> There was always a priest with them as long as they were well off, but quit them when they became poor. In the days when the robes were plentiful, the fathers would have more robes than anybody as they always had an eye for business. (Noyes, n.d.).

Father Lestanc was the main Catholic priest among the Cypress Hills Hivernants and was in the Hills by at least 1868 (Stegner, 1966:65).

I. Values and Personality

With regard to the mechanics of racial and cultural recombination, Park (1931) says that the process takes place more rapidly than elsewhere on the frontiers of an advancing civilization. Under the influence of a mobile and cosmopolitan population, custom and tradition are relaxed and class stratification is not as rigorously enforced. Under these circumstances

> Social distances are . . . difficult to maintain, and the measures intended to preserve them are invariably only partially successful. Furthermore, sexual interest. . . operates independently and often counter to the interests represented by the organization of society. (Park, 1931:536).

> . . . the mixed blood, without respect to his racial origin and merely because of the role he is called upon to play, constitutes a distinct personality type . . . more enterprising . . . , more restless, more aggressive and ambitious . . . . It has been the disposition of the mixed bloods, wherever they have been denied the status of the dominant race, to compensate themselves by withdrawing from association. . . . (Park, 1931:544-545, 549).

The above description is a good evaluation of some causative factors behind the formation of Metis (and other mixed blood) personality and cultural values.

However, beyond Park's work there appears to be no other relevant literature on Hivernant values and personality.

J. Social Change

The repeal of Ordinance No. Five, for the protection of the buffalo (Sessional Paper No. 86, 1878:2), was a final trigger for a spiralling, accelerating trend of buffalo extermination on the northwest plains. Giraud (1945:Pt. 6, Ch. 4) starkly details this final act in the Metis cultural panorama--an act played out especially by the Hivernants.

As early as 1845, Alexander Christie at Fort Garry wrote George Simpson that "The time is evidently not far distant when buffalo will disappear (Giraud, 1945:1156)." For those who foresaw it, the extermination of the buffalo was a logical consequence of both the size of the hunting brigades, and of the selective killing of cows which the Metis preferred to bulls. The demand by the American market for buffalo robes was also an essential cause of the decimation of the herds. Even "Prairie Law" was intended less to prevent the blind destruction of the animals than to keep individual hunters from making blunders, which could adversely affect the wholesale success of the hunts. As the herds gradually broke up, the Hivernants never did understand that the odd returns to abundance were in more and more limited areas, and always in more remote areas, e.g. Cypress Hills, Wood Mountain, and Milk River. Instead of adopting a policy of moderation, the ever-increasing numbers of Hivernants began killing buffalo without interruption in winter as well as in summer. Also, the Montana traders, "the canteen

keepers of Fort Benton", multiplied their posts in the British North West Territories--especially in the Cypress Hills; by trading with alcohol they encouraged a pace of extermination which enabled them to carry away thousands of robes. In February, 1873, trading only in whiskey, they accumulated 10,000 robes in the Cypress Hills. (Giraud, 1945).

Foreseeing the full extinction of the buffalo and the Hivernant way of life, the missionaries endeavored to prevent both phenomena. Abandoning nomadism for farming was seen as the only efficient remedy. Monsignor Tache even envisaged the cancellation of the missionary visits to the wintering camps as the only means of ending the practice of nomadism. However, Father Lestanc accurately wrote to Monsignor Tache

> Only the total destruction of the buffaloes can stop the winterings. We must have the harsh lessons of a prolonged fast to determine our poor people to take again the plough and pick. (Giraud, 1945: Pt. 6: Ch. 4).

The missionaries could only institute fragmentary reforms in hopes of easing the uncertainties of life on the prairie, and delaying the extermination of the herds. Thus, Father Andre obtained from the St. Laurent council in January, 1875, the issuance of regulations intended to better the organization of the hunts by imposing instructions similar to "Prairie Law" and the already existing political structure of the Hivernant camps. However, when sanctions were imposed, the guilty trespassers went to Carleton House where they complained of having been maltreated. The council had to return the goods paid as fines, under pressure from the N.W.M.P. After that, all discipline disappeared from the hunts. "In the

fall, everybody did act freely and rushed upon the buffalo (Giraud, 1945: Pt. 6, Ch. 4)." The Hivernants disbanded into winter camps so numerous, and began such a slaughter of the buffalo, that the N.W.M.P. finally intervened. In 1877, the anarchy continued and all laws remained "dead letters". In effect, the Hivernants recognized that they were constructing their own future destitution, but confessed themselves incapable of changing their way of life as long as there were buffalo on the western plains. (Giraud, 1945).

The final destruction of the herds took about ten years. The breaking up of the herds dispersed the Hivernants into smaller and smaller hunting groups which, in turn, did not leave any respite for the animals. Periods of scarcity continued, and affected greater and greater areas. Father Lestanc stated that "Fasting . . . ravages a place each year (Giraud, 1945: Pt. 6, Ch. 4)." In 1872, the St. Albert-Edmonton district suffered. The animals concentrated instead near Qu'Appelle River and Wood Mountain. In 1873, the pastures of the latter regions, plus those of Whitemud River and the Cypress Hills constituted the favorite area of the herds and the hunters. It became a senseless waste of animals and meat--a systematic slaughter that resisted all the entreaties of the missionary. The slaughter continued without cessation in the region during February and March; then scarcity succeeded prosperity but without reforming the Hivernants nor tempering their careless attitude towards the killing. St. Albert-Edmonton continued to suffer persistent scarcity; the pastures of the South Saskatchewan became depopulated of buffalo. "The hunt has been bad, 'wrote Father Andre at Carleton House in August, 1873,'

our people come back scarcely half-loaded, so that the future is not favourable for our Hivernants (Giraud, 1945: Pt. 6, Ch. 4)." The winter of 1874 was a period of scarcity at St. Laurent. The camps, which were at intervals along the South Saskatchewan, were reduced to eating poisoned wolves, the remains of which were strewn on the prairie. The families soon abandoned the river to reach the Whitemud River where animals were numerous. The districts of Moose Jaw, and St. Albert-Edmonton again knew abundance. Everywhere there were buffalo; at the Whitemud River, the killing continued and the Americans gained rich crops of robes. The year 1875 was again a period of scarcity. However, after a winter of near starvation, the summer brought abundance to Qu'Appelle River, St. Albert, and the South Saskatchewan. Great summer and fall hunts took place. Even so, that year the regions of Wood Mountain and Turtle Mountain, previously so well supplied, experienced a serious decrease in buffalo. Scarcity reappeared in the St. Albert-Edmonton district, and the last refuges of the buffalo started to outline themselves in the Cypress Hills and along the Milk River. This situation continued in 1877. (Giraud, 1945).

While the animals were scarce north of the South Saskatchewan, they formed important concentrations on the south bank--especially in the areas of the Cypress Hills and Milk River. This was the case in 1878; these last two areas remained the points of concentration for the herds. Many Hivernants--fearing the enforcement of Ordinance No. Five, and dreading the arrival in the Cypress Hills of Sitting Bull's Sioux legions

fleeing the American troops--gathered near Father Gevin on the Milk River. Important wintering camps were also made in the Cypress Hills. The St. Albert-Edmonton district had its last period of abundance in the winter of 1879; the buffalo disappeared afterwards. Famine, long foreseen, broke out brutally on the western plains. More and more, the last herds stayed below the boundary line where the American Government endeavored to keep them, to starve out the Sioux. Cypress Hills and Wood Mountain entered a phase of decline which paralyzed the usual rhythm of winterings, and dislocated the Hivernants into smaller and smaller groups. A fire broke out on the prairie in the fall of 1879 which further reduced the possibilities of subsistence for the Hivernants in the region, and increased the exodus towards the Milk River and the Judith Basin. The presence of buffalo in the Judith Basin allowed a concentration of some 200 families divided into numerous winter camps. The 1,500 to 2,000 families of Sioux gathered just north of the boundary line also acted as a barrier to the eventual migration of buffalo northward.

> In March, 1880, Father Hugonard wrote from Wood Mountain: 'In our grasslands, everything is gloomier and gloomier. The buffalo are not coming any more on this side of the line, only Sioux come there who live by hunting on the other side . . . . Everything will scatter itself in the spring . . .' In July, he announced that the hunt had stopped: 'the prairie is decidedly finished. . . .' (Giraud, 1945: Pt. 6, Ch. 4).

Consequently, the winter of 1879-80 was particularly hard for the Hivernants in the Cypress Hills region. The cold was exceptionally severe, and violent blizzards swept prairie pastures which had been destroyed

by a new fire in the fall. Horses perished in great numbers in the Hivernant camps. From the Cypress Hills and Wood Mountain, Hivernant families streamed towards the pastures of the Milk River and the Missouri to save their children from cold and hunger. The St. Laurent Hivernants, in turn, went into American territory in the spring. From then on, the St. Laurent chronicle ceased referring to wintering and summer hunts. (Giraud, 1945).

In 1881, the rumor spread of a return of the herds between Wood Mountain and the Cypress Hills. A small number of animals seem to have remained on the northwestern plains, because at Willow Bunch (Wood Mountain) the Hivernants organized a hunt in the summer of 1881, from which they came back only at the beginning of the winter. The same thing occurred in 1882--the Wood Mountain Hivernants still hunted. However, their later and later return indicated they met with increasing difficulties. In 1883, the last hunt took place, again organized by the Willow Bunch Hivernants. It marked the end of buffalo hunting in the British territories. By the beginning of winter, the animals had disappeared completely. (Giraud, 1945). In the Cypress Hills locality, the last buffalo was killed on the Irvine flats by Robert McCutcheon in the fall of 1882 (Morrow, 1923:15). The Hivernant hunters now had to face the fact of total destitution--and starvation. They sold their horses, which had always been the sign of wealth and the means of obtaining a subsistence for their families. After leaving their usual wintering places in the Cypress Hills, Wood Mountain, and Toudre Mountain, they had to live by hunting wolves and ducks, which only brought

them insufficient food. (Giraud, 1945).

The Missouri and Milk Rivers also lost their importance. Also, in the spring of 1883, the Hivernants were hounded by the Fort Benton Sheriff who attempted to extort duties on the robes they were carrying back into Canadian territory. Upon a refusal to pay, the sheriff seized a great part of their goods. (Giraud, 1945). Giraud's date is inaccurate. An editorial in the Benton River Press (15 March, 1882) indicates that Sherrif J. J. Healy was bettering his own personal fortune, and acting illegally under the auspices of his badge. Healy almost overreached his own greed in the affair. A telegram to the Benton Weekly Record (16 March, 1882) noted

> . . . that Sheriff J. J. Healy and his deputies Jeff Talbert and Joe Healy were prisoners in the Halfbreed camp in Milk River near Medicine Lodge . . . . It was said that the three officers had made arrests of certain Halfbreed smugglers, and a seizure of large quantities of robes; that the breeds followed them up in great force, overpowered them after a sharp struggle . . . .

However, this sort of commercial independence did not sit well with the Americans. The Benton Weekly Record (23 March, 1882) noted later "One result of the trouble with the smugglers and whiskey traders of Milk River will be the destruction of the Halfbreed village at Medicine Lodge." Healy was finally rescued by the American cavalry; he then arrested several of the camp residents. The U.S. troops took a leisurely two days to burn and raze the village and then escorted the Hivernants north across

the border. The Hivernant Chief, Alec Brilleau, claimed to have had permission to trade and hunt at Medicine Lodge from Mr. Porter, the Indian agent at Poplar Ridge (Benton Weekly Record, 30 March, 1882).

In the British northwest, after 1883, many Hivernants stabilized themselves in former wintering camp sites--only Hump Mountain, Toudre Mountain, Wood Mountain, and Turtle Mountain are mentioned by Giraud (1945). However, their resources did not allow them to purchase draft animals nor agricultural implements. Above all, they lacked the experience of farming. (Giraud, 1945). Interestingly, after the 1878 petition by the Cypress Hills Hivernants, J. S. Dennis, Deputy Minister of the Interior for the Territorial Privy Council, noted in a confidential report that the Governor General in Council had concluded

> (a) Each Halfbreed should receive non-negotiable script for 160 acres of land, which he or she should be at liberty to locate on any vacant Dominion lands . . . .
> (b) That aid, in the form of implements and seed grain, should be issued to such Halfbreeds to a reasonable extent. (Sessional Paper No. 116, 1885:95).

Beyond the repeal of Ordinance No. Five, these recommendations were never acted on at the time. Apparently, it was not an immediate policy of Sir John A. MacDonald's government to aid Metis endeavor. Sir John A. MacDonald's curious aversion to act on Metis claims is interesting. In a letter to Mrs. Josephine K. Howard of Great Falls, Montana, Justice Davis (1953) notes that nearly all the Metis were asking for titles to their farms, that this was designedly delayed, and that the anticipated trouble (the 1885 rebellion) followed. Even while the uprising was in progress, steps were being

taken to meet Metis demands; they received their title soon after.

> If they were entitled to them why not years earlier? . . . There appears to be ample justification for the suggestion in some sources that John A. et al did in fact foment the uprising through deliberate inaction for this purpose. But as I say that is all speculation. (Davis, 1953: Letter).

The Canadian Government's treaty policy also closed its doors in Metis faces. Many Hivernants had moved onto Indian Treaty reservations in order to have enough food to eat. However, in the Cypress Hills the reserves were closed and the Indians moved to the Indian Head reservation in Saskatchewan (McDonald, 1883:261). The Hivernants were then smoothly eased out of the other reserves.

> In my report of last year I stated that I was in hopes of another year to be able to dispense with the greater part of the Instructor's force in the eastern section of Treaty No. 4. I am happy to say my hopes in that respect have been realized, and on the first of November, I closed Farms No. 1 and No. 2. (Dewdney, 1883:193).

> Another matter deserving your attention is the extent to which the numbers of treaty Indians have been reduced by the withdrawal of those who although possessing that admixture of blood which entitles them to rank as Halfbreeds, preferred, so far, to assume the status of pure Indians . . . the greatest care was exercised to prevent any from leaving treaty in order to obtain script . . . . On the other hand, no Halfbreed applicant who seemed likely to be able to take care of himself, was retained in treaty against his wish. (Dewdney, 1886:111).

In summation, W. P. R. Street in 1885 noted

> The 'Indian title' referred to in this act is an undefined and somewhat shadowy right which our Government is in the habit of recognizing as belonging to the aborigines with regard to tracts of land in their possession, when

> it has been decided that their possession must be ended and the tract surveyed and opened up for settlement. It is not a title which could be actively enforced in any court, for it is only recognized in order that it may be extinguished . . . . In the case of the Halfbreeds, there being no tribe or other organization with which to deal, the Government itself fixed what it deemed an adequate consideration, and having set this apart for them treated their Indian title to the rest of the lands in the province as extinguished. (Langton, 1944:43).

It was in this bitterly frustrating bureaucratic milieu that the final Metis rebellion occurred in 1885, beginning with the battle at Duck Lake. After the final battle at Batoche, Riel was condemned to hang for treason, and eighteen Metis associates were sentenced to terms of imprisonment ranging from one to seven years. Eleven Cree warriors were condemned to hang for murder; three were ultimately reprieved. The prominent Cree chiefs Big Bear and Poundmaker we re imprisoned. (Stanley, 1936:378). Many more prominent figures escaped into Montana. These included: Gabriel Dumont, Charles Trottier, Imasees, Little Poplar, and Lucky Man (Benton River Press, 1885: 10 June, 7 October, 14 October, 25 November, 23 December). According to Gabriel Dumont's personal account (Stanley, 1949), only eight Hivernants from the Cypress Hills (based on the 1878 petition list) took part in the rebellion.

Nomadism still retained the attraction it always had. Many Hivernants preferred the cartage of goods to cultivation (Giraud, 1945). For a while business was brisk. For example, Dewdney (1880:90) instructed his Indian agents to utilize as many Indians and Metis owning carts, as would

want to freight--should they agree to carry the treaty contract goods at the well-known recognized rates. However, the approach of the railway through Medicine Hat in 1883, and to Lethbridge in 1885, eliminated most of the slow-moving bull trains that came to and from Benton (Turner, 1950). By 1883, some Metis were working as instructors on the Indian treaty farms (Sessional Paper No. 4, 1884:117).

Specifically in the Cypress Hills, the remaining Hivernants settled randomly in the coulees and ravines, and subsisted by trapping, hunting, collecting buffalo bones, and carting, and working on the ranches (Nelson, 1970: Ch. 8:21). In 1887, there were still Metis living in several places around Elkwater Lake (Mitchell, n.d.:7). However, White homesteaders and ranchers were already moving into the area. In 1881, the Department of the Interior gave out the first twenty-one year grazing leases for sheep; foundation stock was brought into Alberta from Montana and Wyoming after this date (Berry, 1953:102). In 1883, Fort Walsh was torn down, and H. Stewart and W. H. Bridgemen helped the first surveyors lay out the lines around Elkwater Lake (Morrow, 1923:49). The Mitchells were one of the first homesteader families to move into the Hills.

> Alex Mitchell recalls when he came in 1877 as a small boy he found shells and targets on the hill back of his house. These had been used by the Mounted Police who had a post there for two years or so while waiting for the Willow Creek Detachment to be completed. (Mitchell, n.d.:7).

In 1892 the two Mitchell brothers dissolved their partnership and Robert Mitchell moved to a homestead where Anton Kajewski is now--at the head

of Gros Ventre Creek (Mitchell, n.d.:9). The old cellar pits of Robert Mitchell's homestead can still be seen along the Kajewski's access road.

The Hivernants have now disappeared from the Cypress Hills. Farming was an alien concept to them. The Hivernants were, and still are, essentially hunting nomads. Many moved to Montana, and probably some to the brief-lived reserve at St. Paul des Metis in 1896 (Giraud, 1956:11-14). However, even at St. Paul, in 1910, after having skillfully circumvented the Metis and won government approval, the missionaries opened the debt-ridden reserve to a significant contingent of French-Canadian settlers (Giraud, 1956:14. Maber, 1909: Letter. Dion, 1932: Paper). Thus, a good number of the French-Cree Hivernants of the Cypress Hills must have moved into the remote districts of northern Alberta and Saskatchewan. Sivhon (1951: Letter) notes that the Alberta Metis Population Betterment Act (1940) benefits are centred completely in the Peace River country. Cote (1929) indicates that money and land scrip was issued in Alberta at Red Deer Crossing, Battle River, Laboucane Settlement, Peace Hills, Lac La Biche (1886); Moose Lake (1887); Medicine Hat, Lethbridge, Edmonton, Lac La Biche, Saddle Lake, St. Paul des Metis, Athabaska Landing, St. Albert, Lac St. Anne, Fort Saskatchewan, Wetaskiwin, Duhamel, Lacombe (1900); Lesser Slave Lake, Peace River Crossing, Fort Dunvegan, Wolverine Point, Fort Vermillion, Fort Chippewayan, Smith's Landing, Fort MacMurray, Wabiscaw Lake, Pelican Portage, Grand Rapids, Calling River Portage, Athabaska Landing (1899

and 1901). In all the Northwest, 24,396 land claims were settled for a total 2,609,772 acres, with a cash outlay of only $41,280.00 (Cote, 1929).

CHAPTER V

CONCLUSIONS

Four classes of conclusions are required in relation to the data in the thesis. First, there are conclusions concerning the archaeological technique utilized at the Kajewski Cabin Site. Second, there are conclusions about the ethnohistoric data--as it relates to the Metis generally, and to the Cypress Hills Hivernants specifically. Third, there are conclusions concerning archaeological description and inference, in relation to the Kajewski Cabin Site, and to the nature of the Hivernant subculture. Fourth, there are conclusions about methodology which arise out of that description and inference.

A. Technical Conclusions

Generally, the archaeological techniques employed at the Kajewski Cabin Site were of sufficient accuracy to provide a realistic appraisal of the material culture in Cabins B and E. The in situ excavations offered a visual representation of various areas of cultural activity in each cabin. In effect, the artifact proveniences were usually precisely recorded; this enabled the two excavation areas to be planeview mapped in detail. The data recording process was further supported by various other scale drawings and a complete photographic record.

A few shortcomings became apparent after implementation of the thesis. One problem is the specific definition of flaked stone tools according to relevant stylistic attributes and evidence of functional use. Perhaps the particular contexts

of the stone tools in Cabins B and E will offer some insights into these problems. There were four technical problems with the excavation. More precise proveniences for the identifiable faunal remains, rather than just excavation unit locations, would have enabled a more precise definition of the various activity areas. The flakes, china sherds, glass sherds, sheet iron fragments, beads, fire broken rock, and scattered charcoal do not appear to be as sensitive to this sort of cluster analysis as the faunal remains. Surveying for more cabin site locations before undertaking major excavations, rather than after, would have allowed a more objective selection of cabin area excavations for comparisons between different DjOo cabin clusters. Sampling of the wood and clay should have been more rigidly performed with series of paired samples from the two cabins--to allow a more objective comparison of the structural detail between cabins. Furthermore, all the various interior and outside pits should have been half-excavated and profiled to allow for tighter control of the dating sequence, and to define more certainly the number of discrete occupations in each room. Beyond this, further investigation of other Metis settlements in differing culture areas, with recorded occupations by Metis of differing ethnic origins, is needed to validate or invalidate the particular application of the Direct Historic Approach (e.g. Forbis, 1963) outlined in the thesis.

B. Ethnohistoric Conclusions

Generally, the historic perspective and language sections of the constructed ethnohistory sufficiently portray the socio-economic factors

behind the acculturative formation of Metis culture--in the region between Red River and the Great Lakes. Metis culture developed as an intimate product of the fur trade; thus, many written sources exist regarding different aspects of that culture. Therefore, it has been also possible to specifically reconstruct the Hivernant subculture that formed within, and broke away from, the general Metis culture unit. In effect, the distribution and settlement pattern, life cycle, material culture, warfare, trade and economy, village life, and social change sections define the Hivernant ethnohistory as closely as possible to the nineteenth century Fur Trade Period in the Cypress Hills.

With regard to the use of ethnohistoric data, one major problem became apparent. An ideally comprehensive description in any ethnohistory is immediately limited by biases and conceptual limitations of the actual observers who wrote historic documents, records, and observations. I found myself constantly searching for alternative sources to check one author's description or observation against another's. Whenever possible, I utilized descriptions based on actual participation and observation by the recorder, rather than second-hand descriptions. In effect, the problem was consistently obtaining objective information on Hivernant social organization and behavior from accounts written by White observers, who were untrained (for the most part) in ethnology. This was especially true of information on religion, personality, and cultural values--and again will be true in future investigations of other Metis settlements. For example, an immediate shortcoming to future research on this topic will be differentiating Hivernant sites from Indian sites in the historic record.

C. Descriptive-Inferential Conclusions

Most of the conclusions about material culture, inferred from the archaeological record in Cabins B and E, agree with the ethnohistoric data. These include: resource ecology of the site situation, most cabin construction details, functional identification of the various cabin furnishings (e.g., artifacts) and activity areas, specific dating and chronological ordering of the multiple occupations in each room, seasonality of the site, food resources available at the site (e.g., a faunal list), and the relative importance of these resources, food preparation techniques, and daily nutrition rates.

The above conclusions are based on initial inferences from the archaeological record, and constitute the first and second level of patterning as outlined by Deetz (1967 and 1968). Such inferences have a high degree of probability for a major reason--archaeological data are completely composed of specific, materialistic detail. Conversely the ethnohistoric record is too vague regarding most specific details of material culture that are required by archaeologists.

However, there are a few gaps in the archaeological record of the Kajewski Cabin Site, which fortunately can be inferred from the ethnohistoric record. For example, the DjOo120 cabin windows presumably had been covered with hide parchment, and the roofs with poles, sod, and hay. A large iron spike is the only possible evidence for teepees; probably it had been used as a tent peg. The only evidence for food supplements are tea boxes, a spice container lid, and tinned food container fragments.

There is no specific evidence for the all-important pemmican--only the remains of freshly-killed game. The only evidence for transportation, other than saddle horses, is various metal harness pieces. There is no specific evidence for Red River carts. Beyond a general paucity of material remains, and a few specific artifacts, there is no real evidence that the partial floor platforms have been used for eating, sleeping, and social gatherings. Generally, daily activities appear to be similar both inside and outside the cabins. Most activities probably took place inside due to the winter weather, and similar activities took place outside when the weather permitted.

Only two specific conclusions about Hivernant social organization and behavior were correctly inferred from the archaeological record. This was the social process of acculturation--i.e., identification of the site occupants as Metis. Also, a social stress phenomenon, based on nutritional deficiencies, was inferred from the archaeological record. Generally, these latter inferences constitute the third level of patterning as outlined by Deetz (1967 and 1968). The latter inferences exhibit a high degree of probability because acculturation is indeed extensively reflected in the archaeological record, while the social stress is based on nutrition--a function of utilized food resources and, in turn, also an integral part of the archaeological record. Even so, the phenomena are as well (but differently) documented in the ethnohistory.

With specific regard to the process of acculturation--of all the contacts between Indians and Whites west of the Great Lakes, Hivernant subculture manifests the largest number of aboriginal traits. Archaeologically,

I can only speculate that Eastern triangular and Prairie side-notiched points, small square-ended and leaf-shaped bifaces, split-pebble and domed end scrapers, and nosed unifacial cobble chopper styles represent the aboriginal ethnic group contribution to the acculturation--possibly originating from a prehistoric Cree cultural entity--as most certainly did the hand-made stone pipe styles, horizontal cache pit, and butchering techniques also associated with Cabins B and E. A bale seal with the name L ORILLARD strongly suggests the other founding ethnic group contributing to the acculturation.

With regard to the social stress phenomena, the Hivernants in Cabins B and E apparently were forced to shift onto a wide variety of other faunal resources, additional to buffalo. The probable daily biomass-intake rate, calculated on a family unit size of three, is about one-sixth the requirement noted in the ethnohistoric record (e.g., Moodie, 1965:113). Furthermore, it is possible that up to fifteen people may have resided in each room of the two cabins (e.g., Moodie, 1965:111-112), thus compounding any social stress situation (based on food shortages) which might have led to social change.

Beyond the material and a few social aspects of Hivernant subculture, the archaeological record fails. The ethnohistoric record of the Hivernants must be fully utilized in conclusions on trade and economy, the sexual division of labor, family unit size, residence pattern, kinship, language, warfare, life cycle, village life, values and personality, and social change. This sort of probative data (i.e., the ethnohistoric data) constitutes the only sure basis for reconstructing the third, and even fourth, level of patterned context as

outlined by Deetz. The descriptions of Hivernant personality and values constitute the only social description which defies complete analysis by either the ethnohistoric, or archaeological, records.

There are many examples within the archaeological reconstruction of the thesis which exemplify the problem of inferring conclusions about complex social phenomena from archaeological data. For example, the ethnohistoric sources note that White-manufactured trade items were obtained through Fort Benton, in exchange for buffalo robes and some wolf pelts; however, the archaeological record does not indicate what products were traded for White trade goods. Specifically British-manufactured articles were usually supplied (at lower prices) by the Benton merchants, rather than by the Hudson's Bay Company--through the system of bonded cargoes. Even so, some items may have been obtained directly from the Hudson's Bay Company (i.e., Isaac Cowie in Qu'Appelle Valley. e.g., Cowie, 1913). Perhaps the dynamics of the buffalo robe trade with the Americans was yet another reason for utilization of aboriginal flaked stone and bone tools by the Hivernants. By the 1870's, the ever-quickening disappearance of the buffalo herds certainly stimulated social change, and had an effect on the Hivernant economy. With apparently few animals for pemmican production and the robe trade, the Hivernants had little to offer for White trade goods. Perhaps it was this reason that the Hivernants shifted to the ancestral-style aboriginal tool kit.

There was a sexual division of labour between adult males and

females, as inferred from the archaeological record. However, the ethnohistoric record indicates that the males (rather than the females) butchered the game and chopped wood. Furthermore, the males hunted, made pemmican, built cabins, gambled extensively, and performed various handicrafts; the females cut meat, prepared clothing and meals, kept house, and reared children. Rather than postulated small nomadic nuclear families of three people, as inferred from the archaeological record, each single room represents a much larger nomadic nuclear family, as inferred from the ethnohistory. Also, the ethnohistoric record indicates that each cluster of cabins in the DjOo settlement represents an extended family composed of two or more biologically related nuclear families--instead of either related or unrelated larger social groups. Furthermore, the extended families in the settlement were probably patrilocal. Each extended family formed a large, economically cooperating, social group. In effect, the family groups formed the settlement to independently exploit particular resources at Head of the Mountain and in the Cypress Hills. Beyond this, there is no indication of the role that prairie fires, buffalo migration shifts, early explorations, and Canadian imperialism also played in determining Hivernant settlement patterns.

D. Methodological Conclusions

Seven hypotheses are suggested by the descriptive-inferential conclusions.

(1) Material culture, and its relationship to specific areas of cultural-functional activity (e.g. the first and second levels of patterned context outlined by Deetz), is most accurately inferred from the archaeological record.

(2) Cultural-ecological relationships are most accurately inferred from the archaeological record.

(3) Specific dating and chronological ordering of multiple occupations within a site are most accurately inferred from the archaeological record.

(4) Social stress based on nutritional deficiencies is materially expressed in the archaeological record.

(5) Acculturation is materially expressed in the archaeological record. Therefore, an area of research reality exists within the protohistoric interval between aboriginal prehistory and post-White contact.

(6) Personality and values cannot be accurately inferred from either the archaeological or ethnohistoric records.

(7) All other aspects of complex social description (e.g. the third level of patterned context outlined by Deetz) are most accurately inferred from the ethnohistoric record.

With regard to hypothesis (7), Deetz' methodology admittedly refers specifically to community settlement patterns and descent rules, e.g., at this level of indicated context. However, I feel the broader implications of

Deetz' rationale easily allow such a level of patterning to be applied to other aspects of complex social description--often erroneously. In effect, Deetz' methodology may be applicable in some research situations but will often lead to distortion in describing data and inferring conclusions, unless very carefully applied. Furthermore, this type of inference circumvents any independent checks based on empirical reality, which is scientific experimental methodology. Therefore, I feel a methodology employing ethnohistoric data and/or analogy (e.g. the independent methodological check) actually provides a more definite basis of empiricism in complex social description.

In summation, I feel the aim of the thesis has been realized. Initial conclusions based on the indicated archaeological contexts in Cabins B and E have been tested and re-evaluated in relation to ethnohistoric reality, and the limitations of both technique and inference have been tested against that reality. In effect, I must agree with the basic hypothesis by Thompson (1958)--in order to reconstruct an archaeological culture, to proceed through an analysis of all four levels of patterning as outlined by Deetz, and to order such an archaeological analysis into an objective scientific experimental model--the archaeologist has no recourse other than ethnohistoric analogy.

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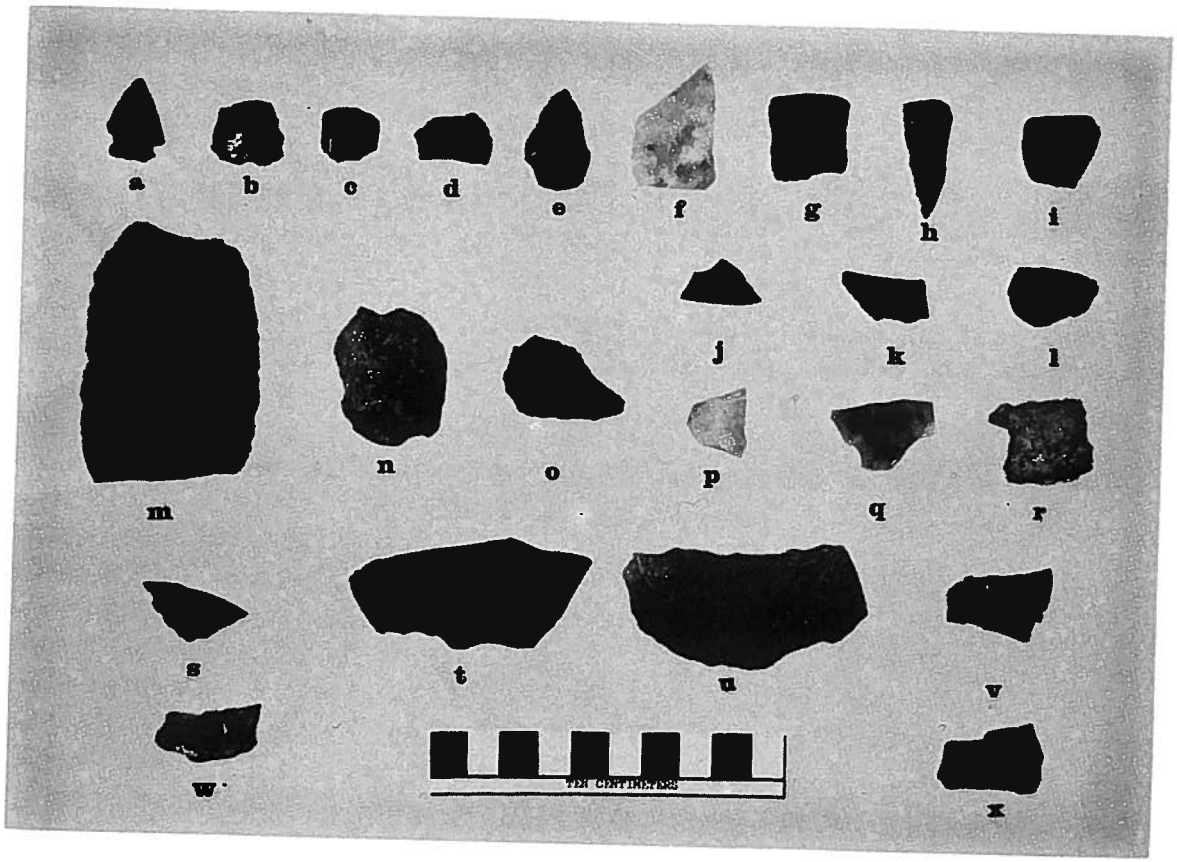
FIGURE 10

STONE TOOLS

FIGURE 11

STONE TOOLS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TEN CENTIMETRES

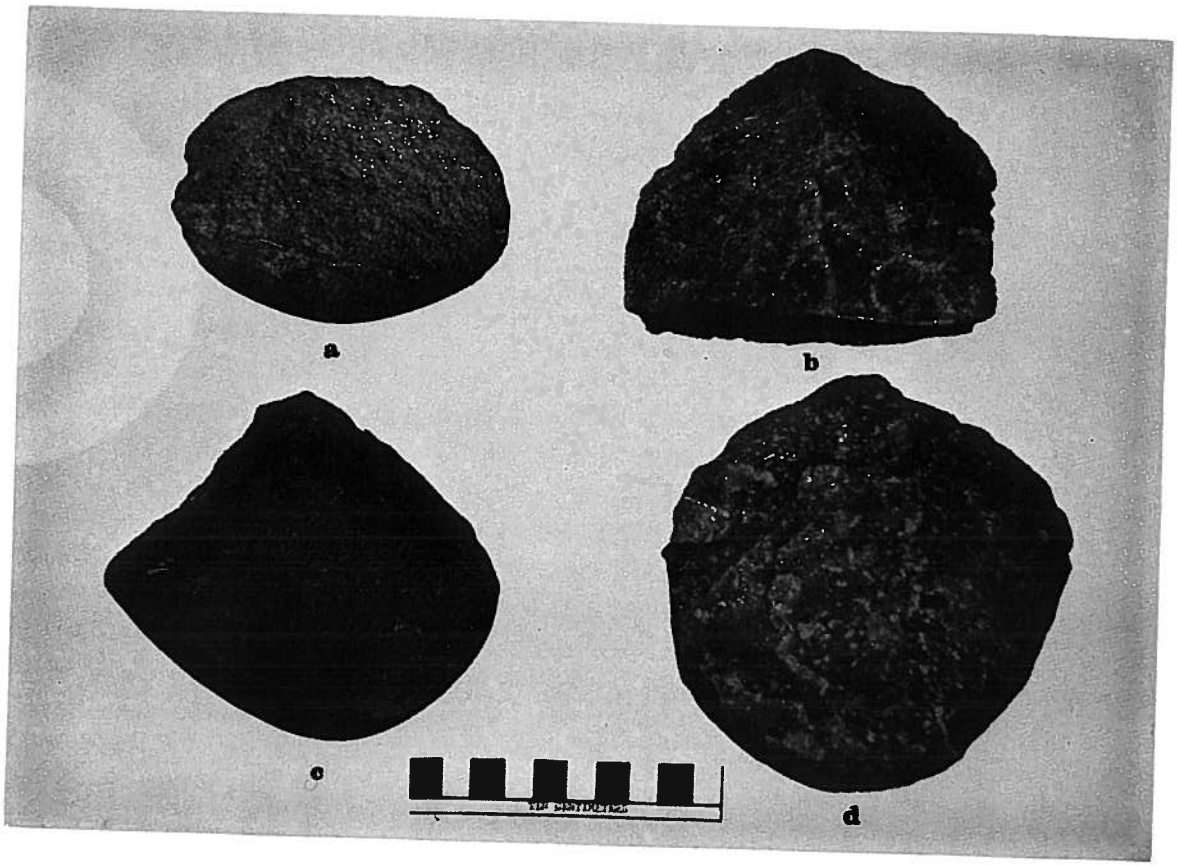
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FIGURE 12

STONE TOOLS

FIGURE 13

STONE AND BONE TOOLS

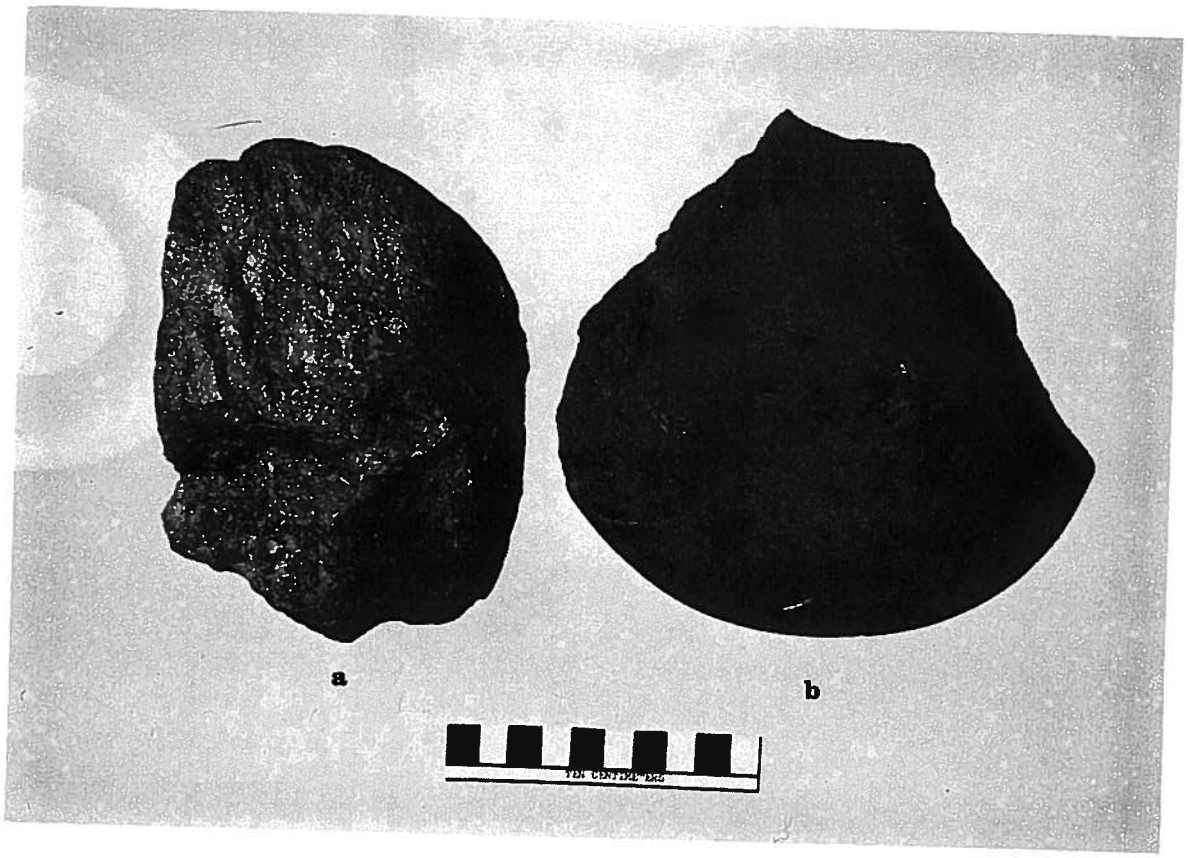
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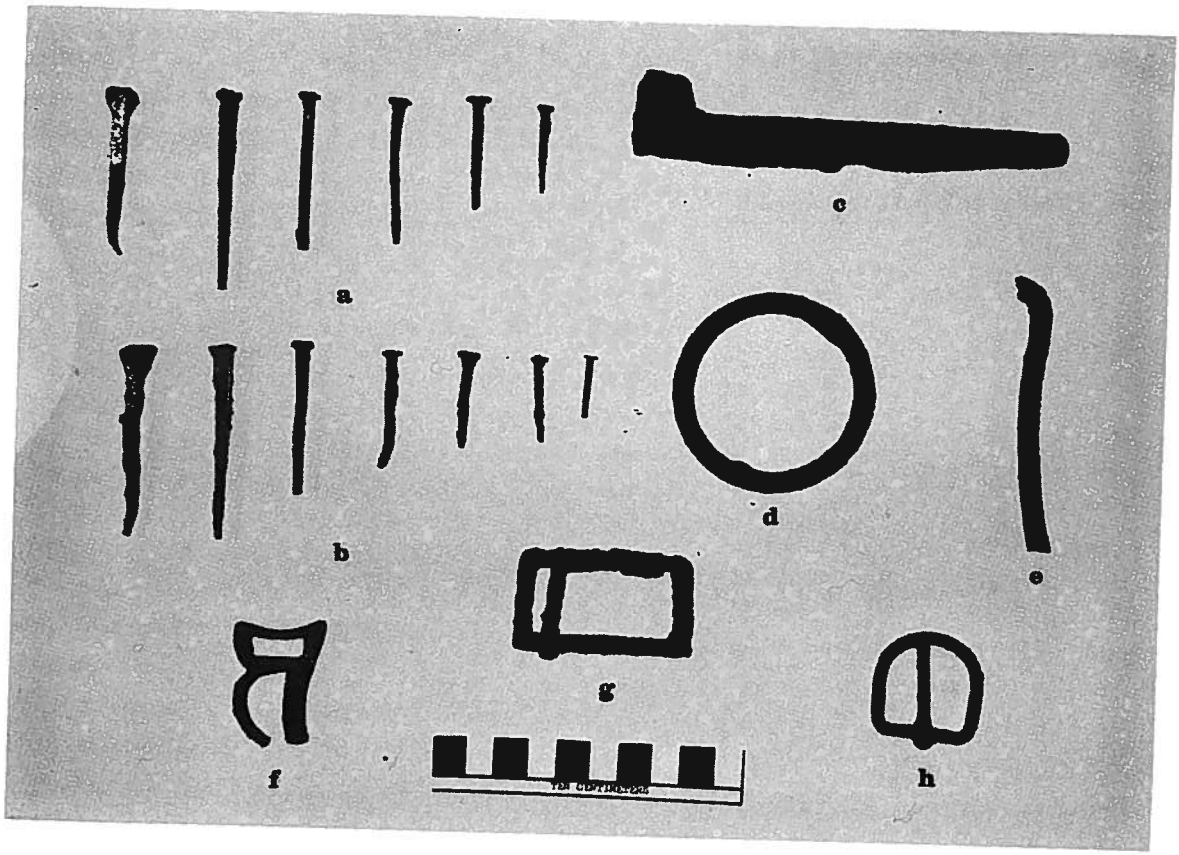
FIGURE 14

METAL HARDWARE ARTIFACTS

FIGURE 15

METAL TOOLS, AND ORNAMENT ARTIFACTS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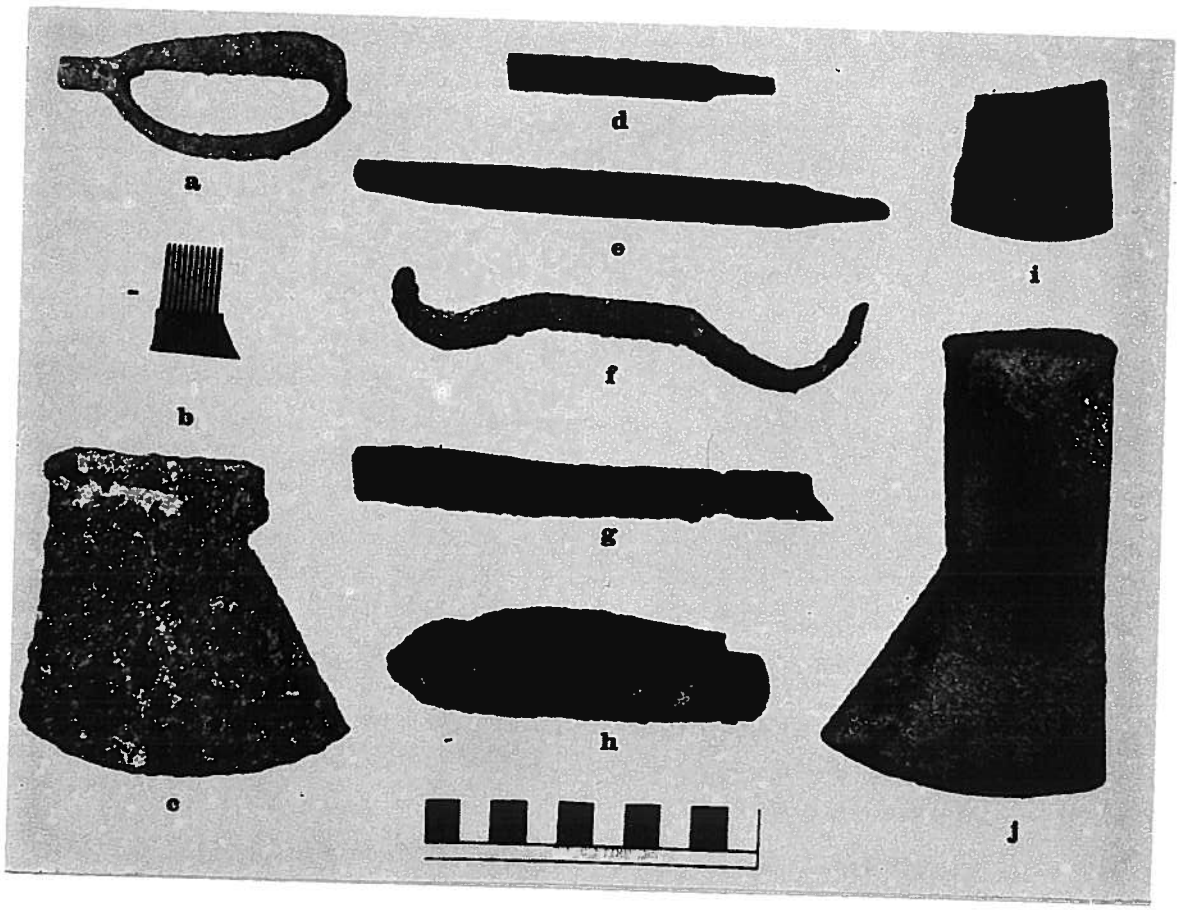
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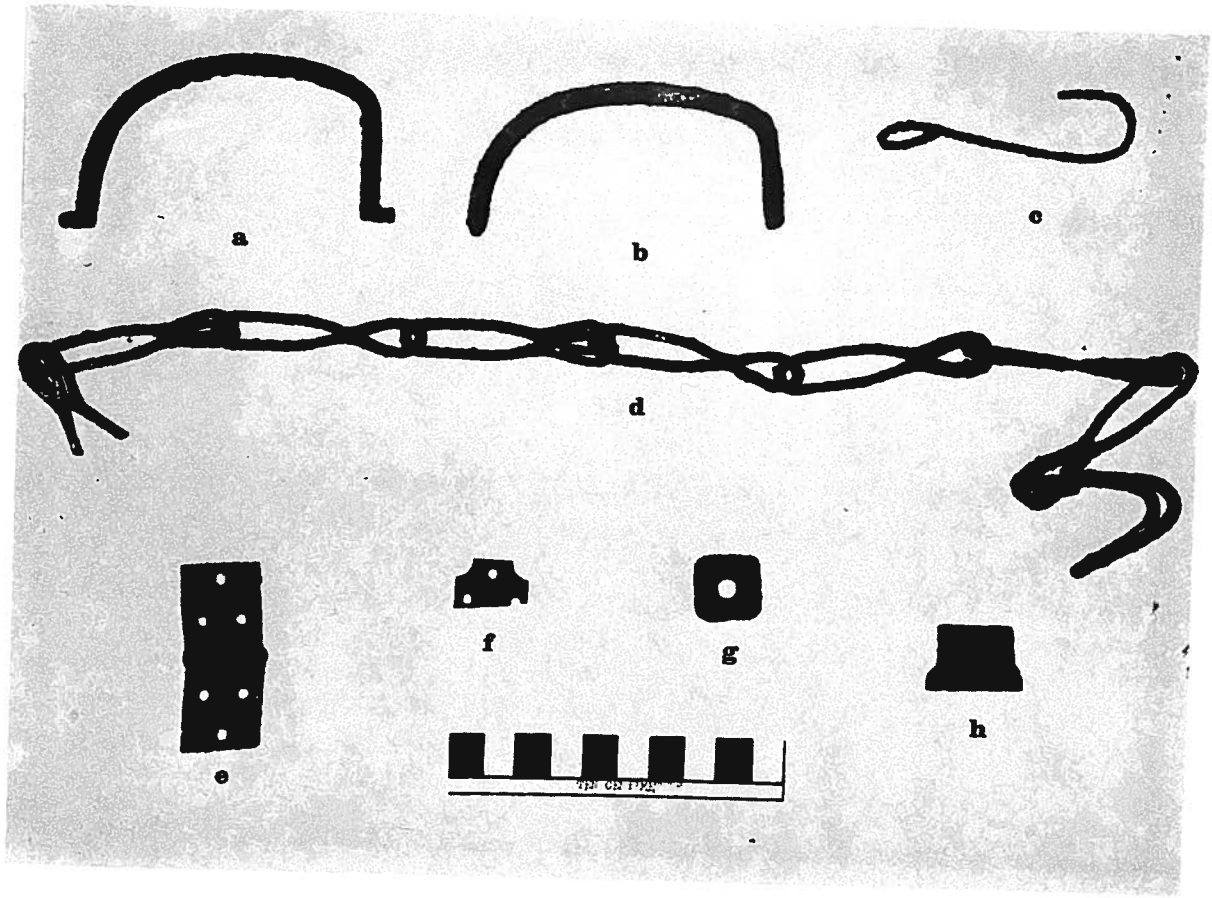
FIGURE 16

METAL TOOLS AND HARDWARE ARTIFACTS

FIGURE 17

HUNTING AND DEFENSE, BUSINESS, ORNAMENT, AND MISCELLANEOUS ARTIFACTS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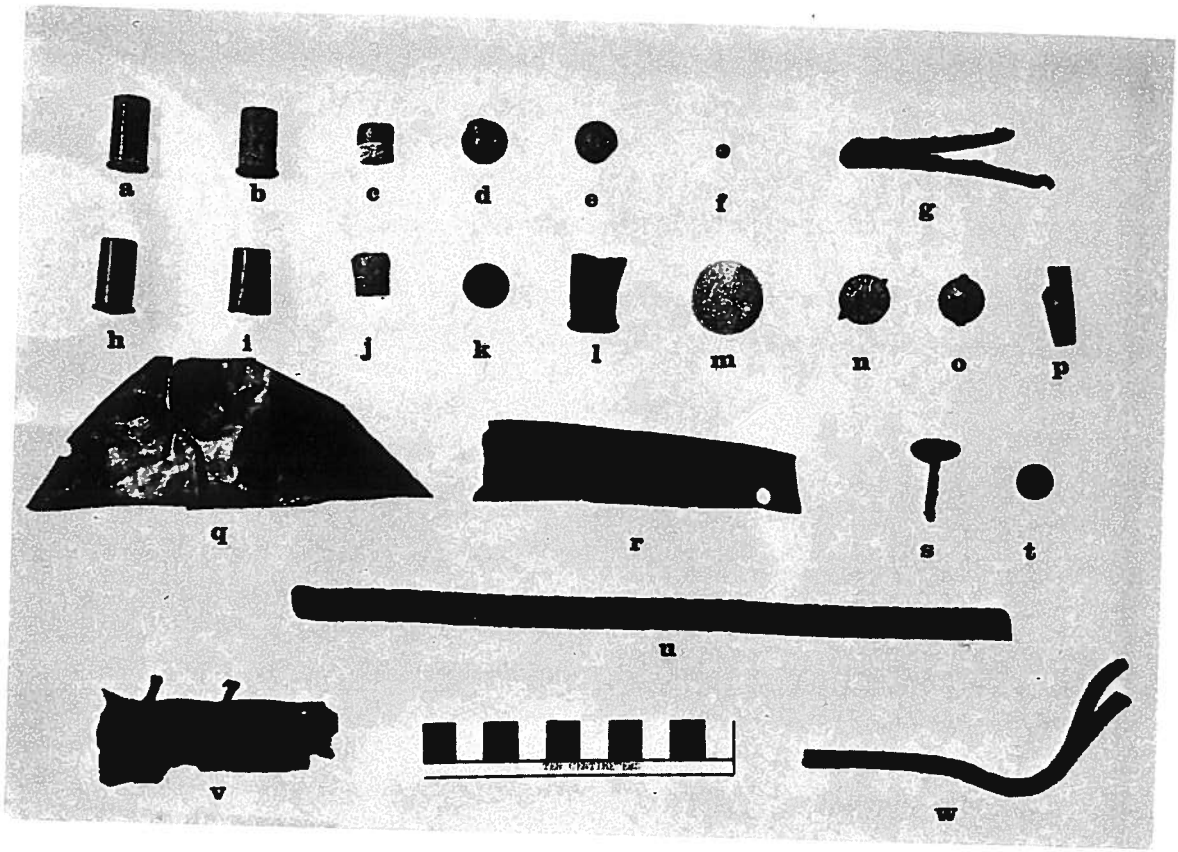
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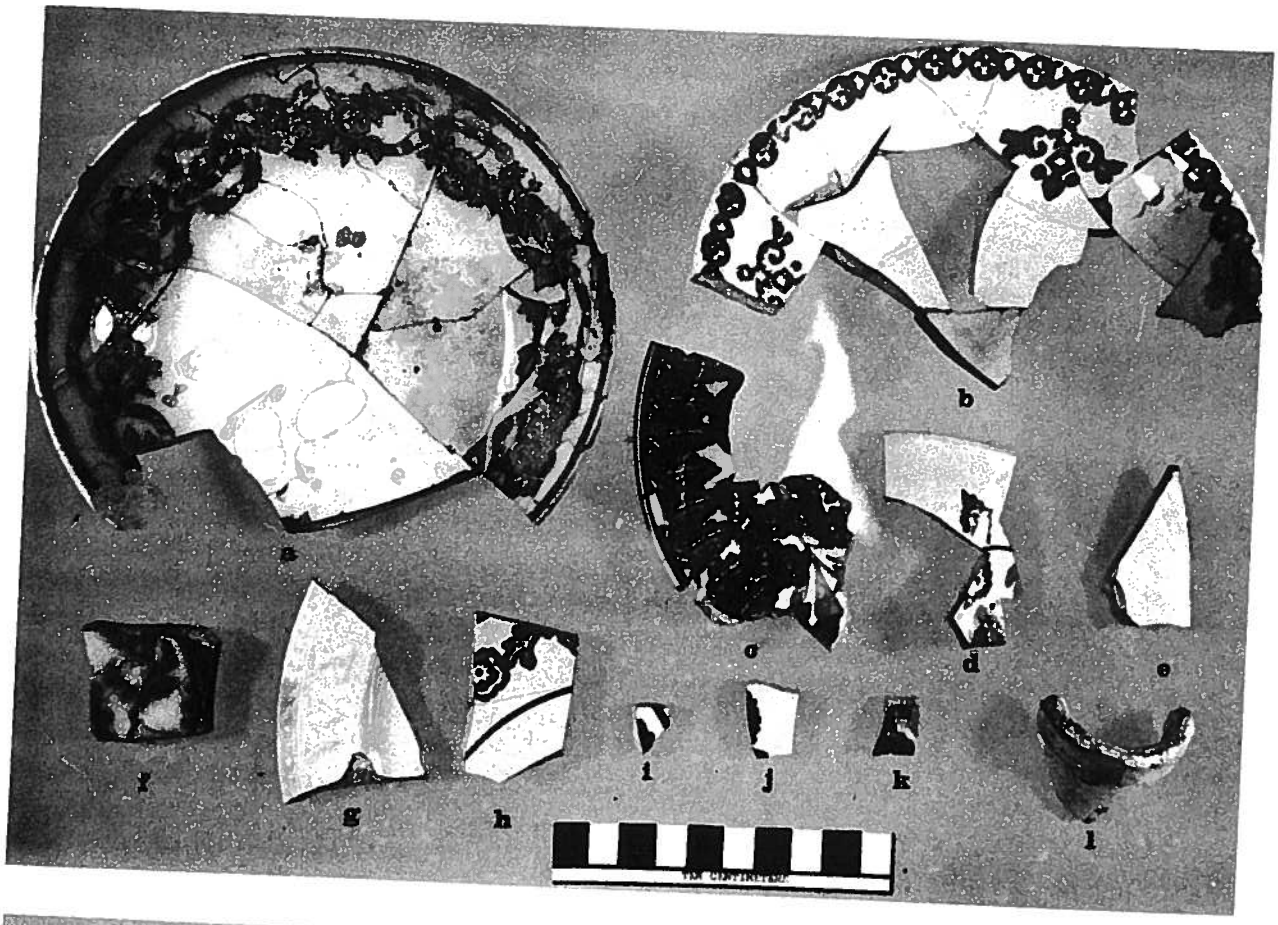
FIGURE 18

HOUSEHOLD ARTIFACTS

FIGURE 19

HOUSEHOLD ARTIFACTS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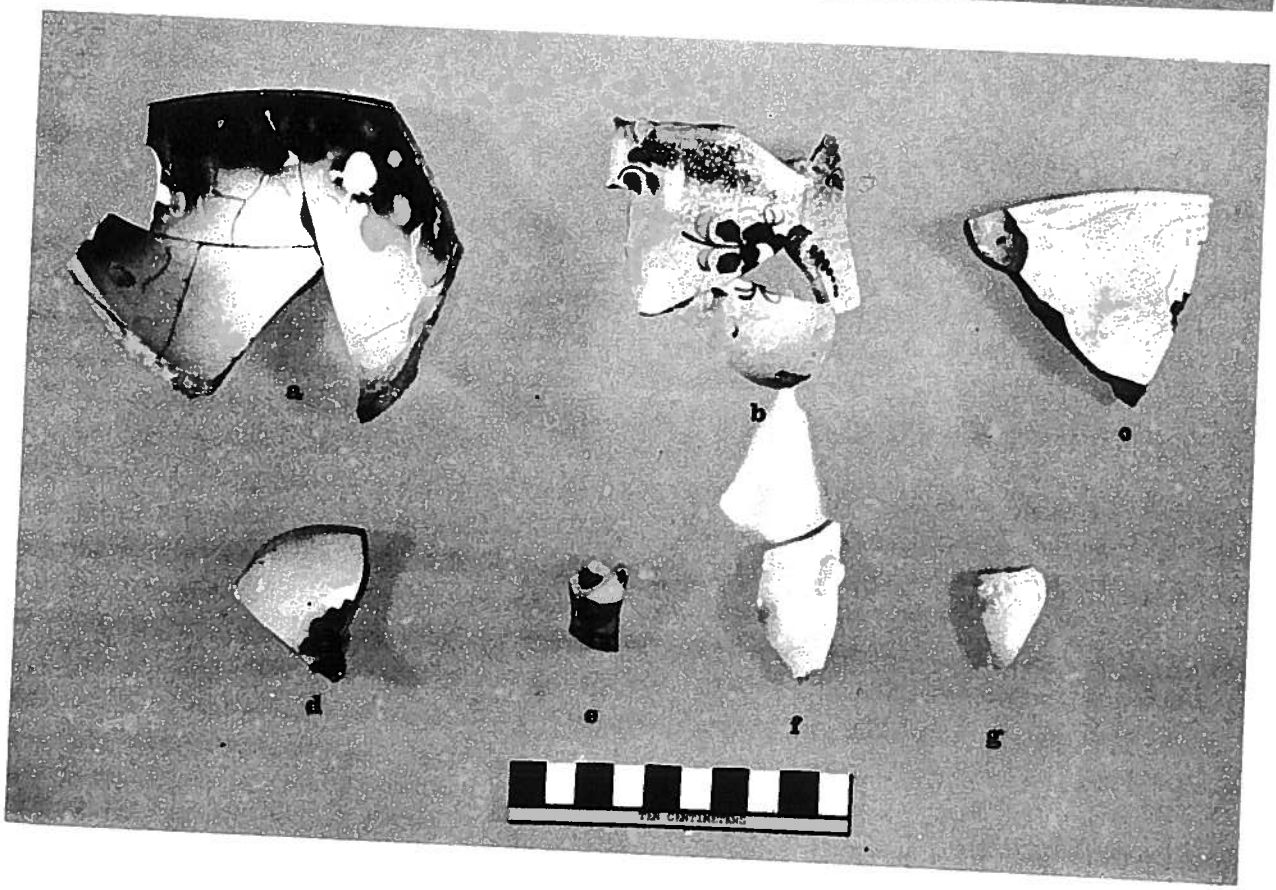
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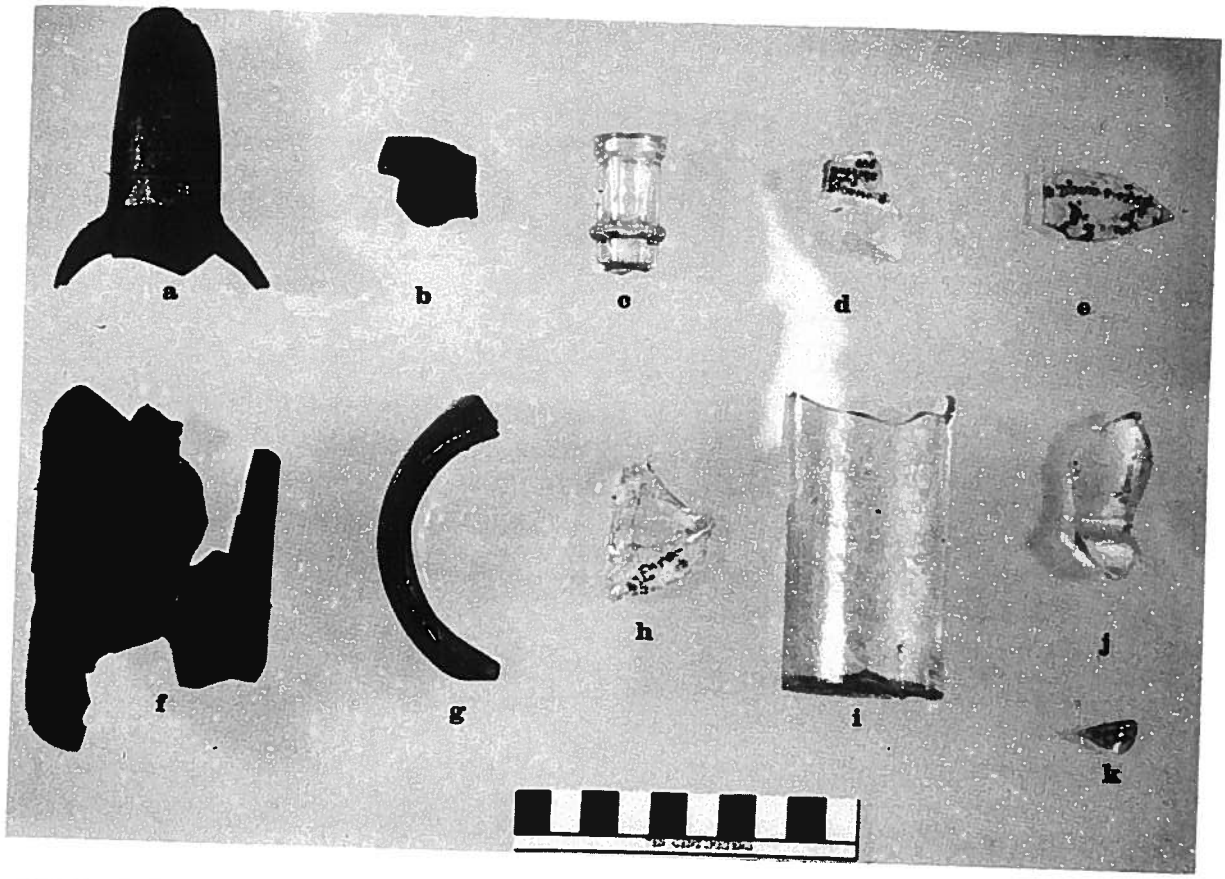
FIGURE 20

HOUSEHOLD ARTIFACTS

FIGURE 21

HOUSEHOLD ARTIFACTS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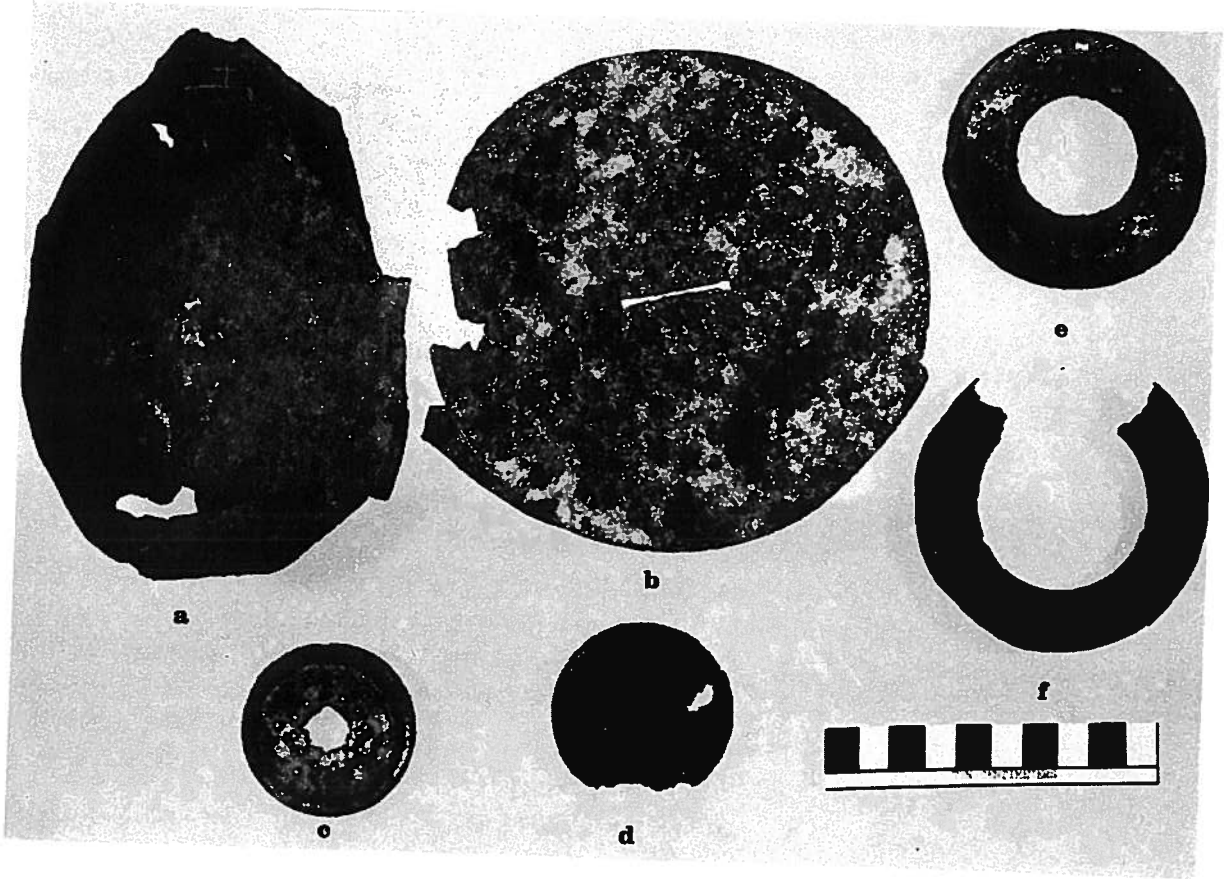
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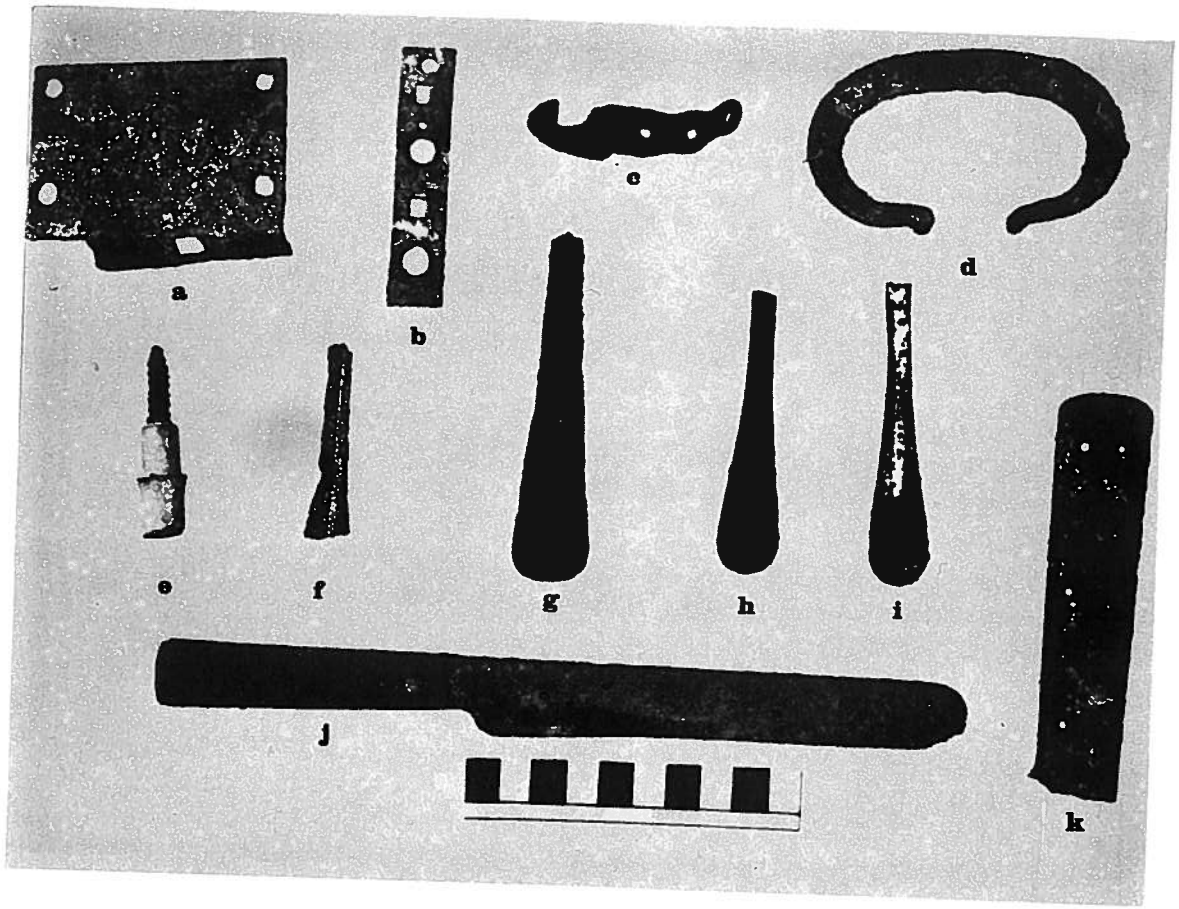
FIGURE 22

HOUSEHOLD ARTIFACTS

FIGURE 23

CLOTHING ARTIFACTS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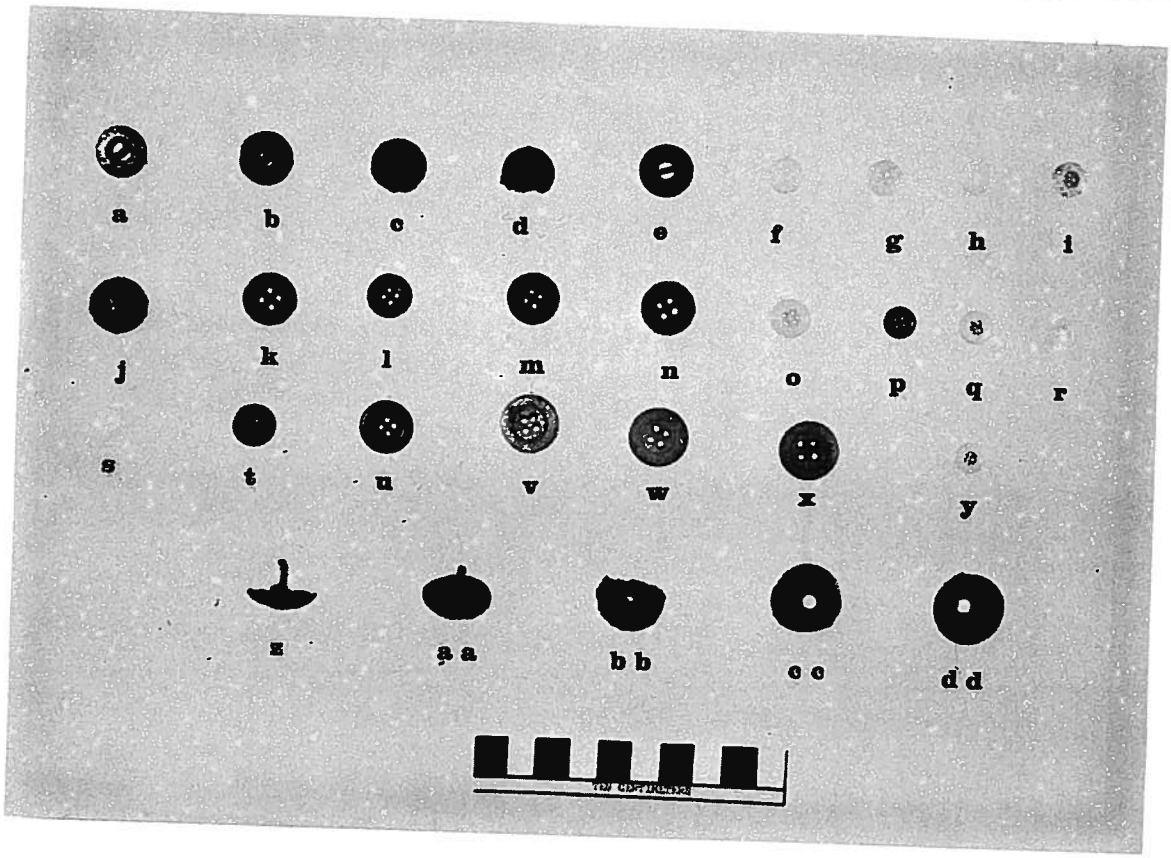
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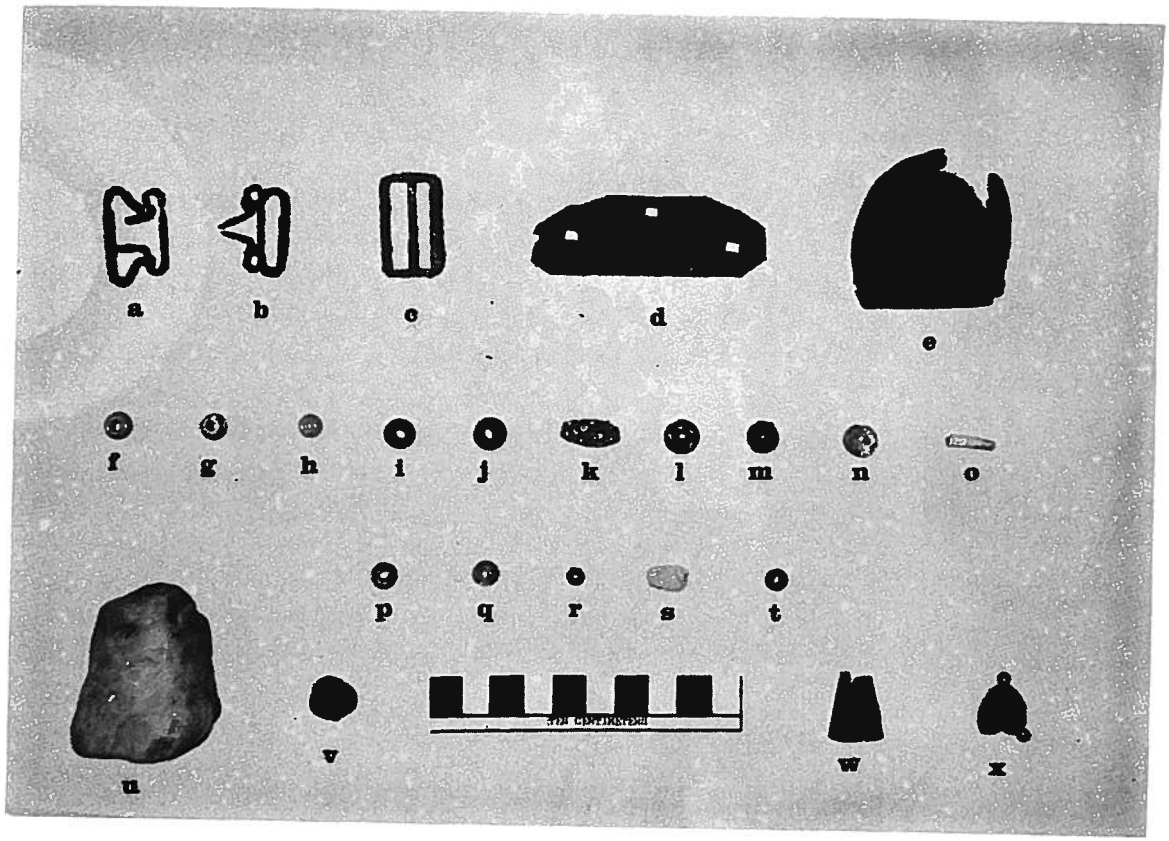
FIGURE 24

CLOTHING AND ORNAMENT ARTIFACTS

FIGURE 25

RECREATION ARTIFACTS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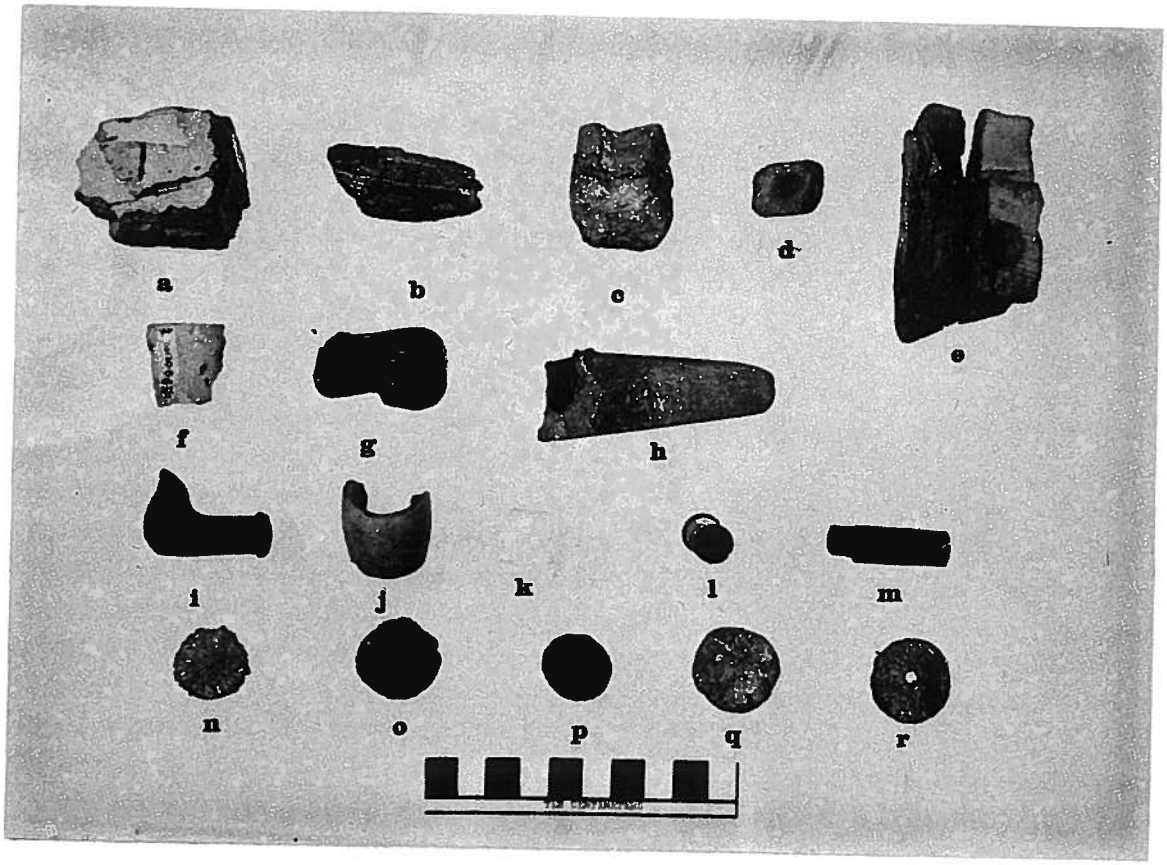
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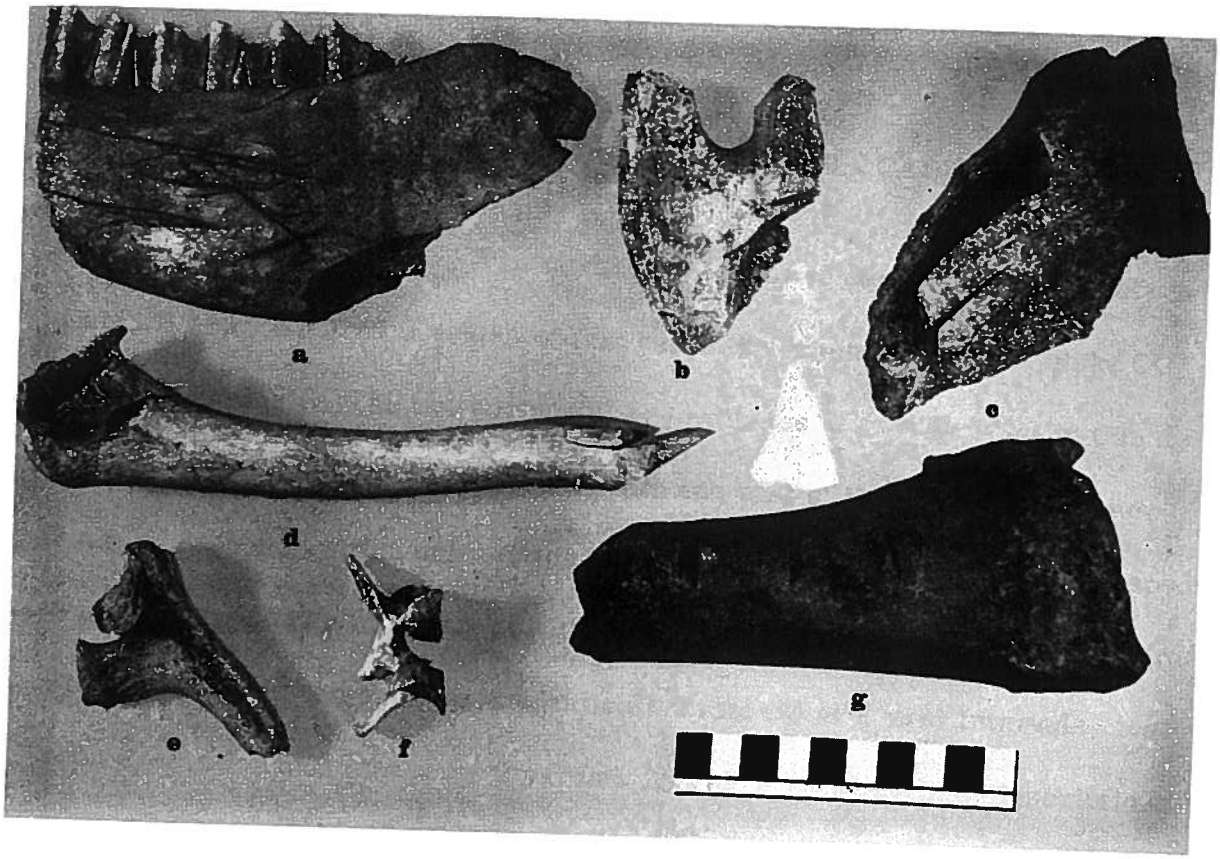
FIGURE 26

FAUNAL REMAINS

FIGURE 27

FAUNAL REMAINS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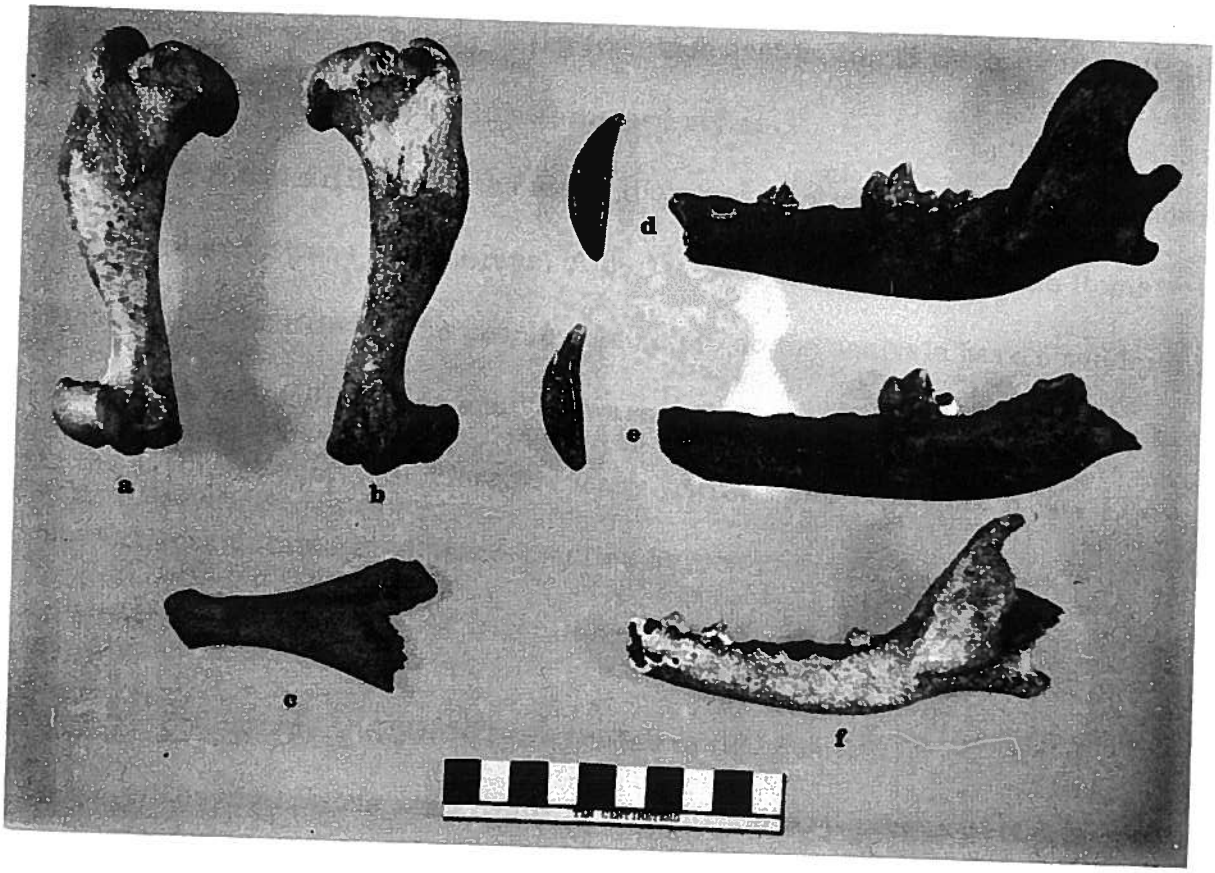
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APPENDIX I

ARTIFACT DESCRIPTIONS FOR DjOo120 - CABIN B

Refer to figure 4. The vertical co-ordinate depths of all artifacts in Cabin B are measured in tenths of feet below the ground surface of stake OO (the cabin datum). The two horizontal co-ordinates of each artifact in Cabin B are measured in tenths of feet, both south and east of the north west corner stake of each excavation unit. Each excavation unit is identified by the respective north west corner stake. The grid of excavation units is oriented on a true North-South axis and expands quadratically from OO at 2 yard intervals, i.e., each excavation unit measures 2 yards x 2 yards. In all artifact descriptions for Cabin B, the provenience is given as precisely as known. In effect, many measurements are purposely in the foot-inch system to aid the easy identification of nineteenth century cultural patterns and styles.

Several artifacts of the metal tools and hardware type have been shown to particular citizens of Cochrane, Alberta, as a means of having the items functionally identified. The people selected to do the analysis have considerable experience in handling tools and hardware. R. Downs and B. Klassen have been in the hardware supply business for many years, while Constable R. A. Floyd has had considerable experience handling horses in the R. C. M. P.

A. Stone and Bone Tools

<u>End Scrapers</u> (DjOo20B-15. refer to fig. 10:c).

The dimensions are 17 mm. x 17 mm. x 6 mm.; the material is red jasper. The provenience is 3.4' depth x 3.0'S x 1.9'E (4S2W). Stylistically,

the tool resembles domed end scrapers described for the Mortlach site (Wettlaufer, 1955). The style is chiefly characterized by a dorsal ridge formed by steep flaking on both lateral sides. When oriented dorso-longitudinally with the working end or "bit" distal to the viewer, the DjOo120B-15 tool exhibits steep marginal flaking on both the working end and the right lateral margin. There is no marginal flaking on the ventral surface of the tool, nor any edge crushing.

Biface Fragment (DjOo120B-20. refer to fig. 10:g). The dimensions are 24 mm. x 22 mm. x 9 mm.; the material is dark grey chert. The tool was found in excavation unit 2SO. Bifacial marginal flaking and edge crushing are exhibited along both lateral edges. Generally, marginal flaking on the tool is characterized by erratic fracture lines. Both the proximal and distal ends are truncated and the fragment appears to be the midsection of a larger bifacial tool.

Hammerstone (DjOo120B-87. refer to fig. 13:c). The dimensions are 155 mm. x 70 mm. dia.; the material is light brown quartzite. The provenience is 1.7' depth x 2.1'S x 5.8'E (O2W). Both ends of the ovoid cobble exhibit scarred and pocked areas of percussion.

Unifacial Cobble Chopper (DjOo120-B-113. refer to fig. 11:c). The dimensions are 120 mm. x 110 mm. x 33 mm.; the material is dark grey quartzite. The material provenience is 1.3' depth x 4.5' S x 0.4'E (6S2W). The tool is made on a split cobble. Two large flakes have been removed from the split surface to form a "nosed" or pointed cutting edge--

which exhibits minor edge crushing.

Unifacial Cobble Chopper (DjOo120B-140. refer to fig. 11:d). The dimensions are 129 mm. x 125 mm. x 33 mm.; the material is light brown quartzite. The tool was found in 8S4W. Again two large flakes have been removed from a split cobble to form a "nosed" cutting edge. There is no apparent edge crushing on the cutting edge.

Whetstone (DjOo120B-27. refer to fig. 13:b). The dimensions are 169 mm. x 103 mm. x 32 mm.; the material is grey-brown sandstone. The provenience is 1.4' depth and on the southeast edge of the North Outside Pit. When oriented dorso-longitudinally in regard to the viewer, the tool exhibits a highly polished dorsal surface scored with six linear grooves at right angles to the longitudinal axis. There are several notches along the right lateral margin. The tool may be a whetstone used for abrading and sharpening steel tools.

Cobble Core (DjOo120B-138). refer to fig. 12:a). The dimensions are 158 mm. x 108 mm. x 47 mm.; the material is light brown quartzite. The core was found in 6S6W. Five flakes have been removed from the core. Also, there is evidence of a color change (to reddish-brown), possibly from the cabin being burned down, or from the application of heat in a hearth to enhance the flaking quality of the material (Crabtree and Butler, 1964). Generally, there is no apparent edge crushing; the artifact appears to be a discarded cobble core.

Retouched Flake (DjOo120B-25. refer to fig. 10:j). The dimensions are 23 mm. x 13 mm. x 2 mm.; the material is brown jasper. The provenience is 1.5' depth x 4.7'S x 4.8'E (6S4W). The flake exhibits bifacial marginal flaking along one edge.

Prepared Edge Flake (DjOo120B-1. refers to fig. 10:k). The dimensions are 25 mm. x 13 mm. x 2 mm.; the material is fine-grained dark grey quartzite. The provenience is below the sod x 0.5'S x 5.8'E (O4E). One margin exhibits minor edge crushing.

Prepared Edge Flake (DjOo120B-2. refer to fig. 10:u). The dimensions are 69 mm. x 34 mm. x 14 mm.; the material is light brown quartzite. The flake was found in 2SO. One margin exhibits extensive edge crushing.

Prepared Edge Flake (DjOo120B-19. refer to fig. 10:r). The dimensions are 25 mm. x 24 mm. x 11 mm.; the material is brecciated white and grey chalcedony. The flake was found in 4S2W. Five small marginal flakes have been removed unifacially along one edge.

Prepared Edge Flake (DjOo120B-139. refer to fig. 11:a). The dimensions are 84 mm. x 64 mm. x 19 mm.; the material is brown quartzite. The flake was found in 2S4E. Edge crushing and small marginal flake scars are exhibited along the edge opposite the striking platform of the flake. I can only speculate that the flake has been utilized as a chopper tool.

Prepared Edge Flake (DjOo120-B-142. refers to fig. 10:t). The dimensions are 67 mm. x 32 mm. x 10 mm.; the material is fine-grained

quartzite. The flake was found in the south west quarter of 2S2W. Three small marginal flakes have been removed unifacially along one edge, adjacent to the striking platform.

Flakes were scattered in several excavation units in Cabin B. Thirty-one light brown to dark grey quartzite flakes were collected from 2SO, 6SO, O2E, 2S4E, O2W, 2S2W, 6S2W, 8S2W, 4S4W, 6S4W, 8S8W, and the South Outside Pit. One obsidian flake was found in 6SO. One grey chert flake was in 6S2W. Generally, these flakes do not exhibit any apparent edge crushing or marginal flaking.

B. Metal Tools and Hardware

Square Harness Buckle (DjOo120B-63. refer to fig. 14:g). The outer dimensions are 57 mm. x 33 mm. x 5 mm.; the material is steel. The buckle was found in O2E. This is the 1-3/4 inch size used for team harnesses and is still manufactured (Downs and Klassen, 1969).

Spreader Element, or Strap Fastener (DjOo120B-94. refer to fig. 14:f). The material is steel. The provenience is 0.5' depth x 4.8'S x 1.6'E (2S4E). The artifact is either part of the spreader rig on a team harness, or is used for hanging brass ornaments on a team harness (Downs and Klassen, 1969).

Harness Buckle (DjOo120B-101. refer to fig. 14:h). The outer dimensions are 38 mm. x 35 mm. x 3 mm.; the material is steel. The provenience is 0.9' depth x 0.3'S x 2.8'E (4SO). This is the $1\frac{1}{4}$ inch size used for team harnesses and is still manufactured (Downs and Klassen, 1969).

Cinch Buckle Tongue (DjOo120B-126. refer to fig. 14:e). The dimensions are 89 mm. x 7 mm. dia.; the material is steel. The provenience is 1.3' depth x 2.5'S x 3.7'E (8S2W). The artifact is part of a saddle cinch and is still manufactured (Downs and Klassen, 1969.)

Sharpened Tool (DjOo120B-5. refer to fig. 15:g). The dimensions are 142 mm. x 19 mm.; the material is steel. The tool was found in O4E. The tool is probably a straight razor blade. Two other speculations also appear possible to me: (1) a steel hide-fleshing tool, or (2) a hand-made knife.

Hide-Scraping Tool (DjOo120B-117. refer to fig. 15:i). The dimensions are 49 mm. x 45 mm. x 2 mm.; the material is steel. The provenience is 0.9' depth x 5.0'S x 4.8'E (6S2W). The tool is unifacially bevelled on two edges with one edge convex, or rounded. Both myself and Downs and Klassen (1969) think that this is a hide-working tool. Both Wissler (1910) and Mandelbaum (1940) refer to iron scraper blades with rounded and bevelled edges, hafted adze-fashion, and used to scrape hides during the Historic Period.

Composite Tool Element (DjOo120B-10. refer to fig. 16:h). The dimensions are 29 mm. x 19 mm. x 2 mm.; the material is steel. The element was found in 8S6W. The function is unknown. It is possible that this is a shim-guide plate from a small wood-working tool such as a plane or router.

Triangular File (DjOo120B-72. refer to fig. 15:e). The dimensions are 155 mm. x 13 mm. across each face; the material is steel. The provenience is 1.9' depth x 3.3'S x 4.5'E (2NO). This is the seven inch taper triangular file and is still sold today (Downs and Klassen, 1969).

Half-Round File (DjOo120B-118. refer to fig. 15:d). The dimensions are 79 mm. x 10 mm. dia. x 6 mm.; the material is steel. The provenience is 1.0' depth 0.5'S x 0.3'E (6SO). This type of file is still manufactured (Downs and Klassen, 1969).

Large Knife Tang (DjOo120B-81. refer to fig. 22:k). The dimensions are 120 mm. x 26 mm. x 2 mm.; the material is steel. The provenience is 1.5' depth x 0.0'S x 3.0'E (OO). The fibrous remnants of a wood handle still adhere to the metal. This type of knife is still manufactured (Downs and Klassen, 1969).

Hudson's Bay Pattern Axe-Head (DjOo120B-129. refer to fig. 15:j). The dimensions are 130 mm. overall length x 63 mm. butt length with an aperture 18 mm. dia. x 43 mm. dia.; the material is steel. The provenience is 1.3' depth x 2.2'S x 0.8' E (8S2W). This is the $1\frac{1}{2}$ pound size and is still manufactured (Downs and Klassen, 1969).

Single-Blade Clasp Knife (DjOo120B-136. refer to fig. 15:h). The dimension is 114 mm. long; the material is steel, with a handle of wood or stag and brass rivets. The provenience is 1.2' depth x 4.8'S x 1.1'E (8S2W). This type of knife is still manufactured (Downs and Klassen, 1969). Pocketknives have been recovered from Fort Pierre II, circa A.D. 1855 (Smith,

1960a). Fort Pierre II is situated at the junction of the Bad and Missouri Rivers in South Dakota.

Trap Chain (DjOo120B-14. refer to fig. 16:d). The outside dimensions of each link are 65 mm. x 13 mm. x 3 mm.; the material is steel. The chain is composed of seven and one-half links. The provenience is 2.1' depth x 2.8'S x 2.1'E (pit in O2W). This is definitely a trap chain, but the link style is not manufactured or sold today (Downs and Klassen, 1969).

Trap Jaw (DjOo120B-57. refer to fig. 16:a). The dimensions are 100 mm. x 8 mm. x 6 mm.; the material is steel. The provenience is within the East Outside Pit, 1.1' depth x 3.1'N x 6.0'E (8S8E). The jaw is part of a No. 1 Victor pattern steel trap which is still manufactured (Downs and Klassen, 1969).

Back-Flap Hinge Fragment (DjOo20B-55. refer to fig. 16:f). The dimensions are 22 mm. x 14 mm. x 0.5 mm.; the material is brass. There are three holes in the hinge-half. The fragment was found in excavation unit O2E. This is a 7/8 inch machined back-flap hinge and is still manufactured (Downs and Klassen, 1969).

Back-Flap Hinge (DjOo120B-64. refer to fig. 16:e). The dimensions are 35 mm. x 24 mm. x 1 mm.; the material is steel. The hinge was found in the southwest quarter of 6S6W. There are three holes in each hinge-half. This is a 1 inch machined back-flap hinge and is still manufactured (Downs and Klassen, 1969).

Threaded Nut (DjOo120B-123. refer to fig. 16:g). The dimensions are 19 mm. x 19 mm. x 7 mm. x 5 mm. dia. aperture; the material is steel. The provenience is 0.7' depth x 0.4' S x 5.1' E (8S2W). The artifact is a 3/16 inch threaded nut and is still manufactured (Downs and Klassen, 1969).

Iron Nails (refer to fig. 14:b) were scattered, but generally confined to the structure-interior area of Cabin B. There are thirty-seven complete specimens, twelve head portions and seven shaft portions. Two types of various lengths were collected. One type with a pyramidal or mushroom head is hand-made; the other type with a round head is machine cut and sold today as case-hardened nails (Miller, 1960). Both types have square-cut shafts and both were in use prior to A.D. 1850--Miller (1960) collected similar artifacts from Fort Lookout II (A.D. 1831) on the Missouri River in South Dakota. With regard to complete specimens, eight $2\frac{1}{2}$ inch hand-made, five $2\frac{1}{2}$ inch machine cut, two 2 inch machine cut, nine 1-7/8 inch machine cut, five $1\frac{1}{2}$ inch machine cut, six $1\frac{1}{4}$ inch machine cut, and two 1 inch machine cut nails have been recovered.

Wire. Two pieces of iron wire were collected within the South Outside Pit. One piece of copper wire were collected from excavation unit O2W.

C. Hunting and Defense

Cartridge Case (DjOo120B-13. refer to fig. 17:a). The dimensions are .875 in. x .440 in. dia.; the material is brass. An "H" is stamped on the base. The provenience is 2.4' depth x 4.6'S x 3.2'E (pit in O2W). The

case is from a .44 calibre Henry ~~Short~~ Flat-Long cartridge, first loaded in A.D. 18~~73~~ 66 (Williamson, 1952. White, 1969).

Cartridge Case (DjOo120B-67). The dimensions are .823 in. x .440 in. dia.; the material is brass. The provenience is within the East Outside Pit, 1.5' depth x 3.5'S x 1.5'E (8S8E). The case is from a .44 calibre Henry Short cartridge. First loaded in A.D. 1873 (Williamson, 1952).

Cartridge Case (DjOo120B-71). The dimensions are .875 in. x .440 in. dia.; the material is brass. An "H" is stamped on the base. The provenience is 1.6' depth x 3.5'S x 3.9'E (2NO). The case is from a .44 calibre Henry Flat - Long cartridge.

Cartridge Case (DjOo120B-125). The dimensions are .875 in. x .440 in. dia.; the material is brass. An "H" is stamped on the base. The provenience is 1.3' depth x 2.5'S x 3.7'E (8S2W). The case is from a .44 calibre Henry Flat - Long cartridge.

Cartridge Case (DjOo120B-130). The dimensions are .823 in. x .440 in. dia.; the material is brass. The provenience is 1.3' depth x 2.2'S x 0.5'E (8S2W). The case is from a .44 calibre Henry Short cartridge.

Flat-Base Rifle Bullet (DjOo120B-26. refer to fig. 17:c). The diameter is .440 in. base; the material is lead. The provenience is 2.1' depth x 5.4'S x 3.4'E (pit in 6S4W). The bullet post-dates A.D. 1862 (Williamson. 1952, Bowman, 1956).

Rifle Bullet (DjOo120B-33). The bullet is too deformed to measure; the material is lead. Rifling marks are present. The provenience is 2.2' depth x 2.9'S x 2.5'E (pit in 6S4W).

Flat-Base Rifle Bullet (DjOo120B-34). The diameter is .440 in. base; the material is lead. The provenience is 1.9' depth x 3.6'S x 3.0'E (pit in 6S4W).

Flat-Base Rifle Bullet (DjOo120B-119). The bullet is too deformed to measure; the material is lead. The provenience is 1.0' depth x 5.3'S x 0.6'E (6SO). I think this is a .44 calibre bullet.

Flat-Base Rifle Bullet (DjOo120B-121). The diameter is .440 in. ; the material is lead. A rifling mark is present. The provenience is 0.5' depth x 3.2'S x 3.9'E (6S2E).

Musket Ball (DjOo120B-18. refer to fig. 17:d). The diameter is .560 in.; the material is lead. The ball is unfired as the mold-tit is still present. The provenience is 1.5' depth x 5.0'S x 2.9'E (pit in 6S4W). .56 calibre muskets were a common trade item of the Hudson's Bay Company in the nineteenth century (Gooding, 1951. White, 1969). Hanson (1955) states that .50 - .60 calibre trade muskets were issued by the Americans from the late A.D. 1860's on, and the Hudson's Bay Company traders issued double muskets of the same calibre range from A.D. 1860-1900.

Musket Ball (DjOo120B-35. refer to fig. 17:e). The diameter is .525 in. ; the material is lead. The provenience is 2.0' depth x 4.7'S x 2.1'E (pit in 6S4W). Hanson (1955) states that .50-.60 calibre trade muskets were sold by American traders from the late A.D. 1860's on. Most of the muskets sold to the Indians were usually .52 calibre (Lewis, 1956).

Flintlock Frizzen Spring (DjOo120B-70. refer to fig. 17:g). The dimensions are 67 and 55 mm. long x 9 mm. x 3 mm.; the material is steel. The provenience is 1.4' depth x 3.9'S x 1.9'E (2NO). The artifact is restricted to eighteenth and nineteenth century use (Bowman, 1956).

Birdshot (refer to fig. 17:f). One lead, No. 2 birdshot was collected from Cabin B.

D. Business

U.S.A. Quarter Dollar (DjOo120B-46. refer to fig. 17:m). The dimensions are 24 mm. dia. x 1.5 mm.; the material is silver. The date is A.D. 1877. The stamp-mark "C.C." denotes the Carson City mint as the place of manufacture. The provenience is within the South Outside Pit, 3.3' depth x 1.5'S x 2.3'E (8S8W).

Strap Bale Seal (?) (DjOo120B-69. refer to fig. 17:p). The dimensions are 60 mm. x 6 mm. x 0.5 mm.; the material is lead. The seal is pointed at both ends. The seal was found in 6S2W. It may have been used for sealing and shipping baled goods.

Bale Seal (?) (DjOo120B-128. refer to fig. 17:o). The dimensions are 15 mm. dia. x 0.5 mm.; the material is tinned-iron. The seal is found in 6S2W. It may have been used for sealing and shipping baled goods.

Bale Seal (?) (DjOo120B-135. refer to fig. 17:n). The dimensions are 16 mm. dia. x 0.5 mm.; the material is tinned iron. "I ORILLARD" is stamped in a circle upon the seal. The provenience is 1.0' depth x 2.4'S

x 1.5'E (8S4W). This may have been an identification seal--possibly used by an independent trader to seal and ship goods such as buffalo robes, furs, and trade-goods. Also, the seal may be a composite device, utilizing as its elements B-69, B-128, and B-135.

E. Household

Vessel Forms. Bowls of various sizes and cups are represented by the chinaware. A jug is possibly represented by the earthenware. A small medicine or chemical bottle and other bottles of various sizes are represented by the glassware.

Blue Crude Flower-Diamond on White China (refer to fig. 18:b). Fifty-six sherds were collected, of which forty-two have been restored into seven aggregates. The seven aggregates may represent two vessels. Fourteen sherds remain unrestored. The sherds were distributed in 4SO, 2SO, the pit in O2W, 2S2W, 6S2W, 8S2W, the pit in 6S4W, 6S4W generally, 8S6W, 4S2E, 4S4E, and 2S6E. The excavation units with the highest concentrations were 4SO and 6S4W. Ten sherds have been collected from two pits within the Cabin B structure. The provenience of sherd DjOo120B-4 is 2.4' depth x 5.3'S x 3.4'E (pit in O2W). The provenience of sherd DjOo120B-9 is 2.3' depth x 3.6'S x 3.7'E (pit in O2W). The provenience of sherd DjOo120B-12 is 2.4' depth x 5.3'S x 4.2'E (pit in O2W). The provenience of sherd DjOo120B-39 is 1.1' depth x 2.1' depth x 3.9'S x 1.1'E (pit in 6S4W). The provenience of sherd DjOo120B-42 is 1.5' depth x 4.8'S x 3.9'E (pit in 6S4W). The provenience of sherd DjOo120B-44 is 1.7' depth x 4.0'S x 4.1'E (pit in 6S4W). The

provenience of sherd DjOo120B-45 is 1.7' depth x 5.0'S x 3.0'E (pit in 6S4W).

Blue Flower-Ribbon on White China (refer to fig. 18:a). Eighteen sherds were collected of which all have been restored into the major portion of a vessel. The sherds were most concentrated within the South Outside Pit. Five sherds have also been collected from 6S4W. One sherd (DjOo120B-47) is stamped with COPELAND and the numeral 2 . The provenience is within the South Outside Pit, 3.4' depth x 1.4'S and 0.3'E (8S8W). This stamp-mark was manufactured between A.D. 1847-1867 (Mankowitz and Haggar, 1957. MacDonald-Taylor, 1962).

Black-Green-Rust on White China (refer to fig. 18:k). One sherd was collected from within the South Outside Pit.

Blue on White China with Red Border (refer to fig. 18:i). One sherd was collected from 2S6E. Chinaware of a similar pattern was collected from Cabin E.

Pink Flower and Green Leaf on White China with Green Border (refer to fig. 18:h). Four sherds were collected, of which two have been restored and two remain unrestored. The sherds were distributed in 8S6W and 4S4E. Chinaware of a similar pattern was collected from Cabin E.

Dark Blue Flowers on Light Blue China (refer to fig. 18:f). Three sherds were collected, of which two have been restored and one remains unrestored. The sherds were distributed within the East Outside Pit and

4S2W. Chinaware of a similar pattern was collected from Cabin E.

Purple and Red Flower and Green Leaf on White China with Red Border (refer to fig. 18:c). Twelve sherds were collected, of which five have been restored into a portion of a vessel. Seven sherds remain unrestored. The sherds were distributed in O2W, 2S2W, 2S2E, 2S6E, and within the South Outside Pit. The sherds were most concentrated within the South Outside Pit. Chinaware of a similar pattern was collected from Cabin E.

Plain White China. Nineteen sherds were collected, of which seven have been restored into three aggregates. Twelve sherds remain unrestored. The sherds were randomly distributed in OO, 2SO, 4SO, the pit in O2W, O2W generally, 2S2W, 6S4W, 2S2E, 2S4E, 4S4E, 2N4E, and 4N4E. One sherd (DjOo120B-98) exhibits the printed stamp-mark of a lion with shield and crown, and IRONSTO . . . and CHARL . . . . This is the stamp-mark of Charles Meakin. The provenience is 0.9' depth x 3.6'S x 0.7'E (4S2E). This stamp-mark was manufactured prior to A.D. 1887 (Mankowitz and Haggar, 1957). Charles Meakin was bought out by his brothers James and George in A.D. 1887.

Pink Flower and Green Leaf on White China (No Border) (refer to fig. 18:d). Eighteen sherds were collected, of which five have been restored into two aggregates. Thirteen sherds remain unrestored. The sherds were randomly distributed in 2SO, 4SO, 6SO, O2E, O4E, 2S2E, 4S2E, 2S6E, 2N2E, 2S2W, 6S2W, and 8S2W.

Alphabet Embossed on White China (refer to fig. 18:g). Four single

sherds were collected. The sherds were randomly distributed within the East and South Outside Pits, and in 2S4E and 4S6W. The letters WX are embossed on the sherd DjOo120B-109; the provenience is 2.0' depth x 5.3'S x 4.2'E (4S6W).

Porcelain China (refer to fig. 19:e, g). Six single sherds were collected. Five sherds may be from dolls (one sherd is shaped like a shoe and painted black); one sherd may be from a vessel. The sherds were randomly distributed within the East Outside Pit and in 6S6W, 6S2E, 4S4E, and 2S6E.

White Glaze Earthenware (refer to fig. 18:l). Two sherds were collected and restored into a portion of a vessel. The sherds were distributed in 2S2E and 2S4E.

Clear Glass (refer to fig. 20:c). Eight single sherds were collected. The sherds were randomly distributed within the South Outside Pit and in O2W, 2S2E, 6S2E, and 2S4E. DjOo120B-11 is the neck of a chemical or medicine bottle, and was stoppered with a cork or a ground-glass stopper. The provenience is 2.25' depth x 5.1'S x 3.4'E (pit in O2W). DjOo120B-68 is a melted bottle neck. The provenience is within the South Outside Pit, 3.5' depth x 1.0'S x 3.5'E (8S8W).

Blue Translucent Glass (refer to fig. 20:d). Thirty-six sherds were collected within the East and South Outside Pits, and in O2E, O4E, 4S2E, 2S6E, 4S2W, 8S2W, and 8S6W. The excavation units with the highest concentrations were the East Outside Pit, 8S6W, and 4S2W.

Green Opaque Glass (refer to fig. 20:b). Four sherds were collected. The sherds were most concentrated in 2NO. One sherd has also been collected from 2S2E.

Dark Green Opaque Glass (refer to fig. 20:a). Twenty-six sherds were collected, of which ten have been restored into two aggregates. Sixteen sherds remain unrestored. The sherds were distributed in 4SO, 6SO, 2NO, 4S2E, and 6S2E. The excavation units with the highest concentrations were 4SO and 6SO.

Mirror Glass (refer to fig. 20:e). One sherd was collected from 6S2E.

Food Can Lid (DjOo120B-7). The dimensions are 62 mm. dia. x 15 mm.; the material is tinned-iron. The provenience is 2.4' depth x 5.0'S x 4.0'E (pit in O2W). Tinned-iron food cans of various sizes and apparently largely cylindrical, have been recovered from Fort Pierre II (A.D. 1855) (Smith, 1960a). However, no tinned-iron remains of any kind were found at Kipp's Post (A.D. 1826) (Woolworth and Wood, 1960). Kipp's Post is in North Dakota at the junction of the Missouri and White Earth Rivers. Therefore, tinned-iron food cans can be dated as post-A.D. 1826.

Food Can (DjOo120B-59). The can is too crushed to measure; the material is tinned-iron. The container was found within the East

Outside Pit. Solder is present on the central portion of the one remaining end.

Food Can (DjOo120B-60). The dimensions are 100 mm. x 75 mm. dia. x 0.5 mm.; the material is tinned-iron. The provenience is within the East Outside Pit, 1.1' depth x 0.7'N x 5.0'E (8S8E). Solder is present on the one remaining end.

Food Can (DjOo120B-77). The can is too crushed to measure; the material is tinned-iron. The provenience is 0.6' depth x 5.0'S x 5.4'E (O4E). Solder is present on the central portion of the one remaining end.

Medicine Can Lid (DjOo120B-78. refer to fig. 21:d). The dimensions are 53 mm. dia. x 0.5 mm.; the material is tinned-iron. GLASGOW DRUG HALL-MONTREAL has been stamped in a circle upon the lid. The provenience is 1.6' depth x 4.9'S x 3.9'E (O2E). No information could be obtained regarding this lid.

Food Can End (DjOo120B-83). The dimensions are 74 mm. dia. x 0.25 mm.; the material is tinned iron. The provenience is 1.2' depth x 4.5'S x 1.8'E (OO). Solder is present on this container end and it has been folded over.

Food Can Lid Portion (DjOo120B-84). The dimensions are 52 mm.

dia. x 0.5 mm.; the material is tinned-iron. The provenience is 1.4' depth x 1.8'S x 1.8'E (OO). The dimensions are 52 mm. dia. x 0.5 mm.; the material is tinned-iron. The provenience is 1.4' depth x 1.8'S x 3.4'E (O2W). The artifact appears to be the central portion of a larger lid. Also, solder is present on the portion.

Food Can (DjOo120B-97). The dimensions are 90 mm. x 24 mm. dia. x 0.5 mm.; the material is tinned-iron. The provenience is 0.5' depth x 5.4'S x 3.0'E (4S4E). Soldier is present on the central portion of the one remaining end.

Food Can (DjOo120B-103). The dimensions are 135 mm. x 116 mm. x 0.5 mm.; the material is tinned-iron. The provenience is 0.4' depth 3.9'S x 5.6'E (4SO). The can has been flattened and both ends are removed.

Food Can Lid Portion (DjOo120B-106). The dimensions are 37 mm. dia. x 1 mm.; the material is tinned-iron. The provenience is 1.6' depth x 3.4'S x 1.8'E (4S2W). The artifact appears to be the central portion of a larger lid. Two indentations are stamped into the portion.

Food Can Lid (DjOo120B-112). The dimension is 1 mm. thick; the material is tinned-iron. The provenience is 1.7' depth x 0.3'S x 1.5'E (6S6W).

Food Can Portion (DjOo120-122). The dimensions are 117 mm. x 83 mm. x 0.25 mm.; the material is tinned-iron. The provenience is 0.7' depth x 0.6'S x 4.8'E (8S2W).

Perforated Spice Can Lid (?) (DjOo120-B-133. refer to fig. 21:c). The dimensions are 51 mm. dia. x 3 mm.; the material is tinned-iron. The provenience is 1.2 depth x 0.7'S x 4.6'E (8S4W). I can only speculate that the lid is from a small food can used as a salt or spice shaker.

Remade Food Can (DjOo120B-110. refer to fig. 21:a). The dimensions are 150 mm. x 110 mm. x 40 mm.; the material is tinned-iron. The provenience is 1.7' depth x 5.2'S x 2.5'E (4S6W). A sheet of tinned-iron (probably from a food can) has been cut and folded at the ends to make a home-made vessel. I can only speculate that the vessel may have been utilized as: (1) an open tallow lamp, (2) a food dish, or (3) an ash tray.

Basin Portion (DjOo120B-80). The dimensions are 200 mm. x 5 mm. x 1 mm.; the material is sheet iron. The provenience is 1.3' depth x 2.1'S x 0.6'E (O2E). The portion has been cut from the rim area of a metal basin for unknown purposes.

Sheet Metal Fragments. These were flattened, cut, and bent (into a variety of shapes) portions of many other tinned-iron food containers and basins scattered in the excavation area. Some of these appear to have been used as reinforcing strips, others as metal patches, and many for unknown purposes. Specifically, fifty-five assorted fragments were collected of which six were cut into rectangular portions (possibly to be used as patches). These fragments were within the East and South Outside Pits, and in OO, 2SO, 4SO, O2E, the pit in O2W, O2W generally, O4W, 2S2E, 4S2E, 4S4E, 2S4W, 4S4W, 8S4W and 6S6W. The chief distribution of fragments was within the East Outside Pit, and in 4S4W and 4S2E.

Sealer Ring Portion (?) (DjOo120B-52). The dimensions are 20 mm. wide x 1 mm.; the material is tinned-iron. The provenience is within the South Outside Pit, 2.9' depth x 5.7'S x 4.6'E (6S8W). It is possible the artifact is a sealer ring, probably the mouth of a foil-lined tea box. Generally, sealer rings in Cabin B are larger than sealer rings in Cabin E.

Sealer Ring (?) (DjOo120B-104. refer to fig. 21:f). The dimensions are 87 mm. O.D. x 33 mm. I.D. x 0.5 mm.; the material is tinned-iron. The provenience is 1.5' depth x 5.0'S x 2.4'E (4S2W).

Sealer Ring (?) (DjOo120B-127). The dimension is 0.5 mm. thick; the material is tinned-iron. The ring is in five fragments. The provenience is 1.3' depth x 2.5'S x 3.7'E (8S2W).

Sealer Ring (?) (DjOo120B-137). The dimensions are 15 mm. wide x 1 mm.; the material is tinned-iron. The ring is in three fragments. The provenience is 1.4' depth x 2.8'S x 4.7'E (8S6W).

Lead Foil. Pieces of soft, crumpled lead foil were collected within the East and South Outside Pits, and in 2N2E, 6S2W, 2S4W, the pit in 6S4W, and 6S6W. The major concentration was within the South Outside Pit. White (1969) quotes the Hudson's Bay Company Librarian, Hudson's Bay House, Winnipeg, in a letter dated 24 January, 1969, "We used lead foil-lined tea boxes." Pieces of harder, corrugated lead-alloy sheet were also collected in 2SO, 4SO, O4E, 2S2E, 4S2E, and 2S6E. The major concentration was in 4SO and 2S4E. This material is unlike the tea-

box foil; it may have been used to reinforce chinking and window frames.

Trunk or Casket Strapping (DjOo120B-3). The dimensions are 75 mm. x 25 mm. x 2 mm.; the material is iron. The strap has a bend in one end. The provenience is 2.3' depth x 5.0'S x 5.1'E (pit in O2W). This is the reinforcing from a dry-goods trunk, or a water-casket (Downs and Klassen, 1969). Six other assorted pieces of strapping have also been collected in OO, 2NO, O2E, O2W, and 8S2W.

Trunk or Casket Strapping (DjOo120B-17). The dimensions are 125 mm. x 29 mm. x 1 mm.; the material is iron. The provenience is 1.3' depth x 2.5'S x 2.0'E (pit is 6S4W).

Trunk or Casket Strapping (DjOo120B-37). The dimensions are 93 mm. x 39 mm. x 2 mm.; the material is iron. The provenience is 2.0' depth x 3.6'S x 2.8'E (pit in 6S4W).

Trunk or Casket Strapping (DjOo120B-82). The dimensions are 35 mm. x 26 mm. x 1 mm.; the material is iron. The provenience is 1.4' depth x 0.7' S x 2.8'E (OO). A nail or screw hole is in the strapping.

Trunk or Casket Strapping (DjOo120B-96). The dimensions are 132 mm. x 29 mm. x 2 mm.; the material is iron. The provenience is 0.6' depth x 2.7'S x 0.1'E (4S4E). A nail or screw hole is in the strapping.

Trunk or Casket Strapping (DjOo120B-111). The dimensions are 155 mm. x 31 mm. x 2 mm.; the material is iron. The provenience is 1.4' depth x 0.5'S x 2.4'E (6S6W). An indentation is stamped into the strapping.

Trunk or Casket Strapping (DjOo120B-115). The dimensions are 97 mm. x 39 mm. x 1 mm.; the material is iron. The provenience is 0.6' depth x 5.6'S x 3.3'E (6S2W). At one end the strapping has been shaped by cutting; two rivets remain in place at the cut end.

Cutlery Handle (DjOo120B-51. refer to fig. 22:f). The dimensions are 57 mm. x 13 mm. x 1 mm.; the material is iron. The provenience is within the South Outside Pit, 2.4' depth x 0.8'S x 5.3'E (6S8W). The handle is from a spoon or fork.

Cutlery Handle (DjOo120B-56. refer to fig. 22:i). The dimensions are 88 mm. x 18 mm.; the material is gilded iron. The provenience is within the East Outside Pit, 0.9' depth x 1.6'N x 3.1'E (8S8E). The handle is from a spoon or fork. The process of electrogilding was discovered in A. D. 1840 (Miller, 1960).

Cutlery Handle (DjOo120B-79. refer to fig. 22:g). The dimensions are 103 mm. x 17 mm. x 3.5 mm.; the material is iron. The provenience is 1.1' depth x 5.2'S x 1.5'E (O2E). The handle is from a spoon or fork.

Cutlery Handle (DjOo120B-93. refer to fig. 22:h). The dimensions are 83 mm. x 18 mm. x 1 mm.; the material is iron. The provenience is 0.4' depth x 0.7'S x 2.9'E (2S4E). The handle is from a spoon or fork.

Table Knife (DjOo120B-124. refer to fig. 22:j). The dimensions are 147 mm. x 21 mm. blade x 2 mm. blade; the material is a steel blade, lead ferrule and a rosewood handle. The provenience is 0.9' depth x 2.6'S x 5.4'E (8S2W). Table knives of this style are not manufactured today (Downs and Klassen, 1969).

F. Clothing and Ornament

Button (DjOo120B-50. refer to fig. 23:a). The dimensions are 16.5 mm. dia. x 2.5 mm.; the material is gilded iron. *HARK (?) TRADE is stamped in a circle upon the button face. The button was in the sod of 8S2W. Also, it is similar to buttons used on overall work clothing. Buttons of this style were recovered from Fort Lookout II (A.D. 1831) by Miller (1960).

Button (DjOo120B-76. refer to fig. 23:d). The dimensions are .7 mm. dia. x 1 mm.; the material is brass face with iron back. The brass ace exhibits an incised basket-weave design. Remnants of thread are pre- ent in the four thread holes, and a thin remnant of cloth adheres to the back the button. The provenience is 0.8' depth x 1.2'S x 2.4'E (O4E). The tton may date to the early nineteenth century (Miller, 1960. Woolworth and ood, 1960). A similar button was collected from Cabin E.

Button (DjOo120B-86. refer to fig. 23:b). The dimensions are 17 mm. . x 4 mm.; the material is iron. The thread holes are formed by a bar oss a single central hole. The button was found in 2S4E. It is similar to tons used on overall clothing (Miller, 1960).

Button (DjOo120B-105. refer to fig. 23:c). The dimensions are 17 mm. dia. x 2 mm.; the material is iron. The button face has been stamped with a legend which is illegible. The provenience is 1.5' depth x 3.3'S x 1.5'E (4S2W).

Button (DjOo120B-92. refer to fig. 23:e). The dimensions are 17 mm. dia. x 3.5 mm.; the material is brass. "EXTRA QUALITY" has been stamped in a circle on the button back. The provenience is 1.3' depth x 1.6'S x 0.3'E (2S2E). Various "BEST QUALITY" brass buttons were recovered from Kipp's Post (A.D. 1826-27) by Woolworth and Wood (1960). White (1969) indicates that the various "QUALITY" buttons have a long period of use and are difficult to date.

Button (DjOo120B-30. refer to fig. 23:f). The dimensions are 11 mm. dia. x 3 mm.; the material is white porcelain. The provenience is 2.0' depth x 2.4'S x 1.1'E (the pit in 6S4W). Buttons of this type are still manufactured for shirts, blouses, and underwear (Miller, 1960).

Button (DjOo120B-31. refer to fig. 23:g). The dimensions are 12 mm. dia. x 4 mm.; the material is white porcelain. The provenience is 2.5' depth x 3.8'S x 3.2'E (the pit in 6S4W).

Button (DjOo120B-66. refer to fig. 23:h). The dimensions are 11.5 mm. dia. x 4 mm.; the material is white porcelain. The provenience is within the East Outside Pit, 1.5' depth x 0.0'S x 5.7'E (8S8E).

Button (DjOo120B-114. refer to fig. 23:i). The dimensions are 11 mm. dia. x 4 mm.; the material is white porcelain with a simple molded red transfer decoration. The provenience is 1.7' depth x 5.1'S x 2.0'E (6S2W). The

type is still sold today (Smith, 1960a).

Button (DjOo120B-28. refer to fig. 23:u). The dimensions are 17 mm. dia. x 3 mm.; the material is bone. The button has four thread holes and is lathe-turned. Also, it has been dyed black or dark brown. The provenience is 1.9' depth x 2.6'S x 1.1'E (the pit in 6S4W). A smaller, black-dyed bone button was recovered from Fort Pierre II (A.D. 1855) by Smith (1960a).

Button (DjOo120B-29. refer to fig. 23:v). The dimensions are 19 mm. dia. x 4 mm.; the material is bone. The button has four thread holes and is lathe-turned. The provenience is 2.0' depth x 4.3'S x 4.2'E (the pit in 6S4W).

Button (DjOo120B-75. refer to fig. 23:w). The dimensions are 19 mm. dia. x 2 mm.; the material is bone. The button has four thread holes and is lathe-turned. The provenience is 1.4' depth x 4.1'S x 1.4'E (2N2E).

Button (DjOo120B-131. refer to fig. 23:x). The dimensions are 19 mm. dia. x 3 mm.; the material is bone. The button has four thread holes and is lathe-turned. The provenience is 1.7' depth x 0.4'S x 2.2'E (8S2W).

Beads. Two hundred and twenty seed beads were collected within the South Outside Pit, and in 2SO, 2S2E, 2S4E, 4S6W, and 6S6W. The seed beads were most concentrated within the South Outside Pit where 156 blue, 28 green, 3 white, and 1 red with white centre were found threaded and adhering to a piece of cloth fabric

overlaid on a piece of buckskin. Neither the pattern of the beads nor the color of the fabric is discernable. Generally, the total count of seed beads in Cabin B is: 180 blue (82%), 30 green (14%), 4 pink (2%), 4 white (2%), 1 red, and 1 red with white centre. Five other, larger beads were also collected. One blue opaque glass bead (7 mm. x 9 mm. dia. refer to fig. 24:p) was within the East Outside Pit; one white crudely polished teardrop glass bead (12.5 mm. x 9 mm. dia. refer to fig. 24:s) was found in 8S6W, and one blue opaque crudely faceted glass bead with a light blue core (5 mm. x 5.5 mm. dia. refer to fig. 24:r) was found in 6SO. Beads similar to these three were found at Fort Berthold II (A.D. 1858), and were numerous in the middle and upper Missouri River area throughout the nineteenth century (Smith, 1953). One amber translucent glass bead (7 mm. x 9 mm. dia.) has an individual catalogue number and provenience. The provenience of bead DjOo120B-32 (refer to fig. 24:q) is 1.9' depth x 2.5'S x 2.1'E (pit in 6S4W). Similar beads were recovered from Kipp's Post (A.D. 1826-27) by Woolworth and Wood (1960) and from Fort Pierre II (A.D. 1855) by Smith (1960a). One hollow iron bead (5.5 mm. x 7 mm. dia. refer to fig. 24:t) was found in 2S2E. Unfortunately, I have been unable to obtain any information on hollow iron beads.

Buckle (DjOo120B-58. refer to fig. 24:c). The dimension is 60 mm. wide; the material is iron. The provenience is within the East Outside Pit, 1.0' depth x 0.4'N x 6.8'E (8S8E). It is similar to buckles used on overall - work clothing. Buckles of this style go back as far as A.D. 1831

represent a trader's identification mark.

Rolled Conical Tinkler (DjOo120B-107. refer to fig. 24:w). The dimensions are 20 mm. x 16 mm. dia. x 0.25 mm.; the material is sheet iron. The provenience is 2.0' depth x 4.2'S x 0.4'E (4S4W). The artifact may have been used to decorate fringed clothing. Tinklers may have been recovered from Kipp's Post (A.D. 1826-27) by Woolworth and Wood (1960).

Comb Fragment (DjOo120B-16. refer to fig. 15:b). The dimensions are 20 mm. teeth x 13 mm. x 3 mm.; the material is black hard rubber. The provenience is 1.6' depth x 3.9' S x 3.6'E (pit in 6S4W). Smith (1960b) states that Goodyear patented the hard rubber process in A.D. 1851 and, soon after, hard rubber combs became common items in the Indian trade.

Comb Teeth (Two Items) (DjOo120B-88). The dimensions of each are 24 mm. x 8 mm. x 2 mm.; the material is black hard rubber. The teeth were both in 2S4E.

Toe Plate (DjOo120B-8. refer to fig. 24:d). The dimensions are 75 mm. x 25 mm. x 1 mm.; the material is iron. The plate exhibits three evenly spaced square-cut nail holes. The provenience is 2.4' depth x 5.2'S x 3.3'E (pit in O2W). The lack of wear leads me to speculate that this is a toe plate, rather than a heel plate. The square-cut nail holes indicate a nineteenth century time range.

Boot Heel (DjOo120B-85. refer to fig. 24:e). The dimension is 50 mm. across the base; the material is hard-tanned leather. The provenience is

1.5' depth x 2.2'S x 3.4'E (O2W). Square-cut nails protruding from the heel indicate a probable nineteenth century time range.

Gumboot Fragment (DjOo120B-132). The dimensions are 40 mm. x 20 mm. x 6 mm.; the material is black rubber with a woven fabric impression on one side. The provenience is 1.7' depth x 0.4'S x 2.2'E (8S2W). It is possible that this oblong fragment is from a gumboot.

G. Recreation

Handmade Pipe Preform (refer to fig. 25:e). Four fragments have been reconstructed into this pipe preform, which split while being drilled. The dimensions are 73 mm. x 46 mm. x 34 mm.; the material is locally obtained buff to reddish-brown sandstone. A sample of similar material has been collected from a natural outcrop (S.W.$\frac{1}{4}$, Sec. 21, Twp. 8, Rge. 3, W. of 4th.) within one-half mile of Cabin B. The material has been found to be the same as that used in the Cabin B pipe-making industry, according to a comparative analysis done by Bayliss (1970). A medium-grained, cross-bedded, buff to reddish-brown weathering sandstone--a major component of the Frenchman Formation--outcrops at the above stated land description according to Map No. 22 (Geological Survey of Canada, 1967). Evidence of both sawing and drilling is exhibited on the preform. With regard to the four fragments, the provenience of fragment DjOo120B-99 is 0.4' depth x 4.1'S x 3.5'E (4S2E). The provenience of fragment DjOo120B-108 is 2.0' depth x 2.0'S x 3.7'E (4S6W). The provenience of fragment DjOo120B-141 is 0.6' depth x 3.0'S x 0.7'E (4S2E). The

provenience of fragment DjOo120B-21 is 2.1' depth x 6.0'S x 4.3'E (pit in 6S4W). With regard to the general shape of the preform, Mandelbaum (1940) describes the Cree monitor-style pipe as being flat-bottomed, with a short piece projecting beyond the bowl in the same plane as the shank or stem. Smith (1923:106) states "this shape of pipe is most numerous on the northern plains of North America."

Handmade Pipe Blank (refer to fig. 25:a). Two fragments have been reconstructed into this square-sawn blank. The dimensions are 50 mm. x 48 mm. x 35 mm.; the material is local reddish-brown Frenchman sandstone. The provenience of fragment DjOo120B-22 is 1.5' depth x 4.7'S x 4.8'E (pit in 6S4W). The provenience of DjOo120B-23 is 1.4' depth x 4.5'S x 4.6'E (the pit in 6S4W).

Handmade Preform Fragment (DjOo120B-24. refer to fig. 25:d). The dimensions are 22 mm. x 16 mm. x 14 mm.; the material is local reddish-brown Frenchman sandstone. The provenience is 1.8' depth x 3.5'S x 3.3'E (the pit in 6S4W). The fragment has been both sawn and drilled.

Handmade Cree-Style Pipe Fragment (DjOo120B-48. refer to fig. 25:h). The dimensions are 71.5 mm. x 27.5 mm. x 24 mm.; the material is local reddish-brown Frenchman sandstone. The finished pipe style is flat-bottomed with a front "beak" projecting 52 mm. beyond the bowl and in the same plane as the stem. The bowl is scorched from repeated use. The pipe has been broken through the bowl and the top of

the bowl has been broken off. The provenience is within the South Outside Pit, 2.7' depth x 0.0'S x 5.3' (8S10W). The pipe is of the Cree monitor style as described by Mandelbaum (1940).

Handmade Elbow Pipe (refer to fig. 25:g). Three fragments have been reconstructed to make this pipe. The dimensions are 40 mm. x 23 mm. x 22 mm.; the material is local reddish-brown Frenchman sandstone. The pipe shows little evidence of having been used, but it does appear to have been finished. The provenience of DjOo120B-61 is within the East Outside Pit, 1.0' depth x 3.4'N x 5.4'E (8S8E). The provenience of DjOo120B-74 is 1.4' depth x 2.8'S x 4.9'E (2NO). The third fragment has been collected from the East Outside Pit. Mandelbaum (1940) states that Cree women regularly used elbow-style pipes. Elbow-style pipes were also common among the "Oneota" Indians of Missouri and were "a popular pipe form of the Missouri from early occupation until late . . . outnumbered only by the disk (Hamilton, 1967)."

Handmade Pipe Blank Fragment (DjOo120B-120. refer to fig. 25:b). The dimensions are 37 mm. x 20 mm. x 9 mm.; the material is local reddish-brown Frenchman sandstone. The provenience is 1.1' depth x 3.6'S x 4.4'E (6SO). The fragment has been sawn.

Handmade Pipe Bowl Fragment (DjOo120B-65. refer to fig. 25:f). The dimensions are 26 mm. x 23 mm. x 8 mm.; the material is local buff Frenchman sandstone. The bowl is from a finished but unsmoked pipe. The artifact was in the northwest quarter of 6S6W.

Sandstone Fragments. A major concentration of unworked reddish-brown Frenchman sandstone fragments were collected from 4S2E. Minor amounts of similar fragments were collected from OO, 2SO, 4SO, 6SO, O2W, 4S2W, 6S2W, the pit in 6S4W, 6S4W generally, 8S4W, and 4S4E.

Stub-stemmed Clay Pipe Fragment (DjOo120B-49. refer to fig. 25:i). The dimensions are 40 mm. x 25 mm. x 20 mm. x 12 mm. wide stem; the material is buff pottery clay. The pipe has not been smoked. The provenience is within the South Outside Pit, 3.3' depth x 5.8'S x 3.8'E (6S8W). Walker (1969) gives a very precise analysis of this style of pipe. He notes that the style was made in bipartite lead or wooden molds (this particular specimen exhibits longitudinal axis mold marks), and was originally of middle-European origin. However, by the beginning of the nineteenth century Bethabara-style stub-stemmed tobacco pipes were being produced in the eastern United States.

Flattened Musket Ball Token (DjOo120B-73. refer to fig. 25:n). The dimension is 19 mm. dia. x 2 mm.; the material is lead. Generally, the artifact appears to be a musket ball which has been flattened by being hammered repeatedly. Both flat surfaces are multi-dented. The proveni-ence is 1.5' depth x 4.8'S x 4.7'E (2NO). I can only speculate that this is a gambling piece or token, such as a handmade poker chip. There are several varieties of aboriginal basket and dice games, which utilize flat counters or tokens. Culin (1907) notes that the Chippewa of Minnesota and Turtle Mountain, North Dakota, used flat, rounded dice counters of wood or bone.

Flattened Musket-Ball Token (DjOo120B-100. refer to fig. 25:o). The dimensions are 25 mm. dia. x 3 mm.; the material is lead. Both flat surfaces are multi-dented. The provenience is 0.7' depth x 3.0'S x 4.6'E (4S2E). Again, this may be a handmade gambling piece or token.

H. Miscellaneous

Perforated Metal Sheet (DjOo120B-62). The dimensions are 15 mm. x 14 mm. x 0.5 mm.; the material is tinned-iron. Nail or screw holes are present in the sheet. The provenience is within the East Outside Pit, 1.2' depth x 1.4'N x 6.0'E (8S8E). The artifact appears to have been used as some sort of patch.

Folded and Perforated Metal Strapping (DjOo120B-134). The dimensions are 51 mm. x 20 mm. x 0.5 mm.; the material is tinned-iron. The strapping has been folded over on two parallel sides and nail or screw holes are present. The provenience is 1.4' depth x 2.1'S x 2.1'E (8S4W). It is possible that the artifact has been used as some sort of reinforcement or patch.

Brass Tube with Willow Stick Insert (DjOo120B-90. refer to fig. 25:m). The dimensions of the tube are 12 mm. dia. x 29 mm. The provenience is 1.5' depth x 3.9'S x 1.3'E (2SO). The brass tube appears to be a .44 calibre Centre-Fire Long cartridge case with the rim cut off. The willow stick insert has had the pith removed and been partially hollowed out. It is possible that the artifact is: (1) some sort of handle, or (2) a child's toy. .44 calibre Centre-Fire Long cartridges were first loaded

in A.D. 1876 (White, 1969. Williamson, 1952).

Brass Tube with Willow Stick Insert (DjOo120B-95. refer to fig. 25:1). The dimensions and description remains the same as for artifact DjOo120B-90. The provenience is 0.6' depth x 4.8'S x 1.6'E (2S4E). Again, it is possible that the artifact is: (1) some sort of handle, or (2) a child's toy.

Other Objects. One small fragment of iron was collected in OO. One small piece of bent, channeled sheet iron was collected in 2S4W. Two pieces of melted lead (mis-cast musket balls ?) were collected in 4S2W and 2S4W. Finally, two pieces of shaped, ridged, and folded hard lead-alloy container fragments were collected in 4S4E.

APPENDIX II

ARTIFACT DESCRIPTIONS FOR DjOo120 - CABIN E

Refer to figure 5. The introductory remarks regarding artifact provenience and analysis at the beginning of Appendix I, also equally apply in Appendix II.

A. Stone and Bone Tools

Side-Notched Projectile Point (DjOo120E-1. refer to fig. 10:a). The dimensions are 24 mm. x 17 mm. between shoulders x 5 mm.; the material is dark grey chert. The provenience is 1.6' depth x 0.0'S x 1.1'E (O4W). The point is characterized by broad irregular side-notches, obtuse-angle shoulders, rounded basal edges, a straight base, and straight lateral edges. There is no evidence of basal thinning or grinding, and the flaking style is crude. Stylistically, the point appears to be a late, notched variety similar to the Prairie Side-Notched style described for southeastern Manitoba by MacNeish (1958).

Projectile Point Fragment (DjOo120E-10. refer to fig. 10:b). The dimensions are 20 mm. x 17 mm. x 5 mm.; the material is obsidian. The provenience is 0.3' below ground surface x 5.3'S x 3.3'E (test pit 4S4W). Crude bifacial flaking is exhibited along both lateral edges. Both the proximal and distal ends are truncated and the fragment appears to be the midsection of a larger point. One juncture between a lateral edge and a truncated end exhibits the upper half of a flaked notch. In effect, one obtuse-angle shoulder is still present. The artifact appears to be another side-notched point.

Triangular Projectile Point (DjOo120E-14). This specimen was lost in the field after the initial cataloguing and identification had been done. No dimensions are available; the material was white chalcedony. The provenience is 0.9' depth x 3.9'S x 5.7'E (4S2E). The point was characterized by a thin cross-section, fine, neat flaking, a concave base, and slightly convex lateral edges. Stylistically, the point appeared to be a late variety similar to the Eastern Triangular style described for southeastern Manitoba by MacNeish (1958).

Split-Pebble End Scraper (DjOo120E-17. refer to fig. 10:d). The dimensions are 22 mm. x 14 mm. x 7 mm.; the material is grey chert. The provenience is within the North Outside Pit, 2.0' depth x 1.1'S x 4.2'E (4N4W). The tool is made on a split pebble. When oriented dorso-longitudinally with the working end or bit distal to the viewer, the tool exhibits steep marginal flaking on both the working end and the left lateral margin. There is no marginal flaking on the ventral surface; the dorsal surface is cortex. There is extensive edge crushing along the distal working edge. The tool has been truncated transversely, and the proximal portion is missing.

Plano-Convex Ovoid Scraper (DjOo120E-31. refer to fig. 10:n). The dimensions are 40 mm. x 31 mm. x 15 mm.; the material is light-brown quartzite. The tool was found in 2N2E. The tool is crudely unifacially flaked on the dorsal surface producing a conoid style. There is no flaking on the ventral surface, nor any apparent edge crushing. MacNeish (1958) describes chalcedony avoid scrapers as being common in all archaeological horizons.

Split-Pebble Scraper (DjOo120E-21. refer to fig. 10:m). The dimensions are 73 mm. x 47 mm. x 16 mm.; the material is grey-brown quartzite. The provenience is within the East Outside Pit, 5.5' depth x 3.5'S x 9.0'E (4N12E). The tool is made on a thermally-split pebble. The split surface does not exhibit any characteristics of being the result of man's flaking activities. The dorsal surface is cortex. When oriented dorso-longitudinally with the working end distal to the viewer, the distal end has been unifacially marginally flaked into a concave working edge. Edge crushing and small marginal flake scars are exhibited along the right lateral margin. The ventral surface of the left lateral margin has been marginally truncated transversely and the proximal portion is missing.

Biface Fragment (DjOo120E-2. refer to fig. 10:f). The dimensions are 37 mm. x 23 mm. x 6 mm.; the material is white chalcedony. The provenience is 1.5' depth x 1.9'S x 3.5'E (O4W). The tool has a square base and parallel lateral edges. Fine bifacial flaking is exhibited along both lateral edges and the base and there is no apparent edge crushing. The distal end is truncated at an angle to the longitudinal axis; the fragment appears to be the base portion of a larger biface. Small, well-made, square-based "blades" (actually bifaces) 28 mm. across the base have been described for the Mortlach site (Wettlaufer, 1955).

Leaf-Shaped Biface (DjOo120E-4. refer to fig. 10:e). The dimensions are 30 mm. x 18 mm. x 9 mm.; the material is dark brown chalcedony. The provenience is 1.2' depth x 4.4'S x 3.4'E (2SO). The tool is leaf-shaped in

outline with one end pointed, the other end convex, and convex lateral edges. Fine bifacial marginal flaking is exhibited on all margins of the tool; there is no apparent edge crushing. Ovoid bifaces are found in all horizons of the Mortlach site (Wettlaufer, 1955).

Biface Fragment (DjOo120E-12. refer to fig. 10:h). The dimensions are 33 mm. x 14 mm. x 4.5 mm.; the material is brown chalcedony. The provenience is 0.2' below ground surface x 0.7'S x 0.9'E (test pit 4S4W). Crude bifacial flaking is exhibited along both lateral edges. Both the proximal and distal ends are truncated and the fragment appears to be the midsection of a larger biface. Minor edge crushing is exhibited along the lateral edge.

Piece Esquillee (DjOo120E-6. refer to fig. 10:i). The dimensions are 23.5 mm. x 23 mm. x 9 mm.; the material is dark grey chert. The tool was found within the upper one-half foot of 2S2W. The tool is made on a small pebble, and is crushed and battered on the proximal and distal edges. The tool is very similar to those depicted by MacDonald (1968:pl. 11). Piece esquillees were used as wedge and slotting tools for working bone, ivory, hardwood and other resistant materials (MacDonald, 1968:88-89).

Whetstone (DjOo120E-106. refer to fig. 13:a). The dimensions are 129 mm. x 34 mm. x 30 mm.; the material is grey quartzite. The tool was found in 2N2W. One side of the squarish, elongated cobble exhibits rust streaks parallel to the longitudinal axis of the tool. The tool may be a whetstone used for sharpening steel tools.

Prepared Edge Core Fragment (DjOo120E-7. refer to fig. 10:o). The dimensions are 36 mm. x 24 mm. x 14 mm.; the material is dark grey

chert. The core was found in 2S2W. The remaining flaked edge exhibits small marginal flake scars and edge crushing. The fragment is truncated and appears to be a portion of a larger core. The size of the several flake scars may indicate that the core had been used to produce flake micro-tools.

Core Fragment (DjOo120E-51. refer to fig. 11:b). The dimensions are 144 mm. x 92 mm. x 33 mm.; the material is grey-brown quartzite. The provenience is 1.4' depth x 2.7'S x 3.6'E (O4W). The core has two flake scars on one side and cortex on the other side. There is no apparent edge crushing, and the core has been truncated transversely.

Core (DjOo120E-107. refer to fig. 12:b). The dimensions are 142 mm. x 140 mm. x 90 mm.; the material is brown quartzite. The core was in 2N4E. There are five large flake scars exhibited on the core; some cortex is still present. There is no apparent edge crushing.

Retouched Flake (DjOo120-108. refer to fig. 10:l). The dimensions are 25 mm. x 17 mm. x 5.5 mm.; the material is brown chalcedony. The provenience is 1.8' depth x 5.2'S x 1.7'E (2S4E). The flake exhibits bifacial marginal flaking and edge crushing along one edge.

Prepared Edge Flake (DjOo120E-3. refer to fig. 10:q). The dimensions are 29 mm. x 20 mm. x 3 mm.; the material is brown chalcedony. The provenience is 1.6' depth x 1.7'S x 3.3'E (O4W). One projecting margin exhibits edge crushing and small marginal flake scars.

Prepared Edge Flake (DjOo120E-15. refer to fig. 10:v). The dimensions are 29 mm. x 18 mm. x 9 mm.; the material is brown petrified

wood. The provenience is within the North Outside Pit, 1.6' depth x 4.0'S x 4.1'E (4N4W). One margin exhibits edge crushing and unifacial marginal flake scars, which follow the cleavage planes of the wood grain.

Prepared Edge Flake (DjOo120E-16. refer to fig. 10:x). The dimensions are 28 mm. x 22.5 mm. x 5 mm.; the material is brown petrified wood. The provenience is within the North Outside Pit, 2.0' depth x 3.5'S x 3.9'E (4N4W).

Prepared Edge Flake (DjOo120E-30. refer to fig. 10:w). The dimensions are 35 mm. x 13 mm. x 9 mm.; the material is mottled grey-brown chalcedony. The flake was found in 4N2W. One of the striking platform margins exhibits edge crushing.

Prepared Edge Flake (DjOo120E-49. refer to fig. 10:s). The dimensions are 30 mm. x 15 mm. x 4 mm.; the material is dark grey quartzite. The flake was found within the North Outside Pit. Several unifacial marginal flake scars are exhibited along one margin.

Prepared Edge Flake (DjOo120E-76. refer to fig. 10:p). The dimensions are 20 mm. x 17 mm. x 3 mm.; the material is white chalcedony. The flake was found in 2SO. Edge crushing and unifacial marginal flake scars are exhibited along three margins of the flake.

Antler Handle (DjOo120E-5. refer to fig. 13:e). The dimensions are 127 mm. x 22 mm. dia. The handle was found in 2NO. The tool is an antler tine that has been squared by carving and filing; gouges and the fine serrations of a steel file are exhibited faintly on the handle surfaces. A hole has been drilled by hand through the tip end by

unknown means. A thong may have been passed through the hole; the interior walls are polished and no striations or drilling marks are exhibited. The handle has been broken transversely at the base end. This is probably the handle of a composite tool, and may be from a hide-working tool, as described by Wissler (1910) and Mandelbaum (1940).

Notched Bone Tool Fragment (DjOo120E-83. refer to fig. 13:d). The dimensions are 51 mm. x 47 mm. x 2 mm.; the material is thin cortical bone (probably from a scapula). The provenience is 1.1' depth x 0.3'S x 5.4'E (2S2E). The fragment exhibits three flat-topped teeth and two "V" notches along one margin. The other three margins are broken and the fragment appears to be a portion of a larger bone tool. I can only speculate that the fragment may be part of a bone fleshing tool.

Flakes were scattered in several excavation units in Cabin E. Fifty-one light brown to dark grey quartzite flakes were collected from 2NO, 4NO, 4SO, O2W, O4W, 2N2E, 4S2E, 4N4E, 4N2W, 4S4W (0-0.5' and 0.5'-1.0'), the West Outside Pit, the North Outside Pit, and the East Outside Pit. These flakes were minimally concentrated in the three Outside Pits, and in O4W and 4S4W. Twenty-one grey to brown chert flakes were collected from O2W, O4W, 2N2E, 4N2W, 4S4W (0'-0.5' and 0.5' and 0.5'-1.0'), the North Outside Pit, and the East Outside Pit. Sixteen dark brown to grey to white chalcedony flakes were collected from 4SO, O2W, O2E, 4N2E, 4S4W (0'-0.5), and the North Outside Pit. One petrified wood flake was found within the North Outside Pit. One red jasper flake was found in 4S2E, one brown jasper flake was in 4S4W (0'-05').

One white quartz flake was in O2E. Generally, these flakes do not exhibit any apparent edge crushing or marginal flaking.

B. Metal Tools and Hardware

Hoof Pick (DjOo120E-50. refer to fig. 15:f). The dimensions are 141 mm. x 10 mm. dia. at centre; the material is steel. The provenience is 1.3' depth x 5.0'S x 2.0'E (2NO). The tool has been tentatively identified by Constable Floyd (1969) as a hoof pick, although he indicates that present-day picks are larger.

Harness Ring (DjOo120E-82. refer to fig. 14:d). The dimension is 74 mm. outer dia. x 7 mm.; the material is steel. The provenience is 1.2' depth x 0.5'S x 0.6'E (2S2E). This is the 2 inch size used for team harnesses and is still manufactured (Downs and Klassen, 1969).

Hudson's Bay Pattern Axe-Head Fragment (DjOo120E-54. refer to fig. 15:c). The dimensions are 185 mm. x 82 mm.; the material is steel. The provenience is 1.2' depth x 2.0'S x 2.2'E (O2W). This is the $2\frac{1}{2}$ pound size and is still manufactured (Downs and Klassen, 1969).

Trap Jaw (DjOo120E-105. refer to fig. 16:b). The dimensions are 100 mm. x 8 mm. x 6 mm.; the material is steel. The provenience is depth unknown x 0.5'S x 1.4'E (2S2W). The jaw is part of a No. 1 Victor pattern steel trap, which is still manufactured (Downs and Klassen, 1969).

Trap Chain Link, or Hook (?) (DjOo120E-61. refer to fig. 16:c). The dimensions are 77 mm. x 2.5 mm. dia.; the material is steel. The provenience is 1.4' depth x 4.3'S x 5.3'E (O2W). I can only speculate that this is:

(1) a very eroded trap chain link, or (2) some sort of hook.

Iron Nails (refer to fig. 14:a, c) were scattered, but generally confined to the structure-interior area of Cabin E. There were twenty-three complete specimens, two head portions, and one shaft portion. Three types of various lengths were collected. One large square-cut spike and another type with a pyramidal or mushroom head are hand-made; the third type with a round head is machine cut and sold today as casehardened nails (Miller, 1960. Smith, 1960b). The provenience of the large spike DjOo120E-62 is 1.2' depth x 6.0'S x 6.0'E (O2W). The dimensions are 144 mm. ($5\frac{1}{4}$ inches) x 12.5 mm x 8 mm.; the material is iron. The spike is square-cut with an offset square head. Smith (1960b) indicates that handforged large spikes, similar to those described above were recovered from Fort Stevenson (A.D. 1867) on the Missouri River in North Dakota. Miller (1960) collected nails similar to the other two types, referred to above, from Fort Lookout II (A.D. 1831) on the Missouri River in South Dakota. With regard to complete specimens, four $2\frac{1}{2}$ inch hand-made, two $2\frac{1}{2}$ inch machine cut, three 2 inch machine cut, five $1\frac{1}{2}$ inch machine cut, four 1 inch machine cut, and four 3/4 inch machine cut nails have been recovered.

C. Hunting and Defense

Cartridge Case (DjOo120E-8. refer to fig. 17:1). The dimensions are .938 in. x .585 in. dia.; the material is brass. The provenience is 0.4'

below ground surface x 5.3'S x 4.3'E (test pit 4S4W). A hole has been cut in the centre of the base which may have been an attempt to remove a centre-fire primer. However, I think that the case is centre-fire. Williamson (1952) indicates that if the case is from a .58 calibre centre-fire cartridge it was first loaded in A.D. 1877; if the case is from a .58 calibre rimfire cartridge it was first loaded in A.D. 1878. White (1969) states that the N.W.M.P. (A.D. 1874) used the .577 calibre Snider carbine during the first years of the force.

Cartridge Case (DjOo120E-87. refer to fig. 17:h). The dimensions are .875 in. x .440 in. dia.; the material is brass and the base is plain. The provenience is 0.9' depth x 5.2'S x 2.6'E (2SO). The case is from a .44 calibre Henry Flat-Long cartridge, first loaded in A.D. 1866 (Williamson, 1952. White, 1969).

Cartridge Case (DjOo120E-91. refer to fig. 17:i). The dimensions are .813 in. x .440 dia.; the material is brass and the base has been cut off. The provenience is 1.0' depth x 4.0'S x 5.1'E (2S2W). This is probably from a .44 calibre Henry ~~Flat-Long~~ cartridge (model undetermined).

Cartridge Case (DjOo120E-100). The dimensions are .875 in. x .440 in. dia.; the material is brass and the base is plain. The provenience is 0.8' depth x 4.6'S x 0.6'E (4SO). The case is from a .44 calibre Henry Flat-Long cartridge.

Hollow-Base Rifle Bullet (DjOo120E-13. refer to fig. 17:j). The diameter is .440 in. base; the material is lead. The provenience is within the West Outside Pit, 3.5' depth x 1.2'S x 4.7'E (O8W). The bullet

has been fired, and post-dates A.D. 1861 (Williamson, 1952. Bowman, 1956).

Mis-Cast Bullet (DjOo120E-37). The bullet is too deformed to measure; the material is lead. The provenience is 0.8' depth x 1.0'S x 3.4'E (2N4E). This is a mis-cast rifle bullet--not deformed by use.

Musket Ball (DjOo120E-44. refer to fig. 17:k). The diameter is .560 in. ; the material is lead. The provenience is 1.5' depth x 6.0'S x 5.3'E (2NO). .56 calibre muskets were a common trade item by the Hudson's Bay Company in the nineteenth century (Gooding, 1951. White, 1969). Charles E. Hanson (1955) states that .50-.60 calibre trade muskets were issued by American traders from the late A.D. 1860's on, and Hudson's Bay Company traders issued double muskets of the same calibre range from A.D. 1860-1900.

Musket Ball (DjOo120E-95). The diameter is .560 in.; the material is lead. The mold-tit has been ground or filed off. The provenience is 1.0' depth x 1.0'S x 1.1'E (2S2W).

Musket Ball (DjOo120E-96). The diameter is .560 in. ; the material is lead. The ball is unfired as the molt-tit is still present. The provenience is 1.0' depth x 1.1'S x 1.0'E (2S2W).

Mis-Cast Musket Ball (DjOo120E-102). The ball is too deformed to measure accurately; the material is lead. The provenience is 0.8' depth x 2.0'S x 1.9'E (4S2E). The ball appears to have been mis-cast while being molded.

Musket Ball (DjOo120E-103). The diameter is .560 in.; the material is lead. The ball exhibits small indentations and appears to have

been fired. The provenience is 0.9' depth x 1.5'S x 2.0'E (2N4E).

D. Household

Vessel Forms. Bowls of various sizes, plates, a sugar bowl, and various decorative or fancy vessels are represented by the chinaware. Bottles of various sizes and a fancy vessel are represented by the glassware.

Brown Flower on White China with Green Leaf. Five sherds were collected, of which two have been restored into a portion of a vessel. The sherds were randomly distributed in O2E, 2N2E, 4N2E, and 4N4E. Chinaware of a similar pattern was collected from Cabin B.

Green Leaf on White China (refer to fig. 18:e). One sherd was collected from test pit 4S4W (0'-0.5').

Green Border on White China. One sherd was collected from 2S2E.

Pink Flower and Green Leaf on White China with Green Border. Five sherds were collected, which were chiefly concentrated in 2S2E. Sherds were also from OO and 2SO. Chinaware of a similar pattern was collected from Cabin B.

Blue Thistle on White China. Three sherds were collected, and were randomly distributed in OO, 2SO, and O2W. One sherd (DjOo120E-59) is stamped with COPELAND and a crown design. The provenience is 1.2' depth x 2.5'S x 4.9'E (O2W). This stamp-mark was manufactured between A.D. 1847-1867 (Mankowitz and Haggar, 1957. MacDonald-Taylor, 1962).

Red Flower on White China. One sherd was collected from 2N4E.

Purple and Red Flower and Green Leaf on White China with Red Border. Seven sherds were collected, and were chiefly concentrated in 2N4E. A sherd was also from 4N4E. Chinaware of a similar pattern was collected from Cabin B.

Light Blue Abstract on White China. Five sherds were collected, of which two were restored into a portion of a vessel. The sherds were randomly distributed in 4N4E, 2N4E, 2S4E, and O2E.

Dark Blue Flower on Light Blue China (refer to fig. 19:a). Forty-five sherds were collected, of which eleven were restored into three aggregates. Thirty-four sherds remain unrestored. The sherds were distributed within the North and West Outside Pit, and in OO, 2SO, 4SO, 2NO, 2N4E, 4N4E, 4S2E, 2S4E, 2S2W, and test pit 4S4W (0'-0.5'). The excavation units with the highest concentrations were 2SO, 2N4E, and the North Outside Pit. The provenience of sherd DjOo120E-11 is 0.3' below ground surface x 5.9'S x 2.4'E (test pit 4S4W). The sherd DjOo120E-67 is stamped with "CO. . .D." The provenience is 1.3' depth x 2.9'S x 3.1'E (OO). The stamp-mark appears to be COPELAND. Chinaware of a similar pattern was collected from Cabin B.

Dark Blue Flower on Blue China (refer to fig. 19:d). One sherd was collected from 4S2E. The letters CO of a partial stamp-mark are printed on the sherd.

Red and Blue Flower on White China with Green Leaf (refer to fig. 19:b). Nineteen sherds were collected, of which eleven were restored into four aggregates. Eight sherds remain unrestored. The sherds were distributed in 2SO, 4SO, O2W, O4E, 2S2E, 4S2E, and 2S2W. The excavation unit with the highest concentration was 4SO.

Plain White China. Twenty-nine sherds were collected, of which nine were restored into three aggregates. Twenty sherds remain unrestored. The sherds were distributed in 2NO, 2SO, 4SO, 4N4E, 4S2E, 2S4E, O2W, test pit 4S4W (0'-0.5'), and within the West Outside Pit. The sherds were most concentrated in 4SO.

Leaf Embossed on White China (refer to fig. 19:c). Two sherds were collected from 4SO and 2S4E.

Porcelain China (refer to fig. 19:f). Three single sherds were collected from 2SO, 2N4E, and 4N4E. The sherds may be from dolls; one sherd is a right cheek and ear, and is painted pink.

Clear Glass (refer to fig. 20:h). Twenty-two sherds were collected in O2W, 2SO, 2NO, 4NO, 4N2E, 2N4E, 4N4E, 2S4E, and test pit 4S4W (0'-0.5'). The sherds were most concentrated in 2N4E. One sherd (DjOo120E-23) is embossed with the letters OF. The provenience is 1.2' depth x 4.4'S x 4.5'E (4N2E). No information has been obtained with regard to the letters.

Purple Translucent Glass (refer to fig. 20:i). One sherd was collected which appears to be the neck of a bottle. The provenience of DjOo120E-26 is 1.2' depth x 5.6'S x 0.0'E (4N4E).

Blue Translucent Glass (refer to fig. 20:j). Thirty-four sherds were collected within the West Outside Pit, and in 2NO, 4N2E, 4N4E, 2S4E, and test pit 4S4W. The sherds were most concentrated in 4N4E; and within the West Outside Pit. The provenience of the melted sherd DjOo120E-9 is 0.15' below ground surface x 5.9'S x 5.3'E (test pit 4S4W). The provenience of bottle sherd DjOo120E-47 is 1.4' depth x 2.5'S x 1.0'E (2NO).

Pale Olive-Green Opaque Glass (refer to fig. 20:k). One sherd was collected from 2NO.

Green Opaque Glass (refer to fig. 20:g). Two sherds were collected from 2NO and 2S2E. The provenience of a decorative sherd (DjOo120E-48) is 1.4' depth x 2.1'S x 1.0'E (2NO).

Dark Green Opaque Glass (refer to fig. 20:f). Thirty-five sherds were collected, of which twenty-six sherds were restored into three aggregates of a possible single bottle. Five sherds remain unrestored. The sherds were distributed in 4SO, 4N2E, 2N4E, and 4N4E. The excavation units with the highest concentrations were 2N4E and 4N4E. One sherd (DjOo120E-48)

is the partially melted neck of a bottle. The provenience is 1.0' depth x 0.5'S x 3.5'E (2N4E).

Food Can (DjOo120E-18). The dimension is 83 mm. x 75 mm. dia.; the material is tinned-iron. A nail or screw hole is present in the wall of the can. The provenience is within the North Outside Pit, 2.6' depth x 0.1'S x 3.4'E (4N4W). Solder is present on the central portion of the one remaining end. Tinned-iron food cans of various sizes and apparently largely cylindrical, have been recovered from Fort Pierre II (A.D. 1855) (Smith, 1960a). However, no tinned-iron remains of any kind were found at Kipp's Post (A.D. 1826) (Woolworth and Wood, 1960). Fort Pierre II is located at the junction of the Missouri and Bad Rivers in North Dakota; Kipp's Post is in North Dakota at the junction of the Missouri and White Earth Rivers. Therefore, tinned-iron food cans can be at least dated as post-A.D. 1826. Two scrap fragments of tinned-iron have also been collected from O2E and 2NO.

Food Can Portion (DjOo120E-19). The dimensions are 256 mm. x 115 mm. x 0.5 mm.; the material is tinned-iron. The provenience, is within the East Outside Pit, 4.7' depth x 3.5'S x 9.0'E (4N12E). The portion appears to be a can with the ends removed and the wall rolled open to form a flat sheet.

Food Can Lid (DjOo120E-20). The dimensions are 136 mm. dia.

x 1 mm. x 30 mm. dia. hole in centre; the material is tinned-iron. A hole is punched in the centre of the lid. The provenience is within the East Outside Pit, 5.1' depth x 0.4'S x 10.4'E (4N12E).

Food Can Fragment (DjOo120E-24). The dimensions are 72 mm. x 72 mm. x 0.5 mm.; the material is tinned-iron. The provenience is 0.5' depth x 5.5'S x 5.0'E (4N2E).

Food Can Fragment (DjOo120E-29). The dimensions are 80 mm. x 4.6 mm. x 0.5 mm. (folded); the material is tinned-iron. The provenience is 0.8' depth x 5.2'S x 1.7'E (4N4E).

Food Can Lid (DjOo120E-32). The dimensions are 58 mm. dia. x 3 mm.; the material is tinned iron. Solder is present in the centre of the lid. The provenience is 1.2' depth x 5.0'S x 3.1'E (4N4E).

Food Can Lid Portion (DjOo120E-40). The dimension is 0.5 mm. thick; the material is tinned-iron. The provenience is 0.8' depth 3.9'S x 4.6'E (2N4E). The portion appears to be one-half of a can lid.

Food Can Portion and Lid (2 items) (DjOo120E-79). The dimensions of the portion are 11 mm. x 1 mm.; the dimensions of the lid are 76 mm. dia. x 0.5 mm. The material of both items is tinned-iron. The provenience of both items is 0.8' depth x 1.6'S x 1.2'E (O4E). The portion appears to be a can with the ends removed and the wall rolled out to form a flat sheet. The lid was positioned within the folded portion.

Food Can (DjOo120E-84. refer to fig. 21:b). The dimensions are 144 mm. dia. x 17 mm. x 1 mm. x 31 mm. long slot; the material is tinned-iron. A slot is present in the centre of the one remaining end of the can. The provenience is 1.2' depth x 1.6'S x 3.6'E (2SO). Generally, the can appears to be very shallow and round. It is possible that the can has been utilized as a coin depository.

Sealer Ring (?) (DjOo120E-35. refer to fig. 21:e). The dimensions are 76 mm. O.D. x 36 mm. I.D.; the material is tinned-iron. The provenience is 1.1' depth x 0.0'S x 2.6'E (2N4E). I can only speculate that the artifact is a sealer ring, probably the mouth of a foil-lined tea box. Generally, sealer rings in Cabin E are smaller than sealer rings in Cabin B.

Sealer Ring Portion (?) (DjOo120E-93). The dimensions are 20 mm. x 1 mm.; the material is tinned-iron. The provenience is 1.1' depth x 1.5'S x 2.3'E (2S2W).

Rectangular Metal Box Fragments (DjOo120E-65). The dimension is 1 mm. thick; the material is tinned-iron. The provenience is 0.9' depth x 1.2'S x 1.5'E (OO). The many fragments may be a portion of a metal tea box.

Lead Foil (DjOo120E-81). The dimensions are 80 mm. x 48 mm. x 0.5 mm. (per leaf); the material is lead. The foil is in layered leaf-like sheets. The provenience is 0.8' depth x 2.3'S x 0.0'E (2S4E). White (1969) quotes the Hudson's Bay Company Librarian, Hudson's Bay House, Winnipeg, in a letter dated 24 January, 1969, "We used lead foil-lined tea boxes in the

1870's, but we do not know the size of the boxes." Additionally, pieces of soft lead foil were collected in 2NO, 2SO, O2W, O2E, O4E, 2N2E, 4N2E, 2N4E, 4N4E, 4S2E, 2S4E, and 2N2W. The major concentrations were in 4N2E, O2E, 2N4E, and 4N4E.

Lock Plate (DjOo120E-43. refer to fig. 22:a). The dimensions are 77 mm. x 54 mm. x 15 mm. x 2 mm.; the material is steel. An 8 mm. wide hole is present in the 15 mm. wide portion. The provenience is 1.5' depth x 5.4'S x 3.9'E (2NO). The plate is from a dry-goods trunk lock; similarly styled locks are still sold today (Downs and Klassen, 1969). The plate is probably a composite mechanism, utilizing as its elements E-43, E-88, and possibly E-77.

Lock Latch (DjOo120E-77. refer to fig. 22:c). The dimensions are 63 mm. x 15 mm. x 2 mm.; the material is steel. The provenience is 1.1' depth x 2.6'S x 3.0'E (O2E). The latch is from either a trunk or door lock.

Lock Plate (DjOo120E-88. refer to fig. 22:b). The dimensions are 77 mm. x 16 mm. x 4 mm.; the material is steel. The provenience is 0.9' depth x 5.9'S x 2.7'E (2SO). The plate is from a dry-goods trunk lock.

Trunk Handle (DjOo120E-46. refer to fig. 22:d). The dimensions are 92.5 mm. x 12 mm. x 6 mm.; the material is steel. The provenience is 1.5' depth x 1.3'S x 3.6'E (2NO). The artifact is a trunk handle, but is of a different style from those sold today (Downs and Klassen, 1969).

Trunk or Casket Strapping (DjOo120-E-45). The dimensions are 26 mm. wide x 1 mm.; the material is iron. The provenience is 1.6' depth

x 5.0'S x 4.8'E (2NO). This is part of the reinforcing of a dry-goods trunk, or a water-casket (Downs and Klassen, 1969).

Trunk or Casket Strapping (DjOo120E-66). The dimensions are 63 mm. x 35 mm. x 3 mm.; the material is iron. The provenience is 1.1' depth x 2.1'S x 2.1'E (OO).

Furniture Lag-Screw (DjOo120E-92. refer to fig. 22:e). The dimensions are 57 mm. x 12 mm. dia. sleeve; the material is steel. The provenience is 1.1' depth x 1.3'S x 4.3'E (2S2W). This is a lag-screw used to join sections of furniture, and may have been used to join a table leg to a table top (Downs and Klassen, 1969).

E. Clothing and Ornament

Button (DjOo120E-22. refer to fig. 23:j). The dimensions are 17 mm. dia. x 2.5 mm.; the material is iron. The button has been split in half and is too rusted for further analysis. The provenience is within the East Outside Pit, 4.3' depth x 0.0'S x 10.0'E (4N12E). Also, a two-hole metal button from overall clothing (Miller, 1960), has been collected from 2S4E.

Button (DjOo120E-25. refer to fig. 23:k). The dimensions are 14 mm. dia. x 2 mm.; the material is iron. The button has four thread holes and appears to be the roll-crimped face from a composite button. The provenience is 1.3' depth x 2.8'S x 3.4'E (O2E).

Button Face (DjOo120E-89. refer to fig. 23:n). The dimensions are 17 mm. dia. x 2 mm.; the material is iron. Again, the button has four

thread holes and appears to be the roll-crimped face from a composite button. The provenience is 1.0' depth x 4.9'S x 1.4'E (2SO).

Button (DjOo120E-97. refer to fig. 23:m). The dimensions are 17 mm. dia. x 1.5 mm.; the material is brass face with iron back. The button has four thread holes and the brass face exhibits an incised basket-weave design. The provenience is 1.0' depth x 1.5'S x 0.9'E (2S2W). The button may date to the early nineteenth century (Miller, 1960. Woolworth and Wood, 1960). A similar button was recovered from Cabin B.

Button Face Fragment (DjOo120E-70. refer to fig. 23:z). The dimensions are 21 mm. dia. x 1 mm. with a hooked shank 12 mm. x 2 mm.; the material is iron. The face has been stamped with a design which is now illegible. Generally, this appears to be the face of a composite button which may have been joined to a back such as artifact DjOo120E-86. The provenience is 1.3' depth x 3.9'S x 2.1'E (O2E).

Button Face (DjOo120E-71. refer to fig. 23:aa). The dimensions are 21 mm. dia. x 1 mm. with a hooked shank 12 mm. x 2 mm.; the material is iron. The face has been stamped with eighteen raised dots around the rim and six raised dots around the head of the shank in the centre. Again, this appears to be the face of a composite button. The provenience is 1.2' depth x 1.8'S x 2.0'E (O2E).

Button Face Fragment (DjOo120E-90. refer to fig. 23:bb). The dimensions are 21 mm. dia. x 1 mm.; the material is iron. The face has been stamped with two series of raised dots, but the central hooked shank is missing. Again, this appears to be the face of a composite button. The provenience is

0.9' depth x 5.2'S x 0.8'E (2SO).

Button Back (DjOo120E-86. refer to fig. 23:cc). The dimensions are 22 mm. dia. x 6 mm. deep; the material is iron. The artifact appears as a hemisphere with a hole in the centre and may be the back of a composite button. The provenience is 1.3' depth x 1.6'S x 1.9'E (2SO).

Button Back (DjOo120E-98. refer to fig. 23:dd). The dimensions are 22 mm. dia. x 6 mm. deep; the material is iron. Again, the artifact appears to be the back of a composite button. The provenience is 1.3' depth x 0.5'S x 0.3'E (2S2W).

Button (DjOo120E-33. refer to fig. 23:p). The dimensions are 10.5 mm. dia. x 3 mm.; the material is green porcelain. The provenience is 1.2' depth x 3.5'S x 4.5'E (4N4E). Buttons of this type are still manufactured for shirts, blouses, and underwear (Miller, 1960).

Button (DjOo120E-57. refer to fig. 23:o). The dimensions are 12 mm. dia. x 3 mm.; the material is white porcelain. The provenience is 1.2' depth x 5.8'S x 2.5'E (O2W). The type is still manufactured (Miller, 1960).

Button (DjOo120E-69. refer to fig. 23:q). The dimensions are 11 mm. dia. x 3 mm.; the material is white porcelain. The provenience is 1.3' depth x 3.9'S x 1.9'E (O2E).

Button (DjOo120E-72. refer to fig. 23:r). The dimensions are 13 mm. dia., x 3.5 mm.; the material is white porcelain. The provenience is 1.3 depth x 2.0'S x 2.9'E (O2E).

Button (DjOo120E-74. refer to fig. 23:y). The dimensions are 10 mm. dia. x 3 mm.; the material is white porcelain. The provenience is 1.3' depth x 2.0'S x 4.2'E (O2E).

Button (DjOo120E-78. refer to fig. 23:s). The dimensions are 8.5 mm. dia. x 2 mm.; the material is white shell. The button has four thread holes and is hand-finished. The provenience is 1.2' depth x 4.9'S x 1.0'E (O4E). Shell buttons were not factory-manufactured in the U.S.A. until A.D. 1891 (Smith, 1960a).

Button (DjOo120E-94. refer to fig. 23:t). The dimensions are 14 mm. dia. x 1.5 mm.; the material is black hard rubber. The button has two thread holes and is lathe-turned. The provenience is 1.2' depth x 1.2'S x 1.2'E (2S2W). Smith (1960b) states that Goodyear patented the hard rubber process in A.D. 1851.

Beads. One blue seed bead was collected from 4N2E. Eighteen other, larger blue opaque glass beads were also collected--of which ten beads (6-8 mm. x 9 mm. dia. refer to fig. 24:f, g) were in 2SO, 4SO, O2W, 2S2E, 4S2E, 4N2E, 2N4E, and 4N2E. Additionally, the provenience bead DjOo120E-28 is 0.8' depth x 5.5'S x 1.4'E (4N4E). The provenience of bead DjOo120E-58 is 1.2' depth x 2.6'S x 4.8'E (O2W). The provenience of bead DjOo120E-75 is 1.3' depth x 2.0'S x 3.6'E (O2E). The provenience of bead DjOo120E-101 is 1.0' depth x 1.9'S x 0.6'E (4S2E). Blue opaque glass beads were the type most preferred by the occupants of Cabin E.

Beads similar to these were in the middle and upper Missouri River area throughout the nineteenth century, and were numerous at Fort Berthold (A.D. 1858) (Smith, 1953). One black opaque glass bead (8 mm. x 10 mm. dia. refer to fig. 24:i) was found in 2S4E, and one black opaque glass bead with imbedded white particles with blue and red centres (19 mm. x 9 mm. dia. refer to fig. 24:k) was found in 4N4E. Beads similar to these have been recovered from Fort Berthold (Smith, 1953). One red translucent glass bead with imbedded white particles with blue centres (11 mm. x 11 mm. dia. refer to fig. 24:l) was found in 2N2W. The spotted red bead could go back as far as A.D. 1858; the method of manufacture appears to be the same as for the spotted black beads recovered from Fort Berthold, and discussed above. One amber translucent glass bead (7 mm. x 8 mm. dia. refer to fig. 24:h) and one dentalium shell bead (16 mm. x 4 mm. dia. refer to fig. 24:o) were found in 2NO. Similar amber glass beads were recovered from Kipp's Post (A.D. 1826-27) and Fort Pierre II (A.D. 1855) (Smith, 1960a. Woolworth and Wood, 1960). Dentalium shell beads were found throughout the West during the nineteenth century (Smith, 1953). One black-painted pottery clay bead (8 mm. x 11 mm. dia. refer to fig. 24:j) was found in 2NO, and one buff pottery clay bead with a green-painted line around the "equator" of the bead, and imbedded paired red particles straddling the green line (10 mm. x 10.5 mm. dia. refer to fig. 24:n) was found in 4N2E. One black opaque faceted jet bead (10 mm. x 10 mm. dia. refer to fig. 24:m) has an individual catalogue number and provenience. The

provenience of bead DjOo120E-63 is 1.3' depth x 6.0'S x 6.0'E (O2W). Unfortunately, I have been unable to obtain any information on either pottery clay beads or faceted jet beads.

Buckle (DjOo120E-56. refer to fig. 24:b). The dimension is 33.5 mm. wide; the material is iron. The provenience is 1.2' depth x 2.9'S x 1.8'E (O2W). It is similar to buckles used on overall work clothing. Buckles of this style go back as far as A.D. 1831 at Fort Lookout II (Miller, 1960).

Buckle (DjOo120E-104. refer to fig. 24:a). The dimension is 39 mm. wide; the material is iron. The provenience is 0.9' depth x 1.2'S x 2.7'E (4N4E). It is similar to buckles used on overall work clothing.

Pendant (DjOo120E-60. refer to fig. 24:x). The dimensions are 20 mm. x 15 mm. x 1 mm.; the material is gilded iron. The pendant is bell-shaped; three circular, pierced lobes are spaced equidistant around the perimeter. One lobe is missing. The provenience is 1.4' depth x 4.2'S x 5.2'E (O2W). This is a piece of inexpensive costume jewellery. Costume jewellery was a common item of trade during the nineteenth century. The process of electrogilding was discovered in A.D. 1840 (Miller, 1960).

Buff Ochre (DjOo120E-27. refer to fig. 24:u). The dimensions are 54 mm. x 45 mm. x 34 mm. Two shallow, conical drilled holes are exhibited on the surface of the ochre piece; the entire surface is very smooth and appears to have been rubbed. The ochre was found in O4W. A smaller piece of buff ochre was also collected from O4W.

Red Ochre (DjOo120E-39. refer to fig. 24:v). The dimensions are 16 mm. x 15 mm. x 14 mm. The piece was found in O2W.

Other Objects. One brass upholstery tack head and one small hard rubber comb tooth were collected from 2S4E.

F. Recreation

Stub-Stemmed Clay Pipe Bowl Fragment (DjOo120E-80. refer to fig. 25:j). The dimensions are 21.5 mm. x 28 mm. dia.; the material is buff pottery clay. The pipe has not been smoked; a longitudinal axis mold mark is exhibited. The provenience is 0.8' depth x 4.1'S x 3.6'E (O4E). Bethabara-style stub-stemmed tobacco pipes were being produced in the eastern United States during the nineteenth century (Walker, 1969). Additionally, an unused white pottery clay bowl fragment was collected from O2W (refer to fig. 25:k). Minor amounts of local reddish-brown Frenchman sandstone material was found in O2W, 2NO, and 4N4E.

Flattened Musket Ball Token (DjOo120E-64. refer to fig. 25:p). The dimensions are 22 mm. dia. x 3.5 mm.; the material is lead. Generally, the artifact appears to be a musket ball which has been flattened by being hammered repeatedly. Both flat surfaces are multi-dented. The provenience is 0.9' depth x 2.7'S x 0.3'E (OO). I can only speculate that this is a gambling piece or token, such as a hand-made poker chip. There are several varieties of aboriginal basket and dice games, which utilize flat counters or tokens. Culin (1907) notes that the Chippewa of Minnesota and Turtle Mountain,

North Dakota, used flat, rounded dice counters of wood or bone.

Flattened Musket Ball Token (DjOo120E-85. refer to fig. 25:q). The dimensions are 29 mm. dia. x 2.5 mm.; the material is lead. Both flat surfaces are multi-dented and the token exhibits a tiny central hole. The provenience is 1.2' depth x 1.3'S x 3.3'E (2SO). Again, this may be a hand-made gambling piece or token.

G. Miscellaneous

Folded Metal Sheet Fragment (DjOo120E-34). The dimensions are 5.5 mm. wide x 0.5 mm.; the material is tinned-iron. The provenience is 1.1' depth x 0.2'S x 1.8'E (2N4E). It is possible that this may be a portion of a metal patch, or lid.

Split-End Rod (DjOo120E-38. refer to fig. 17:w). The dimensions are 130 mm. x 6 mm. dia.; the material is steel. The rod is bent and one end is split and spread. The provenience is 0.8' depth x 0.5'S x 4.1'E (2N4E). This may be a damaged portion of a loop-ended cleaning rod for a fire-arm. The artifact has been made from 7/32 inch mild-steel rod (Downs and Klassen, 1969).

Rod (DjOo120E-54. refer to fig. 17:u). The dimensions are 227 mm. x 9.5 mm. dia.; the material is 3/8 inch mild steel (Downs and Klassen, 1969). One end of the rod has been cut; the other end appears to be broken. The provenience is 1.4' depth x 1.4'S x 0.3'E (O4W). No function has been determined for the artifact.

Sheet Metal Patch (DjOo120E-41. refer to fig. 17:v). The

dimensions are 77 mm. x 31 mm. x 0.5 mm.; the material is tinned-iron. Two nails and one nail hole are present in the patch. The provenience is 0.9' depth x 1.1'S x 5.8'E (2N4E). The artifact may have been used as some sort of patch.

Shaped Metal Sheet (DjOo120E-42). The dimensions are 21 mm. x 7 mm. x 2 mm.; the material is tinned-iron. The artifact has two folded rims and is roughly U-shaped. The provenience is 1.2' depth x 4.8'S x 4.5'E (2N4E). No function has been determined for this artifact.

Sheet Metal Patch Fragments (three items) (DjOo120E-68). The dimensions is 0.5 mm. thick; the material is tinned-iron. The three fragments exhibit nail holes and one nail. The provenience is 1.2' depth x 1.75'S x 0.6'E (O2E). The artifact may have been used as some sort of patch.

Other Objects - Two pieces of melted lead (mis-cast musket balls ?) were collected in O2W and 2N4E.

APPENDIX III

FAUNAL REMAINS - CABIN B

At least twenty different species of mammals, birds, and fish are distributed in thirty-one excavation units. Both Olsen (1960) and Olsen (1964), plus comparative material, were utilized for mammal identification; birds and fish were identified by the author of the thesis. The identifiable osseus elements of each species are numerically tabulated in Tables 8-31, pages 244-66 of this appendix. I have utilized essentially the same element categories as those of the Unworked Faunal Remains Form of the Department of Archaeology of The University of Calgary. Minimum numbers of mature and immature individuals of each species have been determined--based on the most frequently recovered elements (e.g. Flannery, 1968). Thomas (1969) indicates that this method of estimation may be quantitatively inaccurate due to a high degree of fragmentation in many archaeological sites, plus sample sizes so small as to be comparatively useless. However, in the particular case of the DjOo120 site I feel these problems are relatively non-existent. In Cabin B, the bone is very well preserved and any fragmentation appears to be the result of human butchering activities. The excavation area is large enough (the complete cabin interior and a large outside area) that a high proportion of all representative faunal remains, associated with the immediate activity areas of Cabin B, were collected. The average excavation depth below ground surface varied from 0.5 to 1.0 feet. This

depth, plus excellent bone preservation, allowed a very high recovery frequency of both large and small faunal remains by hand collection techniques. Therefore, the sample size appears quite sufficient, and the assemblage complete enough, to be evaluated on an absolute count basis rather than being modified by a correction factor as advocated by Thomas. For details on the minimum number of individuals per species, and a calculation of the probable utilized biomass (e.g. White, 1953) for Cabin B, refer to Table 32, page 268 of this appendix.

Generally, a heavy butchering technique was similarly applied to all large ungulates, e.g., buffalo, elk, deer, and possibly the antelope. This technique is specifically described as being a Blackfoot method for butchering buffalo (Wissler, 1910) and generally agrees with the methods of the Plains Cree (Mandelbaum, 1940). Even so, in relation to estimated numbers of individuals there are few identifiable elements of any category. Almost all the bones (other than carpals, tarsals, and phalanges) are butchered fragments. Skull fragments are occipitals and maxillae, plus one buffalo horn core were chopped through at the base. Mandibles were chopped through above and below the condyles as well as through the horizontal rami (refer to fig. 26:a, b). Vertebrae, generally, had the dorsal and transverse spines chopped off. Far more thoracic vertebral dorsal spines, than centra, are present. Ribs were chopped through the necks (refer to fig. 26:e) and at mid-shaft. With the exception of two relatively complete scapulae, most scapulae fragments consist of glenoid portions chopped through at the neck (refer to fig. 26:c). Pelvic fragments are small ischial and iliac portions

which possibly were the result of chopping through the pelvis to release the acetabulum and femoral head articulation. Eight femoral heads are present. With the exception of three metapodials, there were no unbutchered long bones with intact medial shaft portions. The long bones were chopped through below and above the articular ends (refer to fig. 26:g). This particular butchering activity possibly was due to the long bones being chopped or broken up and boiled for marrow or bone grease (Mandelbaum, 1940). High frequencies of unidentifiable long bone shaft fragments were collected within O2E, 2S2E, 4S2E, O4E, 2S4E, and 4S4E. Finally, the long straight, relatively narrow, and deep cut marks indicate to me that steel axes or heavy knives were utilized for most of the butchering in Cabin B (refer to fig. 26).

Portions of three foetal ungulate long bones were recovered.

The presence of the one horse premolar does not justify any inference that horses were butchered.

Somewhat different butchering techniques were applied to medium and small sized game, e.g., mammals weighing less than one hundred pounds. All of these species apparently were first brought to the cabin area and butchered close to, or inside, the cabin. Wolves and dog/coyotes were processed similarly. The heads were removed and mandibles separated from the skull. Skulls had the nasal and maxillae regions removed and the mandibles were either left whole or chopped through below the condyles. The vertebrae were generally left intact, but some were chopped through sagitally--indicating

either head removal and/or sectioning of the vertebrae column (refer to fig. 26:f). Ribs were chopped through at mid-shaft. Scapulae consist of glenoid portions chopped through at the neck. Pelvic fragments consist of ischial and iliac portions which possibly were the result of chopping free the hip joint. Many long bones were butchered by chopping through at mid-shaft, or above and below the articular ends (refer to fig. 26:d). The large numbers of metapodials, carpals, tarsals, and phalanges were intact. The only possibility of domesticated faunal remains from Cabin B were three canid mandibles which were either domestic dog or very large coyote (too small for wolves) (refer to fig. 27:d-f).

Generally, cougar, bobcat, badger, and skunk elements were too infrequent to warrant any inferences regarding butchering or dismemberment. Red foxes, kit foxes, porcupines and beavers were processed similarly to the larger canids. However, both cutting and breaking were utilized to sever bones. Vertebrae were left intact. The heads were removed intact from porcupines, and presumably this was done also with the foxes and beavers. Approximately one-half of the small rodent, jack rabbit, cottontail, and bird bones are intact; the remainder are broken. However, it is impossible to determine whether the broken bones were the result of cultural activity, or natural erosion after the site was abandoned. The bird remains are similar to grouse bones I have viewed in the past, but without comparative material this can only remain a tentative identification. The fish remains are definitely from large pike.

TABLE 8

FISH *(Esox lucius)* - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
MANDIBLE																																
fragment								1								1					1											
VERTEBRAE																																
undetermined								1				1																				

TABLE 9

BIRDS *(F. Tetraonidae)* - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
SCAPULA	
glenoid	1
STERNUM	
	1

TABLE 10

(Lepus sp.) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
SKULL	
maxilla	1

*Includes Pit Contents

TABLE 10 (Continued)

(Lepus sp.) - DISTRIBUTION - CABIN B.

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W *	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
MANDIBLE																																
right																										1					
VERTEBRAE																																
atlas							2																								
thoracic							1													2											
lumbar																				2											
sacrum							1																								
HUMERUS																																
proximal									1																						
distal																										1					
complete																																
RADIUS																																
distal																		1													
ULNA																																
proximal							3		1																						
distal																		1													
PELVIS																																
acetabulum																																
ischium							1																								
FEMUR																																
complete									1			1																			
head																										1					
head & prox.									2																						
distal									3																						
TIBIA																																
distal																										1					
METATARSAL																																
complete																										1					

*Includes Pit Contents

TABLE 11

(Sylvilagus sp.) - DISBRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
VERTEBRAE																																
thoracic																									1							
RADIUS																																
distal										1																						

TABLE 12

(O. Rodentia) (SMALL) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
SKULL	
frontal	1
TEETH	
incisors	4 4
molars	1 1
VERTEBRAE	
undetermined	1
SCAPULA	
complete	1
HUMERUS	
proximal	1
distal	1
complete	2 1

*Includes Pit Contents

TABLE 12 (Continued)

(O. Rodentia) (SMALL) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
RADIUS																																
proximal					1																											
ULNA																																
complete						3																										
METACARPAL																																
complete												2																				
PELVIS																																
acetabulum										1		1																				
TIBIA																																
complete										1		1																				
distal																			1													
METATARSAL																																
complete										2		17							1													
PHALANGES												30							1													

TABLE 13

(Thomonys Talpoides?) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
HUMERUS	
complete	1

*Includes Pit Contents

TABLE 14

(Castor canadensis subsp.) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
MANDIBLE																																
right							1						5																			
TEETH																																
incisors																						3										
molars							1															3										
VERTEBRAE																																
cervical									1																							
SCAPULA																																
glenoid																										1						
TIBIA																																
proximal													1																			
medial													1																			
METATARSAL																																
distal													1																			
CARPALS/TARSALS																																
PHALANGES													2																			

TABLE 15

(Erethizon dorsatum) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE																															
SKULL																																
maxilla									5			3				1						3									1	

*Includes Pit Contents

TABLE 15 (Continued)

(Erethizon dorsatum) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
MANDIBLE																																
right							2			3	2	1									1		2							1		
left							1			1	1												2					1			1	
fragments																2										1						
TEETH																																
incisors										6		2		3		4					2		1							1		
premolars																1					5											
molars										5		3				1					2											
VERTEBRAE																																
thoracic							1																									
sacrum															1																	
SCAPULA																																
complete												1																				
glenoid							1																									
HUMERUS																																
proximal																							1									
distal							1									1							2	1								
RADIUS																																
complete							2																									
ULNA																																
proximal							3						1																			
distal							1						1													1						
complete							2																									

*Includes Pit Contents

TABLE 15 (Continued)

(Erethizon dorsatum) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
PELVIS																																
acetabulum																																
ischium							1																								
FEMUR																																
complete																					1											
head & prox.											1	1																				
medial			1																													
distal													1																			
TIBIA																																
distal							1																									

TABLE 16

(O. Carnivora) - DISBRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
MANDIBLE	
fragments	1 1
TEETH	
canines	1 1
VERTEBRAE	
cervical	1
caudal	1 4

*Includes Pit Contents

TABLE 16 (Continued)

(O. Carnivora) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
CARPALS/TARSALS																			1													
PHALANGES										15		18							2							6						

TABLE 17

(Canis sp.) (DOG OR COYOTE) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
SKULL	
occipital	1
undetermined	1
MANDIBLE	
right	1
left	1 1
fragments	1 1 2 1 1
TEETH	
incisors	1 4
canines	3 1
premolars	1
molars	1 1 1 1

*Includes Pit Contents

AT TABLE 17 (Continued)

(Canis sp.) (DOG OR COYOTE) - DISTRIBUTION – CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
VERTEBRAE																																
atlas									1	1	1																					
axis															1																	
cervical										2					1			2			1											
thoracic							1		1	2	1	2			1										1							
lumbar																									1							
sacrum							1			1		1																				
caudal												8			7		2								1							
SCAPULA																																
glenoid											1										1				1							
HUMERUS																																
proximal							1					1													3							
distal										1	1		1																			
RADIUS																																
proximal							1				1	1					1															
ULNA																																
proximal							1				1																					
complete												1																				
METRACARPAL																																
complete										1																						
proximal																	1															
distal										2							2				1											
PELVIS																																
complete									1																							
acetabulum																					1											
ilium															1																	

*Includes Pit Contents

TABLE 17 (Continued)

(Canis sp.) (DOG OR COYOTE) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
FEMUR															1																	
complete										1														1							
head															1												1				
head & prox.									1	2																					
TIBIA																															
complete																								1							
proximal						1				1																					
distal											2	3				2			1	1											
METATARSAL																															
complete												4												1							
distal																3															
CARPALS/TARSALS							1		1	1				21	1																1
PHALANGES												10		2	2	1				3	8										1

TABLE 18

(Canis lupus) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
SKULL	
complete	1 1
occipital	1
maxilla	1 1 1 16
undetermined	1

*Includes Pit Contents

TABLE 18 (Continued)

(Canis lupus) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
MANDIBLE																																
right														1	2				1		2				1							
left															1						2											
fragments													1		1											1	2					
TEETH																																
incisors												1			4						19											
canines												2									8											
premolars												1	1																			
molars																			1		1											
VERTEBRAE																																
atlas																1																
axis							1						1		1										1							
cervical		1										5			2																	
thoracic													1		1																	
lumbar															1																	
sacrum																					1											
caudal																																
undetermined																																
RIB																																
shaft													1						1													
SCAPULA																																
glenoid												1		1	1			1														
HUMERUS																																
proximal												1	2																			
distal							2							1	1										1							

*Includes Pit Contents

TABLE 18 (Continued)

(Canis lupus) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
RADIUS																																
proximal																																
medial										2	2	1				1																
distal																				1												
complete										1																						
ULNA										1																			1			
proximal																																
distal										2	1	1								1							1					
complete														2						1						1		1				
METACARPAL												2																				
complete																																
proximal							1													1						1	2					
distal										3										1												
PELVIS								1		5																						
acetabulum																																
ilium							1																									
FEMUR												1	1	1							2											
complete																																
head & prox.																								1								
prox. only					1				1		1					2	1															
medial																1																
distal												1																				
TIBIA									2			1	2														2					
proximal																																
distal					1				1		1	1	1														1					
												1					1		1													255

*Includes Pit Contents

TABLE 18 (Continued)

(Canis lupus) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4S0	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6S0	6S6W	6S2E	2S6E	2S0	8S0
METATARSAL																																
complete							2				22		2				1															
proximal												9																				
distal												9	1														3					
CARPALS/TARSALS						14	1	1			74	9	1												2	21						
PHALANGES						1	3	3		4	11	38						1		1						5						

TABLE 19

(Vulpes fulva) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
MANDIBLE	
right	1
TEETH	
canines	1 2
VERTEBRAE	
atlas	1
axis	1 1
sacrum	1 1
SCAPULA	
complete	1
glenoid	2
HUMERUS	
complete	1

*Includes Pit Contents

TABLE 19 (Continued)

(Vulpes fulva) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	4S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
RADIUS																																
complete							2																									
ULNA																																
proximal							1																									
complete							3																									
PELVIS																																
illium						1																					1					
FEMUR																																
head & prox.												1																				
TIBIA																											1					
complete							1																									

TABLE 20

(Vulpes macrotis) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
TEETH	
premolar	1

*Includes Pit Contents

TABLE 20 (Continued)

(Vulpes macrotis) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	4S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
VERTEBRAE																																
atlas																								1								
axis											1													1								
cervical											1													1								
thoracic																								3								
lumbar						1																		3								
sacrum																								9								
caudal																								1								
RIB																								2								
head																																
HUMERUS																								4								
distal							1																									
RADIUS																								1								
distal																								1								
ULNA																								2								
distal																								1								
PELVIS																																
acetabulum																								2								
FEMUR																								1								
head																																
prox. only																																
distal																																
TIBIA																								2								
proximal																								1								
																								1								

*Includes Pit Contents

TABLE 21

(F. Mustelidae) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	4S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
PELVIS																																
ilium											1																					

TABLE 22

(Taxidea taxus) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE																															
TEETH																																
premolars																																
molars											1																					
																									1							

TABLE 23

(Mephistis mephistis) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE																															
MANDIBLE																																
left																																

*Includes Pit Contents

1

TABLE 23 (Continued)

(Mephistis mephistis) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	4S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
TEETH																																
molars										1																						

TABLE 24

(Felis concolor) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
SCAPULA	
glenoid	1

TABLE 25

(Lynx sp.) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
VERTEBRAE	
thoracic	2

*Includes Pit Contents

TABLE 26

(Equus caballus) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	4S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
TEETH																																
premolar										1																						

TABLE 27

(F. Cervidae) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
SKULL	
maxilla	
MANDIBLE	1
left	
TEETH	1
incisors	
molars	
vertebrae	1 1 1
VERTEBRAE	
cervical	
thoracic	1
lumbar	
undetermined	2 3

*Includes Pit Contents

TABLE 27 (Continued)

(F. Cervidae) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	4S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
PELVIS																															
ischium																															
SCAPULA																		1													
glenoid																															
RIB																		1													
head																															
shaft																	1														
scapula																														6	
RADIUS																															
proximal																															
METACARPAL																		1													
distal																															
pelvis											1																				
FEMUR																															
head																															
TIBIA															1																
distal																															
METATARSAL											1																				
distal																			1												
CARPALS/TARSALS																															
PHALANGES											1							3	4												1
																				2							1				

*Includes Pit Contents

TABLE 28

(Cervus canadensis) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
SKULL																															
occipital							1																								
MANDIBLE																															
fragments				1													1														
left											1																				
TEETH																															
premolars																															
molars				1																						1					
VERTEBRAE																															
cervical				1																											
thoracic				3						1																	1				
undetermined														1	1																
SCAPULAE																															
glenoid		3																													
complete		2																													
ULNA																															
proximal									1	2																					
PELVIS																															
ilium																															
ischium																													1		
CARPALS/TARSALS																			1												
PHALANGES																			1												

*Includes Pit Contents

TABLE 29

(Odocoileus sp.) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	6S6E	2SO	8SO
TEETH																																
molars																									1		3					
VERTEBRAE																																
axis																										1						
cervical																																1
thoracic												1														1						
undetermined														1																		
SCAPULA																																
glenoid										1																						
HUMERUS																																
proximal														1			1															
RADIUS																																
proximal																																
ULNA																																
proximal																				1												
METACARPAL																																
complete																										1						
METATARSAL																																
distal																										1						
PHALANGES																	1															

*Includes Pit Contents

TABLE 30

(Antilocapra Americana) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
VERTEBRAE																																
thoracic									5																							

TABLE 31

(Bison bison bison) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS AS ABOVE
SKULL	
occipital	1
horn core (R)	1
maxilla	1
MANDIBLE	
fragment	2
right	1
left	1
TEETH	
incisors	4
premolars	1 1
molars	1 1 3

*Includes Pit Contents

TABLE 31 (Continued)

(Bison bison bison) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
VERTEBRAE																																
atlas												1																				
cervical			3									1			1											1						
thoracic			1								1			1						3							1		1			
lumbar									1												1	1	1									
sacrum												1																				
undetermined																				3											1	
RIB																																
head					1																											
shaft																							1									
SCAPULA																				3												
glenoid																		1			1											
blade																																
HUMERUS																											1					
proximal		1		1					1			1																				
distal			1								1										1		2				1					
RADIUS																																
proximal																		1	1					1								
distal											1								1					1								
ULNA																																
proximal			11						1					1	1			2		1		1			1							
distal			1																													
METACARPAL																																
complete																						1										
proximal									1									1		1		1										
distal																			1	1												

*Includes Pit Contents

TABLE 31 (Continued)

(Bison bison bison) - DISTRIBUTION - CABIN B

ELEMENTS	UNITS	S.O.P.	N.O.P.	E.O.P.	F.E.O.P.	2S2W	02W*	00	2NO	02E	2S2E	04E	4S2E	2S4E	4SO	2S4W	4S4W	4S6W	6S4W*	6S2W*	8S2W	8S4W	8S6W	2N2W	2N2E	4S2W	6SO	6S6W	6S2E	2S6E	2SO	8SO
PELVIS																																
ilium																	1															
FEMUR																																
head		1		1								2									3											
head & prox.		1										1																				
distal				1																										1		
TIBIA																																
proximal				1								2					2									1							
distal		1	2								4			1			1							2		1						
METATARSAL																																
complete																																
proximal				1										1			1										1					
distal		1									1						1			1												
CARPALS/TARSALS		3							1		1		2				2		1			2								3		
PATELLA														1			1														1	
PHALANGES				1					1	3	3	1		1	1		3		5													

*Includes Pit Contents

TABLE 32

ESTIMATE OF MINIMAL NUMBER OF INDIVIDUALS (e.g. FLANNERY, 1968) AND PROBABLE AVAILABLE BIOMASS (e.g. WHITE, 1953) PER SPECIES--CABIN B.

Species	Minimum Individuals	Average Live Weight (lbs.)	Percentage Factor	Available Biomass (lbs.)
Bison bison bison				
mature	6	1500 (Author unknown, 1968)	x50	4500.0
immature	5	800	x50	2000.0
Cervus canadensis				
mature	3	700 (Author unknown, 1968)	x50	1050.0
immature	1	500	x50	250.0
Odocoileus sp.				
mature	1	175 (Author unknown, 1968)	x50	87.5
immature	1	100	x50	50.0
F. Cervidae				
mature	1	175	x50	87.5
immature	1	100	x50	50.0
foetal	1	50	x50	25.0
Antilocapra americana				
mature	1	110 (Author unknown, 1968)	x50	55.0
Canis lupus				
mature	10	100 (Rand,1945)	x50	500.0
immature	1	65	x50	32.5
Canis sp. (Dog or Coyote)				
mature	5	25 (White, 1953)	x50	62.5
immature	1	17	x50	8.5
Vulpes fulva				
mature	2	15 (Rand,1945)	x50	15.0
immature	1	10	x50	5.0
Vulpes macrotis				
mature	2	8	x50	8.0
Felis concolor				
mature	1	120 (White, 1953)	x50	60.0
Lynx sp.				
mature	1	22 (Rand,1945)	x50	11.0
Taxidea taxus				
mature	1	18 (White, 1953)	x70	12.5
Mephistis mephistis				
mature	1	5 (Schmitke, 1966)	x70	3.5

TABLE 32 (Continued)

Species	Minimum Individuals	Average Live Weight (lbs.)	Percentage Factor	Available Biomass (lbs.)
Erethizon Dorsatum				
mature	13	20 (Seton,1926)	x70	182.0
immature	1	12	x70	8.5
Castor canadensis subsp.				
mature	5	55 (Seton,1926)	x70	192.5
immature	2	22	x70	31.0
O. Rodentia (including *Thomonys talpoides*)				
mature	18	2	x70	25.0
immature	1	1	x70	0.5
Lepus sp.				
mature	4	6	x50	12.0
immature	1	4	x50	2.0
Sylvilagus sp.				
mature	1	3.5 (White, 1953)	x50	2.0
Grouse	2	2 (White, 1953)	x50	3.0
Pike	2	5	x70	7.0
		TOTAL PROBABLE AVAILABLE BIOMASS		9,379.0

APPENDIX IV

FAUNAL REMAINS - CABIN E

At least sixteen different species of mammals and birds are distributed in twenty-one excavation units. Both Olsen (1960) and Olsen (1964), plus comparative material, were utilized for mammal identification; birds were identified by the author of the thesis. The identifiable osseus elements of each species are numerically tabulated in Tables 33-52, pages 272-278 of this appendix. The element categories are the same as those utilized in Appendix III. Minimum numbers of mature and immature individuals have been determined for each species (e.g. Flannery, 1968) as discussed in Appendix III. The factors of excellent bone preservation, adequate sample size, very high recovery rate, collection technique control, and completeness of the faunal assemblage make this the best method of estimation as discussed in Appendix III. For details on the minimum number of individuals per species, and a calculation of the probable utilized biomass (e.g. White, 1953) for Cabin E, refer to Table 53, page 280 of this appendix.

Generally, a heavy butchering technique (Wissler, 1910) was similarly applied to all large ungulates, e.g. buffalo, elk, deer, and possibly the sheep. The various chopping and dismemberment techniques of the different ungulate bone elements were apparently identical to those discussed in Appendix III. However, the number of thoracic vertebrae dorsal spines are proportionate to the number of centra. Also, there was

a much higher frequency of immature animals (as compared to mature) in Cabin E than in Cabin B. Most of the vertebrae, ribs, skull elements, and many of the long bones are immature. In relation to estimated numbers of individuals there are few identifiable elements of any category. Other than carpals, tarsals, and phalanges, almost all the bones were butchered fragments. High frequencies of unidentifiable long bone fragments were collected within 4N2E, 2N4E, and 4N4E. There are two possibilities for domesticated animals in Cabin E. One ungulate metapodial and one ischium fragment are heavily gnawed by a medium-sized carnivore. This may indicate the presence of a domesticated dog, as indicated by Bonnichsen (1967). There are two mature humeri and one partial foetal scapulae which are probably domestic sheep--a lamb and ewe (refer to fig. 27:a-c). The humeri are not typically domestic sheep in comparison to the comparative material I viewed. However, the large degree of variation in domestic sheep breeds may account for the differences.

The butchering techniques utilized on the large canid remains were apparently identical to those discussed in Appendix III. This degree of similarity held true for the small canid, large rodent, and small mammal and bird remains, although, most of the small mammal and grouse-sized bird remains are unbroken. The Canada Goose humeri are all cut or broken near the distal end. Identification of these waterfowl humeri as Canada Goose is based on their size and ruggedness, which precludes other waterfowl species on the prairies, and on comparative material.

TABLE 33

BIRDS (*Branta canadensis subsp.*) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS	E.O.P.	N.O.P.	W.O.P.	02W	2S2W	00	2NO	2SO	04E	2N4E	4N2E	4N4E	4S4W*	2N2W	4NO	4SO	2S2E	4S2E	2S4E	04W	2N2E
HUMERUS																						
proximal					1																	
distal					2		1	1						1								

TABLE 34

BIRDS (*F. Tetraonidae*) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE
SCAPULA	
complete	2
PELVIS	
complete	1
ischium	1

TABLE 35

(*Lepus sp.*) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE
MANDIBLE	
right	1
VERTEBRAE	
lumbar	1
RADIUS	
medial	1
complete	1 1
ULNA	
proximal	1
complete	1
PELVIS	
acetabulum	1 1

*Test Pit

TABLE 36

(O. Rodentia) (SMALL) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS	E.O.P.	N.O.P.	W.O.P.	02W	2S2W	00	2NO	2SO	04E	2N4E	4N2E	4N4E	4S4W	2N2W	4NO	4SO	2S2E	4S2E	2S4E	04W	2N2E
HUMERUS																						
distal					2																	

TABLE 37

(Cynomys sp.) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE
MANDIBLE	
left	1

TABLE 38

(F. Cricetidae) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE	
TIBIA		
complete	2	1

TABLE 39

(Castor canadensis subsp.) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE	
TEETH		
incisors		1
ULNA		
complete	1	

*Test Pit

TABLE 40

(Erethizon dorsatum) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS	E.O.P.	N.O.P.	W.O.P.	02W	2S2W	00	2NO	2SO	04E	2N4E	4N2E	4N4E	4S4W*	2N2W	4NO	4SO	2S2E	4S2E	2S4E	04W	2N2E
TEETH																						
incisors					1																	
molars					3																	
VERTEBRAE																						
thoracic									1													
ULNA																						
distal							1															
PELVIS																						
complete							1															

TABLE 41

(O. Carnivora) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE																					
TEETH																						
canine																					1	
VERTEBRAE																						
caudal								1							1							
FEMUR																						
complete									1													
PHALANGES						2		3														

TABLE 42

(Canis sp.) (DOG OR COYOTE) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE																					
SKULL																						
maxilla														1								
VERTEBRAE																						
lumbar						2			1												1	
RIB																						
head															2							
shaft															2							
RADIUS																						
distal									1													

*Test Pit

TABLE 42 (Continued)

(Canis sp.) (DOG OR COYOTE) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS	E.O.P.	N.O.P.	W.O.P.	02W	2S2W	00	2NO	2SO	04E	2N4E	4N2E	4N4E	4S4W*	2N2W	4NO	4SO	2S2E	4S2E	2S4E	04W	2N2E
PELVIS																						
acetabulum																			1			
PHALANGES										1												

TABLE 43

(Canis lupus) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE
SKULL	
occipital	1
maxilla	4
undetermined	1
TEETH	
premolars	1
VERTEBRAE	
cervical	1 3
caudal	1 1
HUMERUS	
proximal	1 1 2
distal	1
ULNA	
proximal	1 1
PELVIS	
complete	1
FEMUR	
distal	1 1
TIBIA	
complete	1
proximal	1
CARPALS/TARSALS	1

*Test Pit

TABLE 44

(Vulpes fulva) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS	E.O.P.	N.O.P.	W.O.P.	02W	2S2W	00	2N0	2S0	04E	2N4E	4N2E	4N4E	4S4W*	2N2W	4N0	4S0	2S2E	4S2E	2S4E	04W	2N2E
HUMERUS																						
distal								1														
CARPALS/TARSALS								2														

TABLE 45

(Vulpes macrotis) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE
VERTEBRAE	
axis	2
cervical	2

TABLE 46

(Taxidea taxus) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE
SKULL	
occipital	1

TABLE 47

(Mephistis mephistis) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE
MANDIBLE	
right	1
VERTEBRAE	
atlas	1
axis	1
cervical	1
HUMERUS	
complete	1

*Test Pit

TABLE 48

(F. Cervidae) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS	E.O.P.	N.O.P.	W.O.P.	02W	2S2W	00	2N0	2S0	04E	2N4E	4N2E	4N4E	4S4W*	2N2W	4N0	4S0	2S2E	4S2E	2S4E	04W	2N2E
TEETH																					1	
incisors																						
VERTEBRAE															1							
lumbar											1											
undetermined																						
RIB																						
head		4								2	1	4										
shaft										2												
scapula																						
SCAPULA																						
glenoid										1												
METACARPAL																						
distal										1												
PATELLA											1											
CARPALS/TARSALS																		1				
PHALANGES								1							1							

TABLE 49

(Cervus canadensis) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE																					
MANDIBLE																1						
right																						
VERTEBRAE													1									
thoracic																						
RADIUS								1														
distal																						
ULNA													1									
proximal																						
FEMUR										1												
head																						
TIBIA																1						
proximal																1						
CARPALS/TARSALS																						

*Test Pit

TABLE 50

(Odocoileus sp.) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS	E.O.P.	N.O.P.	W.O.P.	02W	2S2W	00	2NO	2SO	04E	2N4E	4N2E	4N4E	4S4W*	2N2W	4NO	4SO	2S2E	4S2E	04W	2N2E
MANDIBLE																					
right										1											

TABLE 51

(Ovis aries) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE																				
SCAPULA																					
glenoid															1						
HUMERUS																					
complete										1											1

TABLE 52

(Bison, bison, bison) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS AS ABOVE																				
SKULL																					
horn core (R)	1																				
horn core (L)	1																				
frontal	1																				
MANDIBLE																					
right	1																				
fragments	1						1														
TEETH																					
molars		1																1			
VERTEBRAE																					
axis	1																				
cervical	3																				
thoracic	2	2			1																
lumbar	1	1							3												
undetermined						1	3		2	1											
RIB																					
head													1		1						

*Test Pit

TABLE 52 (Continued)

(Bison, bison, bison) - DISTRIBUTION - CABIN E

ELEMENTS	UNITS	E.O.P.	N.O.P.	W.O.P.	02W	2S2W	00	2NO	2SO	04E	2N4E	4N2E	4N4E	4S4W*	2N2W	4NO	4SO	2S2E	4S2E	2S4E	04W	2N2E
MANUBRIUM		2			1																	
SCAPULA																						
complete		1																				
glenoid											1	1										
HUMERUS																						
complete				1																		
proximal																						
distal		2								1												
RADIUS																						
distal				1																		1
ULNA																						
proximal				1														1				
METACARPAL																						
complete															1							
proximal			1																			
distal					1																	
PELVIS																						
ischium												1										
FEMUR																						
head		1	1																			
distal		1	1																			
TIBIA																						
proximal		1		1														1				
distal		1	1				1								1							
CARPALS/TARSALS			4					1													1	
PHALANGES								2												1		

*Test Pit

TABLE 53

ESTIMATE OF MINIMAL NUMBER OF INDIVIDUALS (e.g. FLANNERY, 1968) AND PROBABLE AVAILABLE BIOMASS (e.g. WHITE, 1953) PER SPECIES--CABIN E.

Species	Minimum Individuals	Average Live Weight (lbs.)	Percentage Factor	Available Biomass (lbs.)
Bison bison bison				
mature	2	1500 (Author unknown, 1968)	x50	1500.0
immature	2	800	x50	800.0
Cervus canadensis				
mature	1	700 (Author unknown, 1968)	x50	350.0
immature	1	500	x50	250.0
Odocoileus sp.				
mature	1	175 (Author unknown, 1968)	x50	87.5
F. Cervidae				
mature	1	175	x50	87.5
immature	1	100	x50	50.0
Ovis aries				
mature	1	90	x50	45.0
foetal	1	30	x50	15.0
Canis lupus				
mature	4	100 (Rand,1945)	x50	200.0
immature	2	65	x50	65.0
Canis sp. (Dog or Coyote)				
mature	1	25 (White, 1953)	x50	12.5
Vulpes fulva				
mature	1	15 (Rand,1945)	x50	7.5
Vulpes macrotis				
mature	1	8	x50	4.0
immature	2	5	x50	5.0
Taxidea taxus				
mature	1	18 (White, 1953)	x70	12.5
Mephistis mephistis				
mature	1	5 (Schmitke, 1966	x70	3.5
Erethizon dorsatum				
mature	1	20 (Seton, 1926)	x70	14.0
Castor canadensis subsp.				
mature	1	55 (Seton, 1926)	x70	38.5

TABLE 53 (Continued)

Species	Minimum Individuals	Average Live Weight (lbs.)	Percentage Factor	Available Biomass (lbs.)
O. Rodentia (including *F. Cricetidae* and *Cynomys sp.*) mature	5	2	x70	7.0
Lepus sp. mature	1	6 (White, 1953	x50	3.0
Canada Goose	3	8 (White, 1953)	x70	17.0
Grouse	2	2 (White, 1953)	x70	3.0
TOTAL PROBABLE AVAILABLE BIOMASS				3,577.5

APPENDIX V

CONSTRUCTION DETAILS - CABINS B & E

A. Eleven wood samples were collected from different areas of the two cabins. The samples were fragmented, rotted, and many were partially burnt. Lakusta and Williams (1970) analysed these samples on the basis of color, grain structure, and the exhibited cell types. A comparative chemical analysis was impossible due to the burnt condition of many of the samples.

Sample No. 18 collected from floorboards near the hearth in O2E, within Cabin B. "Definitely coniferous (Lacusta and Williams, 1970)."

Sample No. 19. Collected from floorboards near the hearth in 2SO, within Cabin B. "Definitely coniferous (Ibid.)."

Sample No. 20. Collected from floorboards in 4S2W, within Cabin B. "Definitely coniferous (Ibid.)."

Sample No. 21. Collected from a wall beam in 2NO, Cabin B. "Probably poplar (Ibid.)."

Sample No. 22. Collected from either a wall beam or a lining frame behind the hearth in 2N2W, Cabin B. "Possibly poplar (Ibid.)."

Sample No. 23. Collected from a board in the bottom of the East Outside Pit, Cabin E. "Definitely coniferous (Ibid.)."

Sample No. 31. Collected from the floorboards in OO, within Cabin E. "Definitely coniferous (Ibid.)."

Sample No. 32. Collected from either a wall beam or a lining frame behind the hearth in 2N2W, Cabin E. "Definitely poplar (Ibid.)."

Sample No. 33. Collected from a wall beam in O4E, Cabin E. "Definitely coniferous (Ibid.)."

Sample No. 34. Collected from a wall beam in 4SO, Cabin E. "Possibly poplar (Ibid.)."

On the basis of the eleven analyses, it is apparent that the floorboards and hearth frames of Cabins B and E were constructed of either spruce or pine. Both poplar and spruce or pine were interchangeably utilized to construct the walls of the two cabins. The East Outside Pit on the stream bank near Cabin E may be a collapsed cache pit or cellar (refer to fig. 6) excavated into the sloping bank (e.g. Mandelbaum, 1940). A spruce or pine floor, was apparently constructed within the feature. Also, the pit is partially bell-shaped in its lower half. All the other interior and exterior pits associated with Cabins B and E are conical or basin-shaped.

B. Four clay samples and seven possible ash samples were collected from different areas of the two cabins. Rutter (1970), based on the results of a preliminary analysis, indicates that samples 3, 11, 12, 13, 14 and 15 do not appear to be ash. There is little or no apparent potassium, but there is a high frequency of $CaCO_3$ (calcite). Bayilis (1970), utilizing X-ray diffractometer analysis, obtained essentially the

same results as Rutter for sample No. 26. This last sample has a 60% frequency of calcite. Therefore, all the above samples appear to be a whitish clay, rather than ash. The clay samples No. 1, 4, 24, and 25 were also analysed by Bayilis (1970), utilizing an X-ray diffractometer. The composition of the four clay samples varies considerably.

Sample No. 3. Collected from the firepan within the hearth in OO, Cabin B.

Sample No. 11. Collected from a deposit in the northwest quarter of 6S6W, Cabin B.

Sample No. 12. Collected from a deposit within the East Outside Pit, Cabin B.

Sample No. 13. Collected from a deposit in the west half of 8S2W, Cabin B.

Sample No. 15. Collected from on top of the wall beam in 6S2E, Cabin B.

Sample No. 26. Collected from the firepan within the hearth in 2N2W, Cabin E.

Sample No. 1. Buff clay collected from within the hearth in 2NO, Cabin B. 14% calcite, Nil feldspar, 23.5% quartz.

Sample No. 4. Reddish-brown clay collected from the edge of the firepan within the hearth in OO, Cabin B. Nil calcite, 28% feldspar, 19% quartz.

Sample No. 24. Light buff chinking clay collected adjacent to the wall beam in 2S2W, Cabin E. Nil calcite, 19.5% feldspar, 19% quartz.

Sample No. 25. Buff clay collected from within the hearth in O2W, Cabin E. 11% calcite, 9% feldspar, 28% quartz.

On the basis of the eleven analyses, it is apparent that some doubt can be cast on an analysis of the three hearths (two in Cabin B, one in Cabin E) as actually being hearths. What I thought to be ash is a whitish clay. However, no other features were uncovered in the two excavation areas which could be construed even remotely as being cooking hearths. The positioning of these three clay features in relation to cabin walls, the similarity of position in all rooms of both cabins, and the particular structural detail within the three features (including spruce or pine hearth frames)--leads me to conclude that these are clay hearths and chimneys. Also, a thin lens of charcoal-stained clay was observed below the whitish clay deposits within the two Cabin B hearths. Apparently the clay chimneys were melted down into mounds by rain after the site was abandoned. Generally, dissimilar clays from apparently different sources have been utilized in constructing the hearths.

HIVERNANT ARCHAEOLOGY IN THE CYPRESS HILLS: ERRATA

Page xii, line 6, should read: 24. Clothing and Ornament Artifacts

Page 20, line 1, should read: ... other forage plants ....

Page 30, line 14, should read: ... (e.g. B-92, B-90, B-95, china ....

Page 31, line 17, should read: ... .44 calibre cartridge case (B-36).
line 19, should read: ... .56 calibre musket ball (B-18).

Page 35, line 21, should read: ... the upper component (2).

Page 36, line 1, should read: ... a single component 0.9 to 1.2 feet ....

Page 67, line 17, should read: ... in August, 1865, ...

Page 77, lines 22-23, should read: ... only one of five Halfbreed hamlets ....

Page 101, line 10, should read: ... the spines on a fish bone.

Page 115, line 35, should read: camp on the Big Bend.

Page 151, line 16, should read: Head of the Mountain ....

Page 159, line 21, should read: ... Gazeteer and Directory.

Page 161, line 9, should read: ... and the Red River Trade.

Page 164, line 11, should read: Associate Clinic ....
line 27, should read: ... as directed by Section 7 ....

Page 187, line 1, should read: ... .44 calibre Henry Flat-Long cartridge, first loaded in A.D. 1866
line 6, should read: Short cartridge. First loaded in A.D. 1873 (Williamson, 1952).

Page 188, line 16, should read: ... the late A.D. 1860's on.

Page 206, line 17, should read: outcrops at the above stated ....

Page 214, line 8, should read: ... marginally flaked into ....

Page 221, line 17, should read: ... .44 Henry cartridge (model undetermined).

Page 243, line 10, should read: small for wolves) ....

Page 285, line 11, should read: ... conclude that these are ....

PLANEVIEW MAP
D_jOo-120
Cabin E

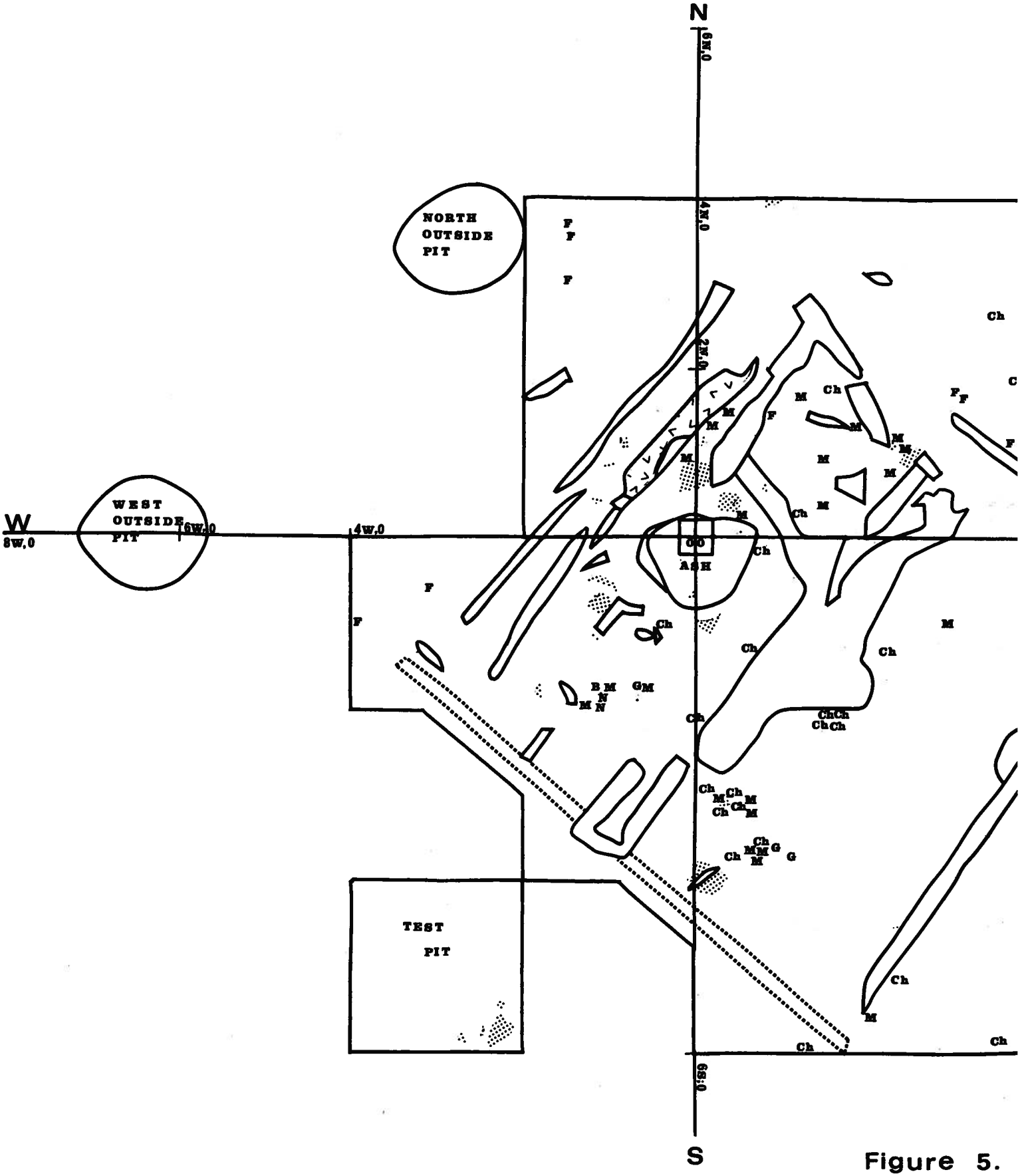
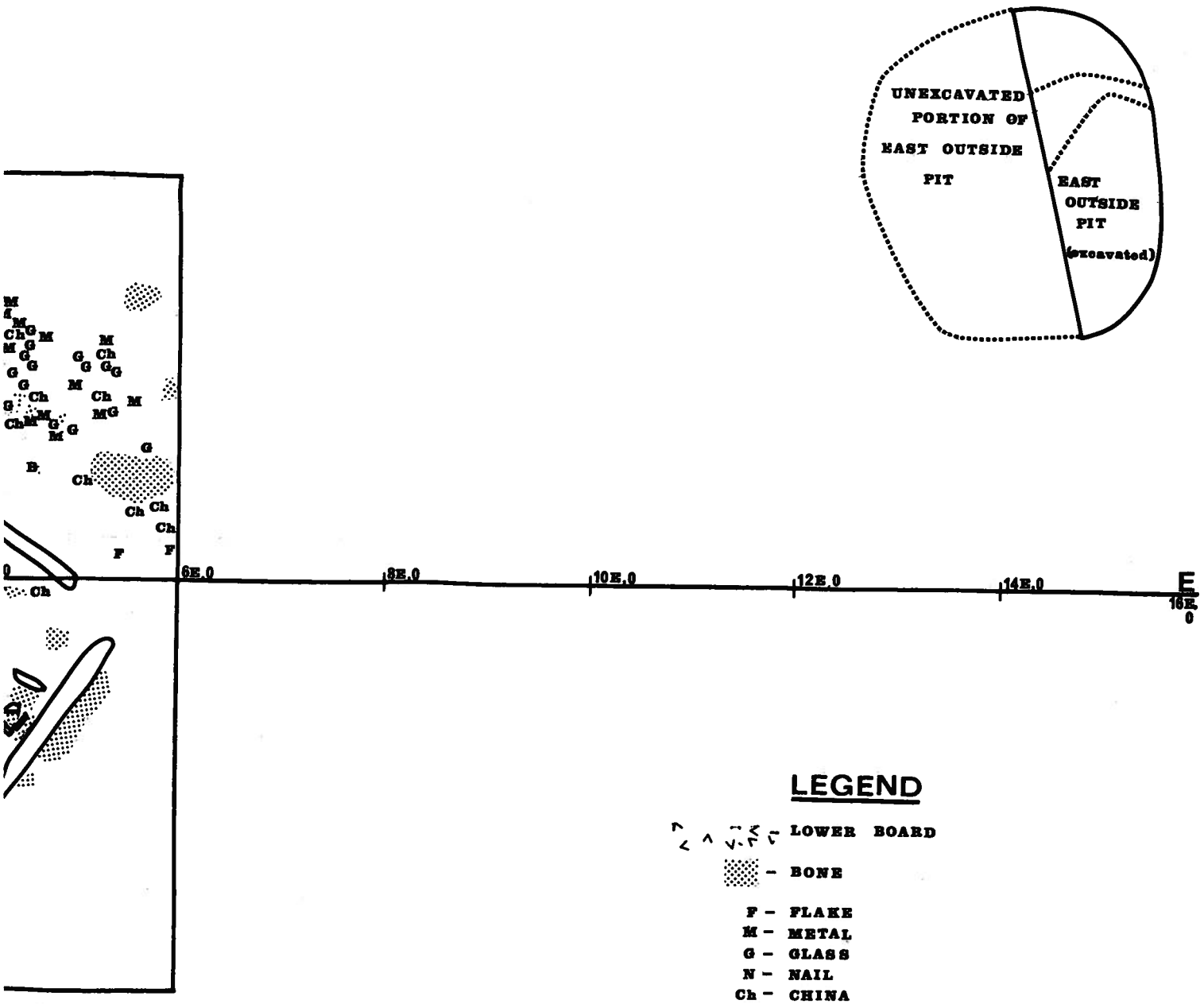


Figure 5.


UNEXCAVATED
PORTION OF
EAST OUTSIDE
PIT
EAST
OUTSIDE
PIT
(excavated)
6E.0
8E.0
10E.0
12E.0
14E.0
16E.0
E
LEGEND
LOWER BOARD
BONE
F - FLAKE
M - METAL
G - GLASS
N - NAIL
Ch - CHINA
B - RED-BROWN SANDSTONE
Scale
Yards
0
1
2
3

PLANEVIEW MAP

Dj Oo-120
Cabin B

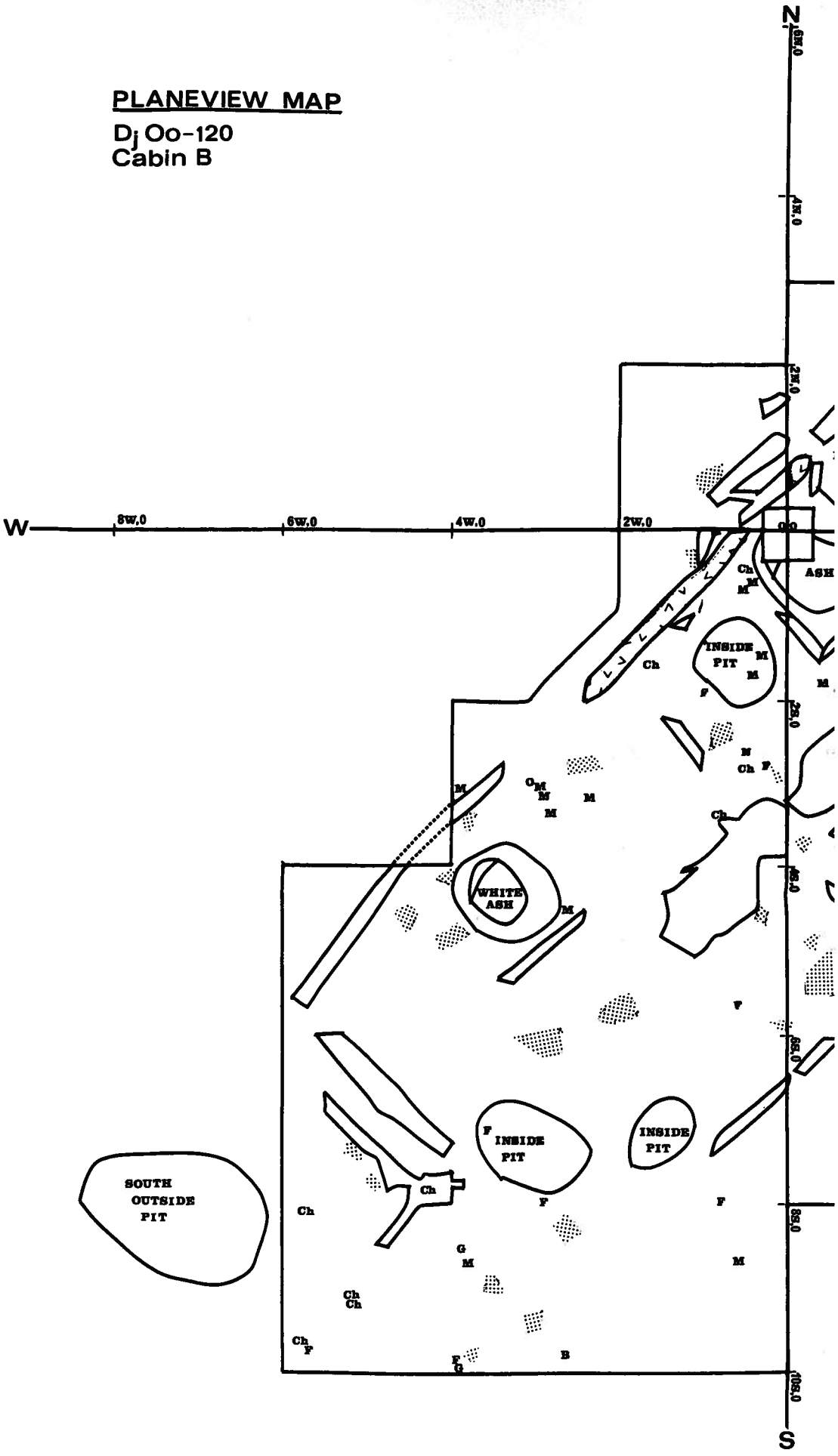
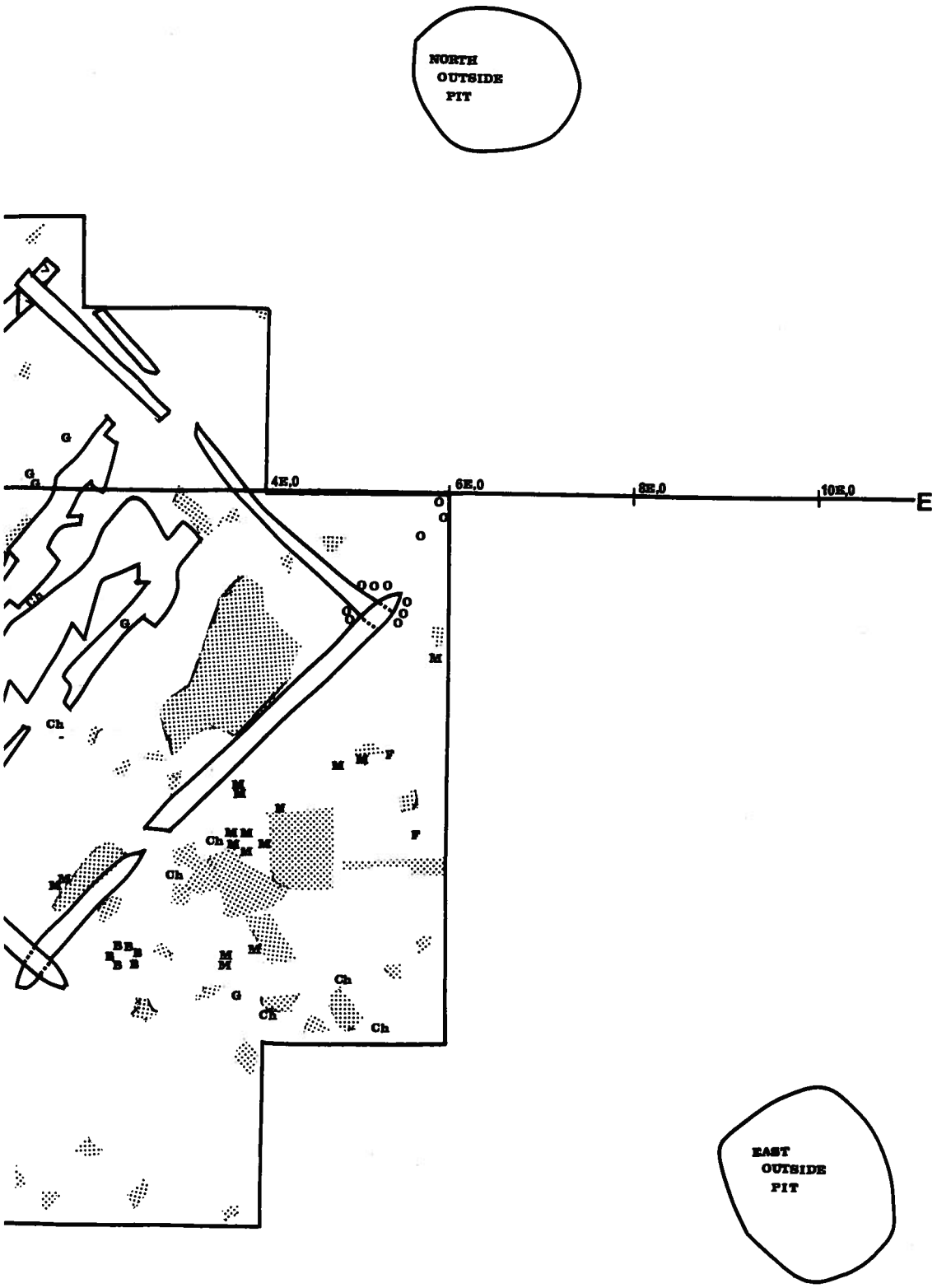


Figure 4.

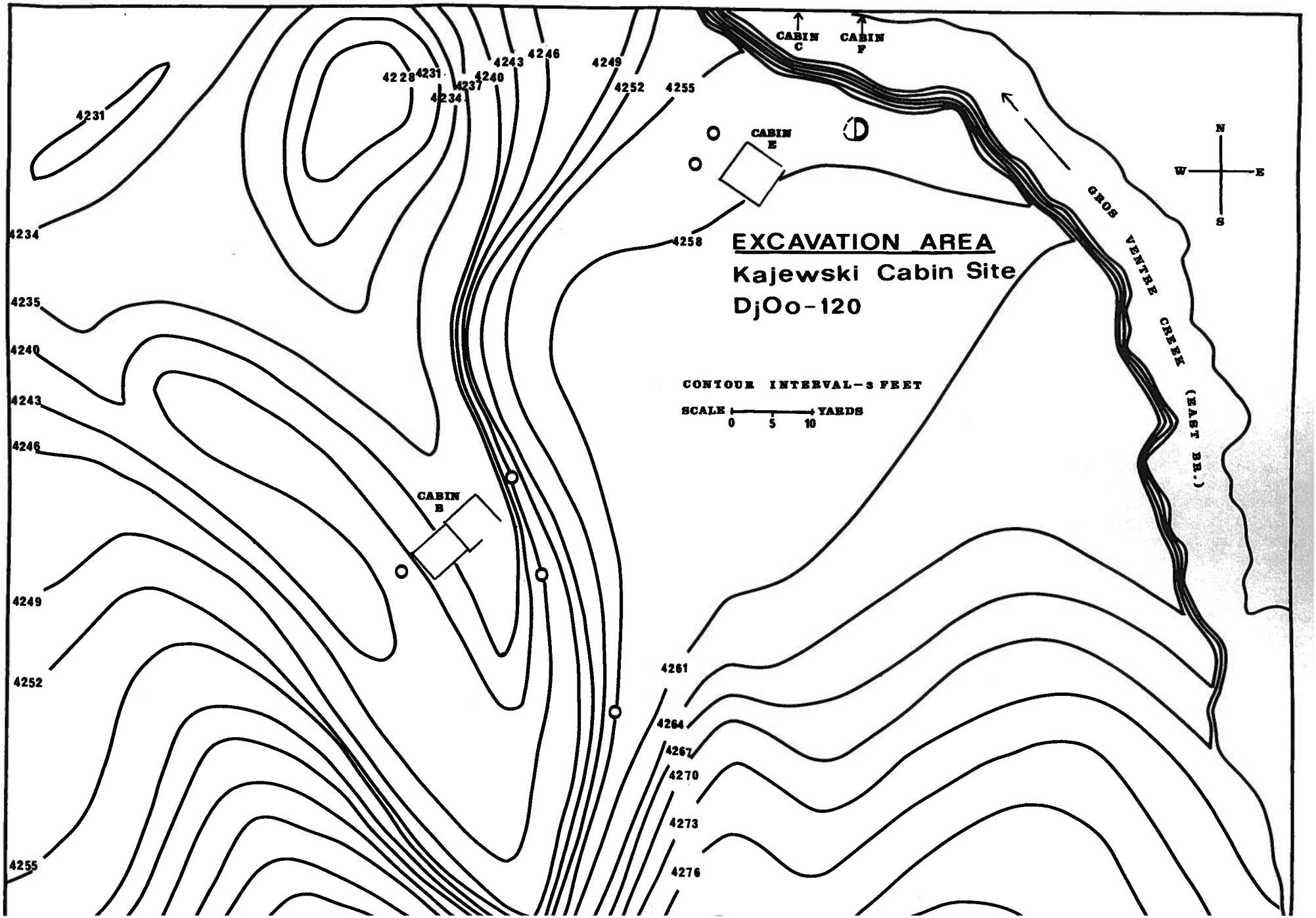


LEGEND

- LOWER BOARD
- BONE
- O – STONE
- F – FLAKE
- M – METAL
- G – GLASS
- N – NAIL
- Ch – CHINA
- B – RED-BROWN SANDSTONE

Scale 0 1 2 3 Yards

FAR EAST OUTSIDE PIT


CABIN C
CABIN F
CABIN E
CABIN B
4228
4231
4234
4237
4240
4243
4246
4249
4252
4255
4231
4234
4235
4240
4243
4246
4249
4252
4255
4258
4261
4264
4267
4270
4273
4276
EXCAVATION AREA
Kajewski Cabin Site
DjOo-120
CONTOUR INTERVAL-5 FEET
SCALE
0
5
10
YARDS
GROS VENTRE CREEK (EAST BR.)
N
W
E
S

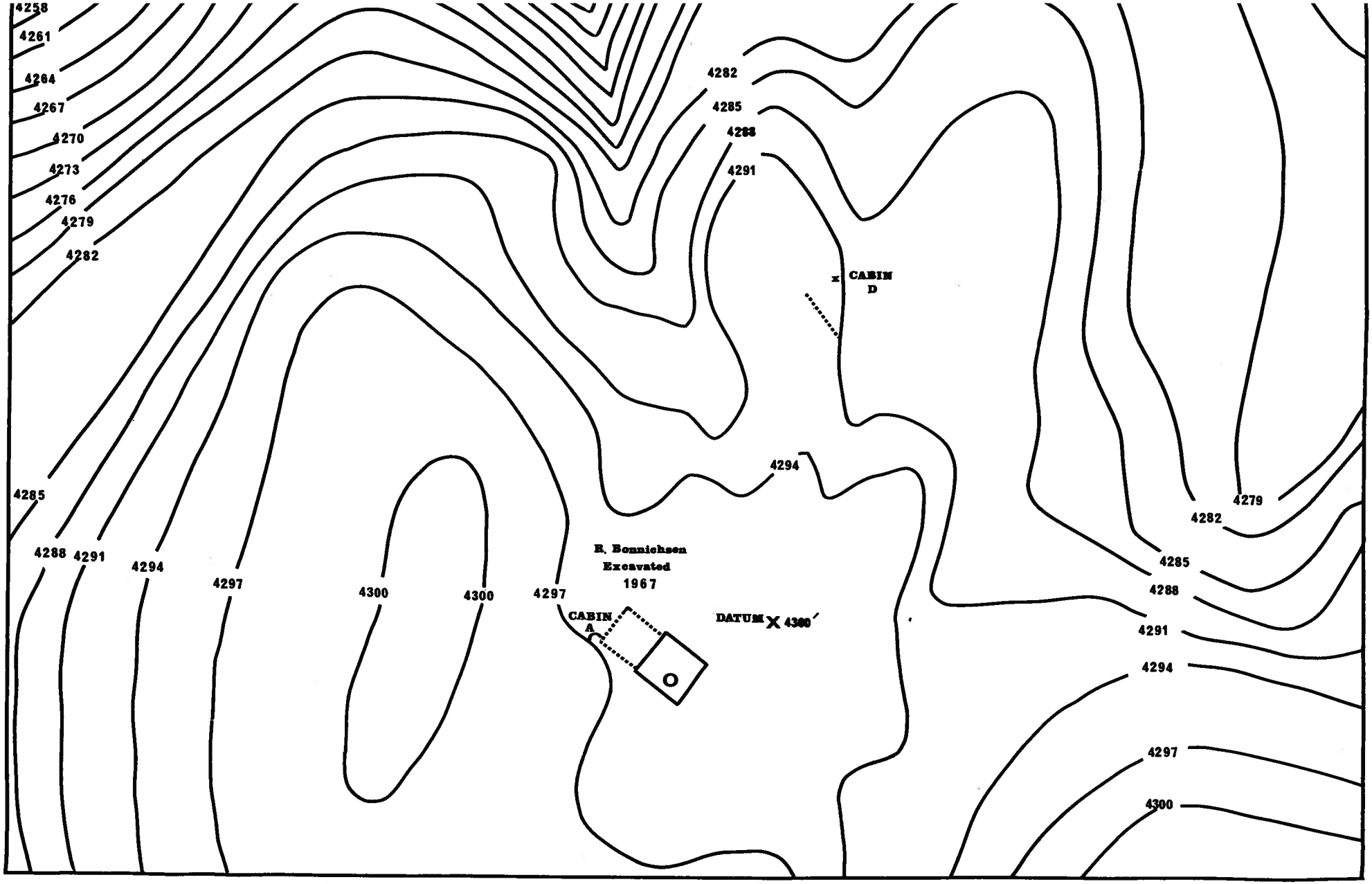

4258
4261
4264
4267
4270
4273
4276
4279
4282
4285
4288
4291
4294
4297
4300
4300
4297
4294
4291
4288
4285
4282
4279
4285
4288
4291
4294
4297
4300
4282
4285
4288
4291
4294
4297
4300
CABIN D
R. Bonnichsen Excavated 1967
CABIN A
DATUM X 4300

Figure 3.