely obliterated woven fabric impressed exterior. The lip has oblique cord impressions oriented from left to right between finger impressions on the interior. S-109 has a plain lip with an undecorated fabric impressed exterior. A plain fabric impressed exterior and plain smoothed lip are the only descriptions that can be applied to sherd S-141. Rim S-113 has a fingernail indentation on the edge of the lip. Exterior decoration is a partially obscured vertical cord impression, with a superimposed oblique incised line. S-116 has a random fabric impressed pattern. The lip has a cord-impressed trailing, which is distorted by round indentations on the exterior of the rim. S-129 is partly spalled, showing only a small part of the rim's fabric impressions. The interior edge of the lip has oblique

tool impressions. S-106 has cord-wrapped-object impressions extended across its rounded lip from the interior to the exterior. The exterior pattern is a woven fabric impression, which is only slightly obliterated. Sherd S-111 has a slightly insloping plain lip with vertical cord impressions on its exterior. The other feature on this sherd is a finger-pinched fillet, which was "welded" onto the rim at the lip after the vessel had been formed. It is similar to Talking Crow and Pehonan complex wares. S-131 has irregular fabric impressions on its exterior, with vertical tool indentations extending down from the lip. The lip of S-130 is flat with small fingernail indentations. The exterior is fabric impressed with no additional decoration.

Sherd S-114 (Figure 2) also has an incipient "S" rim profile, with irregular pock-like marks extending onto a flat lip. S-107 (Figure 2) has very deep pock-like impressions of the exterior with ovoid cord-wrapped-tool impressions on a flat lip.

Rims S-182, S-124 (Figure 3) and S-137 (Figure 2) are readily identified as Blackduck ware (Plate I), and classified according to the ceramic decoration descriptive taxonomy charts prepared by Hamilton et al. (1981). S-182 has oblique cord-wrapped-object impressions oriented from right to left on a flat lip. The rim displays a fairly even excurvate profile. On the rim exterior, chevron cord-wrapped-object impressions oriented from left to right are underlined by horizontal cord-wrapped impressions (Figure 4). S-124 has a flat splayed lip and oblique cord-wrapped-object impressions oriented from right to left intersecting a row of horizontal cord-wrapped-object impressions on the exterior. A punctate centred in a second row of horizontal cord impressions has resulted in a boss on the interior. Sherd S-137 has oblique cord-wrapped-object impressions oriented from left to right on a flat "L" shaped rim. On the exterior rim, a row of right to left impressions is superimposed with ovoid dentate impressions, under which is another row of horizontal cord-wrapped-object impressions.

The ceramic decoration descriptive taxonomy numbers assigned to the Blackduck ware by this author following Hamilton et al. (1981) are S-182/c2/c8/c5/A/R-3,2,2,6x; S-124/c2/c2/c5/PR1/A/R-4,6-7; and S-137/c3/c3+sv/c5/A/R-3,2,6x.

Discussion

There are several very general observations that can be made concerning the Johnas site collection of rim sherds.

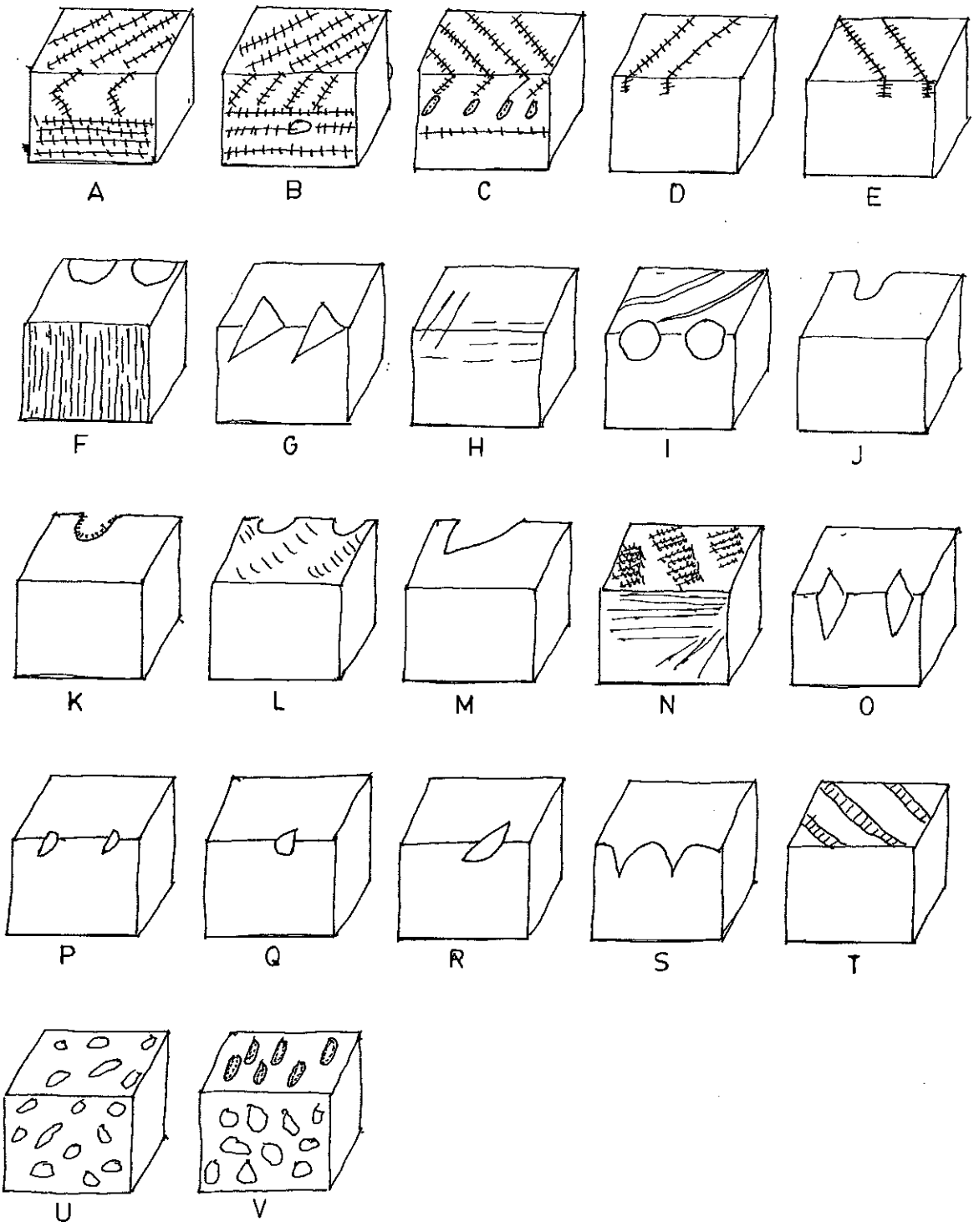

Figure 4. Rim motifs: A, S-182; B, S-124; C, S-137; D, S-135; E, S-106; F, S-108; G, S-105; H, S-139; I, S-116; J, S-117; K, S-122; L, S-120; M, S-129; N, S-112; O, S-131; P, S-113, S-130; Q, S-125; R, S-118; S, S-111; T, S-127; U, S-114; and V, S-107.

1. Incipient "S" rim sherd profiles form the single largest group, followed in number by slightly excurvate rims. The remaining rims are varied.
2. Lip and rim decorations are simple, with the exception of Blackduck ware (Figure 4).
3. Cord-wrapped-object impressions on the lips are obliquely oriented and evenly distributed in both orientations (Figure 4).
4. There are no interior rim decorations, with the exception of tool indentations extending from the lip and bosses formed by exterior punctates (Figure 4).
5. The interior rim surfaces have been smoothed, with a few showing horizontal striations caused by brushing or smoothing with dried grasses or leather.
6. Woven material impressions, eg. plant or fabric, are the predominant surface treatment.

Individual sherds also warrant specific observations. Rim S-105 (Plate IIA) resembles no other sherd. Its exterior is darkened, but the interior is clean and bright: its lip form is flared and pointed.

S-108 (Plate IIB) is a rim made of very fine-textured clay which has resulted in a smooth, hard finish. Its vertically combed exterior finish is unique in this collection.

Rim S-139 (Plate ID) is typical of Middle Missouri ware by virtue of its "S" shaped rim bearing oblique and horizontally incised decorations. It is a fairly thick rim, with a large (possibly finger-made) punctate on its interior, which has produced a boss on the exterior (see Byrne 1973).

Rim sherd S-110 is thin-walled, with a slightly widened lip. There appear to be inscribed decorations on its exterior, possibly of a star and arrow. Sherd S-112 (Plate IIC) has incisions which are part of a more complex design.

Rim S-130 (Plate IIIE) is a very plain sherd, with only one notable feature. The "white out" on which the cataloguing information was written, turned a bright yellow. This feature is shared with numerous body sherds from the Johnas Site collection. Sample sherds were sent to Dr. Chris Macdonald of the Brandon University Chemistry Department: to be analyzed for chemical content. The yellowing is a result of a chemical reaction between the iron in the clay and the "white out".

S-111 (Plate IIIB) has a filleted lip consisting of finger pinched tabs which were "welded" onto the rim at the lip after

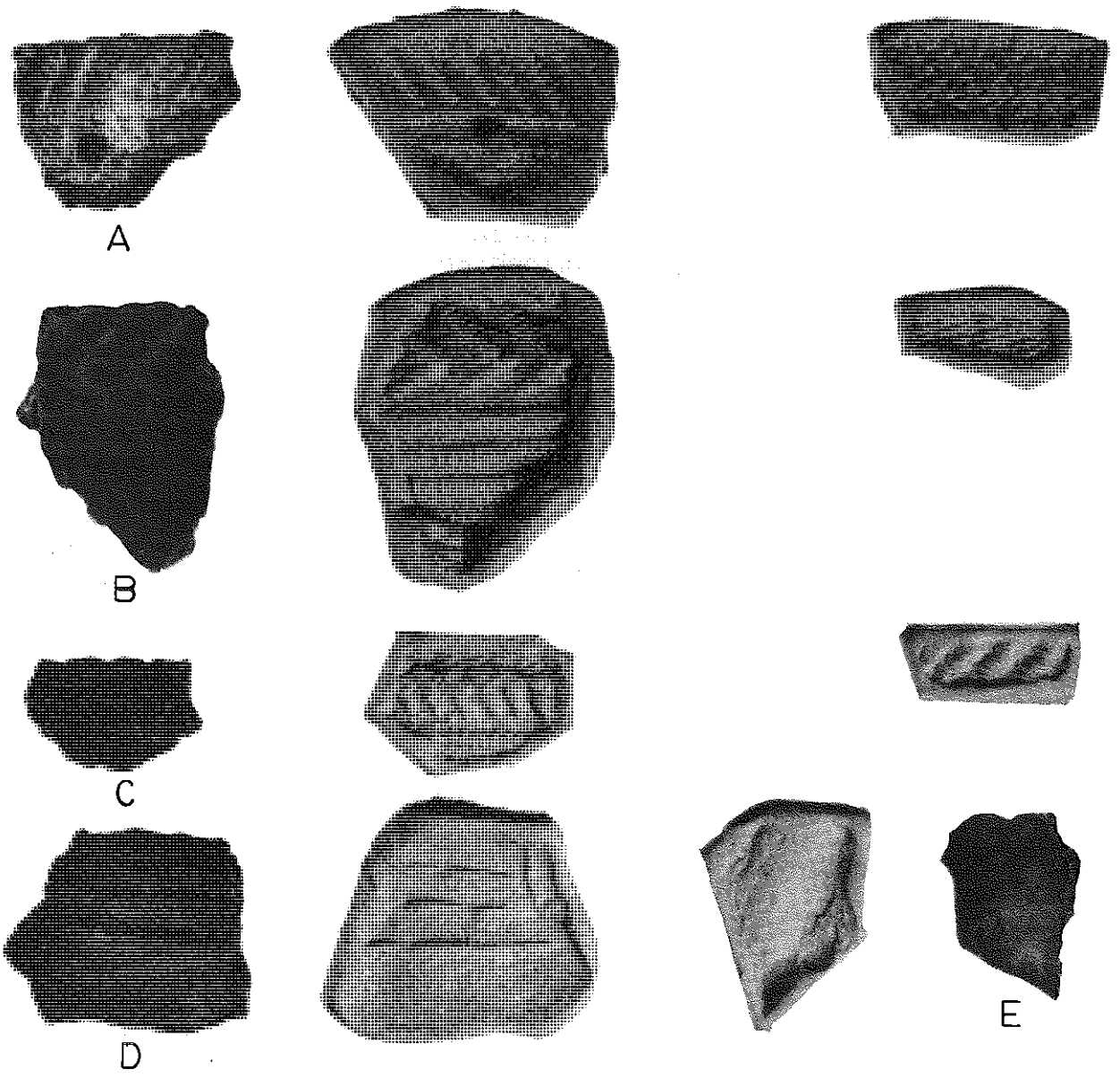

Plate I. Rim Sherds with Rim and Lip Plasticene Impressions: A, S-124; B, S-182; C, S-137; D, S-139; and E, S-134.

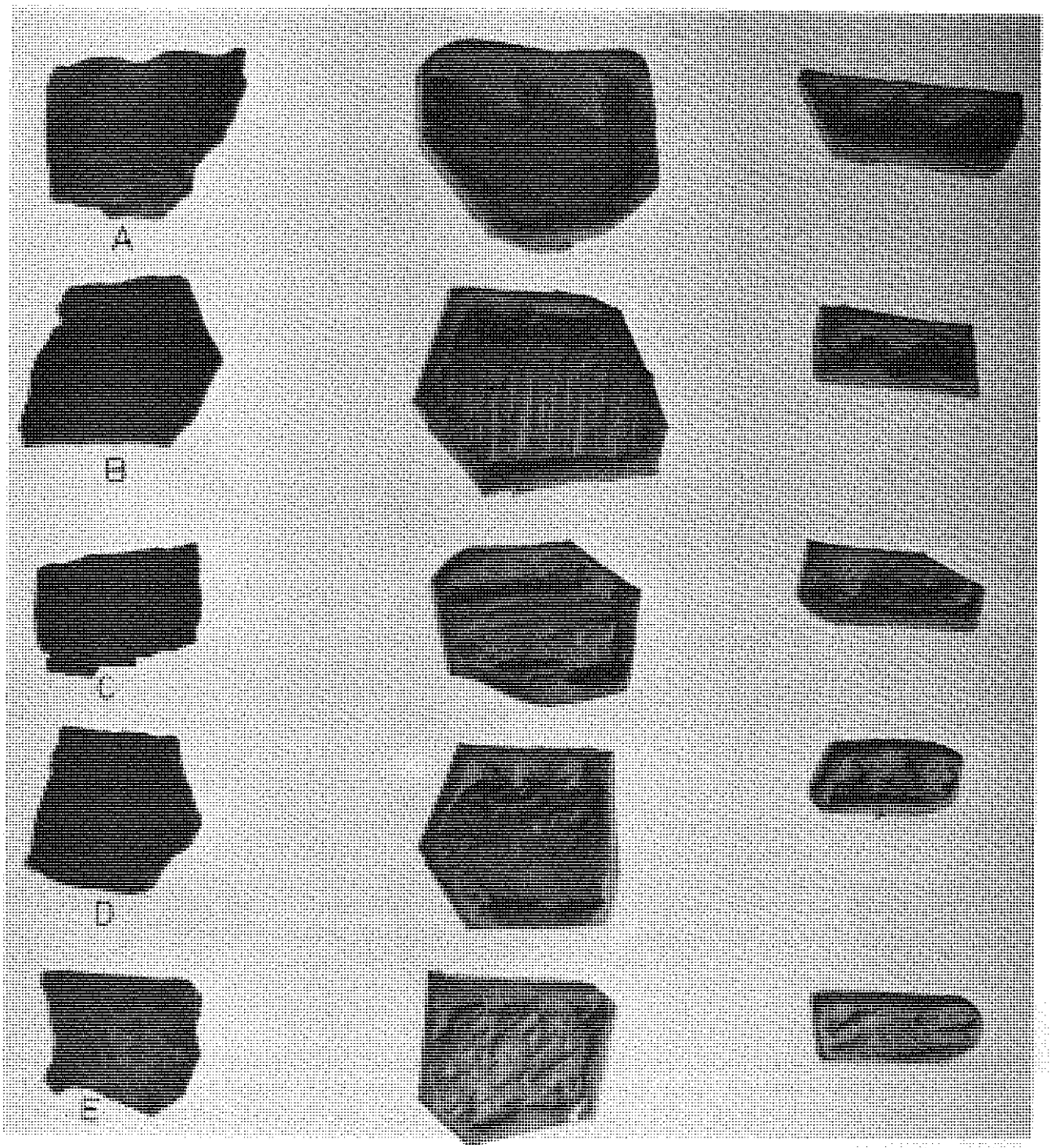

Plate II. Rim Sherds with Rim and Lip Plasticene Impressions: A, S-105; B, S-108; C, S-112; D, S-135; and E, S-126.

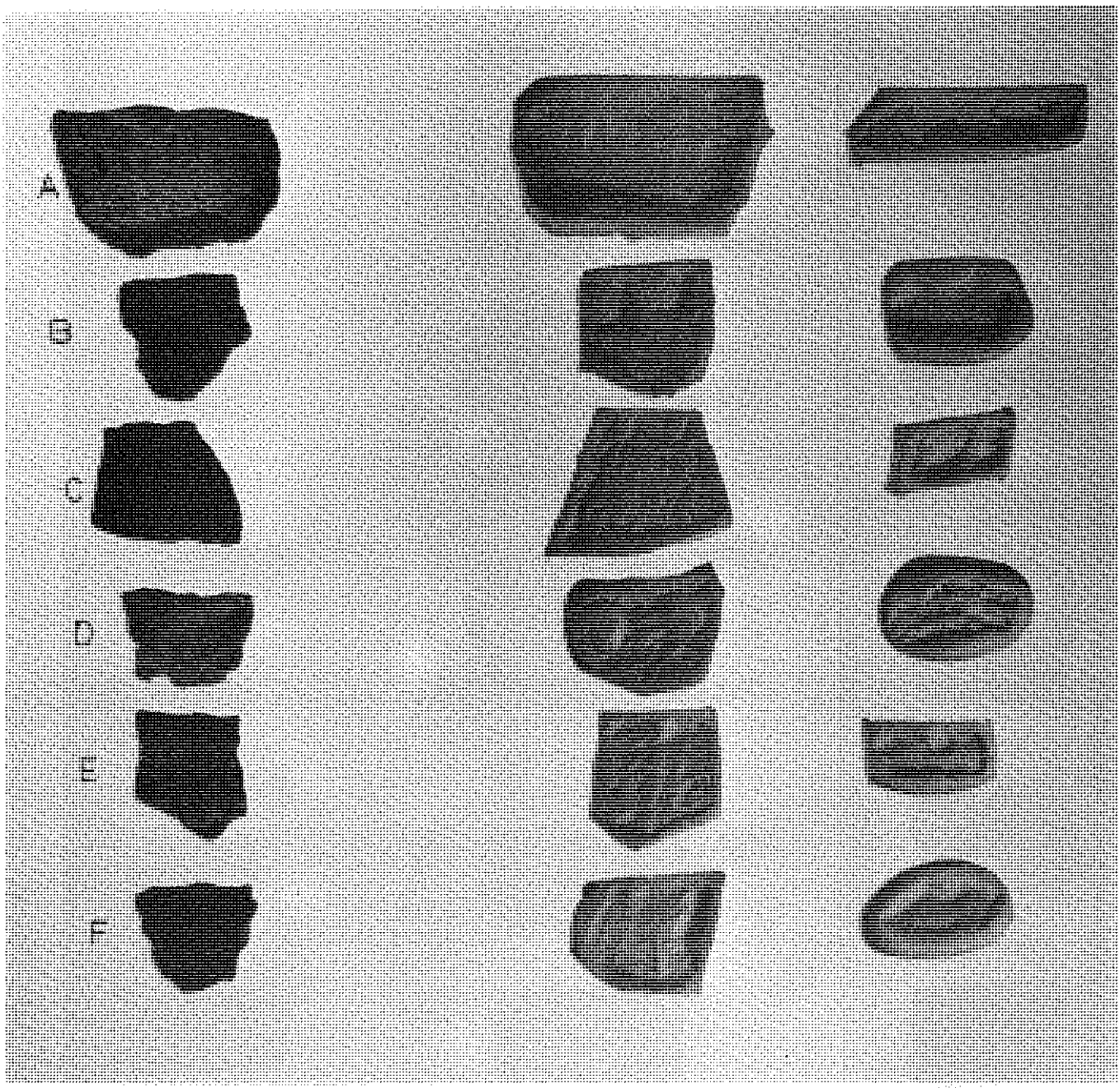

Plate III. Rim Sherds with Rim and Lip Plasticene Impressions: A, S-120; B, S-111; C, S-106; D, S-116; E, S-130; F, S-113.

the vessel was formed.

S-134 (Plate 1E) exhibits a castellation. These are a "peculiar feature" of Knife River ware, according to Ahler and Swenson (1985).

In researching the literature on comparative descriptive analysis of ceramics, it was discovered that Johnas Site ceramics are similar to other wares in many ways. The only ware to be extensively defined and classified, Blackduck ware, occurs only in minor amounts at the Johnas Site. According to Carmichael (1977), a Blackduck occupation would be expected to occur considerably later at the Johnas site than ca. 700-800 A.D., the emerging date of Blackduck ware in the Upper Great Lakes region.

Vessel shape is more difficult to define in this collection, because most of the rims are too small to make definite projections. The majority of rims indicate an incipient "S" shape, with the next largest group having slightly excurvate rims. These vessel shapes conform to Saskatchewan Basin vessels as described by Byrne (1973).

Within the Johnas Collection, the decorations usually used for cultural definitions are difficult to associate with any specific group. Although there are similarities to wares of the Northern Plains and Boreal Forest, there are not the consistencies needed to make specific cultural associations.

In past research, Leigh Syms has documented ceramic wares in southwestern Manitoba, specifically in an area southwest of Melita. Sites in this region include the Snyder I (DhMg-4), Snyder II (DgMg-15), Brockinton (DhMg-7) and Riverview (DgMh-10) (Syms 1971; 1972; 1974). The ceramic descriptions used in this paper are very similar to Sym's descriptions and ware classifications. Shared descriptions of rim and lip decorations include "oblique cord wrapped dowel", "fat lips", "finger pinching" and "fingernail incising". As well, rim and lip profiles are similar in ceramics from the Johnas Site and those wares described by Syms.

Despite the many similarities with other ceramic wares from the Northern Plains, Aspen Parkland and Boreal Forest, the ceramic wares found at the Snyder I and II, Brockinton and Johnas Sites are unique enough and distributed over a large enough area to warrant their own classifications and names. In order to receive adequate and fair representation in Northern Plains ceramics research, the author has adopted the designation

"Symsware" to use for these ceramics, because these materials were first described by Syms (1971; 1972; 1974).

Time relationships are very difficult to assess. The Johnas Site ceramics, some of which are Blackduck, would place the site between 700 A.D. and 1750 A.D., according to Carmichael (1977). The Coalescent period, ca. 1650-1750 A.D. in the Middle Missouri area, produced many ceramic vessels with characteristics similar to those from the Johnas Site, including castellations found on Knife River ware (Ahler and Swenson 1985) and finger pinching similar to Pehonan ware described by Meyer (1981). Unnamed "S" rim vessels described by Ahler and Swenson (1985) are of the same time period as Knife River wares; the Johnas Site ceramics also have some characteristics of Talking Crow ware.

Conclusions

With such similarities to other ceramic wares, it can be assumed that the makers of the Johnas Site ceramics were in contact with many different cultural influences while maintaining an individuality shared by the makers of the ceramics described by Syms (1971, 1972, 1974). The Oak Lake area resembles that of Melita in many ways; both have sandy soils and similar vegetation. Because cultural boundaries frequently follow physiographic divisions, it is quite conceivable that the two areas were occupied by people who shared the same ceramic traditions.

Southwestern Manitoba is easily traversed by overland travel. In the past, this could have been accomplished on horseback, with dog travois or on foot with reasonable ease. This characteristic of the area gives credence to the supposition that the Johnas Site was temporarily and seasonally occupied. Its seasonal use could have been for agricultural purposes. The site contains sandy soil and a fairly high water table, which would make it suitable for growing corn or gourds.The high numbers of sherds distributed over the site could indicate the use of ceramic vessels for activities such as the processing and storing of plant foods.

Acknowledgements

Several people have contributed to this report. Thanks go to Uwe and Gail Johnas who surrendered their collection to a Brandon University archaeology lab analysis class; to Dr. Bev Nicholson, whose interest and enthusiasm for southwestern

Manitoba archaeology encouraged the author, and who was always available for advice and resource material; to Dr. Leigh Syms who provided research, personal communication and unpublished documents; and to my wife Lois for typing the original report and giving me the moral support to complete it.

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A DESCRIPTIVE ANALYSIS OF A COLLECTION OF BODY SHERDS FROM THE JOHNAS SITE NEAR OAK LAKE

by

Lynn Lelond

Introduction

The surface collection which has been analyzed in this study was collected by the Johnas family over the past few years. It came to the attention of the Brandon University Anthropology/Archaeology Department during the winter of 1986. It has been my privilege to conduct this analysis on a large number of the body sherds from the Johnas collection.

The purpose of this paper is to present a descriptive analysis of body sherds from the Johnas collection, with reference to similarities to other collections and/or sites. This paper will also include some background information on the Northeastern Plains area which surrounds the Johnas Site.

Site and Situation

The Johnas Site, DkMd-11, is situated north of the Assiniboine River valley, north-northeast of the town of Oak Lake, Manitoba (Figure 1). The site type is a settlement and covers about six acres. The soil is a sandy loam and contains very sandy knolls. The area is highly modified by agriculture, but there are numerous natural wooded areas consisting of aspen, maple and oak trees. Fruit bearing bushes in the area are saskatoon, chokecherry and wild raspberry. In low lying areas there are willows and large stands of cattail.

The area is reasonably well drained into the Assiniboine River, which is approximately three kilometres away (Figure 2). An unusual geographical feature is a shale ridge about three kilometres west of the site along which Bailey's Creek flows into the Assiniboine River. Numerous potholes and intermittent flowing waterways characterize the landscape adjacent to the site, the immediate terrain is quite flat with occasional knolls and low areas. Adjacent to the site the landscape is hilly, because it is so near the valleys of the Assiniboine River and Bailey's Creek.

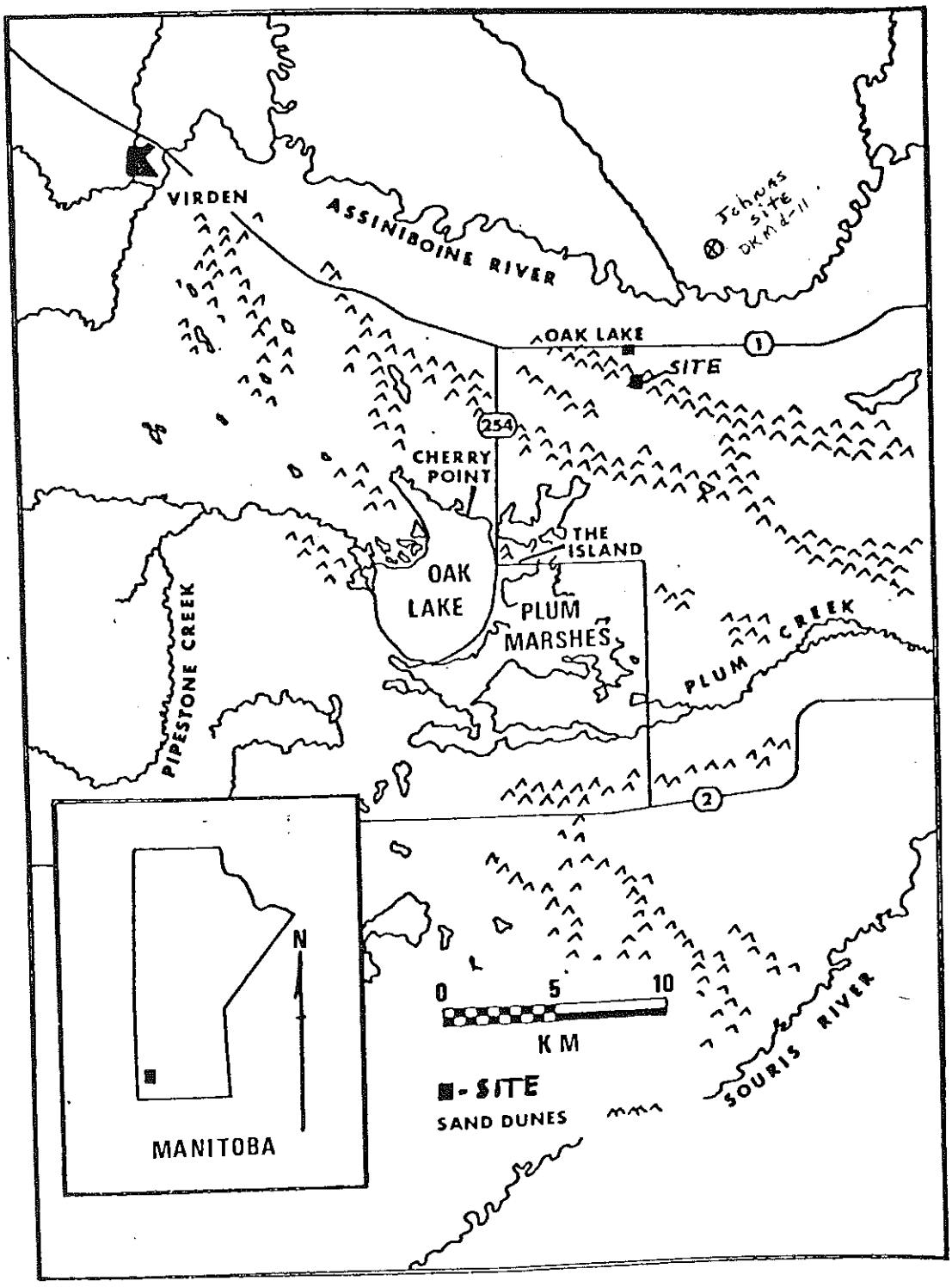

Figure 1. Map of the Oak Lake Region (Adapted from Haug 1975).

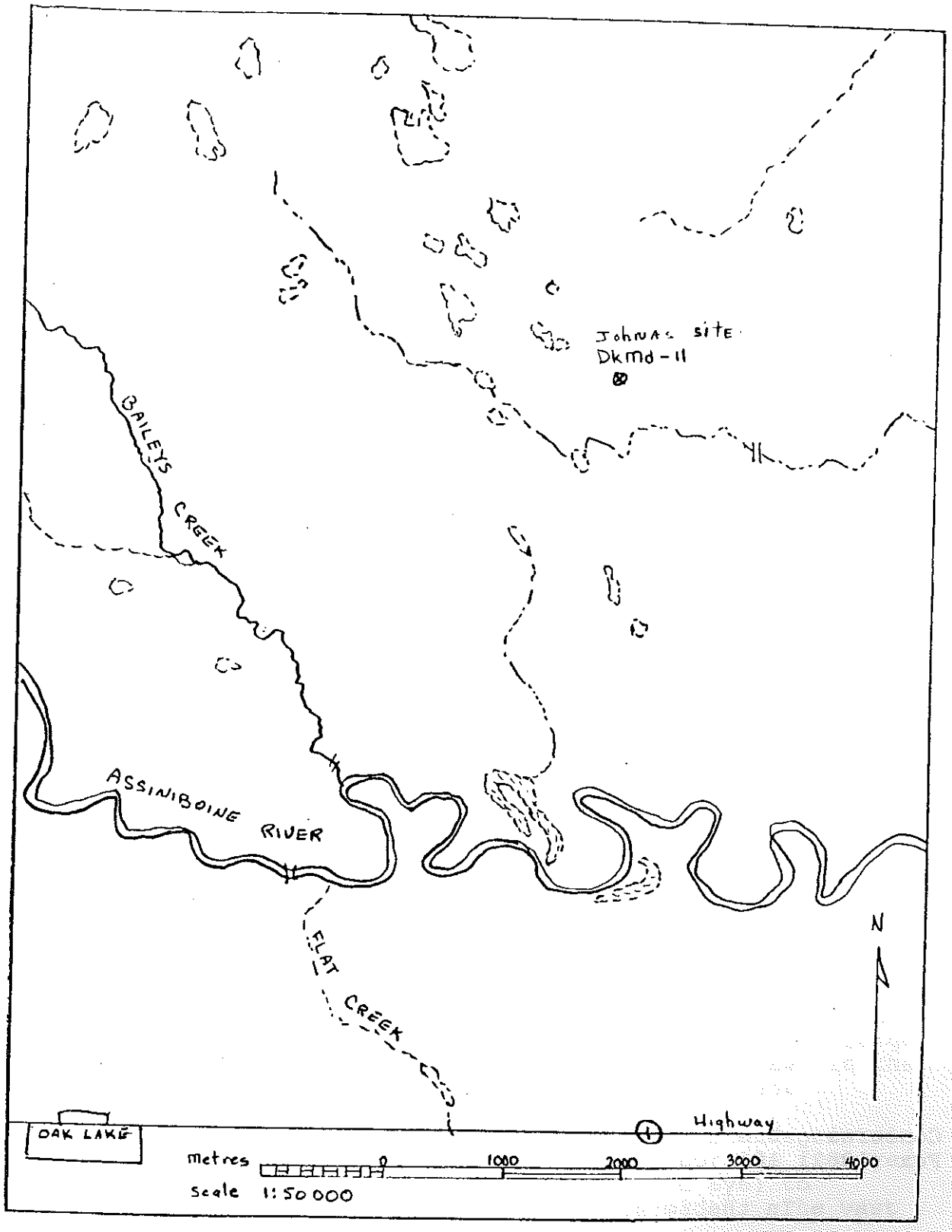

Figure 2. Locale of the Johnas Site.

General physiographic features place the site in the Souris Plain of the Western Upland area of Manitoba. The biome division is Aspen Parkland (Rowe 1972), highly modified by agriculture but very near the Prairie division (Johnas: see page 33, this issue).

In recent times, much of the land has been cultivated. The disturbance and/or destruction of archaeological sites by plowing is a common occurrence, as happened at the Johnas Site. Such disturbance makes it difficult to determine the type of the site that is present.

Background Information:

The Native pottery recovered from the Johnas Site appears to have been made by a Plains group and, according to Dr. Leigh Syms who examined the material briefly, the ceramics date to approximately A.D. 1200 - 1500. There are some sherds that could be classified as Blackduck, but the bulk of the pottery is more indicative of the Middle Missouri, Northeastern Plains area.

Relevant to this discussion is the Late Woodland ceramic tradition which is believed to have entered southwestern Manitoba from the east (Syms 1977). In regard to these ceramics, the fabric designs changed considerably after A.D. 700 and became more complicated, indicating a long-established fibre technology traceable as far back as the Archaic period (Benn 1976: 140).

The cultural milieu in which the Johnas materials were deposited is indicated by Fox (1982: 56) who states:

> The mobility of prehistoric groups is often discussed. Although actual trails have been documented in historic times, it is often difficult to identify prehistoric routes. It is known that during the late prehistoric period extensive trade networks were used between nomadic bison hunters to the west and the village horticulturalists along the Upper Missouri Trench. The village groups ventured onto the western mixed-grass prairie in seasonal pursuit of bison herds, to trap eagles and for other subsistence and trading activities.

Concerning the area of southwestern Manitoba more specifically, Fox (1982: 100) continues, as follows:

> In the northeastern plains area numerous groups such

> as Ojibwa, Bungi Cree, Assiniboine, Teton, Gros Ventre, Mandan-Hidatsa and Ottawa occupied southern Manitoba and exploited the physical environment in and/or near southwestern Manitoba and exploited the region. The Assiniboine used southwestern Manitoba as part of their homeland; other groups used the region for seasonal bison hunts; and still others developed a trade network with local occupants.

Tisdale (1978: 103) supports this view, stating that historic evidence summarized by Syms (1977) also demonstrates the existence of broad trade networks which spanned the North American continent. These undoubtedly enjoyed a lengthy history of development.

Paste Description

In order to understand the complexities of making pottery, it is important to realize the care and patience utilized in the preparation of the paste, which includes clay base, the temper content, the texture and the colour before firing. (Temper generally refers to mineral, shell, etc. additions made to the clay in order to obtain a desired plasticity.) Before the potter mixed the clay and temper, the clay had to be picked clean of undesirable organic and inorganic materials which were natural inclusions or were introduced later during the handling and storage processes. After the temper had been pounded to a desirable consistency and the clay sufficiently cleaned, the potter combined the two. She probably judged the ratio of clay to temper by feel, carefully working and kneading the clay while adding proper amounts of water to wet all the particles. The result was a mixture of the proper plasticity (Ahler 1984: 91).

> Experiments conducted in 1983 by Jane Askey, Glenbow Foundation, on locally available rock, showed that when granite cobbles were heated and cooled rapidly by immersion in cold water they could be crumbled easily in the hand. Hammering reduced the residue to a fine powder containing only a few large particles that could be detected by naked eye in the fired sherds (Forbis 1977: 39).

In the Johnas collection, most of the sherds contain crushed granite temper. These temper particles range from very small and fine (barely perceptible to the naked eye) to excessively large, measuring up to .55 cm in width. The vast

majority of the fragments are of a "medium" size. There is also a small percentage of sherds containing grog, or ground potsherds as temper. The grog also varies from very small to pieces as large as .67 cm in length, .48 cm in width and .2 cm in thickness. There is some evidence that rounded, smooth pebbles were used as temper, perhaps because they were readily available on river deltas. A small proportion of the sherds contain sand temper. The concentrations of temper vary from very little to extremely large amounts. The texture of the Johnas sherds range from quite compact and hard to soft and powdery.

The colour of pottery sherds can be caused by many things and, therefore, should not be used to classify them. One pot may consist of sherds of many different colours. Classifying by sherd colour often causes difficulties when attempting to reconstruct a pot from its pieces. The primary causes of differential colour include the type of clay, the atmosphere, the temperature and duration of firing. Secondary modifications are produced by postfiring conditions such as absorption of stains during use, reactions with the soil after discarding, the leaching by water in the soil, and accidental reheating, e.g., if a lodge and its contents were to burn.

Clay is coloured principally by impurities, the chief classes of which are iron compounds and carbonaceous matter. Full oxidation produces clear colours; reduction results in greys. Only when sherds are composed of identical paste can variation in firing methods be inferred from their colour. The important point to consider here is whether potters were firing specifically for a smudging effect, or whether colour variation was an accidental by-product of partial oxidation (Shepard 1971: 103-105).

Of the 156 sherds found at the Johnas Site, most can be categorized as 10YR or 2.5Y on the Munsell Colour Chart, ranging from nearly black to various shades of grey through tan, including a variety of reddish-brown hues. The majority of the sherds are of uniform colour throughout, with the exception of those bearing slips. Some sherds have black to medium grey cores and interiors, with exteriors that are somewhat lighter. These sherds can easily be confused with those having slips, but a microscopic examination reveals an unevenness of the colour line which suggests it would be inaccurate to label them as having slips. The presence of temper in these colour - contrasted outside layers also rules out slips covering.

General Description of Johnas Site Body Sherds

Most of the pottery sherds are either incurvate or excurvate, indicating that the pottery was probably rounded (conical, conoidal, or spherical). The thickness of the sherds ranges from 3 cm to 87 cm. This is relatively thin pottery, indicating small pot size and very skilled workmanship. The thin walls of these pots is consistent with a trend from thicker to thinner vessels as one moves from Alberta through Saskatchewan into Manitoba (Meyer 1981: 28).

There are several pottery sherds indicating that a deliberate attempt has been made to colour the vessels' exteriors. These observably different colour layers may be caused by the potters' attempts to apply a wash to the vessels or perhaps, they may result from the materials used in the firing process. These distinct colour layers are mainly found on the outsides of vessels, but sometimes found on both surfaces. In one or two instances, washes have been found on the inside surfaces only. In profile, these different coloured layers vary in thickness but are generally thin; they are also generally lighter in colour than the core of the sherds. These distinct colour layers bear a superficial resemblance to a slip.

Slipping is an effective means of improving surface colour and texture. It renders pottery less permeable, particularly when it is well polished, because it fills the vessel's pores with finer material. Slips are generally recognised by their colour contrast with the paste. When the difference is prominent, as with light or clear red coats on brown pastes, slips present no difficulty in identification. When the slip approaches the colour of the paste, however, microscopic examination is often required for detection (Shepard 1971: 187).

Surface Residues

Many of the Johnas Site sherds are heavily charred, while others are only slightly burned. Some of the sherds are charred on both surfaces, indicating that the pots were probably used for cooking or rendering fat. There are also a considerable number of sherds (27%) that are burned only on the inside. This may indicate that the pots burned dry and cracked, rendering them unserviceable. Heavily charred fragments may have been discarded into the fire and food dropped upon them. This could cause them to burn, leaving a carbonized coating of organic material. These are just a few possible explanations for the charred surfaces of

the Johnas Site body sherds.

Several sherds in the Johnas collection are unusual and have been sent to the Chemistry Department, Brandon University, for analysis. Results of this analysis had not been received at the time of writing. When "white out" was placed upon the sherds prior to applying catalogue numbers, the "white out" dried to varying hues of yellow on approximately one dozen of the sherds. Several different brands and qualities of "white out" were used, with the same result. The affected sherds varied in texture, temper and colour. It was suspected that the discoloration was caused by the presence of some form of iron in the pottery, indicating that the iron content of the clay determined the intensity of the yellow colour. This suspicion was confirmed verbally by the Chemistry Department.

Surface Treatment of Sherd Exteriors

> Surface treatment is defined as those spatially extensive exterior surface characteristics that result from procedures such as stamping, smoothing, roughening and rubbing that occurred during the vessel forming and finishing process (Ahler and Swenson 1985: 15).

The outside surfaces of the Johnas Site sherds are mainly fabric impressed with design variation, and with the fabric texture ranging from very coarse to very fine. In some instances, there is a combination of both coarse and fine fibres. The manufacturing technique used to produce the Johnas Site vessels was probably similar to that described by Benn (1967: 7).

Some of the fabric designs are a type of sprang which varied in coarseness and tightness of weave (Plate I). Several other sherds included a double strand of twisted knotted coarse fibres (see Plate 2B). Another type of fabric consisted of one thick strand and one thin strand twisted together, with fine single twisted strands running perpendicularly. The single twisted strands are small and do not always appear on the pattern, except where the fabric impressions are deep and clear (see Plate 3C). Some fabric designs include single strands of fibres varying in thickness, and done in a plain weave (see Plate 4A). The fabric impressions are relatively simple in design, consisting mostly of single strand S or Z twists, or a combination of two strands twisted and woven. The thickness of the strands varies, making for greater variability in pattern.

One unusual sherd shows where the fabric pattern began to change and the fibres are interwoven with the fibres of the material joined onto the main fabric (Plate 2A). Several sherds reveal a closely knotted net weave of coarse fibres (see Plate 2C). Some sherds indicate a check stamping that has been partially truncated, or rubbed in an effort to obliterate the existing pattern. Truncation has also been used on sherds that appear to have been fabric impressed. Only a few sherds have been rubbed smooth or polished.

Several sherds bear impressions that appear to have been made by a single strand of twisted cord that was wrapped so tightly around a paddle that, in places, the cords overlap (Plate 5A). This is a good example of cord-wrapped-paddle impression. Beneath these impressions are others where the design has a different orientation, produced by the paddle striking the pot surface at another angle (Plate 5A,B,C). In some instances the paddling has been followed by partial truncation, but in others the pattern has not been obliterated.

Another sherd appears to be covered in cord-wrapped-stick impressions. Whether this decoration is specific to only one section of the pot or covered the vessel's entire surface is not known. The cord-wrapped-stick was made by wrapping a single strand of material tightly around a stick, leaving only small portions of the implement exposed. The impressions are very deep (Plate 6C).

Decoration of Sherd Surfaces

Most of the body sherds were devoid of any special decoration. However, some sherds believed to be from portions of pots near the rims or close to the lips show a variety of design techniques. A few sherds (see Plate 3B) have cord-wrapped-stick impressions, accounting for 0.06% of the collection.

Incised lines were found on only a few sherds. On one they appear to have been made with a rounded implement and form a criss-cross pattern. The lines going in one direction are deep and clear, but those oriented going perpendicularly to the original lines are not so pronounced. There is also a punctate beside one of the incised lines, but it is debatable whether it is purposeful or was accidentally made when the incised lines were cut (Plate 3A). On another sherd there is a single deep square incision (Plate 7C).

A few clear indications of trailing were found. The

trailed lines have been applied to the surface of the vessel over a fabric impressed design. They are not uniform in depth, size or spacing and, in instances, are not cut as deeply as the fabric impressions below them (see Plate 7A).

One or two sherds have a check-stamped pattern, presumably made by the stab-and-drag method (Ahler 1984: 106), where an implement is repeatedly stabbed into the clay and dragged a short distance. A space is left and the procedure is repeated. This pattern usually consists of several linear rows of check-stamps (Plate 6A).

Another unusual sherd has a smoothed surface bearing two large, deep impressions (Plate 6B). One sherd, either a rim or shoulder, displays finger pinching. The rest of the sherd is fabric impressed (Plate 3D).

Surface Finish and Decoration of Sherd Interiors

The sherd interiors have a variety of finishes. The majority have been either scraped smooth and still show the marks of the tools used, e.g., bone, vegetable rind (Plate 4C), or they have been rubbed smooth, indicating the use of tanned leather or a very smooth rock. Some sherds have very rough inner surfaces. A few show extensive scrape marks that are very pronounced and quite deep in places. There appears to have been no attempt to smooth these marks in any fashion (Plate 4C). Some sherds have been extensively polished on their interiors, giving them a semi-lustrous appearance (Plate 3C).

The wide range of surface finishes suggests several interpretations. Firstly, the degree of care taken in the manufacture of the vessels depended upon their intended use. A pot used for cooking would require less care than one made for ceremonial or trade purposes. Secondly, the skill of the potters varied with the length of time they had been making vessels, the innate motor skills and motivations. A third explanation for the observed differences in vessels could be that the pots were made by different groups, each with its own traditional methods of manufacture.

Vessel Construction Types Relevant to Johnas Site Pottery

There are three basic methods of pottery manufacture

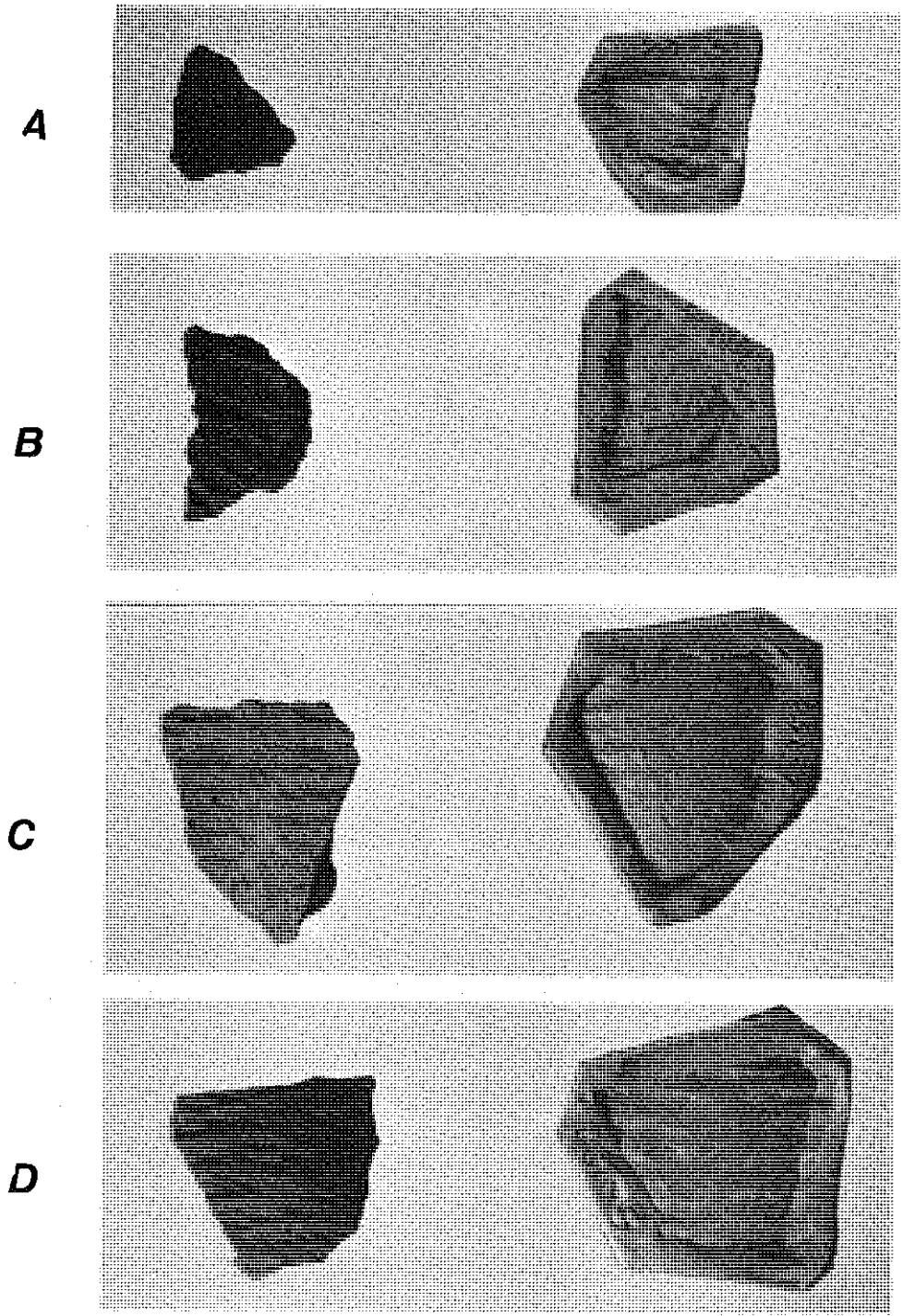

Plate 1. Sprang Weave fabric Impressed Pottery: A, S-46; B, S-168; C, S-159; D, S-150.

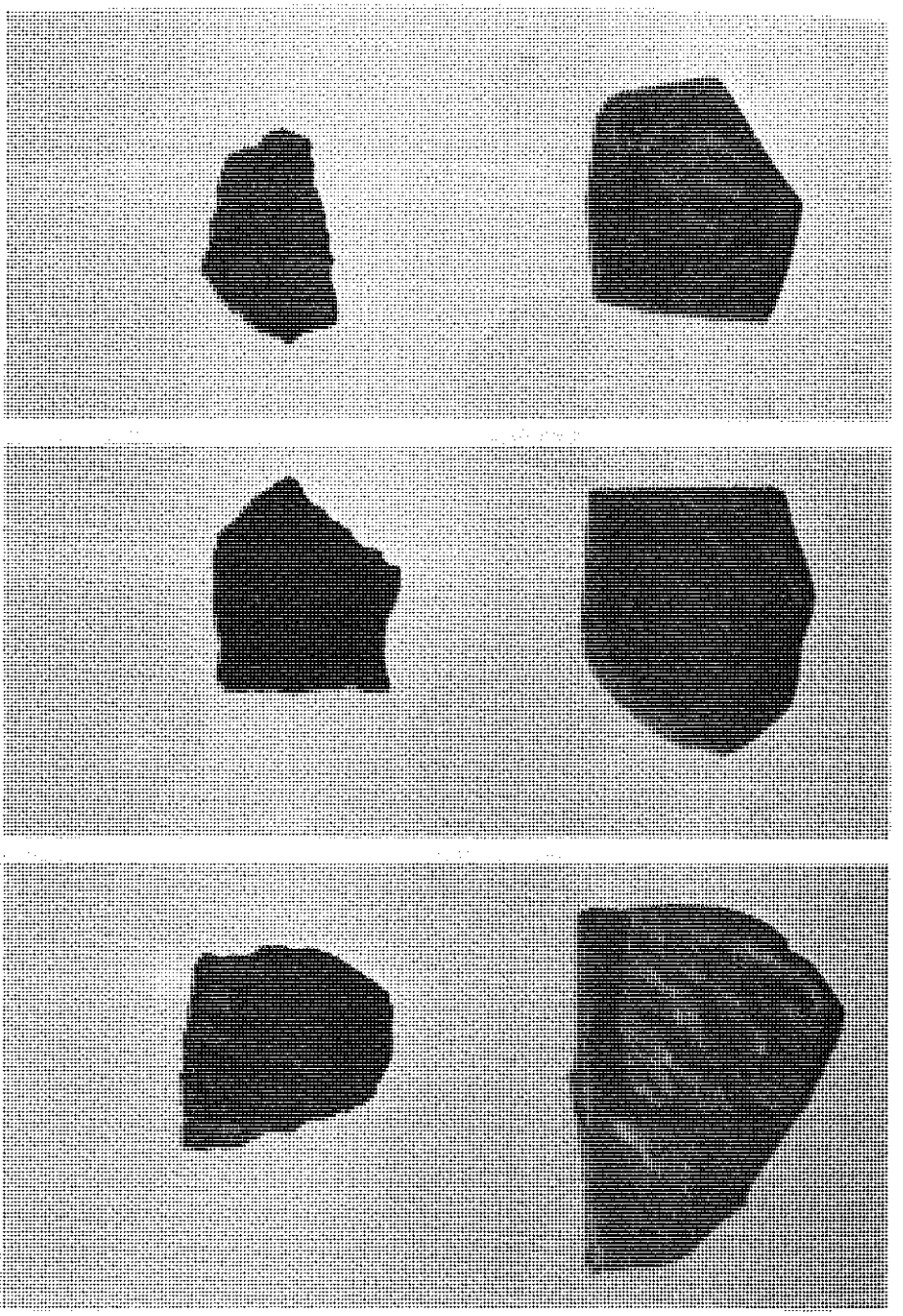

Plate 2. Exterior Surface Treatment: A, S-123; B, S-34; C, S-151.

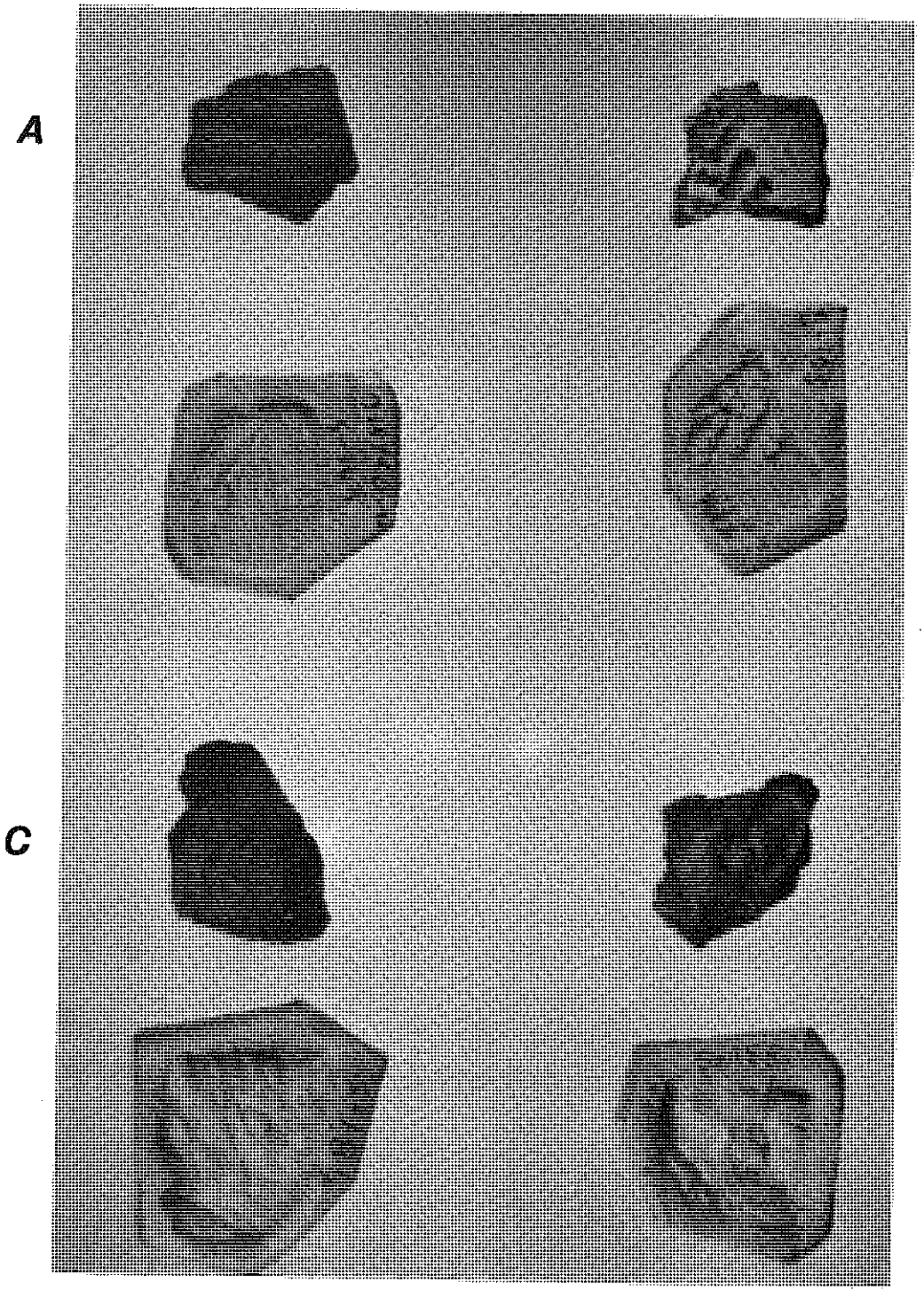

Plate 3. Interior and Exterior Surface Finishes: A, S-149; B, S-163; C, S-184; D, S-155.

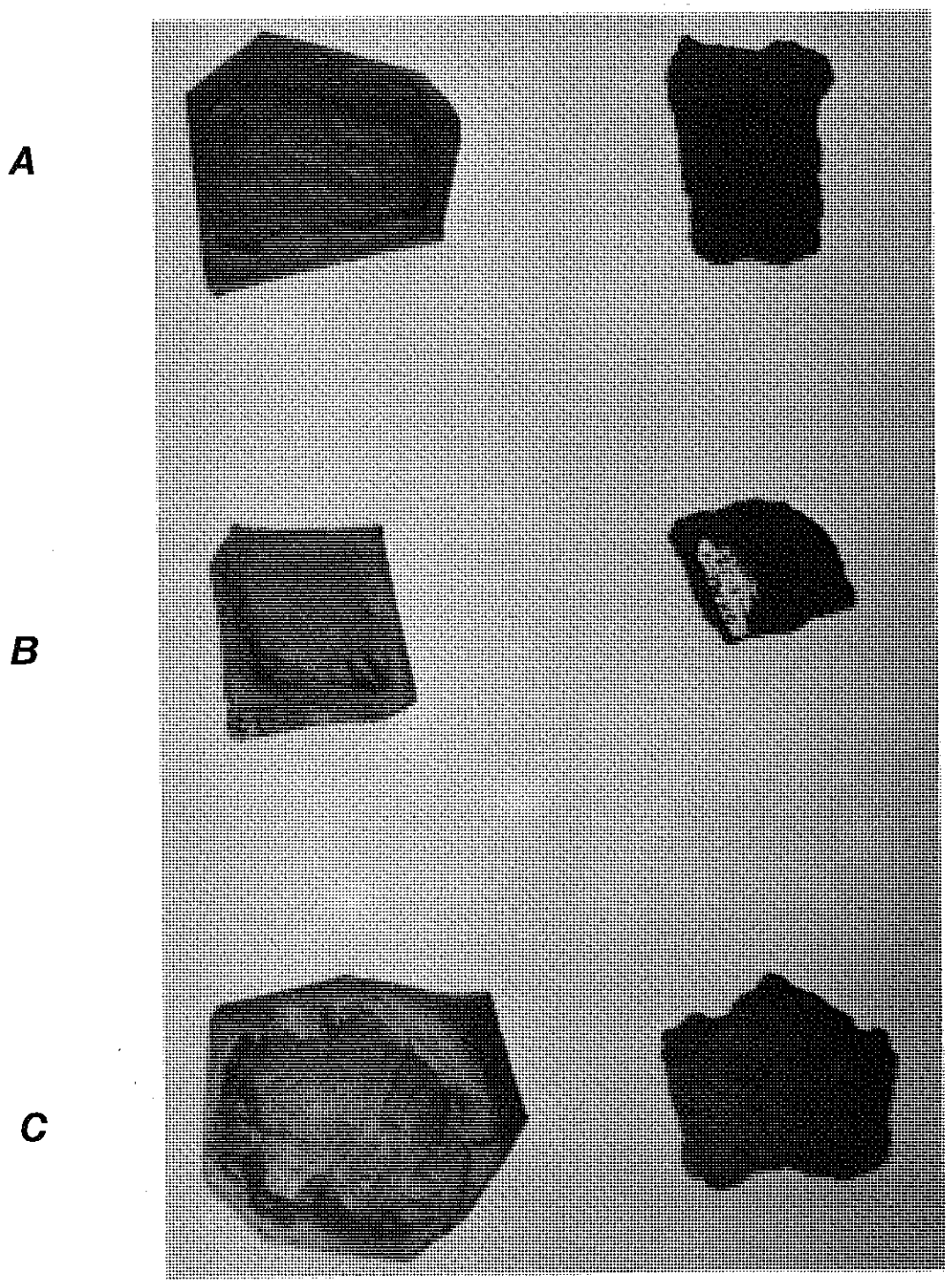

Plate 4. Interior and Exterior Surface Finishes: A, S-31; B, S-33; C, S-160.

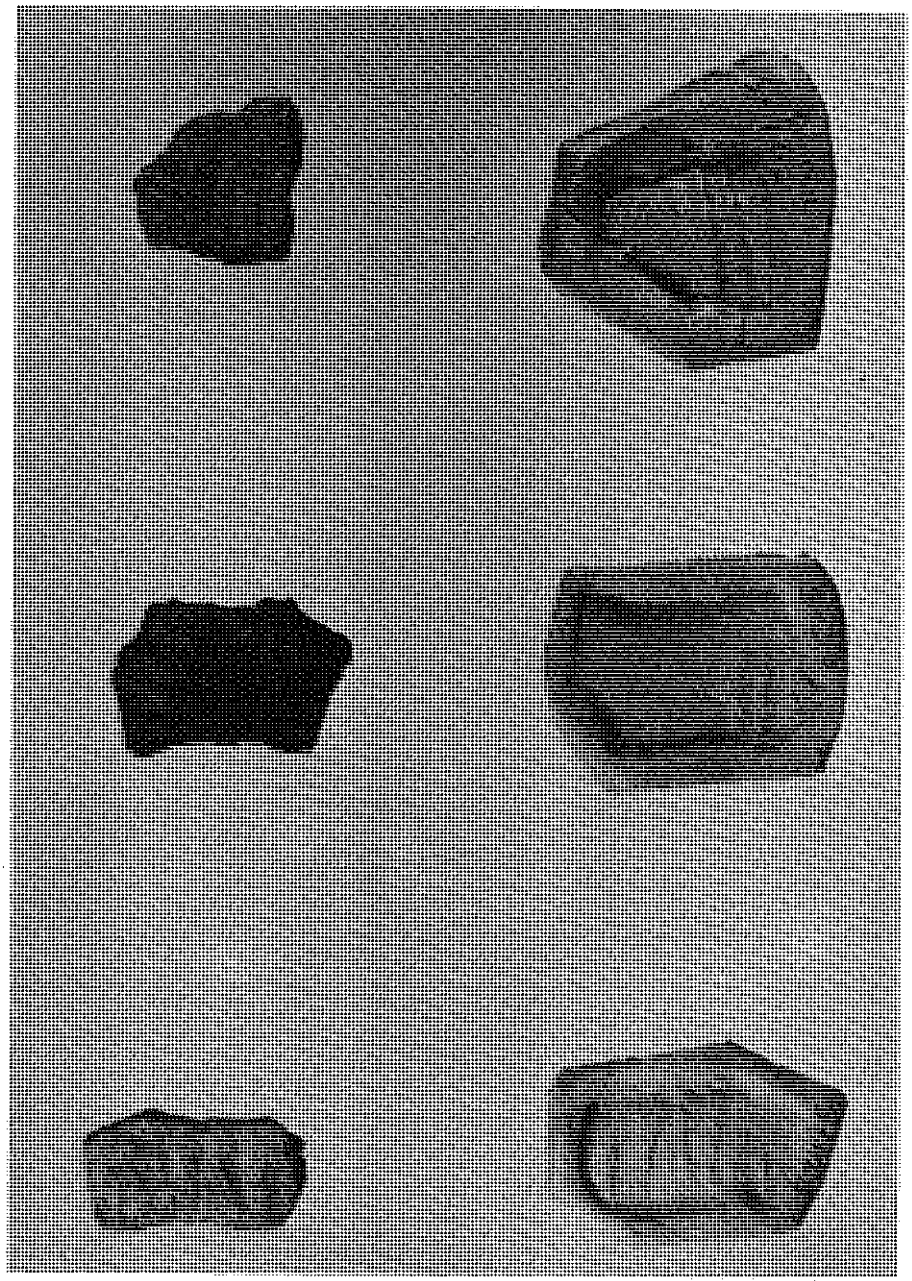

Plate 5. Cord-Wrapped-Paddle Impressions: A, S-162; B, S-36; C, S-128.

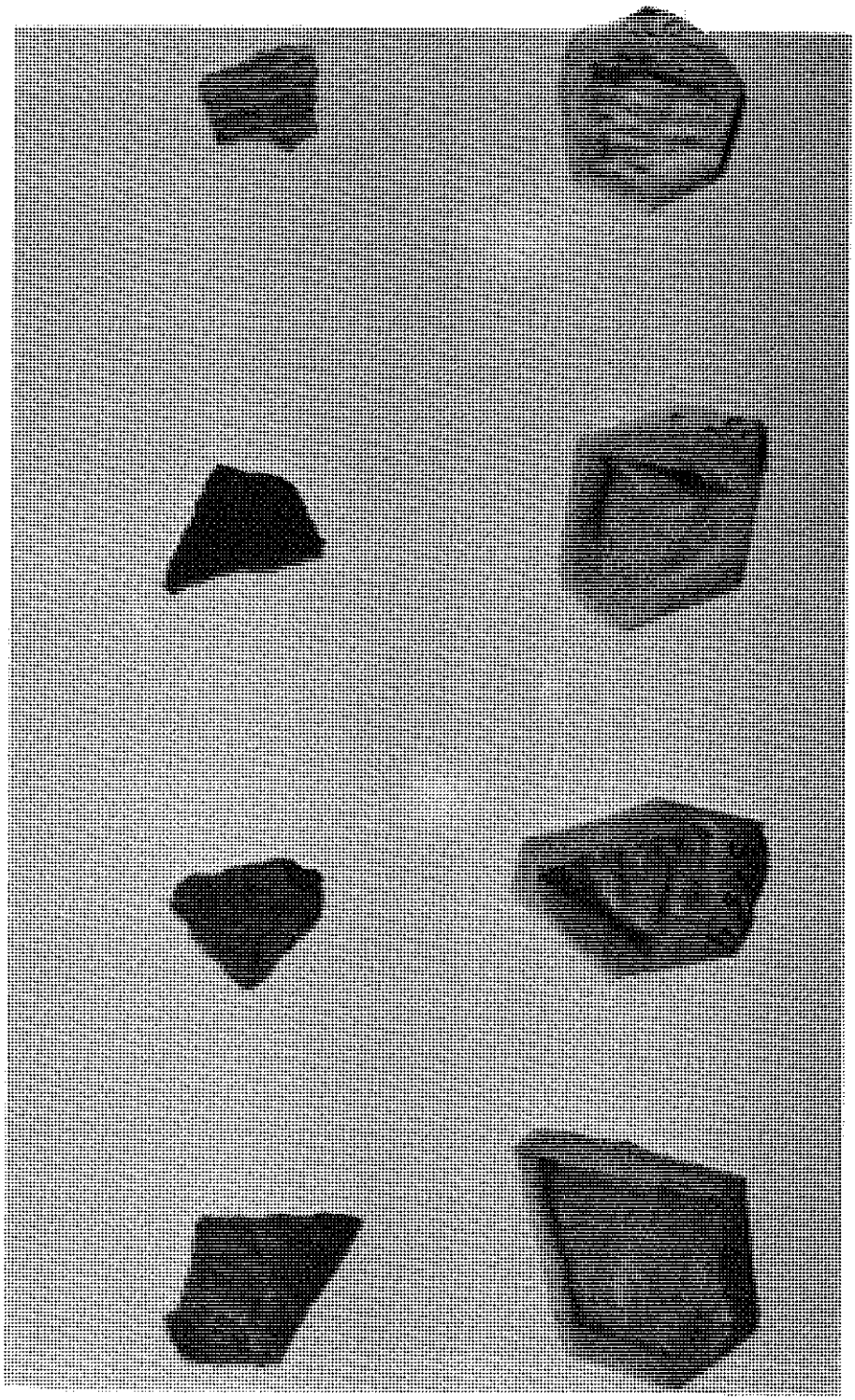

Plate 6. Exterior Surface Decorations: A, S-92; B, S-9; C, S-59; D, S-56.

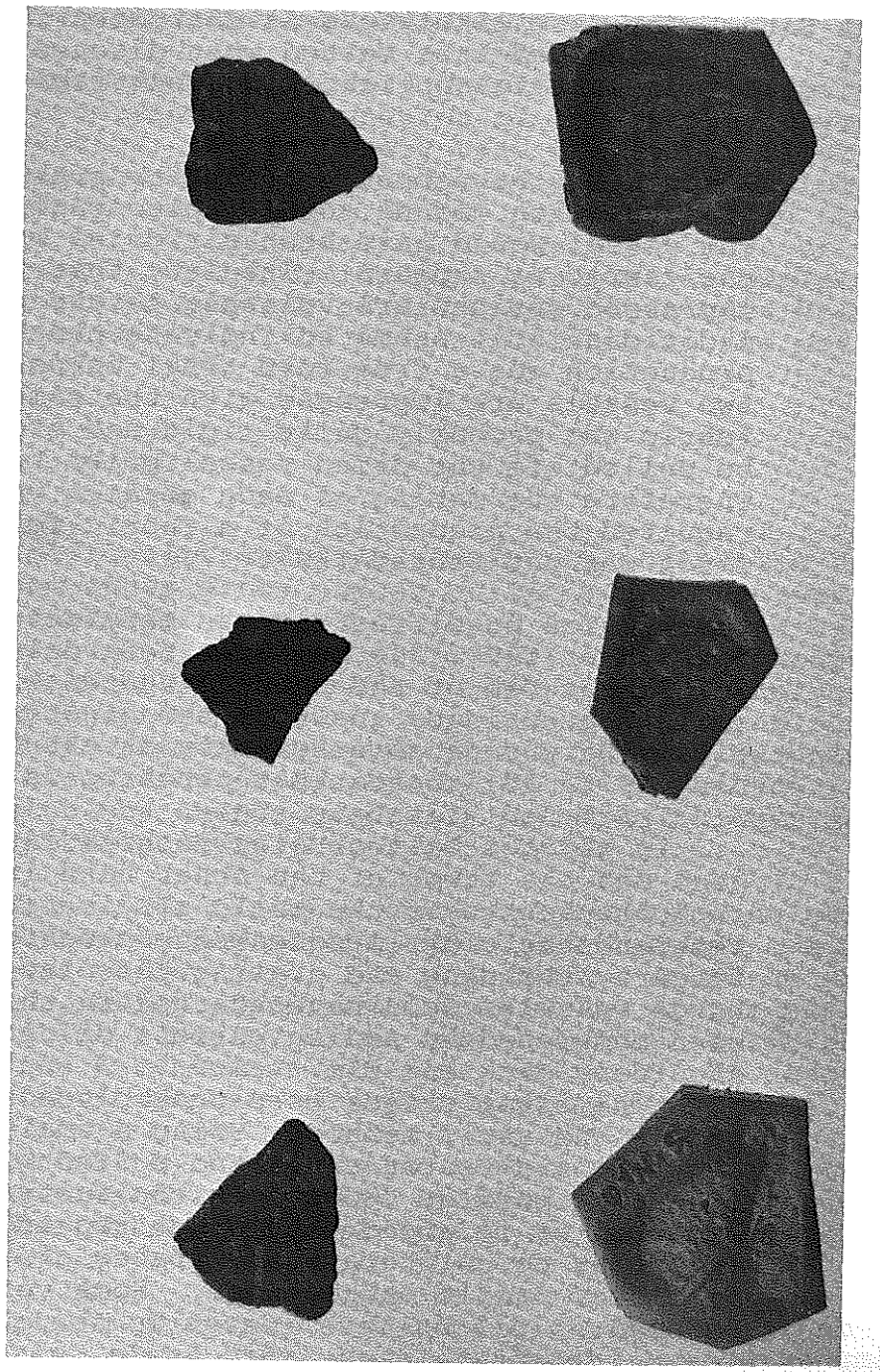

Plate 7. Exterior Surface Decoration: A, S-144; B, S-80; C, S-140.

which may have been used to construct the vessels found at the Johnas Site. The most likely one is that described by Benn (1976). Benn described this method when discussing Madison ware ceramics, but it is also applicable to most fabric impressed pottery.

> Vessels may have been produced by pressing the the base with aid of cord-wrapped paddle and anvil. The vessel would have been air-dried with the fabric as support. The fact that these fabric impressed designs are variable to the point of being individualistic seems to indicate that fabric production was a free-form art. In point of fact, no two vessels are impressed with the same fabric. The fabric was probably quite rigid and probably could not be pulled off the dried vessel prior to firing. Therefore the making of each ceramic vessel would have required the production of a fabric for that vessel which was not reused (1976: 7).

It is quite possible that the manufacturing technique described by Forbis (1977: 39) may have been used in the production of one or two of the unusual sherds of the Johnas collection. This technique, known as the pinching method, was used in the manufacture of some ceramics at the Cluny Site, as well. Forbis (1977: 39) states that pinching is one

> ... in which a ball of clay is held in the palm of the hand and the thumb of the other hand is then pressed into the centre of the ball. It is rotated at the same time and the clay is squeezed between the thumb and fingers, thinning and drawing the clay into shape. Large vessels could have started in this manner and been completed by adding pellets of clay to form the shoulder, neck and rim.
>
> The final stages were probably achieved by the paddle and anvil method. Using a small rounded pebble on the inside as an anvil and a flat piece of wood or bone as a paddle. Sometimes the surface was then smoothed as if wiped with a wet rag often to such an extent as to obliterate any traces of the kinds of fabric or paddle method used. Some vessels were scraped.

The manufacturing technique of laminated moulding described by Wettlaufer (1960) is the probable method used for the manufacture of the few Johnas Site sherds showing definite indications of lamination. This method of manufacture was also

employed for some of the ceramics at the Mortlatch Site in the Besant valley of central Saskatchewan.

> The term laminated molding provides a convenient means for a provisional designation of this technique of construction. It is likely that the potter first produced the basal part of a desired vessel by molding in plain hands, using a dab of paste, pressing the fingers into it and drawing the wall out more or less concurrently. The laminations are then incomplete bonds between morsels of mixed clay that have been molded together in the process of shaping the pot. (Wettlaufer 1960: 20)

Discussion

It is difficult to define the Johnas collection on the basis of data from other sites and/or collections. However, the Johnas sherds are similar to pottery found in adjacent areas and similar time periods. It is also difficult to visualize the sizes of the vessels by looking at a collection of pottery fragments. The pot sherds are very thin, ranging from 0.30 to 0.87 cm, which indicates that they were made by skilled potters. The thinness of the sherds is also peculiar to the southwestern Manitoba area, with the sherds gradually becoming thicker as one moves west across the country (Meyer 1981: 28).

Several surface finishes commonly found in the ceramic traditions of southwestern Manitoba and adjacent areas are also found in the Johnas collection. The most common of these are fabric impressions, which appear on the majority of the sherds in the Johnas collection. Nearby sites that have fabric impressed pottery include the Kirchenmann III Site, where "Of 39 decorated sherds, 20 were fabric impressed" (Gregg *et al* 1985: 135).

The Stott Site, D1Ma-1, also contained fabric impressed pottery. This site is found west of Brandon and is relatively close to the Johnas Site. The description of fabric impressions, however, is vague:

> Description of vessel surface finish...is somewhat premature, given that vessel fragments are quite small. Examination of rims and neck sherds does indicate that the cord roughening is oriented vertically on the vessel. Some body sherds exhibit overlapping cord-impressions, traditionally taken as evidence of cord-

> wrapped paddling. However, the possibility of textile folds cannot really be ruled out unless one is dealing with large portions of vessels. Secondary smoothing of cord impressions is virtually universal. (Tisdale 1978: 75)

Fabric impressed Sandy Lake ware is similar to some of the sherds in the Johnas collection. It is found in the area extending south of the Johnas Site. In discussing this ware, Fox (1982: 100-101) states that the majority of the body sherds are either cord-roughened or plain. In addition to those already mentioned, Avonlea pottery also displays fabric impressions as noted by Gregg et al. (1985: 130).

Lump molding with paddle and anvil, if employed and not truncated afterwards, would conceivably leave a cord-marked design that could be mistaken for fabric impressions. In his discussion of the Mullberg Site and surrounding sites in the Nipawin area, Meyer (1981: 21) states that body sherds with smoothed fabric impressions have been collected from cultivated ground surfaces.

The fabric impressions found on Johnas Site pottery are also similar to fabric impressions found on Blackduck ware. Although Blackduck ware is more common to eastern Manitoba, examples are found in southwestern Manitoba near the Johnas Site. In describing Blackduck ware, Carmichael states that the "body is completely covered with cord impressions" (1977: 5).

Although the Johnas Site sherds are too small to determine if fabric collars were employed in their manufacture, neither can they be ruled out as a possibility. A type of ware employing the use of fabric collars in its manufacture is Madison ware, which according to Benn (1976: 156) has:

> ...cord roughened exterior surfaces...decorated by some corded design. The design often begins of the exterior rim and continues over the lip to be impressed on the upper portion of the interior rim as well. There are bold vertical wrap cords impressed on the interior surface. There is conclusive evidence for fabrics that were impressed on vessel rims and shoulders as a single unit. Fabric evidence indicates that a fabric collar was employed to produce the cord impressions.

Another surface treatment found on many Johnas Site sherds is the smooth finish. "Smoothing appears to have taken place when the surface of the vessel was still moist, since the

fine particles have risen to the surface to create a pseudo-slip" (Smith 1977: 53). Smooth sherds seem universal and are found at most of the sites already mentioned in this study. This type of surface finish is also found at the Cluny Site (Smith 1977: 53) and the Quast 32LM234 Site (Gregg et al. 1985).

Polished surfaces are also found on pottery sherds. Smith (1977: 53) describes this type as follows: "Occasionally the exterior surface has further been modified by burnishing, resulting in a low polish. This polish is limited to relatively small portions of the body, and never appears on the neck." Those sherds displaying polished surfaces in the Johnas collection are few in number and represent only 2% of the collection. Although this surface treatment is rare, it can be found on some sherds of Saskatchewan Basin ware (Meyer 1981: 30) and on some sherds at the Cluny Site (Smith 1977: 53).

A final surface finish found in the Johnas Site collection consists of cord-wrapped-paddle impressions. These are often difficult to identify because vessel surfaces are commonly obliterated by subsequent decoration. Cord-wrapped-paddle impressions are also found on sherds at more distant locations, such as Talking Crow Site. In his description of the pottery found at this site, Smith (1977: 49) states that "Replication of cord-marking was easily accomplished by maleating clay with a paddle wrapped tightly with twisted cord."

Decorative techniques found mainly on the exteriors of Johnas Site pottery sherds are also found on the surfaces of sherds of other ceramic traditions. One of these described by Ahler (1984: 106) is a distinctive technique, in which a pointed tool is alternately pushed and pulled in a line across the vessel surface, producing a linear corrugated track. This "stab and drag" technique, usually applied in multiple rows, had been applied to ceramics found at the Elbee Site (Ahler 1984). Similar markings were found on some of the Johnas Site sherds. Other sites noted as having similarly decorated ceramics include the Kirchenmann III Site (Gregg et al. 1985: 135), in which nine of the 39 decorated sherds were so decorated, and the James River Valley Site (Fox 1982: 125).

Finger pinching is another decorative technique found on a limited number of sherds in the Johnas collection, which is also common to other ceramic traditions. Finger pinching is mentioned by Fox in connection with the James River Valley Site. "Rims are decorated by pinching or incised lines, lip tabs or appliqued strips" (Fox 1982: 125). Gregg et al. (1985: 130) also mentions finger pinching in connection with Mortlatch Aggregate.

Two other distinctive decorative techniques, trailing and cord-wrapped-stick impressions, are also found on Johnas pottery. Trailing is found on Sandy Lake ware (Fox 1982: 130) and on James River Valley ceramics (Gregg et al. 1985: 130), whereas cord-wrapped-stick impressions are a more widespread design found throughout the Parkland/Plains area. Cord-wrapped-stick impressed pottery is found at the Kirchenmann III Site (Gregg et al. 1985: 135), the Elbee Site (Ahler 1984: 106), and also on Saskatchewan Basin ware (Meyer 1985). For Blackduck ware, the "primary decorative elements, are vertical to oblique and horizontal cord wrapped object impressions and punctates" (Carmichael 1977: 6-7).

One characteristic of Johnas Site pottery is its tendency to laminate or split. Johnas Site sherds are very thin and tend to flake or cleave along their centre lines. Perhaps a tendency to laminate indicates a different method of manufacture than one used for Stanley or Le Beau wares (Wettlaufer 1960: 36). Splitting of sherds is a trait also found on samples of ceramic wares from the Long Creek site.

> All of the pottery seems to have been manufactured in a similar way. Cross sections of many pottery sherds showed layers or laminations, and a tendency to split very easily...It is highly likely that the technique of manufacture known as molding was used. The laminations are the incomplete bonds between morsels of mixed clay that have been molded together in the process of shaping the pot (Wettlaufer 1960: 20).

The sites used for comparison with the Johnas Site are only a small portion of all the archaeological sites in the surrounding area. Johnas Site pottery displays similarities to many of the types described in the literature, but its traits do not conform to any one ware in particular. This may mean the Johnas Site pottery is a ware unto itself, or rather that it combines traits from neighbouring traditions. Further additions to the collection, as well as additional information about the ceramics from nearby sites, may help to determine more accurately the specifics of manufacturing used to produce the Johnas Site ceramics.

Conclusion

For two reasons, Johnas Site pottery sherds cannot be assigned to any ware or particular ceramic type. Firstly, the

observations made in this paper have been based upon individual body sherds, without consideration of the more diagnostic rim sherds or any reconstructed vessels. This isolated analysis leaves an incomplete picture of the decorative elements or surface treatment found on the rest of the vessel. Secondly, there is a general lack of description and analysis of body sherds from neighbouring sites. Because the body of the vessel often differs from the rim and lip areas in terms of decoration, surface treatment and finishing processes, it is extremely difficult to correlate the body and rim sherds. Considerable work can be done with rim sherds but a discussion of the body sherds is necessarily speculative.

Its differences from other sherd collections make it impossible to specifically classify the Johnas Site collection. Generally speaking, the ceramics appear similar to those of the Middle Missouri and Northeastern Plains areas and have been cross dated to approximately A.D. 1200 to 1500 (L. Syms: Pers. Comm.) Future additions to the collection may provide more clues and a clearer picture of the pottery.

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