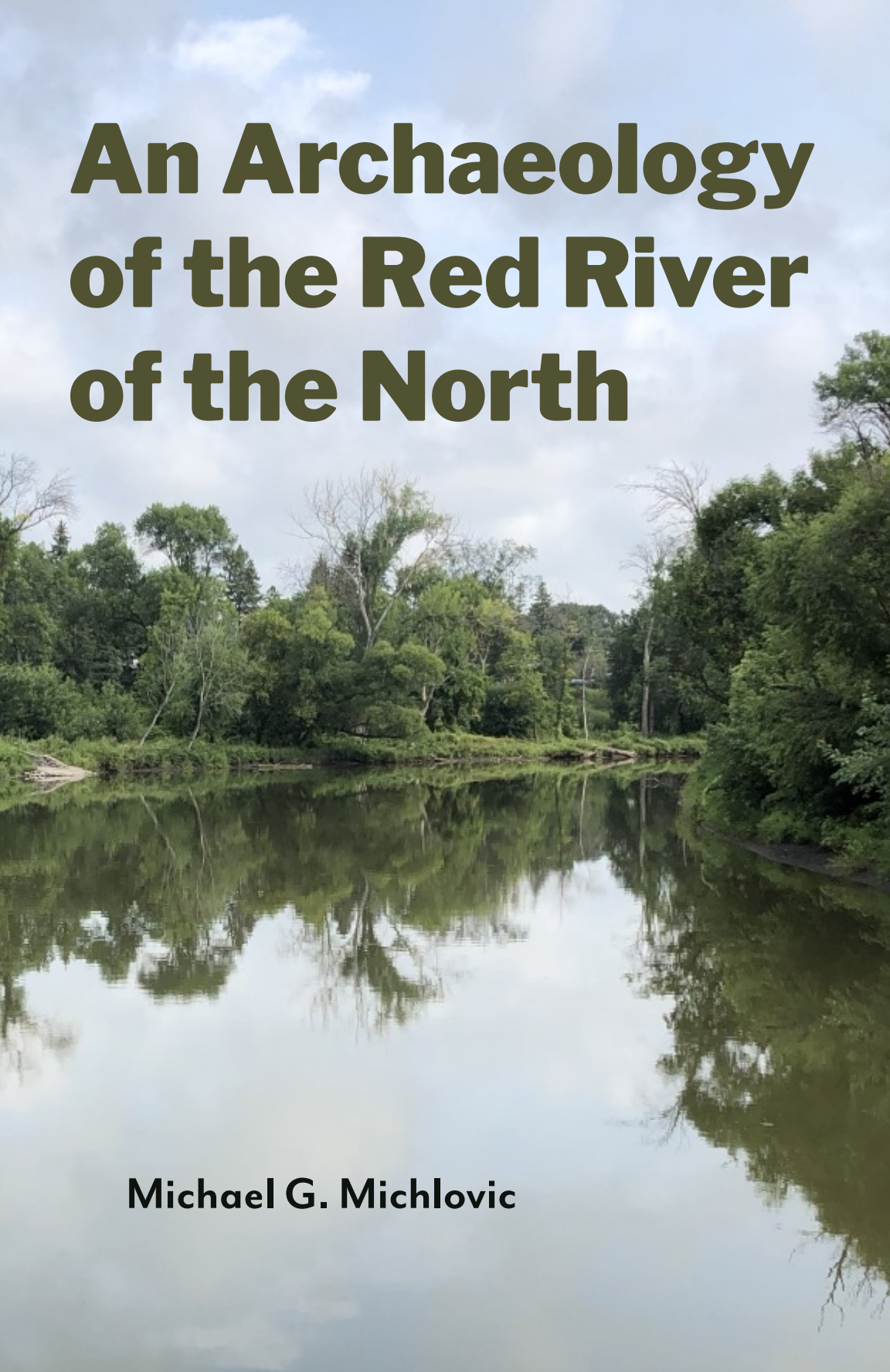
An Archaeology of the Red River of the North



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Preface

When I first came to the Red River Valley in 1975, I understood it to hold little promise for archaeology. My own experience on arriving at Moorhead State University was one of apprehension. I was hired to instruct students in archaeology using summer field schools. The object was to show them archaeological techniques for excavating sites and properly handling artifacts and other finds from the field. A brief meeting with a senior archaeologist in Minnesota led me to understand that there were few archaeological sites in the Red River Valley, located along the border of Minnesota and North Dakota and into southern Manitoba, but no matter, there were plenty of them in lake and forest country to the east. He assured me I could be set up with places to work in Minnesota's extensive lakes country, and reminded me of the great need for archaeological work to save sites being lost every year.

Archaeology was not exactly new to the Red River area when I arrived. My predecessor at Moorhead State had conducted a survey in the Pembina Valley, a northeastern North Dakota tributary to the Red. Not very much was made of this 1974 work, and the stories told by the students who worked on the project were of rough conditions in thick, wet, and heavy clay soils. When I was told that there were few sites in the Valley it was something of a relief, since I would be exonerated from conducting any field projects in such a difficult setting.

As it turned out the archaeological poverty of the Red River Valley was exaggerated. Now, literally hundreds of sites from the precontact period (meaning prior to European contact, also called prehistoric) are known, and there are many others as well from historic, or post contact times. It would not be regarded as archaeologically rich, but I would argue it is important. I'll be explaining this as I go along in this volume, but for now I'll only say that there are some surprisingly significant elements to the Red River Valley's past and it is long past time to bring them to light. I hope that my efforts to some extent remedy this gap in our knowledge of the Valley's early native history.

My first brush with the ancient Red River Valley came not when I arrived at Moorhead, but a few years earlier when I was a graduate student at the University of Illinois. In a course on glacial geology, I first heard of a gigantic body of water ponded against the receding glaciers at the end

of the Ice Age. Today we call it Lake Agassiz. The southern arm of this great lake is what is popularly thought of today as the Red River Valley. Around the same time a guest speaker came to the university, a renowned paleo-ecologist who spoke on the vegetation history of the northwestern part of the North American Central Lowland physiographic province; that is, Minnesota. Here, he said, was one of the most dramatic environmental transitions in the northern hemisphere, the great ecotone, or boundary between the forests that extended from just outside the eastern edge of the Red River Valley to the Atlantic Ocean, and the grasslands that occupied the continental interior from the Valley's eastern edge to the Rocky Mountains. Although our region has been heavily impacted by modern development and agriculture, it is still possible to experience the ecotone in northwestern Minnesota, something I saw for myself shortly after arriving in Moorhead. The transition from open country to woodlands was still dramatic at that time, and the ecotonal interfingering of different environmental zones, prairie and forest, was impressive even to the casual observer.

Aside from these personal experiences there were previous academic studies of the Red River Valley that had to be absorbed and applied to my understanding of the region. One study saw the Valley as a war-road used by the competing Dakota and Ojibwa as a locus of raiding, and because of this a region of few settlements. Perhaps the presumed lack of sites in the Valley was a product of intertribal warfare and not the nature of the wet, clayey soils. Earlier study of the region indicated that the margins of the Valley, the beach deposits of Lake Agassiz, which are elevated above the Valley floor, were favored by native people as a burial ground and numerous burial mound sites were documented for these sandy and gravelly beach ridges. And in the Manitoba portion of the Red River Valley there was a well-documented stratified archaeological deposit showing a series of precontact cultures represented by artifact collections very similar to those found in central and northern Minnesota. I also heard occasional reference to finds of strange stones with holes in them that were connected to an early "Viking" visit, which seemed to have something to do with odd signs on US Highway 10, leading from Moorhead east, up to lake country. The signs featured a Viking ship and designated a "Viking Trail." What to make of this would turn out to be one of the oddest of any academic or archaeological adventure I experienced in the Red River Valley. To all of these issues I'll return later. But for the present I only wish to give the reader a sense of what a novice saw confronting him in the study of the archaeology of the Red River Valley-Lake Agassiz plain.

There is another important preliminary to explain about archaeology in the Valley since the 1970s. In an earlier time, archaeology was the purview of museums and larger universities that sponsored expeditions to places that were regarded as significant. The lands of the Bible, Greece, Mesopotamia, Central America, Peru, China; that is, places with monumental buildings, temples, pyramids, palaces, gold and silver ornaments and art objects. Archaeology in North America focused on large sites with standing structures, such as those in the Southwest US where cliff dwellings and pueblos are found, and in the Midwest and Southeast US where archaeologists were especially interested in monumental earthworks. On the Great Plains, archaeologists spent much effort in the study of the earliest hunting peoples, the Paleoindians, and their dramatic kill sites, sometimes with Ice Age animals like mammoth or giant bison. When construction of dams on the Missouri River were planned archaeologists were sent in the 1950s-1960s to dig at the large river-side villages in the Dakotas to retrieve information about sites before they were flooded. Other areas, such as the river valleys of the Northeastern Plains; the Sheyenne, James, Minnesota, and Red rivers were more or less ignored, and the work done in these areas was haphazardly organized, and in general, not very common.

In the late 1960s and early 1970s the US Congress passed important environmental legislation. Some of these laws protected not only natural resources, but important cultural resources as well. These included buildings related to important historical events, sites of battles, places associated with historically important people and so on. What this meant was that any project involving federal funding, or requiring federal permits, had to have a statement about whether or not there would be damage, or impact, to any important historical property, and by historical, the law intended not only historically famous locations and significant standing structures, but also archaeological sites from both the historic and precontact periods. By the mid-1970s archaeological work was increasing across the US as projects—road building, dams, dikes, urban renewal and expansion—often required archaeological study. Some of these were routine location checks requiring a few hours. Others required more intensive investigations. Since this work was done through contracts with construction and engineering companies, or state and federal agencies, it was sometimes called "contract archaeology," or more commonly, cultural resource management (CRM). Besides the federal laws, states instituted laws protecting natural and cultural resources, so that today there is a substantial set of regulations applicable to archaeological sites.

Similar legislation has been instituted in Canada on both the national and provincial level. In the northern Red River Valley, the province of Manitoba passed the Heritage Resources Act, which may require the excavation of cultural resources prior to their disturbance by any sort of development. The details of these laws and associated regulations are not a concern here, but it is worth making note of the fact that governments in both Canada and the United States recognize the importance of archaeological resources and the necessity of protecting them, or in the case of necessary development, of retrieving from them valuable historical information prior to their destruction.

The result of these new requirements was that archaeological work came to be conducted in areas that were ignored in the past. It turned out that sites were far more common than previously thought, not only where there were monuments, or above ground ruins. In a way, cultural resource management democratized archaeology, creating a need for studies of the past in areas and during time periods that had never previously attracted the attention of the archaeological community.

With these developments, there was suddenly a need for archaeological workers; not Ph.D.s, but people with some rudimentary training that would allow them, under supervision of experienced archaeologists, to identify archaeological properties. This training was provided by colleges and universities with archaeology programs, programs such as the one I was asked to institute at Moorhead. By the early 1980s undergraduates from Moorhead's archaeology program were finding jobs working as field archaeologists on projects to protect and preserve archaeological resources. Naturally, once the availability of jobs became known, archaeology began to grow as an academic program. As student numbers increased it became possible to conduct more ambitious archaeological projects, sometimes with contract funding, but always with a contingent of very capable students. Archaeology requires field crews; it's not really feasible to do archaeology alone (sorry Dr. Jones). The university field school, as set up at many US colleges and universities, is designed to get archaeological projects completed while training students in appropriate techniques. Once students had the field experience on their résumé, they were potentially employable in contract jobs; at least that was my experience where I worked in Minnesota and North Dakota. In this regard, I might emphasize here that what is reviewed in this volume is commonly attributed to the archaeologist who published the report on the work that was completed. In most cases, the actual field work was conducted by crews who are mostly anonymous. It is important to remember that

these crews, whether student volunteers, avocationals, or paid workers on CRM jobs, do the work of actually recovering archaeological materials from the ground.

The archaeological record is available to read in libraries, in various reports and documents often housed at state historical museums, and of course, on the internet. While many of these documents are published and readily found in the literature, there are many others that are hard to access since they are simply printed and submitted to sponsors of cultural resource management projects. They may be found at state historical society repositories, with government agencies under whose permitting requirements the work was done, or often in libraries of some of the larger universities. In archaeology they are referred to as "gray literature" because while they are formal, written reports, they are not in refereed journals or published as books or monographs and distributed for sale. Sometimes, companies that are required to pay for these projects make a proprietary claim on them and forbid outsiders from seeing them. This subverts the entire reason for doing the archaeology in the first place, which is to preserve knowledge of the past for future generations before it is destroyed. This is part of the conflict between the proprietary and public interest that is pervasive in American life.

There are several archaeological books on the Red River Valley; *Burial Mounds of the Upper Red River*, by Lloyd Wilford, *The Arvilla Complex*, by Elden Johnson, and *An Introduction the Archaeology of Southeast Manitoba* by R.S. MacNeish. Today, these overview works from the late 1950s to the early 1970s are dated and, while they have been updated in journals and technical monographs, they have not been amended for a more general audience. Articles that address Red River archaeology may be found in the periodical literature including *American Antiquity*, *The Canadian Journal of Archaeology*, *Plains Anthropologist*, *Minnesota History*, *The Minnesota Archaeologist*, *North Dakota Archaeology*, *Papers in Manitoba Archaeology*, and *The Manitoba Archaeological Quarterly*. Some of the archaeological claims made here derive from sources besides the objects found in the ground. There are historical documents that offer accounts of the people and the land when Europeans first came on the scene in the area west of Lake Superior. Archaeologists usually assume that these earliest historical records describe something of what life was like in the last portion of the pre-European period. Sources used here include *Journals and Letters of Pierre Gaultier de Varennes de la Vérendrye and His Sons*, and *The Journal of Alexander Henry the Younger, 1799-1814*. One Native American account offers a vivid narrative of traditional life and animates

the archaeological record with descriptions of actual events in native life before the European intrusion. This may be found in *Yanktonai Ethnohistory and the John K. Bear Winter Count*, assembled by James Howard and published in *Plains Anthropologist*. *The Chippewa and Their Neighbors,* an ethnohistory by Harold Hickerson, provides a detailed description of relations between the Chippewa and the Dakota during the fur trade period. These types of sources are important supplements to the archaeological materials.

Looking over the titles of these journals and books it becomes clear that they are mostly written for the professional archaeologist. I suppose the work I present here is a hybrid. I have composed it in ordinary language and my hope is that any reader is able to follow the presentation. On the other hand, I have included enough archaeological detail to give a person working in the field a rough guide to the resources of the Valley. What follows is my effort to bring the archaeological discoveries and resources found in the Red River Valley to a wider audience. Included here is work done from earlier in the twentieth century, and surveys and excavations completed in the past few decades. I have organized the materials in the traditional chronological fashion, but will try to present it with reference to the types of information archaeologists typically gather from sites regarding settlement patterns, technology, subsistence, and more rarely, social and ritual behavior. I must also note that this work does not include consideration of historical period remains from the Red River region. Coverage of this topic would expand this work into a more cumbersome product than it already is, and would take the reader into an entirely different domain of research. Finally, I note my intention here is to offer a straightforward archaeological overview of this area of study. I decline to enter the debate over western intellectual biases and conceits that concern many academic archaeologists, my own feeling being that these issues are best addressed by indigenous voices.

The title of this volume is "An Archaeology of the Red River of the North." There are other archaeologists, perhaps more familiar with these materials than me, who might write a different book, with a different view of how to present these materials, and insert certain others that I have decided not to include here. What follows is my own view of archaeological matters in the Red River Valley. I rely on the judgement of the reader to decide whether or not the effort was successful.

Chapter 1
Introduction

Valley of the Red River of the North

The Red River of the North flows northward along the Minnesota-North Dakota border. It runs through southeastern Manitoba and empties into Lake Winnipeg. Waters from Lake Winnipeg then continue north in the Nelson River to finally enter Hudson Bay. The Red River drainage basin is a major part of the larger Hudson Bay drainage area (Figure 1.1).

The Red formally originates at the juncture of the Otter Tail River, flowing west out of lakes country in Minnesota, and the Bois de Sioux River, which runs north from Lake Traverse at the far northeastern corner of South Dakota. I regard the Bois de Sioux as a part of the Red River Valley, extending south to Lake Traverse. The Red River Valley includes portions of eastern North Dakota, northwestern Minnesota, and southeastern Manitoba. The Valley's length is about 315 miles from Lake Traverse to Lake Winnipeg, (Schwert 1999). Along with its tributaries the Red drains an area of about 40,000 mi^2. The Valley itself, as defined here, is considerably more restricted, encompassing about 17,000 mi^2. Some say the name for the Red River came from the eighteenth-century French explorer and trader, La Vérendrye, who called it *Rivière Rouge* because the water carried a lot of suspended sediment that kept the waters of the river muddy and gave it a reddish-brown tint.

The Valley is endowed with rich soils and enough rainfall and snow melt to sustain a healthy agricultural economy. Some of the major crops are wheat, barley, sugar beets, soybeans, potatoes, and corn, The average farm is about 1,900 acres; however, larger operations are over 3,000 acres (AgWeek 2018). The Valley was once the bottom of the southernmost portion of glacial Lake Agassiz, where fine silt and clay sediments were deposited, but the perimeter of the Valley, once the shoreline of this glacial lake, is mostly sand and gravel. While the Valley margins with coarse sediments drain quickly, the clay-rich Valley bottom land drains slowly, and retains moisture in dry conditions. The sediments here have only been weathering since the end of the Ice Age, which means the

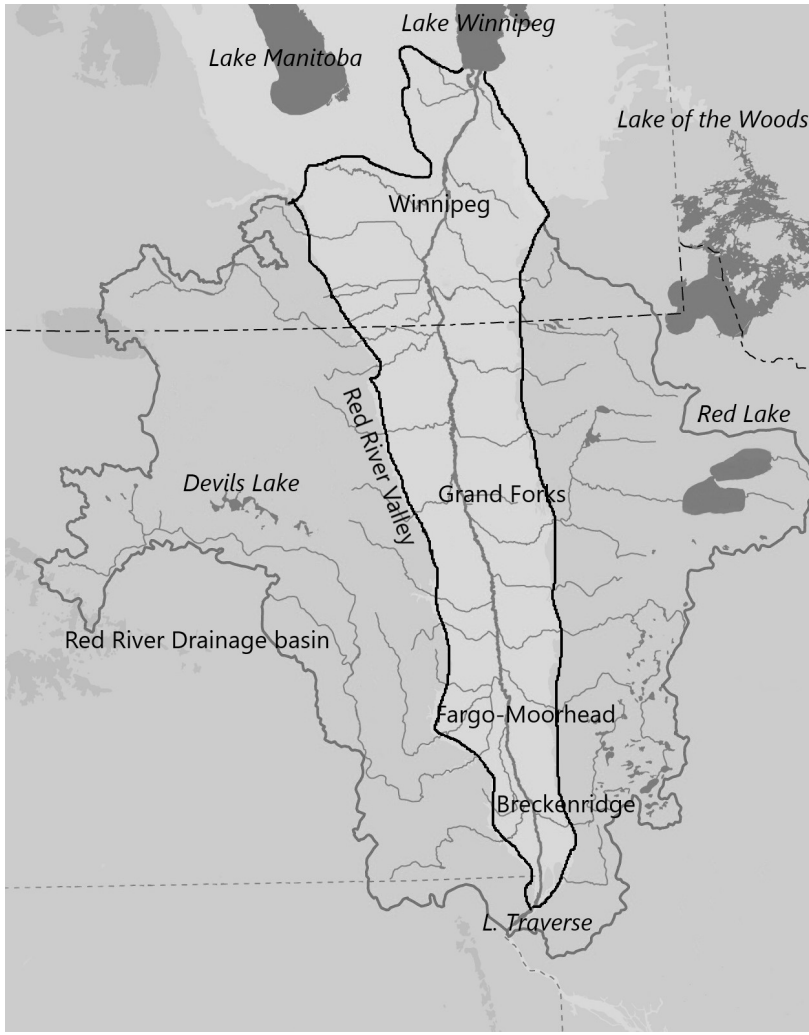

Figure 1.1. The Red River Valley, light shade is lower elevation (base map used in this volume is in the public domain from usgs.gov).

mineral content of the soils has not been leached away. The Red River soils are famous for their productivity and the entire region is regarded as a breadbasket.

The major towns and cities of the Valley are mostly along the Red itself. In the US portion of the Valley there are often twin cities on either side of the river, one in Minnesota and one in North Dakota; Breckenridge and Wahpeton at the Otter Tail-Bois de Sioux junction, Moorhead and Fargo, East Grand Forks and Grand Forks, and in Manitoba, the city of Winnipeg. In some ways the clustering of population along the main stem of the Red is unfortunate (Schwert 2003: 2). The Red River Valley, being the bottom of an old glacial lake, is extremely flat and the gradient of the river very low, under a foot per mile (Schwert 1999: 6). Besides this, spring thaws usually occur first in the south. The Red River often floods as melt water from the south flows into ice to the north, and when the Red overtops its banks water spreads far and wide, often flooding the cities along its course. But on the Great Plains drought can be a problem just as serious as flooding, and significant droughts have been recorded throughout the Valley's past.

The Red River Valley is recognized as a discrete region in archaeological terms by archaeologists in Minnesota and North Dakota, largely because the environment of the region is distinctive, consisting of tall grass prairie, and because the lowlands created by glacial Lake Agassiz along with the defining beach deposits to the east and west form a region characterized by an array of prairie resources (Anfinson 1990; Picha et al. 2016). In Manitoba, the Red River and the immediate floodplain of the river seem more often identified as an area of archaeological focus. Here, an aspen parkland crosses the Red River Valley in a southeast-northwest path to the south of Lake Winnipeg and interrupts the tall grass prairie environment. Also, the far northeastern portion of the Valley features some evergreen woodlands, making this part of the Valley more varied than the US portion.

Accounting for the Past

This is a book about the archaeology of the Red River Valley. Archaeology is an exciting subject, but not quite the kind of excitement many of us see in the movies. In part, archaeology is about discovery, which is a fundamental aspect of the field. This is especially so with precontact American archaeology of the sort described here, since the finds we make are almost always brought to light for the first time. By definition prehistory, or precontact times in North America, is all that time that is missing

from the historical record, or the written accounts of the human past. Prehistory is universal, and every land has its prehistoric past. In different parts of the world, prehistory ends at different times, depending on when written records become available, thus creating a "historical period." In North America many now prefer the term "precontact," meaning prior to European contact, which is the same meaning as prehistory for this part of the world. In this volume I will replace prehistory with precontact, since that is now apparently preferred by the academic community. Both precontact and prehistoric have the meaning of separating the North American past into a pre-European and post-European settlement.

The past, or history if we use it in the generic sense, may be presented with many different types of evidence. Sometimes, we can make our own history by talking to our grandparents, our elders or "old-timers." The accounts about the past that they provide for us are rich with names and events that may have a personal meaning. Although this is very different from the history written by a professional historian about politics, economics, wars, kings, conquerors, and the like, it may be classed generically as a history, nonetheless. These sorts of accounts may end up as part of an oral tradition. Jan Vansina, who studied such traditions from around the world, gives a succinct presentation of the types of accounts that may be contained in an oral tradition (Vansina 1985). He lists memorized speech, gossip, personal traditions, origin stories, epics, tales, and sayings. Of course, oral tradition misses a lot of the past on which formal histories are focused. On the other hand, these same formal histories miss many of the issues that we find in oral traditions. Every way of examining the past has its advantages and shortcomings.

Sometimes, native history diverges dramatically from professional historiographic methods of study. While the historian and the archaeologist follow the tenets of the Western scientific and scholarly tradition of relying on empirical and documentary evidence, Native American knowledge-keepers may operate with a different set of standards. Archaeologists regard the results of their studies as something to be publicly shared, but native accounts of the past are often presented with other standards in mind, and may not be intended for a public audience. For example, rigid chronologies are not important, but past events may be merged for the purpose of making a point. Historical narratives for Native Americans may ignore developmental sequences so important to the archaeologist, and focus on interpersonal connections and relations to highlight an important lesson. Also, many native narratives about the past contain elements of humor "… adding critical performative spice to

narratives about almost any time." (Nabokov 1996: 3). In many native accounts of past times there are mythic stories and supernatural interventions, and varied explanations for archaeological remains. There was a belief among the Plains Ojibwa that stone arrowheads were made by subterranean beings called *maymaygwashiwuk*. These were child-sized creatures with many human features, but also capable of magical feats like passing through the rock faces of cliffs. For some Lakota, stone artifacts found on the ground were made by Iktomi, a trickster-like spirit of traditional Sioux belief (Pettipas 2015).

It has sometimes been the practice to dismiss Native American traditional histories as unreliable. Robert Lowie, one of the foremost American ethnologists of the twentieth century, put it in these terms:

> We are not concerned with the abstract possibility of tradition preserving a knowledge of events; we want to know what historical conclusions may safely be drawn from given oral traditions in ethnological practice. And as regards this purely methodological question I can only say … that I cannot attach to oral traditions any historical value whatsoever under any conditions whatsoever (Lowie 1915: 598).

While this is appropriate in some cases, native origin accounts and explanations of past events contained in oral traditions may contain valuable insights. After all, even Lowie, had he given the matter more thought, might have remembered the great archaeological discoveries of the nineteenth century, driven in part by reliance on quasi-mythic epics such as the Iliad, which included many supernatural events, but led nevertheless to the discoveries at Troy and Mycenae. Keep in mind, also, that some early stories told by missionaries, explorers, soldiers, and traders contain substantial exaggerations, biased inferences, and outright falsehoods (Mihesuah 1998: 2-3). Many people have strange etiological accounts of how things came to be as they are now. One of the medieval kings of Poland oversaw an excavation to discover how ancient ceramics found scattered through agricultural fields in Eastern Europe emerged spontaneously from the earth (Bahn 1996: 10); Old Testament believers claim that a salt formation near the Dead Sea is the transfigured body of Lot's wife; there is a story that Devils Tower was formed by a giant bear that clawed at the sides of the mountain. Myths and legends are found worldwide.

Scientists and scholars are not immune to mistaken interpretations of the past. In the same way that folk tales and oral traditions require matching up against empirical evidence, so to do archaeological claims.

A.E. Jenks, a pioneer of archaeology in the Red River region, argued that a human skeleton found during road work just east of the Red River Valley, which Jenks called "Minnesota Man," was more than 20,000 years old, and showed affinities to Neanderthals (Jenks 1935: 6-7). In fact, it was the skeleton of a young woman with typical Native American features, and probably not even half the age Jenks thought it to be. In another instance of interpretive misadventure, some professional people in the fields of geology, anthropology, and linguistics take as authentic the obviously fake inscription on Minnesota's Kensington Rune Stone, in some cases going as far as postulating a medieval use of the Northern Plains by cattle ranching Norse settlers (cf. Nielsen 2000: 84). More on this later.

Of course, we all make mistakes, and it is worth remembering that any effort to understand the past, and especially the distant past, is burdened with problems. This emphatically includes the archaeological record. As with any scholarly or scientific undertaking it is important to look at the information or data at hand and use proper reasoning to construct an interpretation of what happened. Each type of account has its advantages and its problems. The student of the past must weigh the evidence, take what makes sense, and reject what does not. These methods may be applied to multiple avenues into the past, of which archaeology is only one.

Sometimes, oral traditions offer valuable insights and even surprises. For instance, in 1988 an archaeologist in Manitoba was told a story by native elders that had been handed down to them. They stated that, over 700 years before, thousands of people came together for a peace meeting at the juncture of the Red and Assiniboine Rivers (modern Winnipeg). They here agreed to a peace to be kept throughout the western Great Lakes and Northeastern Plains. Archaeologists working at this location, known today as "the Forks" uncovered evidence of a great abundance and variety of artifacts, reflecting a large group of people. The gathering, or settlement dated to about AD 1285, that is, around 700 years ago (Sinclair 2019)!

Some of the Plains peoples kept what are known as "Winter Counts", normally drawings on buffalo hide, each image serving as a mnemonic device for the events of a given year. While there is much to be gained by the study of these counts, few of them go back much more than about 150 years from the time of its creation. One famous Winter Count of the Yanktonai, who once lived in the Red River region, takes us back to 1682 (Howard 1976: 20). The Winter Count of Battiste Good has large pictographs that represent events not of the local band, but record past events significant for the tribe. Some of the pictures reflect experiences of

an entire generation, which for the Lakota was about 70 years. In the case of Battiste Good, the Winter Count gives glimpses of the Lakota past that might go back as far as AD 900 (DeMallie 1976: 13).

Written accounts left by European explorers, missionaries, trappers and traders can take us back to the eighteenth century, or perhaps a little earlier. Oral accounts may go back in some cases even further than historical records, but the further back in time the more tenuous they become. On the other hand, archaeology documents a human past in the Red River Valley spanning about 10,000 years, and this date is established with a fairly robust degree of scientific rigor. I am not claiming that archaeology is superior to any other approach to the past, but it does offer a unique perspective. It not only takes us back deeper in time, but it provides an account of the way ordinary people lived, allows us to make educated inferences about the sequence of cultures that existed in the past, and makes it possible to understand the geographic distribution of these cultures.

Archaeology in the Red River Valley

Archaeologists pay attention to objects and debris left behind by people and preserved in the ground, or sometimes on the ground. These items may be things that were made or transformed by people. If they are portable objects, they are called artifacts. Arrowheads, stone mauls, scraping and cutting implements, flakes from making stone tools (called flaking debris, or sometimes, débitage), clay pots, or the broken pieces of pots (called potsherds). If they are artificial structures that are part of the soil, like a house foundation or a fireplace, they are called features (Figure 1.2). Occasionally, there are standing structures that have lasted for thousands of years; pyramids in Egypt, megaliths in western Europe, earthen mounds in North America. There are other objects that the archaeologist studies. These are natural objects that are found associated with artifacts. They help us understand the natural conditions people lived in, or the resources they used. For example, broken and burnt animal bones found near a fire hearth tell us what people probably ate at this place. The bones were not made by people, but were used by people, and help tell the story of those who lived at this site. The same is true of plant remains, such as seeds, nutshells, wood fragments, and the like. Since these objects were not made by people, but by nature, they are called ecofacts. Artifacts, features, and ecofacts are the raw materials of archaeological interpretation.

Figure1.2. Exposing a feature, here, a refuse pit with bison bone and potsherds at a Lake Agassiz beach ridge site.

Figure 1.3. Two artifacts exposed on the surface of a soil pit in the southern Valley.

The places where we find artifacts, features, and ecofacts are called archaeological sites. They are the locations where there is physical evidence of past human activity. Sometimes the evidence is visible on the surface of the ground. In the Red River Valley, for instance, ancient peoples buried their dead in cemeteries that sometimes consisted of earthen mounds. These mounds are artificial monuments and, like grave stones, serve as markers. Technically, they are archaeological sites, even though they are not localities where archaeologists normally dig (at least they don't any more). Most archaeological sites are made up of ordinary debris from everyday life: broken pot fragments, used-up tools, flakes of stone from making stone tools, animal bone fragments, seeds and plant remains, charcoal and burned earth from fires, the rock from fire rings that stained red and black and cracked apart (fire cracked rock, or FCR).

Sometimes these sites are buried deep in the ground and are more or less preserved for the present. Depending on the local landscape history sites may be located in a depositional environment, where sediments are being periodically laid down. If this is the case, a site will get more and more deeply buried over time. A river floodplain is a good example of a depositional environment. Every time the river tops its banks it loses the kinetic energy of the deep channel and drops sediment, laying down a thin layer of mud. Over decades and centuries, these thin muddy layers begin to add up. For example, in the Fargo-Moorhead parks I collected mud left behind by the 1989 flood. It averaged about 0.5 cm. If there were a flood of that magnitude twice in 25 years, that would mean about 1 cm. of mud in 25 years, or 4 cm. in 100 years. In 1000 years, if the river were "regular" there would be 40 cm. of deposit. In 5000 years, two meters (over six feet) of sediment. Of course, things aren't that simple, but you get the idea. I have dug sites along the Red between Breckenridge and Halstad, Minnesota that are between 1-2 meters below the surface and date back as far as 5000 years ago.

Other times we find sites near the surface. People often think that the older the site, the deeper it must be buried. Sometimes this is true, but if the site is not in a place where sediment accumulates, it will not get deeply buried, no matter how old it is. For example, on the uplands above the Buffalo River east of Glyndon, Minnesota is a 1000-year-old site, but it is just under the sod. In fact, if you find bare ground in this grassy field, you may sometimes see artifacts exposed on the surface. This high ground doesn't flood, and there is no higher land around from which sediment can erode and move down slope to cover the site. The wind probably blows as much sediment off the site surface as it deposits. The site is in a

steady state, neither losing nor accumulating sediment. So, it seems, it was for most of the past 1000 years. Only a few inches of sediment have accumulated here, and this thin layer probably resulted from ground squirrels, earthworms, and insects making burrows and moving sediment to the surface. As this occurred the relatively heavy artifacts on the surface sank into the ground as the subterranean voids collapsed, and the tiny amounts of excavated sediment from fossorial animals slowly created a covering mantle of earth over the artifacts. Even so, this site is quite shallow for being ten centuries old. On the other hand, I have found artifacts that are almost certainly no more than 700 years old on the floodplain of the Maple River, a tributary of the Red in Cass County, North Dakota, that are buried a full meter in alluvium, or about three feet below the surface. Near surface sites are often disturbed, sometimes by farm equipment which has plowed through them, scattering artifacts across an agricultural field. Other times road building or other construction activity causes disturbance (Figure 1.3).

Sites may be found in different parts of the landscape. They may be in floodplains or uplands; near a lake or a river, or a stand of trees. There are some places where archaeological sites are more likely than others, just as modern towns are more likely in some places than others. In the Red River Valley, sites are more often found along the rivers than in the open prairie, and they are more likely on well drained ground than in wetlands. One problem in predicting the location of sites is that the land as it stands today is not necessarily the same as the landscape of the past. Today's river channel might have been a half mile away thousands of years ago. Today's woodlot might have been a marsh in past centuries.

Wherever archaeological sites are found they are best treated with care. Archaeology technically destroys sites by digging into them. When an excavation ends, the holes in the ground are absent the cultural materials that made them part of a site. For this reason, archaeologists try to proceed carefully, making certain that the net result of digging will be some contribution to our knowledge of the past. Sites were formed by human activity in the past. That activity, those humans and that past, can never be replicated. The site that represents that behavior is really a fragile 'historical' resource. Once a site is wrecked it cannot be reconstituted. This is the reason archaeologists take notes, make drawings, and take pictures, all of which go into a field report. When reading a report, one should be able to determine where artifacts were found in relation to other objects, be they ecofacts, features, or other artifacts. This locational

and contextual information is known in archaeology as provenience. It is a touchstone of archaeological field work and without it there is no archaeology.

Generally speaking, field work in archaeology is divided into two kinds of tasks: survey and excavation. Survey is the process of discovering sites; excavation is the process of digging into them. Survey tells us about the way sites are distributed across the landscape. An excavation helps us understand how people lived at a particular place and time. Below is a description of field techniques that I and others used in study of the Red River Valley. In other parts of the world different procedures may be employed, and, often, well-funded projects are able to deploy more sophisticated equipment or use larger crews. Even so, the methods described here have resulted in a considerable body of usable archaeological data.

Survey

Most people associate archaeology with digging sites and fail to appreciate the importance of archaeological survey. A survey tells us not only where sites are located, but also helps us understand the spread of sites from different time periods and how they are arranged on the land. There are several different ways of doing survey. Normally, a survey project begins with background study of the area, including the natural environment and previous archaeological work. Usually there is an effort to locate people who know the area and might be willing to share their knowledge of site locations. Sometimes a single friendly artifact collector can provide the archaeologist with information that would take months to gather independently Figure 1.4).

In recent years, new methods were developed for implementing surveys. Geographic information systems (GIS) are now used to assemble and display information about a region. Researchers can visualize an archaeological landscape prior to fieldwork, and then to compare the same landscape at the conclusion of the survey work. Lidar imagery, that is, laser produced aerial images of the topography displaying a high degree of accuracy and detail, are often used as part of GIS applications (Figure 1.5).

If the area to be examined is not too large, it may be possible to perform a total coverage survey. Larger areas may require a sampling procedure in which representative parts of the survey area are looked at, and sites are assumed to be distributed in the same pattern in parts of the region that were not surveyed. A simple full coverage survey may be reviewed

Figure 1.4. Pottery from a private collection along the Bois de Sioux, Upper Red River region. It differs from pottery found on the Red River farther to the north.

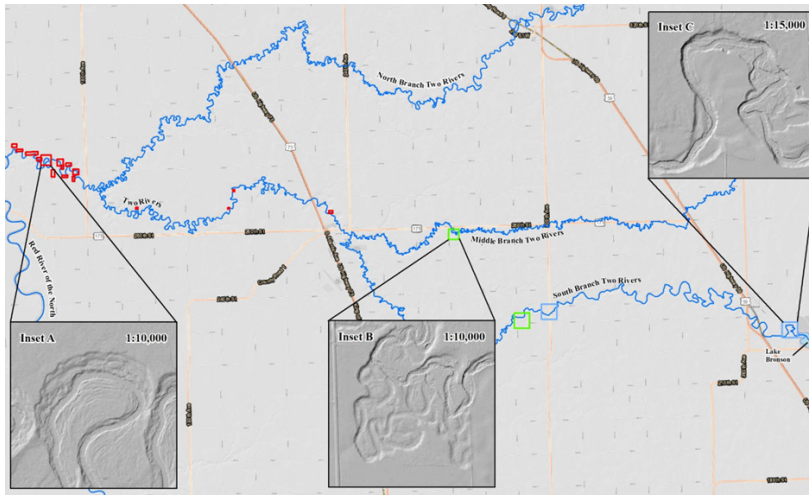

Figure 1.5. Archaeological survey map of Kittson County, Minnesota showing combined GIS and Lidar data. Grayscale insets are Lidar images. Map shows branches of Two Rivers, a Red River tributary (from Holley et.al. 2023).

Figure 1.6. Survey parcel in a cultivated field along the upper Red, Wilkin County, Minnesota. (Courtesy George Holley).

in my survey of Norman County, Minnesota (Michlovic 1982). A more extensive and sophisticated sample survey in Kittson and Wilkin counties, Minnesota, is also available (Holley et al. 2023).

The amount of land that can be surveyed in a given amount of time varies with ground conditions. If the land has been plowed, then the upper six to ten inches or so of the soil has been turned over and any site in the upper part of the soil profile will be visible, with artifacts and ecofacts laying on the ground surface. Sites in cultivated fields are easy to find. A crew can walk across the field spaced at about 15 meters. The spacing is based on our understanding of the smallest likely diameter for an archaeological site. Few are known to be smaller than 20 meters in diameter, and surveyors will scan the ground in an arc in front of them as they proceed, making the transects inspected even less than 15 meters. A walking survey over a plowed or disturbed surface is called a pedestrian survey (Figure 1.6).

In pasture, or wooded areas, the process is more tedious. If the ground surface is not visible then the crew is forced to make small probes into the soil to discover artifacts. This is usually done with a shovel to a depth of about 30-50 cm. (one to one and a half feet). The soil taken from the hole is sifted through for cultural material (artifacts or ecofacts), then the soil is replaced. Depending on soil conditions (sand is easy; clay is tough) a

single shovel probe may take two people 5–10 minutes to complete. With typical spacing, it takes about 16 probes per acre. A five-acre area would require about 80 probes, and at ten minutes per probe per team, this means the better part of a day for two crews of two persons each. Surveys such as this are time consuming and to be honest, it is much more difficult to detect sites this way than by walking over a cultivated field. Even if a site is present there is always a chance, and a pretty good one at that, the shovel probes will be in places that do not contain artifacts. Shovel probe surveys are an imperfect solution to a difficult problem.

There are methods, none of them perfect, for assessing deeply buried deposits for archaeological sites. Some of them involve looking for disturbances that expose deeper portions of the local sediment profile. For example, if there are sand or soil pits in the area being studied, these may be inspected for cultural materials, although it is unlikely that a modern sand or gravel pit just happens to be in an area where archaeological sites are also present. Since many sites are near rivers, cut-banks along the river may be walked and the vertical cut of the river bank examined for sites. Along the Red it is often the presence of animal bones eroding out of cut-banks that lead to the identification of a buried site. On upland sites there are often gopher or ground squirrel mounds with soil dug up from the subsurface by the burrowing animals. On occasion these reveal small flakes, potsherds, or burned animal bone reflecting a buried cultural deposit. Sometimes we use an augur (mine was equipped with a 4″ diameter receptacle) that can be used to drill down as many as five or so feet in clay (somewhat more in less resistant soils). If a site is present the augur "bucket" will, with luck, bring up an artifact indicating a site below the surface. Unfortunately, even if a site is present the chances are not very good that a 4″ augur will happen on an artifact, but it's better than no chance at all. Finally, there are sometimes opportunities to use a piece of heavy equipment, like a backhoe or a front-end loader, to scrape away several feet of sediment and give a look at a large section of the subsurface. While this method of detecting subsurface archaeological sites is preferred by some, renting the equipment is expensive, and the process itself is far more destructive than other survey methods, and obviously, it only makes sense in locations where the archaeologist feels there is a good chance of finding something.

Excavation

Excavation is the intensive study of a single site. The process of excavation is fairly well set-out at most US projects. Usually, a marker, like a metal post, sometimes with a concrete collar, is set in the ground from which a transit, or total station will be set up. This permanent point is known as a datum in archaeological parlance. Nowadays, it is established using a global positioning system, after which a grid is laid out over the site in the area to be excavated. Sometimes, remote sensing techniques, like magnetometry or electrical resistivity are used prior to digging to discover where important features like storage pits, house floors, walls, filled-in ditches, and fire hearths, might be located. Other times, small test units, usually one-meter square, are dug to find the depth of the cultural deposit, and the places where more extensive digging might be rewarded. Excavation units of some uniform size will be placed over the site, or a large area will be stripped to the level where the cultural materials are located.

The excavation itself usually proceeds by removing natural layers, or, if there is simply a normal soil profile, common in most Red River Valley sites, arbitrary levels of five or ten centimeters (about two to four inches) are removed with hand tools, and the soil is sifted through quarter or eighth inch mesh screening to find small artifacts and ecofacts. Larger items may be left in the soil and mapped in terms of their three-dimensional relation to datum. Maps of features and other finds are made, and photographs taken. All small finds are placed in containers, normally bags, marked with the coordinates of the excavation unit and level. This allows analysis of finds from the site to be made in terms of where everything found was situated in relation to everything else.

Following the field work, the description and quantification of all finds is made in a lab setting. Archaeologists perform artifact analysis—the types of stone tools, the stone material they are made of; the amount of pottery sherds, how they are decorated, how they were fashioned, the type of temper used; the animal bone, perhaps divided into identifiable and unidentifiable elements. Soil samples brought back from the field may be subjected to flotation, or submersion in water to remove a "light fraction" of material that floats on the water, or perhaps sinks slowly, like charcoal. Special study is usually required by experts in other fields. Organic matter for dating is sent to a radiocarbon lab, identifiable animal bones to a person familiar with that specialty, seeds from the flotation process sent to a paleobotanist for identification. Most of the time money is required for payment for each of the special studies, which has to be set aside in a

budget at the beginning of a project, whether that money comes from a state or federal grant, or whether it is part of a contract with a company that required a cultural resource study.

Dating

The ages of sites are based largely on radiocarbon dates, a type of absolute dating, meaning that it provides a date in years ago. Carbon dating is based on the presence of radioactive carbon (C^{14}) in plants and animals. This isotope of carbon is formed in the upper atmosphere by cosmic radiation transforming nitrogen atoms into C^{14}. This radioactive carbon decays by half every 5730 years or so. Plants and animals absorb this as carbon dioxide into their systems during their lifetime. When they die and stop absorption, the decay process begins and scientists can measure remnant carbon-14 in organic remains and date the time of death. However, cosmic radiation has apparently varied over time, meaning that carbon-14 production in the atmosphere has increased or decreased at times. These variations have been documented by various means. Times when there was more carbon-14 will give younger dates, times when there was less carbon-14 will give older dates. The adjustment of raw radiocarbon dates in light of this variability is called calibration. Many archaeologists and geologists prefer to use raw radiocarbon dates, since calibrations are often refined, and therefore, the ages of ancient remains changed. For our purposes, these changes are not very important, and to simplify this presentation, the radiocarbon ages offered here are calibrated using presently available calibration programs. Dates may be presented in calendar ages, using BC and AD, or as years before present, abbreviated BP. For consistency in reporting, BP is assumed to mean before AD 1950, when radiocarbon dating started being used. So, 1000 BP would mean AD 950, or 1000 years before 1950.

Sometimes archaeologists date sites based on stratigraphy. This is a form of relative dating, meaning that we know only that the more deeply buried strata are older than the ones above. If a stratum contains a distinctive type of artifact and is radiocarbon dated, we often assume that when artifacts of that type are found in contexts where there is no suitable material for radiocarbon dates, the similarity in artifact types allows us to assume that the distinctive artifact from the dated stratum is roughly the same as the date for the artifact in the undated context.

Artifacts

From the historical and ethnographic record, we know that the indigenous peoples of the Plains used tools made of stone, bone, antler, horn, fired clay, fiber, wood, bark, leather, sinew, clam shell, and no doubt other materials as well. One may get an impression of the wide range of native manufactures by examining the ethnographic record or simply reading the literature on traditional Native American life. For an anthropological review, see the first chapter of Robert Lowie's (1954) *Indians of the Plains*.

I will deal in more detail with items made from stone, bone, copper, and clay, but it is important to make mention here of a few of the many items made from perishable material that are documented in both the ethnographic record, in the memory of native elders, and the ongoing maintenance of some traditional practices today. For instance, we know that wooden sticks sharpened to a point were used to dig roots and tubers, such as the prairie turnip. Wooden pins were used to anchor tipi covers to the ground. Baskets were made of plant fibers, such as those taken from basswood and cedar trees, while mats were made from corn husks and bullrush. Mortars and pestles were often made of wood, with mortars formed from sections of logs. Spoons were fashioned from wood, or sometimes from the horn of buffalo, and bowls or dishes made of knots from trees which were burned and scraped into the proper shape (Skinner 1919: 165–166). Wood was used to make the travois, which consisted of wooden poles joined in a V-shape and crisscrossed with leather strap netting. In pre-horse days the travois was often pulled by a dog. Willow sticks were woven together to construct backrests as a substitute for chairs. Animal hide was used for lodge coverings, for robes, footgear, bull boats (on larger rivers such as the Missouri), parfleches, and other bags. Wood was also used for projectile shafts, whether arrows, spears, or darts (Lowie 1954: 22ff; Shay 2022: 130, 136, 159). Most of these items do not preserve in the archaeological record in the Northeastern Plains since fiber, wood, leather and the like rarely preserve in the semi-humid conditions typical of the region (Wedel 1961 provides good descriptions of precontact Plains technology).

Since this volume is concerned with the precontact record, I will focus attention on the technological productions found in the body of archaeological materials recovered in the Red River Valley. These may be divided into several categories, including copper, shell, bone, stone, and ceramic. Stone or lithic materials and fired and tempered clay, or ceramics, are the most common artifacts found at archaeological sites in the Valley, but it is important to mention other and less common items as well.

Stone Tools

Many of the tools used by prehistoric people all over the world were made of stone, and that includes the ancient people of the Red River Valley. Some of the information we have about the use of stone for tools comes from actual accounts from native people. The Sisseton, who lived around the southern terminus of the Red River Valley reported on the use of stone for arrow tips, of flat stones for smashing berries, and of grooved mauls and axes to break bone, pound pemmican, and chop wood (Skinner 1919: 166–167).

The rocks from which chipped stone tools were made were normally silicates, meaning they were stones rich in silica or silica dominant minerals. Flints and cherts are largely silica-based, and so are rocks such as jasper, quartz, quartzite, and chalcedony. Many of these stone materials are cryptocrystalline, meaning that the crystal structure in the stone is muted or barely discernible. When these are struck or broken, they break in the direction of the applied force, meaning that a smooth, straight surface is produced. In the Red River region most of the usable stone material was deposited by the glaciers in till. This till is found outside the Valley where it is exposed on the surface, or on the Valley perimeter where there are gravel and boulder deposits in the beach ridges of Lake Agassiz. In the interior of the Red River Valley, a thick blanket of silt and clay covers the till deposits. Bakken (1997: 53–56) studied the lithic raw material regions of Minnesota and considered the Red River Valley as part of the Western Resource region, consisting mostly of stone from till that had its source somewhere to the northwest, the direction of the last advance of glacial ice. Some of this lithic material was to be found in the beach deposits of Lake Agassiz, including Swan River chert, Red River chert, some Tongue River silica, and Hudson Bay Lowland chert, among a few others. Most of these are not ideal for making stone tools, but were nevertheless used regularly in precontact times.

Some stone was obviously imported, the most prominent being Knife River flint. This is a somewhat waxy-looking, brown, translucent stone found in North Dakota west of the Missouri River, where cobbles were mined from till deposits for thousands of years. Other exotic rocks sometimes found at Red River Valley sites includes Prairie du Chien chert from the Minnesota–Wisconsin border area, Grand Meadows chert from southeastern Minnesota, Lake of the Woods siltstone, and even some jasper-taconite from the Manitoba-Ontario border with Minnesota. Two exotic stone materials found only on rare occasions in the Valley

are obsidian, a volcanic glass, which came from the Rocky Mountains, and red pipestone (also called catlinite) from the Pipestone quarries in far southwestern Minnesota.

There are many named rock types besides these that are occasionally found in and around the Red River region. What is important to remember is that precontact people were sometimes importing raw materials with which to make their tools, and at other times they were using somewhat inferior local materials. When inspecting the appearance of stone tools like projectile points, it is important to keep in mind that the quality of the workmanship is not always reflected in the look of the artifact. Superior flintknapping is sometime reflected in a modest looking production made out of difficult to work local cherts, quartzite, and quartz.

Stone tools were produced using several techniques, all of which might be described as subtractive, that is, removing material from a rock in order to form it into a shape that was useful for some purpose. The products of the various subtractive processes in stone tool manufacture were, in general terms, twofold: the actual tool that was fashioned from a raw stone, and the debris that was removed from the original core. This debris is distinctive and easily recognized at archaeological sites. We call the actual purposed object an implement or tool, while the waste material is called debris (sometimes debitage) or waste flakes (flakes). Often, after a rough shape was achieved, the final phase in the chipping process did not involve striking the core to remove a flake, but rather pressing very hard against a part of the core, normally the edge, to pressure off a small, thin flake. This finishing phase of the tool making process is called pressure flaking. Often at archaeological sites we can tell somewhat the stages of the tool-making process by looking at the flakes left behind. If the debris has the outer, weathered rind of the stone, called cortex, we infer that these flakes were probably removed in the initial stages of tool making. Small, thin, pressure flakes normally represent the last part of the process of fashioning an implement. Larger flakes without cortex or any indication of removal by pressure would naturally represent some intermediate stage in tool-making.

Archaeologists recognize a variety of different flaked stone tools. Some of these are understood in their function because they are documented as having been used by native groups recorded in the historical records. Others are defined based on experimental use. Some are known to have been used for one or another purpose by careful examination, sometimes with microscopic magnification, of the type of wear pattern visible on the working edge of the tool.

Figure 1.7. Styles of Red River Valley projectile points, from left, Late Paleoindian, Plains Archaic, Plains Woodland, Plains Village.

Figure 1.8. End scrapers from a Red River site. Working edge at top.

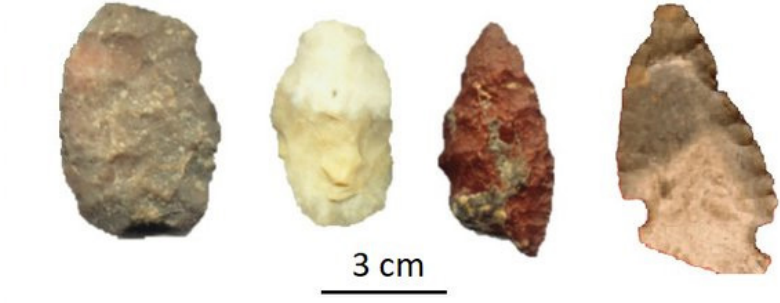

Figure 1.9. Bifaces and hafted knife (far right).

Some standard tool types found in the Red River region include projectile points, used either on arrows, darts, or spears. Spear points tend to be larger, while arrow points are usually much smaller, being only inch or so in length. Projectile points necessarily have a point at one end, and a prepared haft designed at the opposite end. This hafting element might consist of thinning and grinding the edge of the point base in order to prevent it from cutting through the sinew or leather that binds it to the arrow or spear shaft. Sometimes the haft is a stem that may be inserted into the distal end of a shaft, or it may have notches, that allow it to be bound by lashings to the projectile shaft. Projectile points tended to have different types of hafting in different time periods, and we refer to the points that result from different ways of fashioning them as projectile point styles or types.

Projectile point types are much discussed in Plains archaeology, since they are a common and readily identifiable artifact. Collectors seem to prefer picking up points, and private artifact collections often consist primarily of points and point fragments. Point types, or styles, differ over space and time, and for this reason they are used to distinguish different cultural entities in the past, and to register chronological age in an approximate fashion. The earliest style of projectile points in the Northeastern Plains are known as fluted points of the Paleoindian period. These are so-called lanceolate forms that are elongate with roughly parallel sides converging to a point. In early Paleoindian points a large flake, or flute, was removed from the base toward the center, giving the implement a distinctive appearance. Later in the Paleoindian period the point shape remains, but the flute scar is absent. Following the Paleoindian period is the Archaic, in which points with notches and stems are common. These continue in the Plains Woodland period, although by this time there is a general reduction in point size due to the use of the bow and arrow. In the latest part of the pre-European period small, unnotched arrowpoints are commonly found at sites (Figure 1.7).

Another common tool found at regional archaeological sites are scraping tools (Figure 1.8). Often, they are parallel sided implements with a rounded or convex contour on one of the tool ends, explaining the name for them; end scrapers. On this convex end there is a flat bottom and a rounded top or, in archaeological parlance, a plano-convex edge. The flaking of the working end of the tool was on a single side, so sometimes these tools are called unifacial, since they are only worked or modified on one side, while the other side is the unworked belly of the flake. End scrapers were usually hafted to a bone, antler, or wooden handle. They

were a very important tool for hide and perhaps wood working. In order to use a hide for clothing, or for covering a shelter, it had to be made pliable. To accomplish this, it would be staked down and a scraper used to scrape off the connective tissue or hair from the hide. Oils were rubbed into it to make it soft. Without this treatment hides would dry out and become hard and more or less useless. Sometimes the plano-convex edge of a large flake was on the side of the long axis rather than on the end. In this case the tool would be called a side-scraper, but it might still be used for the same type of work. Side-scrapers may have been hafted differently than end-scrapers, or they may not have been hafted at all. It is also possible that they were used for other purposes, perhaps working wood or even bone. Among the people of the Plains most of the hide preparation was done by women, who made clothing and coverings for lodges or tipis, so scraping tools at a site may reflect the work performed by women.

The stone knife was also used. Sometimes a long, sharp flake was blunted on one of the long sides, while the thin, very sharp edge was used for cutting. These are known as backed knives. Other times a piece of suitable stone was flaked on both sides (bifacially flaked) until the long edges were thinned. While not as sharp as the backed knife, these bifacially flaked knives were probably longer lasting. Since we often are not certain of what a bifacial tool might have been used for, rather than calling all elongate and thinned items knives, they are often simply called bifaces. In fact, sometimes sites yield large, pointed tools, both notched and stemmed that look too large to have been used as projectile tips. These may have been used as hafted knives.

There are a variety of other stone tool types besides points, scrapers, and bifaces/knives (Figure 1.9). Stone flakes sometimes have a broad notch chipped out of one side, making a serviceable spokeshave for wood working. Sometimes stone was worked into an elongate, narrow point archaeologists call drills. These were likely used for drilling holes in soft materials like leather or might also have been used to drill wood. Occasionally archaeologists find long, sharp flakes that have had a flake struck down the length of the sharp edge. This creates a chisel-like working edge at one end of the flake. These are known as burins and are widely regarded as tools for working bone, antler or wood. And very often unmodified flakes were taken and simply used for cutting or slicing since they were very sharp edged. These are called utilized flakes, or expedient tools by archaeologists and have no definite shape, thus being characterized as amorphous.

Besides chipped stone tools sometimes the Plains people also made implements out of rocks like granite, basalt, and other igneous rocks. Rather than chipping these rocks, they were ground and pecked into shape. Archaeologists call them ground stone tools (Figure 1.10). Grinding, pecking, and sometimes even polishing hard rocks were intended to transform these into heavy duty implements, like mauls for pounding and smashing, or to make pestles and mortars for grinding seeds or other plant material. At some sites archeologists even find pieces of sandstone with grooves in them, obviously for abrading and finishing the work of making arrow or spear and dart shafts. In the Red River region most of the ground stone tools I found in private collections were grooved mauls, which I believe would have been hafted to wood handles with leather straps and glue. They could have been used for smashing open bone to recover marrow, or for hammering stakes or posts into the ground. The main problem with ground stone tools lay in their construction. Pecking and grinding hard stone is laborious. Based on contemporary experiments, along with ethnographic reports, it would have taken many hours to make these tools. On the other hand, though difficult to make, ground stone tools had a far longer use-life than chipped implements.

Sometimes archaeologists discuss stone tools in terms of curated and expedient assemblages. These terms suggest differing tactics in the way that people approached tasks at a site. Where an archaeologist finds tools that are well-made, carefully designed, and perhaps show evidence of having been refashioned or repaired, it suggests a curated assemblage of implements that show invested work effort. These well-made tools are assumed to have been designed to function reliably in situations where tool failure would have high costs. Projectile points and end scrapers are a couple examples of well-made, labor-invested, curated tool types. Consider a bison-kill where spears, darts, or arrows must perform reliably, and later, where scraping tools must be designed not to pierce a hide needed as a tipi cover, or winter robe. Expedient tool assemblages are less carefully made, often consisting of nothing more than sharp flakes, amorphous in shape, and meant to be used for a brief time and discarded. Expedient tools are assumed to reflect activities that required less skill or technical involvement, such as shredding plant fiber to make binding material, or peeling skin from a plant root. Curated and expedient tool assemblages may be found at archaeological sites where significantly different activities were carried out.

Figure 1.10. Ground stone tools (grooved mauls) from a private collection.

Figure 1.11. Shell mask from a surface site in the southern Red River Valley (private collection).

Bone and Shell

In Red River archaeological sites bone tools are not nearly as common as those made from stone, but occasionally they are present. Scapulae from bison are sometimes found at sites especially from the later portion of the precontact record. The ridge of bone that runs along the backside of the scapula was chipped away, and sometimes the broad end of the bone was also shaped as desired. These were then attached to a handle and used as hoes to mound up the soil for gardens (Shay 2022: 136). Scapula hoes are often thought to be an indirect indicator of farming. We know very well how they were made and used since they were still part of native Plains technology in the late nineteenth century. Sometimes the scapulae would also be broken in such a way to create a convex and sharp edge to be used as a knife, occasionally referred to as "squash knives."

The metapodial (lower leg bone above the ankle on ungulates) of bison or elk might also be used after being split lengthwise and small, comb-like notches carved into one end. These were fleshing tools used like stone scrapers to remove connective tissue from the inside of a hide. Another use of metapodial bones were as tool handles, used to haft scrapers or other implements. Also for hide working were so-called grainers. These might be the size of a fist, comprised of the articular joint of a leg of a large mammal. The surface was broken away to expose the rough cancellous tissue inside, which was used to rub hides smooth. Bone splinters were used to make needles and awls for sewing and piercing. Sometimes bone was made into fishhooks, although in the Red River Valley fishing paraphernalia is not found very often. Horn from bison might be used as scoops for serving food, or even for digging. Rib fragments were sometimes smoothed and rounded on their ends to make flatteners. These might be used to flatten porcupine quills for decorative use. Large ribs might also be used as softeners for hide straps. Elk antler was used to flake stone tools, and incisor teeth were used as parts of necklaces. Beaver incisor teeth split lengthwise and drilled with holes for suspension were used as jewelry.

Sometimes clamshell was used to make washer-shaped beads. These were most likely made from river-mussel shells that could be taken from the Red or many of the tributary streams. Sometimes in burials excavated in earlier times shell artifacts made from more exotic species were found. There are a few examples of whelk shell incised with facial features, such as drooping or weeping eyes (Figure 1.11). These belong to the last part of the precontact period. The whelk is a typical sea-shell at beach souvenir shops, and is from a species of the genus *Busycon,* a sea-snail often

Figure 1.12. Copper spear point (Catalog No. 1485.A905, courtesy Minnesota Historical Society).

found in the Gulf of Mexico. Occasionally, long bead artifacts were made from the coiled, interior column of the shell, described in the archaeological literature as columella beads. Another sea-shell from the Pacific coast is sometimes encountered. This is the Dentalium shell, which are small tusk-like shells from another genus of sea-snail. They were used as the elongate beads sometimes arranged in rows sewn together as necklaces. Being exotic, these shell artifacts may have been a signature of status, particularly since making beads from these shells was a time-consuming procedure (Lowie 1954: 55; Wedel 1961: 222-227).

Copper

The people of the Red River Valley occasionally used copper artifacts as well (Figure 1.12). Copper does not occur naturally in the region and it almost certainly came from the Lake Superior area of northeastern Minnesota or northern Wisconsin where it is found in till deposits and is known as float copper. Copper was mined from bedrock in the Keweenaw peninsula of Upper Michigan as well, and a good deal of copper has been traced to Isle Royale, which is about 15 miles off the north shore of Lake Superior. There are archaeological sites on the Lake Superior north shore where copper was brought from Isle Royale and worked into rough shape, and then taken inland where fashioning it into tools was completed (Fregni 2009: 123).

Native Americans did not smelt copper from ores, and there is no good evidence that copper was cast in molds. In fact, while copper can be annealed at around 900 degrees Fahrenheit, it will not melt until heated to over 1900 degrees F. It has been suggested that heated copper was softened at annealing temperatures and perhaps hammered into grooved molds (not poured as molten metal) to form some of the shapes found

with copper tools. In any case, it is clear that copper was heated, perhaps both to shape it more readily and to increase its strength (Fregni 2009: 124).

The mining of copper, its transport, working, and trade was a complicated system that apparently began as long as 5500 years ago. There are arguments that copper was even used in Paleoindian times. Copper occurs both as utilitarian items and ceremonial objects (sometimes found in graves), and the use of copper persisted for thousands of years. In the Red River Valley this metal was undoubtedly traded or brought from the east, but it does occur at archaeological sites as a rare find. Sometimes copper ornaments are found in burial sites along the Lake Agassiz beach ridges, but in the same area it is found fashioned into tools, mostly large projectile points apparently the size of spear heads. While copper was made into a variety of tools in the Great Lakes region, in the prairies of the Red River copper is found mostly in the form of spear points (Gibbon 1998).

Ceramics or Pottery

Probably the most widely studied artifact in North American archaeology is pottery, or vessels and miscellaneous items made from fired clay. Pottery vessels are considered important for a variety of reasons (Skibo 1992). They could be used to store food in containers that rodents would not chew through. Perhaps more important they were efficient for boiling water to cook food. A variety of plant foods that might have been otherwise unpalatable, upon boiling, become eminently edible. And for archaeologists, pottery is supremely significant since the wet clay that is the beginning of a ceramic vessel can be shaped in many ways, can be enhanced with tempers or additives, and may be impressed or painted with decorations, all of which makes pottery quite distinctive when made in different time periods by different people with different preferences about how to make pottery and how it should look. And as a final gift to the archaeologist, pottery resists the erosive effects of burial in the soil fairly well.

Before wet clay was made into the shape of a vessel, some non-plastic material might be added to the clay to keep it from shrinking while it dried before it was fired, although this was not always needed. The added material—crushed granite, sand, sometimes crushed clam shell—is called temper. The vessel was formed using one of a couple of methods; sometimes molding a lump of clay into a pot, or perhaps rolling coils of clay and building them one on top of the other to form a vessel. While the clay was still wet the coils would be scraped, perhaps with a clam shell,

to smooth out the ridges and form an even surface. Sometimes a net bag was used to line with clay, and when partly dried, the bag removed (Goltz 2018). Pottery was sometimes globular, sometimes more cone shaped or conoidal. The top of the vessel near the mouth might be straight, everted, in-slanted, or even wavy in an S-like profile.

The pot was further shaped with a wooden paddle, sometimes carved with crisscrossing grooves that prevented the paddle from sticking to the wet clay of the pot. The marking left on the surface of the vessel, depending on the way the paddle was carved, is called simple stamping, or check stamping. More often in the Red River region, pottery was paddled with a piece of wood wrapped in some sort of cord or fabric. If we can see the impressions of cordage on the pot surface, we call it cord marked. If the markings seem more like the impression from a piece of woven cloth, it will be called fabric impressed. If a net-like bag was used to line with clay, it would leave net impressions on the surface. Thus, precontact pottery is described as being cord marked, net impressed, simple stamped or the like. If the surface of the vessel was rubbed smooth before firing it is called plain, or smoothed. Sometimes a smooth object might be used to rub the partially hardened surface to bring finer particles to the surface, creating a sheen on the vessel surface. This is called burnishing.

The shape of the vessel, the type of temper used, the nature of the surface treatment—cord-marked, stamped, fabric or net impressed—all of these go into characterizing the pottery from a site. But sometimes the most important feature of the pottery is not so much how it was made, but rather how it was decorated. In the Red River area, pottery was almost never painted, although in the last part of the precontact period on rare occasions we find ceramic fragments that have a red paint or slip on one surface. Most decoration involved impressions with a variety of tools. This was mostly done on the neck and rim of the vessel, or sometimes on the shoulder below the constriction of the vessel neck, where a globular vessel expands. Decoration sometimes involved impressing a twisted cord repeatedly into the lip or rim of a pot, or pressing a notched object, perhaps wood, into the wet clay surface prior to firing. A sharp narrow point might be pulled across the clay to create an incised line, or a wider tip would make a wide, shallow impression called 'trailing' or wide incising. This type of line decoration was often made to create actual images on the vessel surface, such as a stylized bird tail or hawk's breast.

Decorative styles on ceramics are more diverse than the styles of projectile points since wet clay is much easier to modify than stone. Because pottery is so easy to shape and to decorate, archaeologists find that

ceramics vary dramatically from one place to another, and over time as well. This is probably because the people making these vessels belonged to different social groups and learned different preferences for the best way to make and decorate their pottery.

Pottery styles are usually assumed to be the archaeological signature for social groups. From native testimony in historic times, we even know something of the meaning of pottery decorations. Alfred Bowers (1950: 373–374) tells us that among the Mandan, who lived on the Missouri River in North Dakota, certain women in the community made pottery and actually had rights invested to them and their heirs to produce ceramics. Daughters even "paid" their mothers for the transfer of these rights. The pottery was made in private and there were mythic elements surrounding its manufacture. The decorations had specific meanings; arches impressed on the wet clay surface represented the sky, or perhaps rainbows, zig-zags were rain, encircling lines were snakes. Benn (2019) takes the analysis of ceramic decorations to another level, suggesting that vessels themselves were symbolic of women, and that the surface of the pot was decorated with a symbolism that was significant in the daily life and ritual of people who made them. Pottery was, therefore, a 'cosmogram' that reflected various spiritual or ideological conceptions of the world and the unseen forces behind the reality of everyday life. If Benn is correct, the study of ceramic decorations may inform us about more than social interaction among people in the past: it may provide us with insight into their belief systems as well.

People's preferences for decorative styles would change over time, so pottery decoration is used as a rough estimate of time. When a pottery style has been dated at one site with, say radiocarbon dates, it will be assumed that the same pottery style at other sites probably dates to roughly the same time. If different styles are found in a stratified site, one above the other, when those same types of pottery are found in surface sites with no stratigraphic context, they may be assumed to be chronologically related in the same way as they are in the stratified context (Figure 1.13).

A final comment regarding the technology reflected in the archaeological record. A study of organic residues cooked into the walls of clay pots shows that the inferred foodways derived from the artifactual assemblages at Northern Plains sites is supported by the nature of the fatty acids released during cooking. In other words, chemistry supports the interpretations developed from artifacts (Malainey et al. 1999). Not every

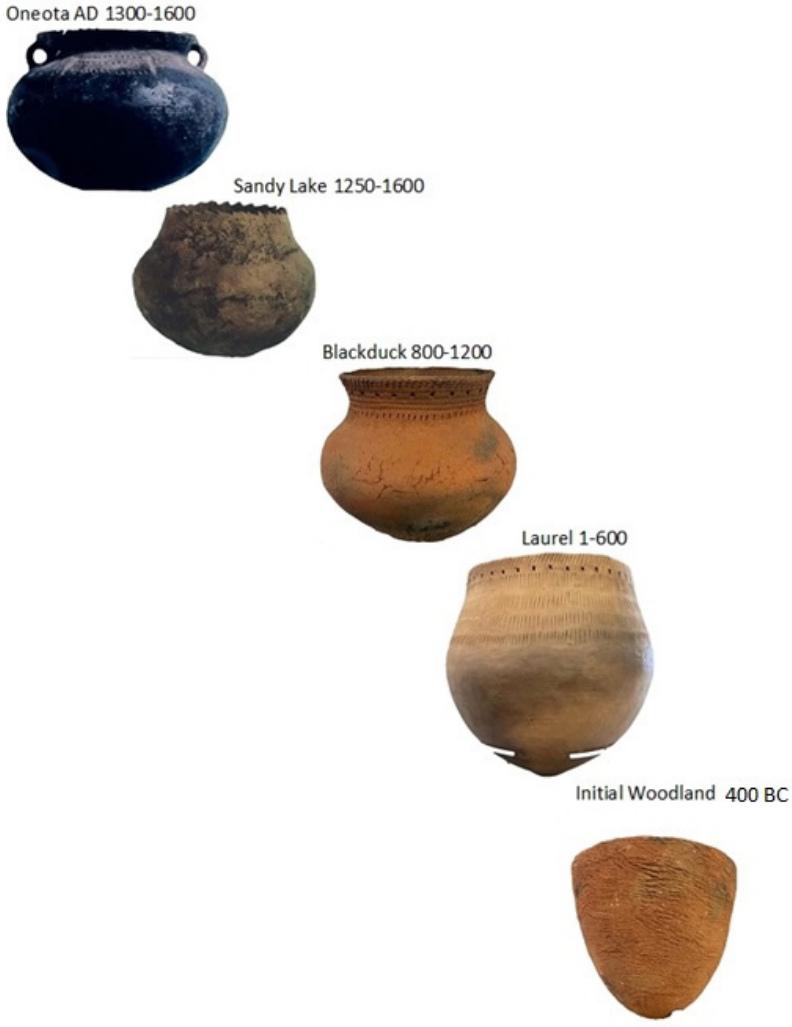

Figure 1.13. Regional precontact pottery through time (courtesy, Office of the State Archaeologist replica collection and Scott Anfinson).

interpretation made from a site assemblage is correct, but it is possible to closely approximate the life-style of ancient peoples from their discarded implements.

A Rationale for Archaeology

Archaeology is about the past. It is not the same as history, at least history as conducted by historians. It does some of the things that history does, but it really is a different undertaking both in how it is accomplished and in what it comes to learn about the past. The historian works with documents written by people and expressing ideas, thoughts, intentions, and motives; sometimes even feelings and emotions. The archaeologist works with objects, often made by people, but sometimes simply modified by them (like butchered animal bones). Historians usually learn what people did and, often, why they say they did it. They try to understand their subject from the 'inside' as well as from the 'outside.' This is to say that sometimes historians understand that the environment, or climate, or resources had important impacts on the lives of peoples and of nations. But they also understand that the decisions of identifiable people had a large impact on what happened in history.

One may ask then, why bother with archaeology at all, since history does much the same thing but with more detail, accuracy, and insight into the motives of real actors in the story of the past? The answer to this question is twofold; first, sometimes an archaeologist finds some physical evidence of activities that no one bothered to record in the historical record. Everyone leaves a material signature behind, but only a few people leave a written record. Second, there is no historical record for most of the time people have lived in the Red River Valley (or anywhere else for that matter). Archaeology is far from perfect, but for now it is really the only effective way to penetrate very distant periods of time.

Archaeology is limited in what we can say about people in the past. We don't know individuals, we have little insight into moral standards, and only slightly more about kinship or politics. For all practical purposes, we never know about named places or individuals. Our inferences about the past are often informed by historical accounts, by ethnographies, and by traditional sources, such as oral and family histories. Sometimes names and places are mentioned in these sources provided by native authorities who have a knowledge of their people's traditions. From these sources we make inferences about how to interpret the archaeological materials. But mostly, we work with inanimate objects left in the soil. As

an archaeologist, I try to learn the ethnographic descriptions of groups mostly to help me understand the archaeological record, but I learn these things from the authority of others. My main work is not with the living, but with the things left behind by those long gone.

Archaeology is comparable to a forensic investigation. We don't have testimony from witnesses, but objects, sometimes those that were made by human hands. Sometimes they are simply plant seeds, or animal bones, or clam shells, or charcoal from a fire, or a building foundation. These objects were left behind by people who lived for some period of time, short or long-term. The archaeologist asks the question, "what happened here?"

The historian usually works in libraries and other locations where documents are maintained. The archaeologist normally works in the soil. While the historian gleans facts and ideas from the written record of the past, the archaeologist extracts objects from the ground. The historian needs to be able to track down documents to make a case for the history being written. Historians must learn to navigate libraries, archives, and other sources of documentary evidence. Archaeologists work in soil, and it is the soil that must be navigated and understood.

The soil that contains archaeological materials has a history itself, reflected in the soil profile. This profile develops over time as sediment is exposed to weathering. In normal cases a soil profile weathers into an A-horizon near the ground surface which is rich in organic matter and usually black in color. Here is an active biologic zone teeming with life—gophers, ground squirrels, snakes, insects, arachnids, earthworms, mites, bacteria, molds, and so on. Dead organic matter decays to form the A-horizon, aided in its decay by water from rain and snow melt. This organic matter serves as the foundation for the growth of new life.

Below the A-horizon is the B-horizon, sometimes called a mineral horizon. Compounds from the A-horizon are transported here as water from precipitation percolates through the profile. One may find concentrations of various minerals here formed as water moves through the profile. The exact composition of the B-horizon often provides an understanding of the age of the profile, that is of how long the soil has been weathering. Some B-horizons enriched with clay particles are considered to be old due to the fact that it takes time for particles of clay to be moved through the profile from the A-horizon to the B. The bottom of the profile is the C-horizon, or parent material that weathers into a profile. In the

Red River region, along rivers, the parent material is alluvium (usually clay and silt), on the Lake Agassiz plain the C-horizon is clay and silt as well, and on the beach deposits it is comprised of sand or sand and gravel.

In some cases, the profile is interrupted by darker layers below a B-horizon. In this situation a former land surface weathered into a dark colored A-horizon, and was buried by subsequent deposition. If an entire profile with an A- and B-horizon is buried it is classified as a paleosol, or old soil. If it was buried by additional deposition before enough time passed for the formation of a B-horizon, it is simply a buried A-horizon. In places along the Red River archaeological sites are found in or below these paleosols and buried A-horizons, showing a complex history of weathering and deposition at that location. The archaeological record gives us a view of the human past, while the soil that encases that record gives us a record of the natural history of the place.

Soil functions as a great natural recycling mechanism. The remnants of dead plants and animals break down into organic compounds in the soil, forming a foundation for the growth of new plant life, which in turn sustains animal life on earth. But the soil does more than simply recycle. The soil serves as a repository for the detritus left by human action. We all create debris during our lives. Rich or poor, powerful or powerless, famous or anonymous, we all leave behind a remnant of our lives in the shape of material stuff, garbage, junk. In times gone by, people disposed of their everyday debris outside of their homes, or on the edges of their settlements.

This debris begins the process of decay more or less immediately but given the nature of the things we use as tools, containers and the like, and the hard parts of the foods we eat, such as bones, hard shells, and seed coatings, some of the debris we create takes longer for the soil to digest. It rests there as a signature of our behavior and preserves this testament if we care to lower ourselves and observe it, to read and understand it. For the archaeologist, this lowly junk is a time machine. It is the way the earth gives a voice to nameless peoples from the past. It's only a whisper of what once happened. Archaeology amplifies that whisper.

Over time, everything decays. Remnants of the human past dissipate over time in the soil. Some objects are consumed by soil acids, others broken up by freeze-thaw cycles, or by the expansion and contraction of clays, some moved from their place of deposition by burrowing animals (Figure 1.14). It is up to us whether or not these preserved images from the past are recognized, understood, and used as a way to appreciate those

Figure 1.14. Archaeological site on the upper Red River slumping after a flood.

who once lived here before they are destroyed or disturbed. For the archaeologist, it is a humane duty to learn these about these remnants before they are gone forever.

I was once confronted by several men who thought archaeology was disrespectful to the past, and they told me they would rather archaeological sites be pushed into a lake than be studied by an archaeologist. I could only shake my head. Their wish comes true every day. Countless sites are bulldozed under, plowed over, tiled through, washed away, and tunneled into every year. In one way or another, they are irretrievably wrecked by nature or by humans. So, the question is: Should people today decide for future generations that the record of the past should be destroyed, or left unattended to decay?

The soil is like an attic that holds an old family album. It won't last forever. Attics dry out, pages crumble, pictures fade. Before it falls apart, or is lost when the house is torn down, someone has to save it and care for it. So too with archaeological sites preserved in the ground. The soil has saved them for a time. Just as the soil gives life, it gives us a past. But this isn't a fairy tale. Preservation is not forever. Sooner or later, the processes of decay and rebirth that go on constantly in the soil will destroy our archaeological site, that fragile signature from the past. It may erode, it may be distorted or demolished by natural or human forces. We have a choice to learn now or lose forever the story in the ground. The earth tells us our story, but there are other important matters, and the soil must go

on weathering, wearing one thing out to create another, serving as the birthing ground of life on earth. The soil offers us a special gift: the gift of our past. If we don't want it, so be it. The soil has more important work to do. It only does history on the side.

Figure 2.1. The Red River at Fargo-Moorhead.

Chapter 2
A Natural History of the Red River Valley and Its Relationship to Archaeology

Centuries ago, the nature of the environment had a more direct impact on people's lives than is the case today, and the precontact peoples of the Red River Valley had to develop a variety of strategies to survive in the sometimes-severe regional environment. Extreme cold, heavy snows, torrential rains, high winds, and drought were to be expected at one time or another. A settlement might be located in well-drained terrain to avoid flooding, or on the leeward side of a hill to avoid the wind. Rivers and springs were often chosen for camps to take advantage of the water and the other resources found nearby. A summer encampment in the Red River Valley might be on high and dry ground where a breeze kept the mosquitoes at bay. A winter camp, on the other hand, would more likely be on low ground where trees or a modest river trench might offer protection from extreme wind chills (Figure2.1).

Often, we understand the finds made at an archaeological site because they can be directly related to some aspect of the local environment. In the pre-European period, the type of houses found in the western Great Lakes area were considerably different than those found in the eastern Great Plains because of the difference in the local climates and in the kinds of raw material available to build a structure. While wood, bark, and plant fibers might be used in the woodlands, on the Plains buffalo hides, sinews, and slender poles might satisfy similar needs; the difference between wigwams and tipis.

The natural environment directly affected many elements of people's lives besides the raw materials they used and the buildings they lived in. The types of plants and animals used for food, the seasons in which they were most likely to be gathered or hunted, the migratory patterns of animals, the nutritional value of food sources in different seasons—all these had a direct impact on how people lived and moved about, the tools they made and used, the size of the groups they lived in, and perhaps even the kind of family affiliations they preferred. Anfinson (1990) described the Lake Agassiz basin and the Red River Valley specifically as an area where physiographic features constrained the location of living sites to mainly

along the Red and its tributaries. Lakes were absent, so there were no shorelines to settle on, and the forest and aquatic resources found in other areas of Minnesota were mostly lacking. Besides this, the natural environment was not static over time. In the ten thousand or so years people lived in the Valley there have been significant climatic fluctuations that affected their adaptations. For the archaeologist, it is important to recognize both the natural features of the landscape, its flora and fauna, and how these may have changed over time.

The Ice Age or Pleistocene

Over the past two million years or so the area that would later become the Red River Valley was repeatedly covered with glacial ice. The glaciers developed during a period of dramatic climatic gyrations that included cold and warm intervals, but during which cold conditions dominated. This time is colloquially known as the Ice Age, or in formal geological terminology, the Pleistocene. This is the penultimate epoch of the Quaternary Period; the final epoch in which we now live being the Holocene. In conventional terms, the Pleistocene lasted from about 2.6 million years ago to 11,700 years ago, after which is the Holocene epoch.

The first people came to America during the last part of the Ice Age. We know this because there were no modern humans when the Pleistocene began over two million years ago, and when the Ice Age ended people were clearly present on both American continents, and the earliest archaeological sites sometimes contain the remains of animals that became extinct when the Ice Age ended. Most archaeologists seem to agree that human arrivals in America must have occurred around 20,000–15,000 years ago, perhaps even earlier. However, during this time period the Red River Valley was buried under massive ice sheets.

As the ice began to melt around 14,000 years ago the wind-blown sediment that collected in the ice over the millennia, and the rocky detritus that the ice scoured off bedrock farther north was dumped over the pre-existing landscape. This mix of dust, mud, gravel, rock, cobble, and boulder debris is called glacial till. A thick layer of till covered bedrock throughout the Red River Valley. Some of the bedrock is from the Mesozoic Period, and there are very ancient Precambrian formations in strata below the Mesozoic formations (Harris et al. 2020: 3). Around Fargo-Moorhead on the Minnesota-North Dakota border bedrock is overlain by between 100–200 feet of glacial till (Schwert 2016). The glacial till is from the last of the glacial advances into the Red River region, a lobe of the Laurentide Ice sheet that was centered west of the Hudson Bay

area. This is known as the Des Moines lobe, and it brought a shale-rich till from North Dakota and Canada to the Red River region (Lusandi and Dengler 2017: 2).

One of the features of glacial till sometimes overlooked by archaeologists is the chemical nature of the till deposits. The soils of the Red River Valley perimeter are formed in till and sediments derived from till. The ice in this part of North America originated to the north and northwest of the present Red River region, and the sources for the till were calcareous rocks. This means that the soils formed in these materials are also calcareous, that is, they have a relatively high pH. Many soils in the Red River Valley have pH values of 6 or higher. This feature of the regional soils is conducive to the preservation of bone (Baxter 2004). Many archaeological sites in the Red River Valley have excellent preservation of faunal material. In fact, at most archeological sites bone fragments are the most common item recovered, and as it happens, most of this is large mammal bone, and when identifiable, usually from bison. However, bone from small mammals, birds, and even fish are also encountered in site deposits. Unfortunately, the same conditions do not seem to be effective in preserving plant remains (Shay 2022: 76). In my experience, unless they are burned, plant remains in Red River archaeological deposits are rare, although this does not include every type of plant remnant. Phytoliths, or microscopic silica objects, mostly from grasses, may be present. Plant macrofossils, like seeds, shells, pits, and the like, are subjected to microorganisms that degrade their survival, especially in the somewhat moist conditions that provide a good environment for those biological agents that reduce plant fragments to organic compounds.

Till is relatively easy to recognize when doing archaeological work, and in many areas of Minnesota, North Dakota, and Manitoba archaeological sites are found layered on top of the glacial till. We know that people could not have lived in the Red River Valley during the Ice Age, since the entire region was under ice. Anytime glacial till deposits are encountered it is fairly clear that those deposits pre-date human settlement, and that any artifacts that might be present in till were undoubtedly moved there by some subsequent disturbance. Naturally, where till is exposed on the surface and where it has weathered into a soil profile, archaeological materials will often be encountered. In these cases, the archaeological sites were laid down on the glacial till while it was in the process of weathering into soil. In other words, the till was there before the archaeological site.

Lake Agassiz

Melting ice in the Red River Valley flooded over glacial till as water collected behind a natural dam at Big Stone Lake. This is on the present-day Minnesota-South Dakota border. The water backed up to the receding face of the glaciers and created a gigantic water body we know today as Lake Agassiz. This lake was one of the most massive bodies of fresh water ever. Overall, Lake Agassiz covered about a half million square kilometers, although the Lake changed its shape as the melting glaciers against which it was damned continued to retreat to the north. At any one time it was never more expansive than about two hundred thousand square kilometers, still over twice as large as Lake Superior (Flint 1971: 565). It lasted from just after 13,000 years ago to about 10,400 years ago in the southern Red River region, and perhaps 2000 years later in southern Manitoba. In the Fargo area, in the center of the Lake's southern arm, there is a layer of clayey lacustrine (lake) sediment about one hundred feet in thickness (Schwert 2016; Teller and Leverington 2004: 741).

It's often been remarked that the Red River Valley of the North is not a river valley in a true sense of the word. The Red itself is a sinuous stream that meanders northward through a narrow trench. Outside the trench of the river the land is very flat, extending east and west as a level plain to noticeably higher elevations miles distant from the river itself, where the beaches of former Lake Agassiz define the conventional borders of the Valley. What we usually call the Red River Valley was not formed by the Red River, but by Lake Agassiz. In the southern portion of the valley the higher ground of the beach deposits trends closer to the river itself, while in the northern valley this elevated land is farther from the river on both the east and the west. In other words, the Red River Valley broadens in an irregular cone-like pattern, narrow in the south and broader in the north. Near Lake Winnipeg in the north, it is about 80 miles across; near Big Stone, at its southern end, it is about 20 miles wide. The Lake Agassiz bottom land is one of the flattest areas in the world. The gradient of the Red as it flows toward Lake Winnipeg is only about one foot per mile.

Modern studies of Lake Agassiz provide an updated history for the lake and show that it grew, shrank, and grew again as the Ice Age ground to a choppy end, the climate warming, cooling, and warming again. As climate fluctuated and lake levels rose and fell, the water in the lake found several outlets. One of the main outlets was the southern end of the valley at Big Stone Lake, where Lake Agassiz early on discharged a stupendous torrent of water down the Minnesota River Valley.

As with any large body of water, Lake Agassiz formed beaches of relatively coarse sediments along its perimeter. These are known regionally as the Lake Agassiz beaches or strandlines (Figure 2.2). Since Lake Agassiz rose and fell, and since the land beneath the lake rose as the ice from glaciers melted (isostatic rebound), and slowed as water filled the basin, there are a dizzying number of beach deposits related to the changing elevations of the Lake's shorelines. These beaches are used in part to reconstruct the history of the lake. The oldest phase of Lake Agassiz is defined by the Herman beach, later beach deposits are given names such as Campbell, Tintah, and Norcross. In all, dozens of these strandlines have been identified by geologists in the US and Canada. Geologists offer a history of the phases of Lake Agassiz which include Lockhart, Moorhead, Emerson, Nipigon, and Ojibway, and lasting from before 13,000 years ago to about 8,200 years ago (Brouard et al. 2021; Lepper et al 2011: 206; Michalek 2013). Unfortunately, the dating of Lake Agassiz' history is not straightforward and the dating of multiple beaches representing fluctuations in the water level of the Lake are not entirely consistent. One recent study concluded that "…the collective Lake Agassiz radiocarbon dataset assembled over the last 45 years includes dates of varying precision and reliability, and there is presently no consensus for a detailed lake chronology" (Young et al. 2021: 3).

One aspect of Lake Agassiz history relevant to the human use of the region is that during the Moorhead phase, the Lake breeched its southern outlet and water levels fell dramatically. The lake may have dropped as much as 30 meters below its former level around the southern outlet (Fisher and Lowell 2006: 2688). Recent study using lidar shows low-relief geomorphic features indicating old stream channels that ran toward the Red River during this time and indicate that the lake waters had receded and streams now coursed over the dry lakebed. Geomorphic evidence suggests that the Lake Agassiz southern shoreline was somewhere near the Canadian border (Dilworth and Fisher 2018: 219). Much of what we know as the Lake Agassiz bottomland in Minnesota and North Dakota was probably dry during this time. The Moorhead phase probably began before 12,000 years ago (Young et al. 2021), and for the duration of this low-water period there may have been a short-lived period of human occupation in areas that eventually flooded as outlets clogged and lake levels rose once again.

In addition to the beach deposits there are over 30 remnant deltas laid down by rivers that entered Lake Agassiz carrying sediment from the melting glaciers (Chapman et.al. 1998:10). The largest of these are

Figure 2.2. Lake Agassiz lowland viewed from a beach ridge, Clay County, Minnesota.

Figure 2.3. Lake Agassiz and the Red River region.

the Assiniboine delta, south of Lake Manitoba, and the Sheyenne delta, southwest of Fargo (Figure 2.3). After Lake Agassiz receded, these deltas remained as elevated, sandy landforms featuring distinctive hydrology, soils, and plant communities. Their edges also eroded during post-Ice Age snow-melt and rain events and the sediment that flowed off the deltas formed fan deposits, or tongues of sediment at the terminus of the delta. These alluvial fans, as they are called, sometimes enclose buried archaeological sites.

The still waters in the middle of lakes favor the deposition of fine sediments; silt and clay, while the shorelines and beaches of lakes consist of coarser sediment such as sand and gravel. In the Lake Agassiz region, the old lake bed is characterized by thick, heavy clays and silts, while the beach ridges to the east and west are sandy and gravelly. This had an important impact on vegetation, wildlife, and, ultimately, on the settlement and resource use patterns of ancient peoples. The clay in the bottom of the Lake bed retains water very well, but is also susceptible to flooding and ponding. The sandy sediments near the beach deposits drain more quickly and are less likely to flood, but are more susceptible to drought. People were more likely to make use of the Lake Agassiz bottom-land in winter or in any season when standing water would not present a problem. The beach ridges would have made more sense in the summer where a cool breeze on higher ground, and a panoramic view of the valley might serve well the interests of hunting people. Furthermore, we might expect that forage for grazing animals such as bison and elk would mature at different rates in the well-drained beach soils and in the heavy, poorly drained lowland soils, leading to seasonal preferences in where hunting people might want to locate their settlements.

The Valley of the Red River through Time

The modern Red River drainage began to form in the Early Holocene. Quaternary scientists divide the Holocene into three parts; early (11,700-8,200 years ago), middle (8,200-4,200) and late (4,200-present) (Walker et al. 2012). The early part of the Holocene in the Red River region may have been somewhat cooler than present, the middle somewhat more arid and perhaps warmer, and the late Holocene climatologically more or less like today. It is important to remember that within each of these parts there were climatic oscillations. For example, the Late Holocene included the Medieval Warm period (roughly tenth to thirteenth century) and the Little Ice Age (fourteenth to nineteenth century).

During the terminal part of the Pleistocene and earliest Holocene the climate was still relatively cool. Study of plant pollen, plant macrofossils, diatoms (a type of algae), ostracods (a group of small crustaceans that often live on lake bottoms), geochemistry, and stable isotopes, tell us that the region was probably something like a spruce parkland. Today, there are no vegetation communities comparable to this hypothesized environment, but it would have featured spruce trees, along with some deciduous species such as aspen and ash. These would have flourished in groves, interspersed with grasslands, particularly on higher ground, while lower elevations featured wetland plants (Yansa 2007: 123–124). This environment would have hosted the very earliest people around the perimeter of the Red River region, the early Paleoindians, makers of fluted points and related technology. The Valley proper would still have been under the waters of Lake Agassiz. During the early portion of this period mammoth lived along the Lake Agassiz shoreline, and bones of mammoth have been recovered from the Herman beach deposits of the lake (Harrington and Ashworth 1986). Unfortunately, we do not have any direct evidence in the archaeological record that Paleoindians hunted the mammoth in this region, although in adjacent areas such as western South Dakota mammoth hunting by Clovis people is documented (Hannus 2018). As Lake Agassiz began to drain in its southernmost region, the Red River began to form. At first, it was confined to a relatively narrow meander belt, this being the earliest phase in the formation of the Valley as we know it today (Nielsen et al. 1993: 193).

Droughty conditions may have been widespread across the Northeastern Plains in the immediate post-glacial period, but these conditions were masked by vast amounts of standing water ponded in the relatively flat region after the melting of the ice. Studies of pollen profiles contain arboreal (tree) pollen, possibly suggesting trees supported by groundwater rather than by precipitation. But after about 10,000 years ago arid conditions are more commonly encountered in the pollen record. Maximum aridity begins around 8,800 years ago in the western Plains, and spreads to the east. In simple terms, this is reflected in increasing levels of ragweed pollen and diminished amounts of grass and sage pollen in lake bed samples. The most severely arid times seem to be from around 6,800–5,800 years ago (Yansa 2007: 131ff).

For a period of time in the Middle Holocene the Red River spread alluvial (stream or water-born) sediments over a wide swath of the Lake Agassiz bottom lands (Artz 1995: 81). Geologists call these lateral accretion deposits since sediment was laid down by water spreading laterally

over the landscape. This middle portion of the Holocene is sometimes called the Altithermal by archaeologists. During this time the climate of the Great Plains became droughty, yet while it was more arid, occasional convective storms may have been quite severe. When thunderstorms occurred sediments from the sparsely vegetated land surface would run off and clog stream beds and river channels. Rivers began to overflow their banks more frequently since their channels were filled with the eroded sediment. This resulted in the creation of braided streams and the spreading of flood sediments across a larger expanse of the flat lake plain. These lateral accretion deposits are not very thick in the Red River region, but they are extensive.

An important aspect of droughty conditions in the Red River region, including during the Middle Holocene, was the occasional creation of certain types of surface features that have archaeological significance. Alluvial fans are one of these features. Fan deposits accumulated episodically, and sometimes preserve a record of repeated occupation by ancient people. One of these fan deposits in the southern Red River Valley contained an important stratified site (Michlovic and Running 2005). Fan deposits on the perimeter of the Lake Agassiz basin, where runoff from high to lower ground created these geomorphic features hold great promise for future archaeological exploration, including the potential for finding undisturbed and buried sites. Another of these geomorphic features related to arid episodes are dune fields. Shoreline deposits of sandy sediment around the edges of old Lake Agassiz were exposed to eolian or wind action during droughts, resulting in the creation of sand dunes. Dunes are present in some of the Lake Agassiz perimeter deltas, such as the Sheyenne. They are also present in some areas along the eastern shoreline of the glacial lake, and date from Middle Holocene times probably down to the Historic period. In the Canadian prairie provinces, it has been argued that the dune fields were sometimes used as traps for bison hunting (Holley et al. 2023: 22).

There are other geomorphic features of the Red River that are relevant to the archaeological record. Over the course of the Holocene some sections of the Red avulsed, or jumped from an established channel to form a new one somewhat parallel to the old one. This probably happened as the lake bed rose sporadically in response to the great weight removed from the land as the glaciers and the waters of the Lake Agassiz receded. Occasionally sites are found some distance from the Red or its tributary streams possibly due to this sort of event. Overall, the Red has a low rate of lateral channel migration, perhaps more so on the lower section of the river in

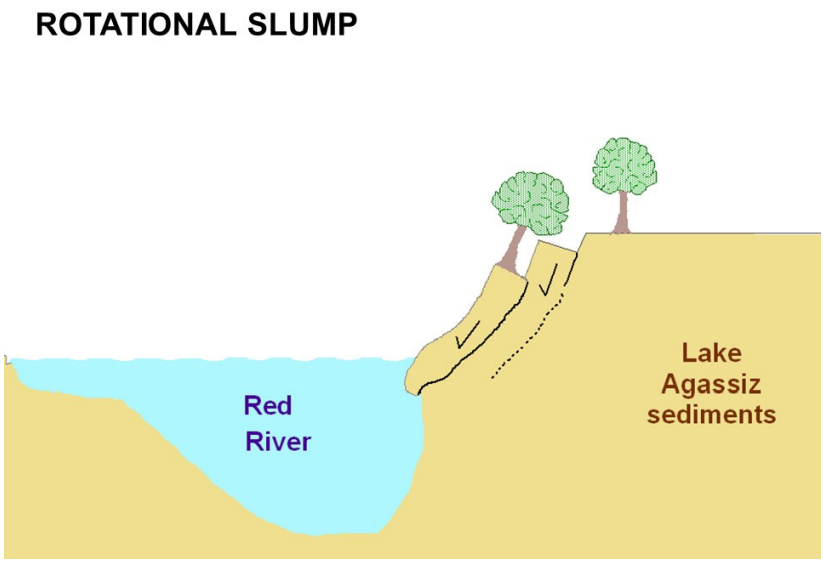

Figure 2.4. Illustration showing destabilized cutbank on the Red River resulting in bank slump. (Schwert 2003: Fig. 6, by permission of the author).

Figure 2.5. Photograph of slumping bank along the Red River near Fargo, North Dakota. (Photo courtesy of Donald Schwert)

Manitoba. Also, just as the Red River Valley is not a typical river valley insofar it is really the bottom of an abandoned lake bed, some features of the surficial geology near the main stem of the river are not typical fluvial features. For instance, some of the benches, or terrace features along the river are not old river beds that have been left high and dry as the river down cut to a new bed, but rather are slow-moving landslides as the trench walls collapse toward the river (Schwert 2003). The Lake Agassiz clays open large cracks when dry, and these destabilizing cracks sometimes define large blocks of riverbank that collapse downward and toward the river. This is due to the instability along the unconfined banks of the river, especially when water levels are low. Lacking hydraulic pressure from the river's water, the clay banks tend to slump. Since archaeological sites are often found near the river, this slumping of adjacent terrain is probably responsible for the loss of archaeological materials. It is one of many natural processes that erode and diminish the archaeological resources of the region (Figure 2.4-2.5).

During the Late Holocene, after about 4,200 years ago the river settled into its channel and began laying down sediment along its banks. These are known as vertical accretion deposits. These vertical accretion sediments form at different rates in different portions of the valley, and vary over time. One study from Manitoba showed that overbank sedimentation was about 2mm/year from 3,000-1,500 years ago, and only 0.1-0.4mm/year from 1,500-500 years ago. But for the past 500 years, vertical accretion reached about 2.4mm/year. In some parts of the lower Red up to 14 meters of alluvium has accumulated over the past 7,000 years (Nielsen et.al. 1993: 193, 207-208). Sometimes an A-horizon developed on a stabilized river bank, only to be covered up eventually by additional deposition, thus creating a buried A-horizon. Since it takes time for an A-horizon to develop, they are more likely to experience a human occupation, and archaeologists tend to inspect these carefully when they are encountered.

These vertical accretions, or overbank flood deposits from the past have buried archaeological sites. The remains of temporary camps and longer-term settlements along the Red were buried in the deposits laid down by the river, although the meandering and braided stream channel of the Middle Holocene may have destroyed more sites than it buried. The Late Holocene vertical accretion deposits were probably far less destructive of the archaeological record. These less energetic waters that escape the well-established river channel are unlikely to disturb artifacts and ecofacts, since these are more substantial than the water-deposited

Figure 2.6. Floodplain of the Buffalo River where it cuts through the Lake Agassiz beach, Clay County, Minnesota.

Figure 2.7. Red River woodlands north of Fargo-Moorhead today.

fine sediments and less likely to be moved by floodwaters. Sites in these contexts may be buried with relatively little disturbance. In any event, the vertical accretion sediments that bury sites also make them more or less invisible from the surface. One archaeological project along the Red River south of Winnipeg near St. Adolphe, failed to find many surface-exposed sites at all, probably because of the intensity of historic period flooding and the amount of sediment laid down over the older, precontact deposits (Callaghan 1984: 10).

Today, when archaeologists dig into these natural levees on the Red the story of the Valley becomes clearer. Buried A-horizons are common in the vertical accretion and reflect the ongoing intermittent flooding of the river (Foss et al. 1985). The soils and the sites comprise a layer cake of ancient times in the Valley and are of vital importance in coming to an appreciation of the very distant past.

The Red River does not flow alone toward Lake Winnipeg. There are numerous tributary streams of note such as the Otter Tail, Buffalo, Wild Rice, Red Lake, Middle, Snake, and Two Rivers in Minnesota, the Wild Rice, Sheyenne, Goose, Turtle, Forest, and Pembina in North Dakota, and the Roseau, Souris, and Assiniboine in Manitoba. Together with the Red/Bois de Sioux, these streams formed a branching system of water courses and woodlands expanding east and west away from the Red and into the uplands formed by the Lake Agassiz beaches. And on the Red River Valley perimeter these same tributaries cut through the more erodible coarse sediments on the Lake Agassiz strandlines forming a system of uplands, bluffs, and floodplain woodlands on the beach ridges themselves. These topographic and vegetational settings on the Red River Valley perimeter were the locus of settlements over the course of precontact time, featuring in close proximity broad floodplains with riparian forests, bluff edges off of the sandy uplands often suffused with springs, and, expanding away on the uplands, the prairie itself (Figure 2.6). In recent years these areas on beach and delta deposits have proven to be archaeologically extremely worthwhile (Holley 2019; Michlovic and Running 2005; Michlovic 1993).

Away from the Red River levees and the major tributary streams and interior to the beach ridges and associated deltaic and fan deposits, that is, in the open Lake Agassiz flats, there is little potential for buried archaeological sites. Soils in this portion of the Valley are formed in glacial lake sediment, and since the recession of Lake Agassiz, there has been little deposition. Smaller streams tributary to the Red, flowing slowly through this flat terrain do not have the capacity to move much sediment, and

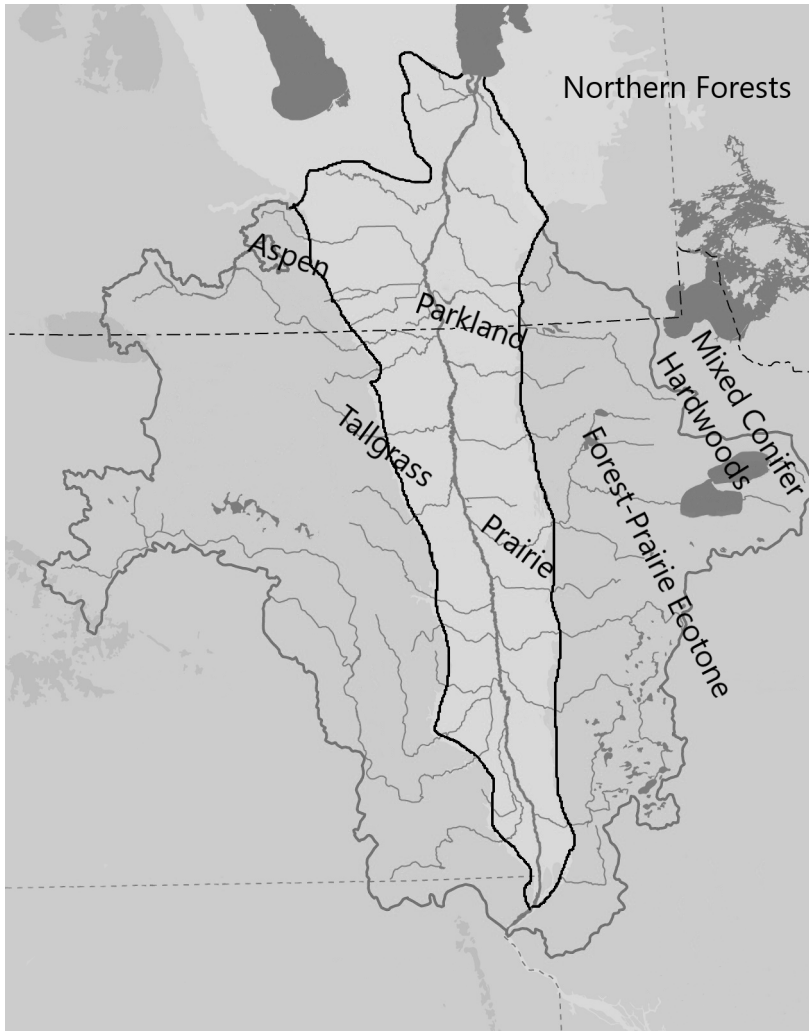

Figure 2.8. Major vegetation zones in the Red River region.

overbank flooding has not resulted in the accumulation of substantial deposits. Archaeological materials that are present are usually near the ground surface. Since most of these areas are now under cultivation, archaeological sites have been plowed up and are normally exposed on the surface (Holley et al. 2023: 20, 27).

The Gallery Forest

The banks and adjacent slope of the Red River trench support a substantial woodland. These woodlands extend out of the river trench onto the flat Lake Agassiz plain to varying distances all along the course of the Red. In some places the width of this forest along both sides of the river is up to a mile in spite of the many inroads of modern agriculture, although in the past, prairie fires may have limited the extent of the woodlands (Figure 2.7). Water in the topographic low areas of the river trench support these forests, as does the increased moisture in the soils along the perimeter of the river trench. Even though the lake plain is flat, there is a slight decline in elevation both east and west toward the river, providing enough soil moisture near the river to support a woodland. This is called a "gallery forest" because like a gallery in a building it is a long, narrow forest that follows the course of the river. The many meanders in the river created spacious and wooded loops, in some cases they consist of dozens of acres of solid forested terrain.

The dominant trees along the Red vary somewhat from south to north but may generally be characterized as Northern Floodplain Forest with boxelder, elm, green ash, and cottonwood as dominant trees, along with willow, oak, basswood, and maple (Severson and Sieg 2006: 127). There were also various shrubs and bushes, some of which provided berries, such as dwarf blueberry, huckleberry, wild grape, serviceberry, and buffaloberry (Ibid: Appendix 3).

On the eastern edge of the Lake Agassiz plain, along the beach deposits and extending eastward were oak-savannas, featuring grasslands interspersed with oak, basswood, and maple. To the northeast of the Valley were mixed forests of spruce, hemlock, pine, and fir (Hoisveen and Anderson 1971: 16). In far northwest Minnesota and extending into Manitoba was aspen-parkland, a mixture of grasslands, aspens, and other trees and shrubs.

The woodlands provided habitat for many animals, both small and large game, and fish and shellfish in the rivers themselves. Some of the trees would have provided foods such as acorn and hazelnut (Adair 2006: 365). Acorn was probably not a preferred food, but if pounded and processed

to remove tannic acid, it made a rather bitter flour that could be used to make cakes or a kind of bread. Hazelnuts are more easily processed and eaten, although neither of these nuts are often reported in the archaeological record of the Red River. The trees themselves supplied the wood for fuel and for building. The bark from some trees could be used for utensils and containers, while the fibrous material under the bark of some trees such as basswood was made into strings and thread. Trees and shrubs often provided edible fruits and berries that were a source of vitamins and used in preserving dried meat as pemmican. In fact, some archaeologists have suggested that ancient peoples on the Plains were tethered in their movements to patches of woodlands, and that every group would have to have had a wooded area out of which to operate. The settlement pattern of people throughout precontact times on the Great Plains was tied to these sources of wood. The Red River, and certain portions of adjacent tributary streams was one such wooded landscape to be found on the Northeastern Plains.

The Prairie and Parkland

The Red River Valley is part of the larger North American Grassland, which extends all the way to the Rocky Mountains. This grassland is usually referred to as the Great Plains. The northeastern portion of the Great Plains, the northern prairie, is known to archaeologists as the Northeastern Plains (NEP). In the formal sense of the term, the prairie is distinguished from the plains in North America as being a heavier cover of lush grasses. Moving east from the rain shadow of the Rockies, and closer to the moisture supply of the Gulf of Mexico, the grass cover of the Great Plains becomes more and more luxuriant. In the Red River Valley, just to the west of the Minnesota forest country, the grasses attain a remarkable growth. In the southern portion of the valley the tallgrass prairie dominates. In far northwest Minnesota and southern Manitoba, the grasslands become intermixed with aspen in a region referred to as the aspen-parkland (Figure 2.8).

Many people unfamiliar with prairie vegetation are unaware that the prairie is a diverse community of plants. In one remnant prairie of over 600 acres on the Campbell (Lake Agassiz) beach in Clay County, Minnesota, 43 plant families represented by 178 taxa were recorded. These taxa include grasses, sedges, forbs, and brush. Grasses are the familiar members of the Gramineae family, while sedges, which look much like grass, have triangular shaped stems, thick roots, and a preference for wet soil conditions. Forbs are flowering plants with broad leaves: sunflowers,

Figure 2.9. Tall grass prairie, east of Moorhead, Minnesota.

goosefoot, or prairie turnips, for instance. In the plant survey on the Campbell beach, distinct plant communities were identified for higher, drier soils consisting of coarser sediments, middle elevations with coarse to fine sediments, and lower, wetter elevations with soils made up of finer clayey and silty sediments (Dziadyk and Clambey 1980:45-46). As a result of findings such as these the prairie is divided into dry and wet prairie plant communities. Prairies also produce both cool season and warm season plants. For example, wheat grasses, blue-joint grass, wild rye, June grass, and needle grass tend to emerge first during the cool springtime in the Red River Valley. In warmer months, big and little bluestem, switch-grass, Indian grass, prairie dropseed, cord grass, Muhly grass, and side-oats grama flourish (Chapman et.al. 1998:46).

Prairie grasses and forbs put down very deep roots sometimes reaching a depth of over ten feet. Many species produce far more organic material below the ground surface than above, in some cases the root mass contains up to 90% of the plant. The mat of roots immediately below the surface may be very dense and it is difficult to penetrate. Archaeological digging in prairie grasses can be hard work, and many an archeologist can attest that the hardest part of digging in these grasses is stripping the sod to prepare an excavation unit. I and my workers would sometimes jump on the back blade of our shovels to get it into the ground deep enough

to undercut the thickest part of the root mat. Without draft animals and plows, prairie sod was extremely hard to farm. With stone or bone hoes and digging sticks prairie grassland was usually left unused by later native farmers, who preferred instead to clear trees in the riverside woodlands, often burning off the fallen trees. The ash fertilized the soil, and the lack of a grass root mat made preparing the cleared woodland plots for crops much easier than working the prairie (Figure 2.9).

The plant community of the prairie and riparian forests offered people dozens of food sources. Altogether, native people used numerous prairie plants for food, medicine, and ceremonies (Shay 1986: 2). There were roots such as the prairie turnip (*Psoralea esculenta*) and American groundnut, wild plum, buffaloberries and chokecherries, and chenopods. Thus, there were seeds, roots, nuts, berries, and greens. One of the problems with wild plant collecting on the Plains is that there is rarely a large amount of any single usable food in one location.

The prairie turnip, for example, is found scattered rather than in dense patches. Not only could digging it be hard work, but the plant had to often be dug up one at a time. The prairie turnip is tasty raw, and can be dried and saved for later in the year when it would often be added to stews as an appetizing thickening agent (Shay 2022: 129). It could also be pounded into a flour for a variety of uses. It was a popular plant among Northern Plains groups, although some have suggested that it was not very common in the tall grass prairies of the eastern Plains (Kaye and Moodie 1978: 329-330). The plant prefers sandy soils, and I have found it on both sides of the Lake Agassiz basin, although I am not clear on how abundant it might be overall in this region. Native people were so desirous of this plant that bison hunting expeditions would sometimes plan their movements along routes likely to encounter the plant. Besides this, being able to dry and save food for later consumption could be very important to people in a climate with difficult winters when food could be hard to come by (Reid 1977: 322-323).

As with the prairie turnip, other plants were used for multiple purposes. Goosefoot (*Chenopodium sp.*), for instance, could be eaten as a green when picked fresh in the early part of the warm season, while the small, starchy seeds from the mature plant could be mashed into meal and baked into a bread. Chokecherries might be eaten fresh or dried in the sun and pounded and mixed with buffalo meat to make pemmican. Cattails, found in prairie sloughs and wetlands, had edible roots, often processed into a meal or powder, its flowers could be boiled and eaten, its leaves made into mats and baskets, and the cottony florescence could be used to cover cuts

and wounds, or used in diapers for babies (Shay 1986: 4). The indigenous peoples of the Plains are often admired for the multiple uses they made of bison, but much the same may be said of their use of plants (Table 2.1).

The portion of the prairie region in northwestern Minnesota and extending in an arc to the north and west into Manitoba south of Lake Winnipeg is the Tallgrass Aspen parkland. Here, the prairie grassland is interspersed with clusters of woods, wet prairie, fens, meadows, and sometimes extensive brushland. Much of this region is sandy, especially near the Lake Agassiz beach ridges. The woodlands consist of quaking aspen, balsam poplar, and willow in wetter areas. The wetlands in this region are typically populated by species of sedge. The Tallgrass Aspen parkland was maintained by natural and man-made fires. Fast-growing aspen invade and flourish until knocked back by periodic fires (Sather and Dana 1999; Minnesota DNR 2018). The parkland environment is of special importance in interpreting the precontact population movements in the northern portion of the Red River Valley, since it is regarded as a significant food source when forest or grassland resources were hard to find.

To the immediate east of the Valley in Minnesota the prairie interfingers with the tracts of forested land. This region is commonly referred to as the forest-prairie ecotone. In this area it is possible to find plant and animal resources of both major environments, and it is regarded by many archaeologists and geographers as an attractive resource zone for human exploitation. This has also been defined as an oak woodland and brushland. It extends northwest to southeast along the eastern side of the Red River region. Bur oak and Northern Pin oak were dominant along with brush vegetation mixed with prairie grasses in scrub forests and thickets (Wendt and Coffin 1988). The aspen-parkland of far northwestern Minnesota and southern Manitoba may be regarded as a continuation of the ecotone into northwesterly reaches.

The mosaic of vegetation in the Valley was under the influence of variable precipitation. We know from paleoclimatic indicators that droughts were intermittent, just as flooding was. Conditions varied with changes in the dominance of dry air from the Pacific, moist air from the Gulf of Mexico and cold, dry air from the Arctic. For example, a study of sediments from Moon Lake in southeastern North Dakota examined diatoms as a reflection of salinity in the waters of the lake. Increased salinity was associated with lower precipitation. The sediments taken from the lake bed also provided materials for four radiocarbon dates so that the variability in saline conditions could be arranged around these temporal benchmarks. The conclusion of the study was that there were several

Table 2.1. Some Edible Plants of the Red River Region (see Shay, 2022, 1986 and Kindscher 1987)

Plant Name	Common Name	Use
Acer negundo	Boxelder	Seeds eaten dried or cooked. Sap for sugar
Allium sp.	Wild onion	Used as an herb or pain reliever
Asclepius spp.	Milkweed	Shoots, buds, flowers can be used
Astragalus caryocaropus	Ground plum	Can be eaten raw or cooked
Cirsium vulgare	Bull thistle	Roots used cooked
Crataegus spp.	Hawthorn	Edible berries, avoid the seeds
Elymus spp.	Wild rye	Dried flour from pounded seeds for bread
Frageria spp.	Strawberry	Fresh fruit
Lilium spp.	Lily	Leaves, fruits, flowers edible, bulbs best
Oenothera spp.	Primrose	Roots and leaves cooked and eaten
Polygonum spp.	Knotweed	Eaten raw or cooked
Potentilla anserina	Silverweed	Cooked roots used
Psoralea esculenta	Prairie turnip	Roots raw or cooked
Prunus americana	Wild plum	Edible fruit
Quercus macrocarpa	Bur oak	Acorns boiled before eating; flour for bread
Ribes spp.	Gooseberry	Often used to make pemmican
Rumex spp.	Dock	Leaves eaten raw or cooked
Scirpus spp.	Bulrush	Most parts edible, flour, syrup, sugar
Taraxacum officianale	Dandelion	Salad green
Trillium spp.	Trillium	Used as a potherb
Typha spp.	Cattail	Roots and bulbs edible
Urtica spp.	Stinging nettle	Cooked as potherb
Verbena spp.	Swamp vervain	Used as tea and medicine

periods of intense drought conditions prior to AD 1200. The driest conditions were noted for AD 200–370, 700–850, and 1000–1200. On the other hand, the past 750 years (to 1950) have been wetter and cooler than the preceding 1500 years (Laird et al. 1996: 553). Booth et al (2005) document a severe drought that probably lasted for decades, perhaps centuries, between about 4,300–4,100 years ago. It is indicated by dune field activity on the Great Plains, and by distinctive sediment accumulation reflecting aridity in Minnesota lake country. In some places Ambrosia (ragweed) pollen, associated with dry conditions, increased dramatically. The authors of the study suggest this drought was unmatched in the past 5,000 years (Booth et al 2005: 323). Resource variability as a buffer against the vicissitudes of climatic conditions would have been significant for the Valley's early peoples, and native groups developed the skills to use a variety of plants and animals to survive.

Bison and Other Fauna

Roe (1951: 368–374) documents the unhappy demise of the bison herds in the Red River Valley. Relentless hunting after about 1830 for hides, robes, and tongues eliminated the bison from the Valley by the middle of the nineteenth century. Occasional buffalo were reported after that time, but the great herds were gone. Early travelers often claimed that vast herds of bison migrated north and south with the seasons and that herds were so large they covered several square miles. This view is mostly dismissed now, although there is no debate that bison were constantly moving, the question is how far, and how large were the herds. Mostly there is a widespread recognition that the bison moved from one pasture to another simply to find food, and seasonal changes in forage abundance affected their movements (Bamforth 1988: 3). On the other hand, bison did not require a southern climate to survive winter and did not migrate across the Plains to the south to avoid cold weather; bison were clearly able to endure the harsh conditions of the Northern Plains.

Studies of bison feeding routines show that they prefer fresh grasses and pastures with the fewest woody species that might interfere with their grazing. Their preference is for grasses such as blue grama, sand dropseed, little bluestem and others, although they will eat a wide variety of grass and sedge species. Woody plants are rarely eaten, and mostly when grasses are scarce. Bison are more resistant to heat and cold than cattle, and can feed at greater distances from water. Their preference for fresh grazing explains their attraction to burned over areas, since this is where growth is newest (Ranglack and du Toit 2015). Bison prefer warm season

grasses (C4) in late Spring through mid-summer, but through September they tend to feed more on cool season grasses (C3). Forbs, or leafy vegetation, is normally a food source early in the warm season (Plumb and Dodd 1994).

The Red River Valley and adjacent areas provide a variety of habitats for bison. The lowlands of the Valley itself provide both wet and dry prairie, although the beach deposits and delta formations are more likely to sustain grass species adapted to drier conditions. Wet prairie, mostly found in the Lake Agassiz lowlands, typically sustains more sedges, big bluestem, and prairie cordgrass, whereas drier areas feature bluestem, prairie dropseed, and buffalo grass. Bison preference for different grasses would be accommodated in the Valley, which features mesic lowlands, well-drained and drier uplands along with deltaic deposits along its perimeter, and glacial till uplands to the immediate east and west of the Valley.

Widga et al (2010) used strontium values in bison tooth enamel to show that bison in the Great Plains during the Middle Holocene exhibited little seasonal movement of any substantial distance. This would imply that the same holds true for the Late Holocene, since the prairies were, if anything, probably lusher and more hospitable to bison in the Late Holocene. The herds may have been more or less long-term residents of regions such as the Red River Valley, and the variety of grazing habitats in and around the Valley would have made such feeding behavior a practical adaptation.

It is well known that the bison were used by the Native American people for many purposes. The meat filled a primary need, as did the hides, used for robes and for tipi coverings. Bone was used for various tools, marrow was eaten, horns were made into scoops and ladles, even the animal's brain was used for oils to soften hides. Various authorities have shown dozens of uses and tools extracted from the bison, although to a lesser degree, other animals typically hunted by the prairie peoples also served various purposes.

Alexander Henry the Younger, who travelled up the Red River in 1800-1801, provided detail on the game resources of the Valley prior to the settler period (Coues 1965 [1897]). This description allows us to understand the resources of the Red River region that would have supported a hunting lifeway in earlier times. He notes that waterfowl, sturgeon, catfish, and other aquatic fauna were abundant in the Red. He described the native people fishing with a net positioned between two canoes. Near the forks of the Red and the Assiniboine, where present-day Winnipeg

is located, he witnessed the tracks of moose, elk, bear, wolves, and foxes. A few excerpts from Henry's journal present a picture of large buffalo herds on the tall grass prairies of the Red River. Below are some of Henry's comments on the abundance of bison in the Valley during his trip upriver. These are all from Coues (1965 [1897]), and are from the 1800-1801 journey.

Aug. 26, near the confluence of the Red and Rat rivers (south of present-day Winnipeg), "…we perceived a large herd of cows to the southward, moving down to the river to drink." (p.65).

Sept. 6, in extreme northeast North Dakota, opposite the mouth of Two Rivers, "On approaching the Bois Perce we found immense herds of buffalo, which appeared to touch the river and extend westward on the plains as far as the eye could reach. The meadows were alive with them. On the E side of the river we now for the first time saw buffaloes; they appeared to be fully as many as there were on the W side." (p. 86-7).

Sept. 10, near the Park River, Henry mentions an Assiniboine pound or corral for bison, which gives the river here its name. (p. 93).

Sept. 17, Henry mentions seeing 15 "herds." (p. 99).

Sept. 18, "I …saw more buffaloes than ever. They formed one body, commencing about half a mile from the camp, whence the plain was covered on the W side of the river as far as the eye could reach. They were moving southward slowly, and the meadow seemed as if in motion." (p. 99).

Nov. 11, near the Goose River, Henry sees bison in "every direction." (p. 150-1).

Jan. 14, 1801, "At day break I was awakened by the bellowing of buffaloes. I got up, and was astonished when I climbed in the S.W. bastion. On my right the plains were black, and appeared as if in motion, S. to N. … to the utmost extent of the reach below us, the river was covered with buffalo moving northward … The ground was covered at every part of the compass, as far as the eye could reach, and every animal was in motion." (p. 167).

Note that Henry reports large herds of bison along the Red River from August to January, or from late summer, through the fall and into midwinter. Gordon (1979) notes that good ground cover with high carrying capacity was as important as protein content of grasses to the bison herds, and the nutritional constituents of this ground cover undoubtedly influenced the movement of the herds.

In early 1823 Stephen Long led an expedition through the Red River area. Long felt the region was useless for farming, but did report bison and elk in large numbers, and various trees throughout the region including oak, elm, linden, ash, red maple, cottonwood, aspen, hackberry, ironwood, hornbeam, pine and fir, willow, wild cherry, crab apple, hazel, and cedar along with grape vine, gooseberry, currant, and raspberry (Kane and Holmquist 1978: 175ff).

Some authorities, Wilson (1992: 12-13) for example, feel that over millennia of human predation the bison became smaller, diminishing in size by almost half from their Ice Age mass, this being an evolutionary coping mechanism to deal with human hunting. Smaller animals need less food and may reach maturity and the ability to reproduce more quickly, in this way compensating for the losses to human predation. In any case, bison were such a successful grassland species that by the time of the European arrival they had pushed into grassland patches in the Northeast, the Great Basin, and even into the Sonoran Desert. Indeed, so well did the bison adapt that some even speculate that Plains people's bison use in early Historic times verged on pastoralism or herding. Wilson (1992) is of the opinion that given time, they would have domesticated the bison entirely, but perhaps this is simply a western conceit. Why domesticate an animal that was used quite successfully as a wild species for 10,000 years?

One element of the indigenous system of hunting bison was the use of fire. Bison are attracted to grassy areas that have recently been burned over. One study shows that in mixed grass prairie burned grassland increased forage quality and prolonged grazing by bison for two to three years. This improved bison conception rates and lactation. Native people would have used fire to improve forage for bison and resources for themselves (Biondini et al. 1999: 455-460). Boyd (2002: 472) presents evidence for an increase in the incidence of fire in the southwest Manitoba grasslands after about 2,500 years ago. Since this period is not associated with any paleoclimatic indication of arid conditions it is likely that some other agency was responsible. This time period is associated with the Besant archaeological culture, a culture which offers us a picture of highly successful bison hunting. Boyd links these two phenomena and suggests that the successful bison hunting of the Besant peoples was partly the result of fire use to manage the movements of the bison herds (Boyd 2002: 479-481).

Other pre-settler wildlife beside bison consisted of elk, moose, deer (mule deer and white-tailed deer) wolf, black bear, occasional grizzly, coyote, fox, badger, weasel, mink, beaver, muskrat, cottontail rabbit,

Table 2.2. Ungulate Population Densities for the Red River Valley (after Shay 1985: 51).

	Antelope	Bison	Deer	Moose	Elk
Density	0.5	3.0	2.0	0.5	1.5
Weight (in kg.)	48	450	70	300	240

Avg. Ungulate Density: 7.5/km2
Productivity (kg/km2/yr): 210.6

snowshoe hare, skunk, and raccoon. Fowl, especially in the pothole lake country immediately west of the Valley, and in the aspen-parkland to the northeast, included grouse, geese, various species of duck, crane, grebes, and swan (Pemble 2005, Sather and Dana 1999). In addition to bison herds, nineteenth century accounts also mention large numbers of elk, and black bear were also very common. Pronghorn antelope were to be found on the western perimeter of the Red River Valley, although in modern times they have not been seen in the region.

Shay (1985) completed a study of the availability of ungulates in the Red River region (Table 2.2). Bison predominate his sample from the Late Precontact/Plains Village period in the Valley, and deer were common to the east and south, while moose were more common north and east. In the Red River prairies bison density was substantial, and if combined with elk and deer, with very minor contributions from moose and pronghorn, the total was about 7.5 ungulates per square kilometer of area. He estimates bison density alone in the prairie area was about 2-6 animals/km^2 (Shay 1985: 39, 51).

In the Red River itself over 70 species of fish have been catalogued, including channel catfish, sturgeon, muskellunge, walleye, northern pike, smallmouth bass, and sauger (State of Minnesota 2014). Fishing is not much reported for the native peoples who used the Red River area; however, Howard (1980: 12) notes that the Yankton-Yanktonai did some fishing using weirs, along with spears and even bow and arrows. They did not fish as much as the Eastern Dakota, but it is not surprising that people living along major streams such as the Red would use riverine resources. Fish remains are occasionally found at archaeological sites along the Red.

Cvancara (1970: 57) identified 13 species of freshwater mussel for the Red River, the most common of which are species of *Lasmagona*, *Anodonta*, *Anodontoides* and *Lampsilis*. The larger streams in the valley, including the Red River itself, support other genera such as *Amblema*, *Quadrula*, *Proptera*

and *Legumia*. Shells from river mussels are quite common at archaeological sites along the rivers in the Valley, and while they were very probably used as food, the shells were also useful for certain types of tools, beads and ornaments, and in the later portion of the precontact record, they were also crushed into a powder in order to serve as a tempering agent in making pottery.

Archaeology in the Natural Setting

The heavy clay soils of the central portion of the lake bed are extremely difficult to dig and sift using standard archaeological equipment. If too wet, the clay turns to a sticky, muddy, mess that is almost impossible to work through screening boxes used to separate artifacts and ecofacts from the soil matrix. If the clay is too dry it is nearly rock-hard. It is easy to break cultural objects when trying to work the dried clay lumps through a screen. The clayey soils are best worked when they are moist but not wet, and when they are only lightly handled and screened. The more the clay is processed, the more it tends to transform into intractable clay balls. The coarser sediments on the beach deposits are easy to work archaeologically. Sometimes, dumping a small pail of sandy matrix into a sifting screen with just the right bounce will pass most of the sand through the screen with almost no action on the part of the worker. The cultural materials have only to be picked out of the sifter. Not only is sand easier to dig in, but when the weather turns rainy the clayey soils in the Lake Agassiz bottom remain wet and difficult to work for days after, while on the sandy beach deposits, it is usually possible to begin work as soon as the rain stops since the water drains through the sand so quickly.

The distribution of archaeological sites has a great deal to do with the geographic features and vegetational communities of the Valley. Although early surveys, such as those of T.H. Lewis (cf. Winchell 1911) and Johnson (1960) were focused on the cultural affiliations of Red River region archaeological sites, and on mounds found mostly on the Lake Agassiz beaches, later archaeological surveys were designed to discover the relationship of the Valley's physical features with the way sites were scattered over the landscape. In Minnesota, a survey was completed in Clay County, opposite Fargo, North Dakota. This survey divided the Lake Agassiz plain into four different layers, or survey strata. One was parcels along the rivers, such as the Red and its tributary, the Buffalo, another consisted of plots on the beach deposits, and a third consisted of areas on the beach ridges that were intersected by a stream. The fourth stratum was open prairie (farmland today) away from water. In the

stratified sampling areas, 14 sites were found. Nine were near rivers, two on beach ridges, two more on beach ridges intersected by streams, and one site in open country away from water. In other words, 11 out of 14 sites were near rivers. Sites spanned the Paleoindian through the Plains Village (Michlovic 1979).

The stratified sampling survey of Clay County was followed by others to discover how robust the results of that survey were, that is, would additional study confirm the results of the site distribution reflected in the Clay County results. Two additional surveys were completed in Norman County and Wilkin County, to the north and south of Clay County. These projects were concentrated on the Red River itself, with crews walking fields adjacent to the river. In Norman County, 22 miles of river-side fields were examined, and 41 new archaeological sites were found, 31 of these in loops in the river (Michlovic 1982). In Wilkin County, 28 sites were found along the Red, all of them within a few hundred meters of the river itself (Michlovic 1984). A third survey consisted of a transect from the Red River west across the Lake Agassiz Plain to the beach deposits in North Dakota. The transect crossed three rivers, the Red, Sheyenne, and Maple. The results supported findings of previous surveys: ten sites were found, nine next to the Red, Sheyenne, and Maple Rivers, one away from water, and none on the beach deposits (Michlovic 1987a).

Other surveys have reached similar conclusions. Biggs et al. (1984: 163) surveyed tracts in northeastern North Dakota between the Red River and the Lake Agassiz beaches and concluded that sites are along the Red or its tributary streams, or sometimes on the beach deposits, but that archaeological sites in the open lake plain are rare. A survey of Red Lake County, Minnesota, on the eastern perimeter of the Lake Agassiz plain, recorded a number of buried soils on river terraces of the Red Lake River. The study concluded that the paucity of archaeological sites along this river are probably due to high rates of alluviation along the river, in the very places where sites are most likely to be located. Buried landscapes along the Red Lake River range from 6,000–900 years ago. (Buhta et al. 2012: 138, 161). Callaghan (1984: 10) conducted a study along the Red River in southeastern Manitoba near St. Adolphe. Several archaeological sites were discovered, although the frequency of sites was lower than expected. The apparent paucity of sites, as mentioned previously, being due to the heavy sedimentation from river floods, burying centuries old occupations with alluvium.

In the 1990s the Minnesota Department of Transportation sponsored a major archaeological study of the entire state of Minnesota in order to facilitate cultural resource studies needed before highway construction. The project came to be known as MnModel, since it was intended to model the distribution of archaeological sites in different areas of the state. One of those areas was the Red River Valley. Basing its conclusions on previous archaeological studies, on topography, vegetation, and other features of the environment the authors of the study predicted archaeological site density in different parts of Minnesota. The Red River Valley projection was that sites would be found mainly along the Red and its major tributaries, with a lesser frequency on the beach ridges, and very few sites in the open Lake Agassiz bottomland (Hobbs 2019). There can be little doubt that the Minnesota results from MnModel would apply to the North Dakota side of the Red as well, although in Manitoba, the intrusion of the aspen-parkland into the Red River Valley would probably have a significant impact on the results of predicted site frequencies.

The most recent survey for archaeological sites in the Red River Valley was completed in 2022 (Holley et al. 2023). This project featured an interdisciplinary study of two Red River Valley counties in Minnesota. One was Wilkin County at the Red River headwaters, and Kittson County, on the Minnesota-Manitoba border. In the two counties workers surveyed almost 4,700 acres and found 69 new archaeological sites. In some cases, there were large sites, with small artifact scatters situated nearby almost as satellite occupations; however, there was no evidence that the sites were actually occupied contemporaneously. It appears that small groups were using the areas repeatedly. There was a marked difference in the cultural materials found in Kittson and Wilkin counties. Blackduck Woodland materials were common in the north, while Late Precontact/Plains Village Oneota was present in the south.

An additional implication from these surveys is that the Red River and its tributary streams feature an active flood regime that is a constant agent of site burial. Most of the artifacts from the river adjacent surveys mentioned here are from the latest part of the precontact period, and almost all these sites are from cultivated fields that have been plowed to a depth of up to a foot. Earlier sites are not common on the surface of riverside farm fields, indicating that farm equipment today is impacting the latest portion of the archaeological record. The Manitoba survey, in a negative fashion, provides additional evidence for this conclusion that sites along rivers are buried by alluvium.

Another result of previous surveys is that Lake Agassiz beach ridges intersected by streams may have a higher-than-average frequency of archaeological sites. In certain circumstances, this is true. The beach deposits are sandy and gravelly, and the rivers cutting through them easily erode these sediments. This results in the creation of ample valleys with bluffs and relatively broad floodplains inset into the higher elevations of the beach ridges. The floodplain in these valleys are wooded islands, often surrounded by prairie in the Lake Agassiz basin below and in the glacial till plain outside of the Agassiz lowlands. They offer a source of water, a variety of plant and animal resources, including shellfish and fish, and provide a source of timber for building, manufactures, and for fuel. These small, peripheral valleys have been studied in several instances, showing a high frequency of sites on the bluff tops, in the valley bottoms, and in some cases, in buried contexts. A large number of sites on blufftops and in the river floodplain were discovered prior to dam construction on the Maple River (a tributary of the Sheyenne) where it cuts through deltaic and beach deposits southwest of Fargo (Michlovic 1993). On the Buffalo River, a Red River tributary east of Moorhead another large sample of archaeological sites is present where the river cuts through the Lake Agassiz beach ridges (Holley et al. 2021). In both of these cases surface and buried sites were found in the floodplain of these tributary streams, while the blufftops featured surface or near surface sites. Sites in these locations date from the Archaic through the Late Precontact/Plains Village.

It is possible, then, to see the impact that the natural setting of the Red River Valley has on the distribution of archaeological sites, and on their context within various depositional environments, such as river alluvium or upland surfaces. Rivers and their accompanying woodlands were primary settings for human settlements. Uplands along the beach ridges were the locus of many burial monuments, or mounds, while the modest peripheral valleys on the beach deposits served as secondary preferences for settlements. The prairie itself was not really settled, but served as an enormous pasture for the herds of bison that the people of the Red River Valley used as a primary resource throughout the ages.

Chapter 3
Ethnohistory and Ethnography

The prairie environment featured a Plains adaptation through past times, meaning that the peoples who lived here were to a large extent mobile bison hunters throughout much of the year, moving as the need arose. Being adjacent to the forested areas of central and northern Minnesota, and eastern Manitoba, the Northeastern Plains groups were heavily influenced by the woodland-living peoples of those areas. In the same way, the hunting peoples on the Plains to the west also influenced the inhabitants of the Northeastern Plains, as did the village farmers of the Missouri Valley.

Written descriptions of the indigenous peoples of the grasslands are used often by archaeologists to establish a baseline of what native societies might have been like in the latest part of the time prior to European contact. From the vantage point of these early historical records and ethnographic accounts, archaeologists try to trace back in time the history of different peoples, assuming that their early Historic period cultural characteristics would have had their origin in Late Precontact times. The intrusion of European explorers, traders, and settlers disrupted this traditional way of life, and it is not always clear how early in the post-contact period significant changes in Plains societies were taking place. For this reason, historical descriptions of native groups are sometimes questioned as reliable guides to precontact times.

There is a caveat to keep in mind when reading the following description of pre-European native life on the Red River prairies and surrounding areas. There are no comprehensive histories of the Red River Valley as a distinct geographical region for the early Historic period. There are a few early maps, journals by early travelers, explorers and traders, a few accounts from the native people who lived in the region, and so on. No anthropological or ethnohistoric studies provide a complete picture of the life-ways of the people who inhabited the Valley in, say, the seventeenth or eighteenth centuries. As a result, we can find information about the trading behavior of some people, the subsistence activities of others, perhaps at different time periods. There are sketches rather than detailed

accounts of different peoples who lived in the Valley. Even so, taking the information we have available will help us understand some of the features of the indigenous life-ways of the Red River region.

At the time of early contact with Europeans, many of the peoples of the Northern Plains, including the Red River Valley, were described as nomadic bison hunters. Some groups lived in large village communities along the Missouri and its tributaries, where they farmed the river bottom land, and in some seasons of the year, left their settlements to foray onto the Plains for bison hunts. These farming peoples, the Mandan, Hidatsa, and Arikara (the MHA nation, today), have been routinely described in the literature as practicing a dual economy of intensive river-bottom gardening and bison hunting. There are two amendments to this view that might be advanced. A reading of the historical documents and ethnographic descriptions based on information from the native people themselves, along with advances in archaeological study of the Northern Plains region, shows that peoples outside of the Missouri River Valley were also sometimes involved in a similar lifeway. Second, we might more properly speak of an economy that was based on gardening, bison hunting, and a third subsistence routine of mixed foraging, which consisted of gathering wild plants, along with hunting and trapping small game (Hamilton and Nicholson 2006: 275).

No matter what sort of information is used to hypothesize the relationship between the latest precontact and earliest historic times, there will always remain questions about the impact of the European intrusion. Even prior to any traders or settlers, most students of the subject believe that European trade goods, epidemic diseases, and the disruptions caused farther to the east by the European incursion, had an impact on Plains peoples. This time of change prior to actual contact with Europeans is known as the Protohistoric period by ethnohistorians and archaeologists. There is ongoing debate about the impact of warfare generated by competition over access to European goods, about how trading patterns affected indigenous cultures, and about the degree the Plains environment itself modified the social behavior and values of peoples from the east who moved onto the Plains, including the Red River Valley, in front of the European advance (Eggan 1966; Fisher 1968).

There is some documentary evidence of ethnic group locations available on maps made by some of the early European visitors to the Upper Midwest, often improved subsequently by cartographers in Europe. Although there are none from the very early Historic period that specifically depict the Red River Valley, it is possible to use a couple of these maps

to inform ourselves about the Valley in the seventeenth and eighteenth centuries. For instance, the Venetian cartographer Vincenzo Coronelli created a map in the late seventeenth century that included the Minnesota region. Here we see the Tintonha and 'Gens des Prairies' depicted to the southwest of 'Lago Baude', which would today be Mille Lacs, in central Minnesota. There are no details of the Red River Valley, but the Tintonha (usually thought to refer to the Teton, or Lakota) seem to be located roughly where the Valley would have been on the map had it been more complete in its western section. Other maps from the eighteenth-century show Lake Traverse or Big Stone Lake (on the Minnesota-South Dakota border) with the designation Tetons or Tintonha in the general vicinity.

A map by Jacques Nicolas Bellin in 1743 shows a minor river flowing into a lake that is to the west of Lake Superior. It is listed as Lac Ouinipigon (Lake Winnipeg). Flowing into it from the south is a small stream named R. au Vermillion, or Red River. Just before this river reaches the lake, another river identified as the Fleuve de l'Ouest (presumably the Assiniboine) joins the Red. To the immediate southeast of the Red (Vermillion) River are listed the Sioux of the Prairies, and farther to the southeast are the Sioux de l'Ouest (western Sioux). These are depicted near an unnamed lake at the head of a river named R. S. Pierre (Rivier St.-Pierre, now known as the Minnesota River). The lake at the head of this river would be Big Stone Lake (Bellin, 1743). Taken together these maps suggest that the Teton or Lakota were probably living in the region of the southern Red River Valley at this time. How far west they may have extended their sphere of use is not clear. Louis Hennepin recounted his adventures with the Dakota people who captured him and brought him to the village of chief Aquipeguetin, near Mille Lacs in 1680. He mentions the Tintonha or 'men of the prairie' as living near the other Dakota groups in the Minnesota area (Shea 1880: 203).

It is important to exercise some caution when looking at early maps showing the location of ethnic groups in one location. Widespread and long-distance travel was common, and it is not always clear whether the information used by mapmakers accurately reflects territorial occupation, or merely a location where people happened to be when a European observer made a report of their presence. Native Plains peoples moved great distances, and there was often confusion among Europeans about who lived in one or another place. One of the earliest written records provided by Europeans in the Red River Valley region is provided by the French explorer and trader, La Vérendrye. In 1738 La Vérendrye left his post, Fort Maurepas near the mouth of the Red River at Lake Winnipeg, and

traveled with Assiniboine to the Missouri River villages of the Mandan in central North Dakota. The Assiniboine lived in what is now southern Manitoba and northwestern Ontario. The Missouri villagers traded corn to the Assiniboine for bison hides and meat in return. We come to understand from these sorts of accounts that people on the Northern Plains, even prior to the horse, travelled hundreds of miles to trade and did so on a regular basis, and that they spoke each other's languages in some cases. Besides accounts of Assiniboine trade across the Plains to the Missouri River, there are reports of these same people travelling to York Factory on Hudson's Bay in 1684 (DeMallie and Miller 2001: 572-574). This would have been a journey of over 400 miles!

Perhaps the earliest document we have about the people of the Red River region is a Yanktonai Dakota Winter Count named for its last keeper, John K. Bear, although it has been credited to the Yanktonai chief, Drifting Goose. This Winter Count is an actual text recorded in the Dakota language. Winter Counts were normally pictorial and were so named since a new image was added for each winter. It was meant to be "read" to listeners by the keeper of the Count, who used each picture as a mnemonic device. The John K. Bear Count was written out, rather than narrated, and covers the years 1682-1883, a two-century span which dwarfs most other early accounts of the Protohistoric and Historic periods. The pictures or images originally comprising this Winter Count were lost over time as its keepers felt that written Dakota was a better way to record the events of the tribal past. The John K. Bear Winter Count records epidemics, floods and other natural events, contacts between the Yanktonai and their neighbors, encounters with spirit beings, and names of important people among the Yanktonai (Howard 1976: 1-3). For a flavor of the entries in the Winter County here are a few entries from Howard (1976: 20-21):

1682: "A big battle took place."
1683: "They camped at a river where there was heavy timber."
1684: "The very first white man they had ever seen came among them."
1685: "The Santee Dakota fought with the Omaha tribe."
1686: "There was ice all over the land."

Reading through the entire Winter Count provides many items of interest for understanding Yanktonai life.

The Yanktonai generally used the region west of the Red River in eastern North Dakota, extending from the Coteau de Prairie in northeastern South Dakota north to Devils Lake in North Dakota, and from the Red to the Missouri River. The Yanktonai, along with their relatives, the Yankton Dakota to the south, are sometimes known as the Middle Dakota, situated geographically between the Santee Dakota to the east, and the Teton or Lakota, to the west. The organization of Yanktonai society was like the other divisions of the Sioux. The Yanktonai may be described as bison hunters of the prairies, although they occasionally tended gardens, growing maize, beans, and squash. And unlike their western neighbors, they were not averse to fishing. The Yanktonai made clay pots, generally small, and traded for larger ceramic vessels from the villages on the Missouri River, especially the Arikara and Mandan (DeMallie 2001c: 789). The Yanktonai made use of more than a single type of shelter, using the tipi on hunts, and occasionally using earth-lodges similar to those of the Mandan, Hidatsa, and Arikara. Some of the poorer families made dome-shaped structures covered with hides, similar to the wigwams found among the forest-living Algonquian peoples to the east. Garden produce and surplus meat was stored in large cache pits several feet deep. Wooden mortars were sometimes placed in the floor of the Yanktonai lodges, and were used for grinding and pounding corn. In all, five earth-lodge villages of the Yanktonai have been identified, although these were built in the nineteenth century and are generally found west of the Red River region close to the Missouri River. The Yanktonai shared several cultural traits with their Santee neighbors to the east, and with the Assiniboine, Plains Ojibwa, and Cree (DeMallie 2001c: 788–789).

On the Minnesota side of the Red, extending from Lake Traverse to the north, were the Sisseton Dakota (the closely related Wahpeton were mostly farther southeast on the Minnesota River). The Sisseton were part of the Dakota people and often referred to as Santee, or Eastern Dakota. Among the Santee, the Sisseton were perhaps the most like other Plains peoples in many of their cultural traits. It seems the Bois de Sioux River takes its name from a grove of trees along that stream that was regarded as a boundary of the territory of these Dakota people (Coues 1965 [1897]: 145). The Sisseton had major settlements around Lake Traverse in the early nineteenth century, where they maintained a cyclical annual subsistence routine. Their lifestyle and patterns of interaction with their neighbors may reflect on long-standing traditions, as noted by Amos Oneroad, a Dakota man whose reminiscences of traditional life were recorded (Oneroad and Skinner 2003).

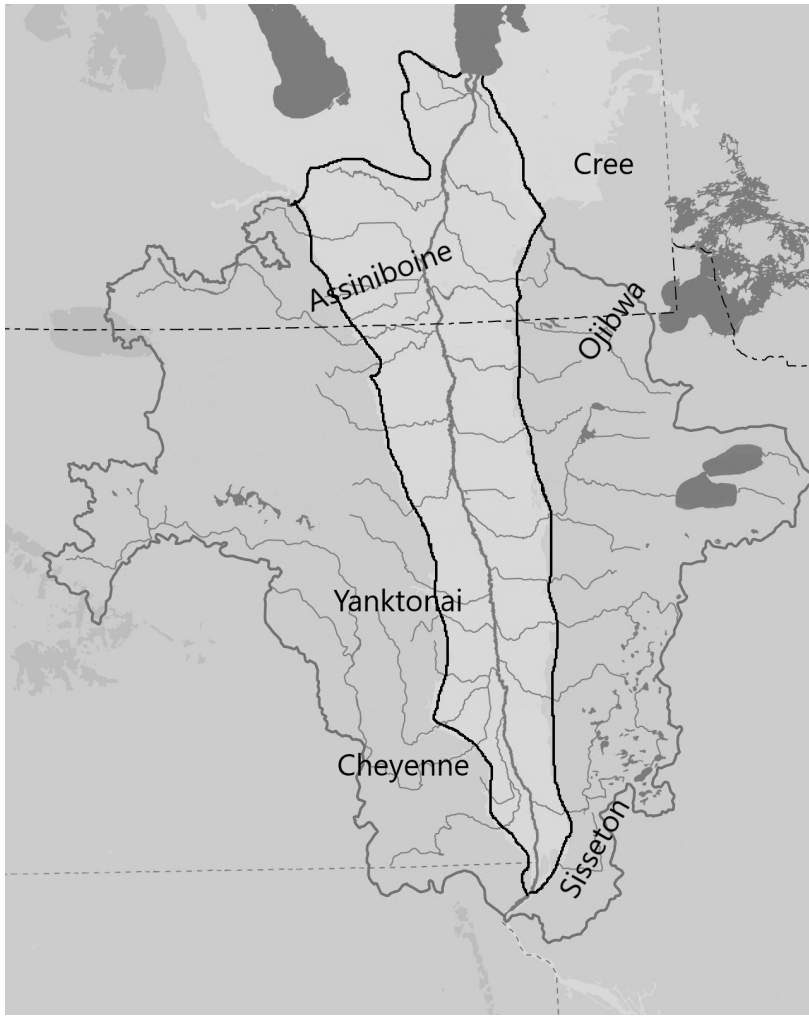

Figure 3.1. Ethnic Groups circa mid-18th century.

In 1834 the missionary Samuel Pond (1986: 26) reported that the Dakota at Lake Traverse were growing more corn than any of the other Dakota settlements. The Sisseton left their gardens after planting to gather wild forbs, grasses, roots, and berries, and to hunt the buffalo during the warm season. In the winter they settled down to their villages on points of land around the perimeter of Lake Traverse, and on islands in the lake. Although in the early nineteenth century they were involved in the Euro-American trade network, they maintained many elements of their traditional patterns of intra- and inter-group exchange. This system is especially important for archaeologists since it is of great assistance in coming to an understanding of the spread of raw materials and artifact styles in the precontact record.

Trade among the Sisseton was based largely on reciprocity, redistribution, and barter. Reciprocity may be understood broadly as gift-giving. Redistribution refers to the collection of goods by some central agency and given out to others, often those in need. Barter has the standard meaning of exchange of one item for another. Interpersonal barter happened routinely within villages. During certain ceremonies, the redistribution of goods would be conducted. This usually included food, clothing, and shelters. Besides this, there was also an exchange of goods between small groups from different settlements. Finally, some important exchanges occurred between people from different bands during trade fairs. Here, crafts, food, pipes, ornaments, and weapons were traded and exchanged. It was also at this time that marriages were arranged. Villages were exogamous, so spouses were to be found in other communities which came together during the fairs. Inter-tribal trade was also practiced, normally at the border of tribal territories. Finally, there was occasional long-distance trade involving travel by small groups to the Missouri River villages in central North Dakota, or the trade center at Sault Ste.-Marie, on the east side of Lake Superior, to obtain specialty items like corn seed or tobacco (Woolworth 1986: 15-17).

The Assiniboine lived in the northern portion of the Valley. Their northern neighbors the Cree were also mentioned on the lower Red River by Alexander Henry around 1800. Ray (1974: 3, 5) details the use of the far northern Red by the Assiniboine in the late seventeenth century. We know from the account of La Vérendrye that the Assiniboine traded with the Mandan. Ray expands on the nature of their occupation of the region, and points out that in winter months both the woodlands and the prairie were typically poor in usable resources, but the parkland (mixed aspen woodlands and prairie) belt that runs through southern Manitoba and the

northwestern corner of Minnesota provided highly desired winter food sources. This was in large measure because the bison herds moved into the parklands during the winter, providing good hunting opportunities. The Assiniboine took advantage of this.

According to their traditions, the Assiniboine broke away from the Yanktonai around the time of European contact. However, neither linguistic or historical evidence supports such a recent separation. Linguistics indicates that Assiniboine is no closer to Yanktonai than it is to other Dakota dialects. And the *Jesuit Relations*, or the accounts written by Jesuit missionaries in North America to their superiors show that the Assiniboine and Sioux were already distinct ethnic groups by 1640 (DeMallie and Miller 2001: 572). In any event, it is clear from La Vérendrye's account that the lower portion of the Red River region south of Lake Winnipeg was their territory. It is also clear that the Assiniboine were in routine contact with the Cree, who lived to the east and north.

Sometime before 1800, the Ojibwa were also in the northern portion of the Valley near the US-Canadian border, and they were familiar enough with the region to guide Alexander Henry southward through the Valley to about the Goose River near present-day Grand Forks. William Warren, an Ojibwa historian noted that the Pembina and Pillager bands of Ojibwa hunted buffalo on the prairies west of the Red River, and he described them as having one foot in the forest, and the other in the prairies. Others concur in locating the early Historic period Ojibwa on the northern portions of the Red (Howard 1980:20). Warren also devotes attention to the inter-tribal warfare between the Ojibwa and other groups such as the Dakota and Hidatsa, even describing an inter-ethnic war party consisting of Ojibwa, Assiniboine, and Cree (Warren 1957:40, 138-139, 261, 355) (Figure 3.1).

Such multi-ethnic associations in the Historic period are of special interest in interpreting certain aspects of the archaeological record, since at many sites we find collections of artifacts that reflect different stylistic traditions, presumably arising out of different communities of production. These multi-ethnic associations were not uncommon on the Northern Plains (Sharrock 1974). In the northern portion of the Red River region one such group was forming in the late eighteenth century. Known as the Plains Ojibwa or Bungi (Howard 1977; Albers 2001), this group was a composite ethnicity consisting of Ojibwa, Ottawa, and Huron, along with Assiniboine and Cree. By the late 1700s they began to use the prairie-parkland area in the northern part of the Red River area, becoming well-established by about 1790. Some stayed year-round in the prairies,

while others moved seasonally eastward to the forests to fish, hunt, and gather wild rice. Through the early nineteenth century bison hunting became more common, and as their behavior and area of occupation changed to prairie living, they took on a new identity. Even so, regular use of the parkland area continued, where they routinely hunted deer, elk, moose, rabbit, muskrat, and other woodland resources. Although the Plains Ojibwa had horses, the travois was still in use. They used the typical Plains tipi, but also made reed and bark lodges similar to those of their forest-living neighbors. In addition to hunting and gathering, they cultivated occasional garden plots (Albers 2001: 652–655).

The case of the Plains Ojibwa is instructive since it illustrates the fluid nature of ethnic group boundaries, where intermarriage was not unusual, and where alliances, combined with social arrangements between families might eventually lead to the creation of new ethnicities. Furthermore, the case shows the resilience of peoples who were able to move from one to another environment, with dramatically different resources, and adjust to a new adaptive strategy in a short period of time. The complexities of ethnicity and adaptation demonstrated by the Plains Ojibwa are an object lesson to archaeologists trying to interpret the comparable complexities of archaeological assemblages, where multiple types of artifact assemblages are found at single sites or components of sites.

While we often speak of native ethnic groups on the prairies and plains as tribes, this is often problematic. Some anthropologists regard the term "tribe" as incoherent and misleading (Fried 1975), although the term is still widely used. The point to remember, however, is that throughout much of the Great Plains, the basic social units were extended families. Groups of these extended families comprised villages and bands. Communities within a larger group acted more or less independently, congregating into larger units—what were traditionally called tribes—only occasionally. The people of the prairies and plains broke into smaller groups in some seasons, and congregated into larger ones at others. During the warm season families and bands coalesced for trade, socializing, arranging marriages and alliances, and engaging in major rituals. This is when the great camp circle was laid out. The well-known Sun Dance was a Historic period version of one of these rituals that involved an entire range of associated activities. How far into the precontact period this ceremony extended is not known, but most anthropologists believe something like it was present long before historic times (DeMallie 2001a: 10).

In the Red River Valley, this flexible type of social organization was found throughout. The Assiniboine were organized into autonomous bands, each with their own territory. There was no overall political structure for the entire people, but a conglomeration of over 25 bands, altogether comprising as many as ten thousand people in the late eighteenth century. Each nuclear family had its own lodge, a tipi, made of up to twelve bison hides and being around thirty feet in circumference. A tipi might accommodate a family of about eight, with room for visitors as well (DeMallie and Miller 2001: 575, 590). In the southern Red River Valley, the Dakota lived like the Assiniboine, each band an independent unit, some of these being as small as five or six families. As with the Assiniboine, so too the Dakota bands would coalesce for major buffalo hunts. Among all these Red River bands, Dakota and Assiniboine, unilineal organization was lacking, but rather, bilateral kinship was the rule. This means that relatives were reckoned equally on both the mother's and father's side. Usually, anthropologists interpret this to be a method for ensuring that families, or even individuals, will have a maximum chance of encountering relatives in neighboring groups, thus making for friendly interactions in social settings outside one's own community. This is regarded as an effective social adaptation in mobile hunting-gathering groups. Bands had chiefs, but there was no overriding political organization among either of these groups. Chiefs had no coercive power, but led by the strength of their reputations, accomplishments, and character. They were expected to be generous and fair-minded (DeMallie and Miller 2001 and DeMallie 2001b: 726).

Other groups, the Arapaho, Cheyenne, and Hidatsa are among the Plains peoples who have traditions of an origin or previous tenure in the Red River Valley. The Hidatsa claim a historical background in the Devils Lake region and in the Red River area. These traditions are well attested and may be reviewed in Bowers (1963: 213). The Arapaho and Cheyenne are Algonquian speakers, related linguistically to Great Lakes peoples such as the Ojibwa. Their presence on the western Great Plains in the Historic period suggests that they must at one time have lived in the presumed homeland of other Algonquian speakers around the Great Lakes. Their westward movement out of this area would obviously have taken them through the valley of the Red River of the North. In fact, a study of skeletal remains from some Red River precontact burials done in the 1970s concluded that the individuals studied were closest in form to the known physical features of the Cheyenne people (Ossenberg 1974). It is not possible to comment directly on the presence of all of these ethnic

groups in the Red River Valley based on present archaeological evidence. Where possible, the ethnic affiliation of the archaeological remains will be mentioned here, although the connection between ethnic groups and archaeological assemblages is an issue full of difficulties and often contested.

Inter-tribal raiding in the Red River Valley was apparently a common occurrence in the eighteenth and nineteenth centuries. The ethnohistorian Harold Hickerson (1970) regarded the ecotone east of the Red River Valley as a war-road during this time, where constant raiding between Dakota and Ojibwa made parts of the Valley too dangerous for permanent occupation. While the Dakota made use of the southernmost portions of the Valley, the Ojibwa exploited the north, but for either group to travel too close to the territory of the other in the central portion of the Red was regarded as dangerous. Hickerson's thesis was that the eastern and northern perimeter of the Red River Valley; the forest-prairie ecotone and the prairie parkland, were rich in game animals, especially white-tailed deer, as a result of the inter-tribal warfare of the Historic period. The conflict between the Dakota and Ojibwa made longer term settlements unsafe, and the lack of human settlement created a game reservoir in the region (see also Ray 1972: 116). But raiding was not limited to the ecotone. The Assiniboine and Cree were sometimes involved in these sorts of conflicts, as mentioned by La Vérendrye (~1730s) and Alexander Henry (~1800). Also, there is a well-known report of the Ojibwa destroying a Cheyenne village on the Sheyenne River in southeastern North Dakota, a location decidedly not in Hickerson's "war-road." Reciprocal raids were not restricted to any one people, nor to any particular environmental setting.

More than one archaeologist has wondered whether this pattern of low site density in the Red River Valley suggested by Hickerson might hold as well for the precontact period. Ebell (1988: 20) suggested that the lack of large village sites reported between the Red-Assiniboine junction and the Rat River, about 50 miles to the south, might indicate a long-lasting contested zone, or "no-man's land," where conflict between hunting bands prevented any substantial settlement. The difficulty with this interpretation of the lack of sites is that heavy flooding along the Red, especially along its lower reaches, may have buried many sites, making settlement appear less common than it actually was (cf. Callaghan 1984).

The occurrence of warfare in earlier times is obvious from the archaeological record. Small, hamlet sized settlements with encircling ditches are known from the archaeological record on the western edge of the Red River Valley. There is even a native account of a great "peace conference,"

previously mentioned, held in the year 1285 at the site of modern Winnipeg, where the Red and Assiniboine Rivers join (*Nistawayak* in the Cree language). (Sinclair 2019). Obviously, a peace conference indicates that warfare was a problem serious enough for such a major event to occur.

In the Red River Valley itself bison were the predominant game animal, and bison were historically hunted more or less year-round by native groups throughout the Northeastern Plains. Using the ethnohistoric documents, Arthur (1974) shows a heavy dependence on the buffalo. Furthermore, the widespread notion that native groups split up into smaller units during the harsh winter was not always true for the Northern Plains. Here, bison hunting continued all year, since the bison were always to be found somewhere in their range. There was no real seasonality to bison hunting, and sometimes winter settlements could be large; several accounts indicate winter camps of up to a thousand souls (Arthur 1974: 110–112). Notions that part of the Red River Valley was dangerous in the Historic period might have been true when the Dakota and Ojibwa contested with each other over access to European trade, but given the rich grasslands and large bison herds in the Lake Agassiz plain, it is pretty likely that precontact peoples used the Valley heavily for bison hunting, as well as for other resources found in the tall-grass prairie environment. This assumption is substantiated by the archaeological record.

The manner in which peoples of this region exploited their environment and built up their social arrangements has been described by Hanson (1987). His study, which includes reference to the Assiniboine, Cheyenne, Lakota, Yanktonai, Blackfeet, Crow, and Plains Cree, indicates that there were three types of residential groups typical among these peoples. There were nuclear family camps, there were "stem family" camps, and finally, band encampments. Nuclear families were the smallest and bands the largest. Each of the higher levels of settlement included the activities performed in the lower-level ones. Hanson describes different types of travel episodes revolving around the procurement of needed resources, whether food or raw materials. Plant gathering teams normally left for a time during a single day and returned by nightfall. There were also camping episodes where what we might call procurement teams left a settlement for more than a day, camping at another location. Eventually, they would return to their main settlement with whatever resource they had been seeking. Settlements were normally located near one or both of two important resources; bison or a source of wood.

Hanson's synthesis of settlement options among the Northern Plains groups used in his study points out that these options would potentially create a variety of site types, which is of special interest to archaeologists. Each major type of organizational set-up, nuclear family, stem family, and band, might also involve material traces created by daily gathering commutes, and various types of camp sites created by small game kills, large kills, and the procurement of other types of resources, say, stone material for making tools, or places where clay was taken for making ceramic vessels (Hanson 1987: 8-9). And just as the ethnographic record on the Northern Plains reflects a variety of settlement types used by people, so does the archaeological record show many different types of sites represented by different constellations of artifacts and features.

When European explorers, traders and settlers arrived the Red River Valley, far from being unoccupied, was the scene of much activity, in terms of settlement, subsistence, and trade. The Yanktonai used and travelled through and around the perimeter of the Red River Valley from the late seventeenth through the nineteenth century. Trips of many miles distance were not uncommon. People such as the Yanktonai could be found hundreds of miles away from a previous location in any given year. They might be observed settled along the Minnesota River, say near Redwood Falls, Minnesota, or perhaps, on the Upper Missouri in western North Dakota. European observers, moving westward, saw groups like the Yanktonai on the Blue Earth River in southeastern Minnesota, and years later reported them near Pipestone, on the South Dakota border. This gave the Euro-Americans the impression of an inexorable westward movement when, in fact, it may well have been simply the way the Native Americans used their territories (cf. Syms 1977: 5ff).

Long distance trading was common, and La Vérendrye's account of Assiniboine trips from the northern part of the Red River region to the Mandan villages on the Missouri River in central North Dakota illustrate this. Such expeditions were apparently routine and communication between the Mandan and Assiniboine was not a problem. We know from more than one source that the Mandan were adept at languages. Will and Spinden (1906: 188) report that: "The Mandan were excellent linguists and we are told by early travelers that they were accustomed to learn the languages of nearly all their neighbors…" This is added evidence that trade and communication between the peoples on the Northern Plains was a normal part of life.

While some farming was practiced by the regional native population, hunting was certainly the primary, but not the exclusive subsistence activity in the early Historic period. Alexander Henry's description of his trip up the Red River (1800–1801) makes clear that bison were abundant, along with elk, black bear, and other game. The Yanktonai, although largely bison hunters in the nineteenth century, also practiced some subsistence farming, growing varieties of corn, beans, and squash. Besides this, they also occasionally built houses in the style of the Missouri River farming people who used timber and earth lodges. This dovetails with Hanson's description of the Northern Plains hunting peoples having used a variety of settlements to accommodate their varied activities over the course of time, and in some cases, these varied activities may have included both hunting-gathering and gardening. Holzkamm (1986) reports that the Ojibwa in the Rainy River area practiced horticulture in the early nineteenth century. This was part of a strategy of switching subsistence practices under changing conditions, reflecting the resilience, flexibility, and background knowledge of native people who are usually identified with hunting and gathering. At Lake Traverse, the head of the Bois de Sioux River, the Sisseton Dakota, along with the Wahpeton and Yankton, also grew corn (Pond 1986: 26). The historic record, overall, shows that the native peoples of the Red River region used mixed subsistence routines and housing styles, and that in general, people from different ethnic backgrounds shared a variety of cultural traits.

The ethnohistoric and ethnographic record of the Red River region could be expanded upon here, but for now we have the information needed to proceed with some more direct archaeological matters. The record of the native peoples of the Red River Valley in the early portion of the Historic period show us how regional groups lived. Although there were distinct ethnic groups, the boundaries of these groups were sometimes fluid, and there were sometimes alliances between them, as well as hybrid social entities. Several different ethnicities are known from the Red River Valley. In the north, Cree and Assiniboine, Ojibwa near the US-Canada border, and Yanktonai and Sisseton farther to the south in Minnesota and North Dakota.

Warfare was endemic, and trade between groups was a routine matter. However, it would be a mistake to regard the Valley as a region of established sedentary groups living here permanently. All of these peoples moved about regularly. Settlements might be used repeatedly, but year-round occupation of a village was not common, except perhaps the area around modern Winnipeg, and the Big Stone-Lake Traverse region.

Also, it is important to keep in mind that the settlement of the Valley did not include any villages of the size or permanence of the villages of the peoples of the Missouri Valley in the Dakotas. Still, the Red River region was one of considerable activity, and one worth understanding in the precontact, as well as in the Historic period

Chapter 4
Early Archaeology in the Red River Valley

There are early descriptions of archaeological sites in the Red River Valley from at least the 1870s. Some of these were by railroad workers and land surveyors who recorded the presence of ancient mounds and earthworks in the Valley. Occasionally, there was even a record of the content of some of the sites, usually burials that were unearthed either as a purposeful exposure of the content of a burial mound, or the result of some sort of construction, such as railway or road work. In Manitoba there was also research into the archaeological remains of the province by the Historical and Scientific Society of Manitoba, which focused largely on burial mounds (Dyck 2009: 1).

By the first decade of the twentieth century several ditched enclosures and earthen embankments, usually associated with mounds, were known around the perimeter of Lake Traverse at the headwaters of the Bois de Sioux River. Some of the mounds were conical, others circular mounds with flattened tops. About two dozen mound sites are reported near Lake Traverse in Winchell's *Aborigines of Minnesota* (1911: 302–305). These sites were on the high bluffs overlooking the lake. The nearby ditched enclosures are thought to be habitation sites and include the Browns Valley fort, once in the center of the town of Browns Valley but now destroyed, and the Tenny, Bunker Hill, and Shady Dell enclosures on the bluff-tops overlooking the lake. In one location, there are two mounds, one flat-top, the other conical, connected by an embankment over 150 meters (almost 500 feet) in length.

These mounds at the Red River headwaters reported by Winchell were the product of one of the earliest systematic archaeological works in the Red River Valley, the Northwestern Archaeological Survey of A.J. Hill and T.H. Lewis. Hill, a St. Paul businessman had an abiding interest in archaeology, and from 1881–1895 he spent over $16,000 funding field work by the surveyor/archaeologist T.H. Lewis. Lewis visited 18 states in the central US and the province of Manitoba recording and mapping burial and ceremonial structures from the distant past. These included mounds, enclosures, and other earthworks. This survey recorded over 2,000 sites and 17,000 earthworks, revealing a cultural landscape that has long since vanished (Dobbs 1999). While Lewis recorded over 7,700

mounds along with miscellaneous earthworks in Minnesota, only a relatively few of these are in the Red River region, and of the ones that are known from the Red River Valley, even fewer are found in the northern portion of the region (Lewis 1886; Keyes 1928).

Lewis was not the only archaeologist to document sites in the late nineteenth and early twentieth century. In the 1880s Henry Montgomery (1906) investigated earthworks and mounds on the Red River periphery in Walsh and Grand Forks counties of North Dakota. Near Fordville, North Dakota, he mapped about three dozen mounds and linear earthworks, one of which extended for over 800 meters! These were on the higher beach deposits of Lake Agassiz (Upham 1895: plate XXIX). In the City of Grand Forks, Montgomery noted one mound that was originally reported to be up to 12′ in height. His digging here revealed the remains of 12 skeletons under a layer of yellow clay, reflecting a planned funerary event.

In Manitoba Donald Gunn reported archaeological sites on the lower Red as early as 1868 (Vickers 1970: 1). Mound sites were documented along the Red River north of Winnipeg (McCharles 1887), and early on attributed to the "Moundbuilders," a presumed non-native people that some felt were related to one or another pre-Columbian European people (Rempel 1994). The early archaeology in Manitoba's Red River area was often sponsored by the Historical and Scientific Society of Manitoba, whose members seemed especially interested in the idea of an early Moundbuilder population, distinct from the later Native Americans of the area. In the early twentieth century W.B. Nickerson began research along the Red River near Winnipeg under the auspices of the National Museum of Canada, and introduced needed rigor to archaeological study (Hlady 1970:269). Unfortunately, his efforts were cut short in 1915.

In the Minnesota and Dakota portion of the Valley not many earthworks were identified north of Lake Traverse in this initial period of archaeological study, although half a dozen or so mounds were noted near Breckenridge around the Otter Tail River junction with the Bois de Sioux, and near the Mustinka River in west central Minnesota. Farther north mound sites were less frequent, but even so, mounds that were opened on occasion created much fanciful speculation and enthusiasm. One mound near Warren, in Marshall County Minnesota, was reported to contain more than ten skeletons, some of gigantic stature (Winchell 1911: 363), a claim not uncommon in nineteenth century mound studies.

There is a long-standing belief in a past race of giants, partly a product of biblical accounts. It is true that some individuals found in mound burials were tall, but not beyond the range of normal people.

Indeed, the mounds were built by the ancient people of the Red River Valley, not giants or trans-Atlantic migrants. However, in the nineteenth century archaeology in North America was not a well-established discipline. There was little firm understanding in Euro-American society of anything substantial about native history. Besides this, few American scholars bothered to consult with indigenous knowledge-keepers about their understanding of the native past. It is probably for these reasons many Americans turned to a text they firmly believed revealed the most reliable history of the world back to the beginning of time, namely, the books of the Old Testament. Here there are stories of sacred high places, such as Zion or Sinai. In the imagination of some, the burial mounds of the Midwest became artificial high places, or even imitations of the Tower of Babel (Colavito 2020: 71–72). Stories of the ten tribes of Israel displaced by the Assyrian conquest of the northern kingdom of Israel around 720 BC became a source of speculation about where these ancient Israelites may have ended up; perhaps in North America. Several passages in Genesis and other biblical books mention Nephilim, often translated as "fallen ones" in Hebrew. But in the Greek version of the Old Testament, the Septuagint, the word is translated as "giants," so any large skeleton found in a grave might become a giant from the land of the Bible. This not only served to reinforce people's faith in the scriptures, but also to connect the New World with the Old, the very font of culture and values that the European immigrants brought with them to America (Silverberg 1968; Colavito 2020). There were a variety of efforts to associate the mounds and earthworks to Old World peoples which are reviewed in any number of articles and books such as the ones cited here. Some found the mound sites the probable monuments of a past high civilization that eventually succumbed to the barbarous indigenes, that is, the Native Americans.

It is fair to point out that the mounds and earthworks found in the Midwest were mysterious to the pioneers and early settlers, and without systematic exploration of these monuments accurate interpretations were not to be expected. Besides this, some of this early work, such as that conducted in Manitoba in the late nineteenth century, occasionally involved some very careful and thoughtful field efforts., The Historical and Scientific Society of Manitoba, for example, consulted native informants, and after their work, they backfilled their excavations and preserved the sites they had studied. They also made it a point to report their findings to

the public. Furthermore, by the 1880s there was a developing recognition that non-mound sites and artifact scatters were also worthy of serious attention (Dyck 2009: 17-22).

Indirectly, the Moundbuilder myth lives on today in the Red River region, transfigured into modern terms through the story of the Kensington Stone, a runic inscription found in west central Minnesota in 1898 by an immigrant Swedish farmer. The inscription is in Swedish using the runic futhark rather than the Latin script. It tells of an expedition by Norse explorers in 1362 who were attacked, presumably by local natives. There is even an abbreviated prayer to the Virgin Mary. The man who discovered the Stone was familiar with runes as attested by the testimony of some of his neighbors, as well as by the fact that he had in his possession books with rune forms and their usage.

From the first, the Kensington Stone was declared a fake, but contrary opinions persisted. Blegen (1968) reviewed the checkered story of the Stone, occasionally gaining in popularity, only to be routinely dismissed by experts. It is promoted even today by self-proclaimed runic authorities, by some farmers and webmasters, television producers, and by a few professional scholars in fields such as anthropology, geology, and linguistics. The Kensington Stone lives on today in popular opinion, in various publications and on the internet. The inscription has even given rise to the notion that the Red River Valley was the home of Norse Christian settlers. They named the region Wynland (Vinland) and called themselves Lenape, another name for the Algonquian-speaking Delaware people of the eastern US. In fact, the blogger proposing this idea suggests that all native Algonquian peoples of the eastern half of North America were medieval Norse Christians, a fact suppressed by the Protestant English who wished to deny that Catholic Scandinavians from centuries earlier were already in America. (see: https://wynlandwest.blogspot.com/2012/05/wynland-of-west-topics.html).

The Kensington Stone's popular appeal and relevance to the Red River Valley require some attention here, even though many scholars prefer ignoring it entirely. The popularity of the Stone may be understood to a large extent on ethnic grounds. Many people in the western Minnesota and eastern North Dakota region are of Scandinavian descent, and a story of pre-Columbian Norse explorers is naturally attractive to many, which was especially the case in the earlier part of the twentieth century. In addition to this, the Runestone provides a distinctive emblem which confers a correspondingly distinctive appeal on the region. There is also a mostly unspoken tension between some whites and the regional

native populations concerning the first settlers and who the land "belongs to." A farmer who refused to allow me to search for archaeological sites of native people on his land, while I ignored the sites of the "Vikings" is a case in point. Finally, for many people who are disappointed with the direction of academic history, with its widely reviled "politically correct" versions of the past, the idea of a pre-Columbian Norse exploration is attractive, not only because it celebrates the ancestors of a dominant ethnic population in the region, but also because it stands in opposition to the professional accounts of early history, which involves only native peoples in the precontact period, and French, English, and Native Americans in the early Historic period.

In addition to all of this, there is a presumed prayer on the Runestone, the Latin letters AVM, believed to abbreviate *Ave Virgo Maria*, a Catholic entreaty. Thus, the minority Catholics in the region find the Kensington Stone an attractive icon. The Catholic church in Kensington was appropriately named, "Our Lady of the Runestone" Church. The presumed history of the Kensington Stone, therefore, supports numerous popular attitudes in this region. It is, in a single object, a way for them to reject professional history, to celebrate their ethnicity, endorse the religion of some, and to make a political statement about the past (Hughey and Michlovic 1989).

Henryk Williams, a leading authority in runic studies, offers the conclusion that the Runestone is unlike any in the Old World, and that the runes on the Stone are consistent with usages found in nineteenth century Sweden (Williams 2012: 19). More recently, Fridell and Larsson (2021) found that the Kensington runes include modern forms found in over half dozen separate contexts known from Sweden from between 1870-1910. Other runes of a medieval form appear in a text by Carl Rosander titled *Den Kunskapsrike Skolmastaren*, a volume in the possession of Olof Ohman, the man who found the Runestone. Finally, a geologist has shown that the weathering patterns on the Kensington Stone, particularly the lack of weathering of runes carved into a calcite encrustation on the Stone, show that it cannot have been carved in 1362, as indicated by the date in the inscription. It is also possible that the Runestone itself was from a quarry that cut stone used as curbing on city streets (Edwards 2020). In other words, it is more or less geologically impossible for the Kensington Stone to be medieval in age.

Along the Red River beach ridges, and throughout much of the Midwest US there are occasional finds of boulders with small, drilled holes. They are called mooring stones by Runestone advocates, who presume

Figure 4.1. Farmers often drilled holes in large stone to blast them apart with explosives. Some people in the Red River region call them mooring stones, and believe medieval Norse explorers drilled them to moor their ships to the shores ofrivers and lakes.

Figure 4.2. Rectangular boulder arrangement dug by an avocational and thought to be a "Viking" house. Located on a Lake Agassiz beach, it is actually a sod house from the late nineteenth century.

Norse sailors fashioned these holes in rocks to anchor ships to the shore (Figure 4.1). Suffice it to say that the holes were not for mooring boats to the shore of modest sized rivers such as the Red, or lakes without tides, where a rope around a tree or boulder would serve to anchor it to shore. There is abundant testimony that the holes were drilled mostly for blasting or splitting rocks to make them easier to remove from agricultural fields, that is, in the days before mechanized farm equipment (Zapffe 1985; Trow 1998).

Some defenses of the Runestone include claims that the Kensington expedition was only part of a larger exploration and exploitation of the North American interior. Kehoe (2005) and Nielsen (2000) have both argued that the Kensington Stone was not left by an isolated expedition, but was part of a much broader use of North American resources by Norse traders operating out of Greenland. This implies that the Norse would have left a considerably more indelible imprint on the archaeological record than a single runic inscription. For this reason, various artifacts associated with the Runestone story—swords, axes, halberds, fire-steels and other European-type artifacts—are important for establishing the Norse as long-term occupants of the Midwest and Plains of North America (cf. Holand 1956). A long-term settlement of the kind that Rune Stone advocates champion would naturally have left the signature artifacts of their occupation.

The miscellaneous artifacts have all been accounted for as Historic period in age. Wallace and Fitzhugh (2000:383), Wallace (1971), and Quaife (1937), among others, have dismissed the miscellaneous artifacts as being nothing more than misidentified recent, or Historic period finds. There is no evidence of a Norse trade in the pre-Columbian Plains, nor any evidence of settlement by medieval Norse in the midwestern parts of the continent.

Having tested more than one of these supposedly Norse sites, I can say definitively there is no acceptable evidence for pre-Columbian Norse in the region (Figure 4.2). The reason for the popularity of the idea has everything to do with ethnicity, historical false consciousness, and a persistent unwillingness to accept indisputable evidence.

By the early decades of the twentieth century more systematic and professionally organized archaeological studies were being performed in the Red River region. I would like to highlight a few of the finds that made a significant impact on later archaeological work. One of these arose from a discovery made by railroad workers in 1908 west of Grand Forks, North Dakota (Jenks 1932). This was near the town of Arvilla

along the Turtle River. Here, work teams removing gravel from Lake Agassiz beach deposits for railroad construction found about 100 burial pits over a distance of about 300 meters. Some of the pits were dug out by hand and would later be described. They were circular in plan, and about eight feet deep and the same in diameter. The pits were parallel sided and each one contained four to eight skeletons, often in a flexed sitting position and facing the center of the pit. About 20 years later, the project supervisor reported the finds to A.E. Jenks, a professor at the University of Minnesota. It was estimated that there were 400–800 individuals originally buried in the gravelly beach of Lake Agassiz. Jenks dug into three mounds near the railroad line in the 1930s (Johnson 1973: 6–14). They were obscured by plowing and barely visible. Some artifacts were found with the burials, but surprisingly, no pottery. Bone beads, two barbed harpoons, shell beads from both the Atlantic Ocean and the Gulf of Mexico, and a whetstone or shaft abrader, were all found in association with the burials. Jenks was convinced that at least one of the artifacts he saw was ivory, possibly from a far northern source. He believed the Arvilla burials were part of a culture in contact with Eskimo influences, and that they were possibly victims of a great epidemic (Jenks 1935). This work was the basis for the definition of a distinctive Red River Valley archaeological complex known as Arvilla, something to be dealt with in more detail later.

A.E. Jenks founded the anthropology department at the University of Minnesota, and although his early work was in cultural anthropology, he made his reputation in archaeology as well. In 1931 he was informed of human remains found by highway workers near Pelican Rapids, just east of the Lake Agassiz basin in west-central Minnesota. Jenks studied this skeleton and was convinced it was as old as the glacial Lake Pelican deposits in which it was found. His estimates of the age of this find, originally dubbed "Minnesota Man" was about 25,000 years (Jenks 1936). We believe today, on the basis of carbon dating that the remains are about 8000 years old, and of course, being they were from a young female, have been officially renamed "Minnesota Woman."

Jenks (1937) was also involved in the description and study of the Browns Valley finds, made in 1933 by William Jensen. This discovery was of a human skeleton and associated artifacts, found during gravel digging at the southern end of the Valley near Lake Traverse. The artifacts from the find included stone projectile points of a classic lanceolate shape. Artifacts like this had recently been found on the western Great Plains associated with Ice Age animals. Jenks was informed of the finds

and believed he had here a site with the potential of great age; perhaps one of the most important early archaeological sites in America. Not only was there a set of very old artifacts, but they had a direct connection to human remains. Jenks dug at the site the year following discovery, later sending one of his graduate students to continue work and reportedly removing tons of gravel looking for additional finds. Although Jenks and his students found a few more bone fragments and another early point, most of the artifacts and features they found were from a later time period. Jenks estimated the age of the skeleton and early points to be 12,000–8000 years old (Jenks 1937: 10–17). Later radiocarbon dating of some of the bone indicated an age of around 10,000 years.

The finds at Arvilla, Pelican Rapids, and Browns Valley excited Jenks, who was interested in the "early man" discussions of the late 1920s and 30s. It was at this time that the Paleoindian period in the American past was unfolding and the archaeological community was enthusiastic about the new-found evidence that people were in America prior to the end of the Ice Age, something that the Smithsonian authority, Ales Hrdlicka, had disputed for years prior. Jenks felt that Minnesota's glacial history bestowed great potential on the state for the discovery of very ancient finds (Anfinson and Gibbon 2008: 28ff). The Browns Valley and Arvilla skeletons were found in deposits associated with glacial Lake Agassiz, and Jenks thought that the Minnesota Woman find was also related to glacial lake sediments. He believed that ivory was present at one or more of these sites and that meant these people must have been hunting mammoth. Therefore, the finds were probably produced by people who lived at a time coeval with Lake Agassiz at the close of the Ice Age, making Minnesota and the finds he reported some of the most significant of the time (Jenks 1935: 13–14). Even though Jenks was mistaken in much of this, his work did set the stage for a great deal of archaeology in the southern Red River Valley over subsequent decades.

V.J. Fewkes (1937), at about the same time, studied a collection of pottery sherds from the Red River in Manitoba. He recognized the similarity of this collection of ceramics to those found in the eastern woodlands of North America and believed that they were the product of the Assiniboine, one of the native groups reported as living on the lower Red by early European traders in the eighteenth century. Today we would probably classify the pottery Fewkes studied as a type called Blackduck, a ceramic ware dated to around AD 1000. However, Fewkes saw similarities between this pottery and the pottery found in northeast Asia, and he was open to the possibility that the early pottery from North America

Figure 4.3. Albert Jenks (left) and Lloyd Wilford (courtesy, Hennepin County Library).

might have actually been the result of diffusion from Siberia. This idea was reinforced at the same time by W.C. McKern (1937), who undoubtedly used Fewkes' study to suggest that the pottery in eastern North America had an Asiatic source. McKern thought that since early pottery seemed more diverse along the western edge of the woodlands, and since mound building, often associated with pottery making, was also very common in the same area, that this might be where cultural traits from the ceramic period, or Woodland, were centered for the longest period. "This condition implies a long period of local entrenchment and development, and might be interpreted to indicate Woodland centralization in this area." (McKern 1937:140). So, by the late 1930's the Red River Valley was being recognized for its importance in North America's past, a significance that would eventually be forgotten by archaeologists, as the US part of the Valley, famous for the Arvilla and Browns Valley burials, was relegated to the status of an ancient cemetery, with little significance to larger trends in culture-historical development.

Lloyd Wilford, Jenks' assistant and eventual successor at the University of Minnesota, is widely recognized as one of the pioneers of professional archaeology in the upper Midwest (Figure 4.3). He worked at many archaeological sites throughout Minnesota, including the Red River Valley, and wrote a series of articles in *Minnesota History* magazine defining and describing various precontact cultures from around the state. He succeeded Jenks at the University in 1938, and soon thereafter began to apply a new taxonomic method to organizing the varied archaeological materials from around Minnesota (Gibbon 2012: 3). This method is known as the Midwestern Taxonomic System in archaeological circles, and was developed by a group of archaeologists in the late 1930s working with W.C. McKern at the Milwaukee Museum. The system was a hierarchical descriptive one in which archaeological materials from different sites and regions were grouped based on artifact similarities. The smallest level of organization was the focus, or a group of components (a discrete occupation) which possessed shared traits. Several foci comprised an aspect, often thought of as an archaeological culture, comparable to an ethnic group in contemporary times. There were also more inclusive categories, such as patterns and bases, but for our purposes the focus and aspect are paramount.

Wilford (1941) systematized archaeology in Minnesota and defined a number of aspects, or archaeological cultures, including what eventually came to be called Laurel, Malmo, Sorg, Howard Lake, and Blackduck, terms still used by archaeologists today. These cultural complexes were

centered in parts of Minnesota outside the Red River Valley. A single aspect was defined for the Red River region, which Wilford dubbed the Red River aspect, part of the Late Woodland period. This aspect had a single focus, which he named Arvilla, after the burials from North Dakota that had been reported by Jenks. Wilford continued occasional work in the Red River Valley. He excavated and identified additional mound sites, most of which were situated on the Minnesota beach ridges of Lake Agassiz. The sites were described as low, elongate, or circular mounds covering burials in pits dug into the original ground surface. They were assigned to the Arvilla focus. Occasionally there were burials in the mound fill, but these were placed after the mound had been constructed over the original interments.

Over time, the Red River Aspect term was abandoned and replaced by Arvilla. Also, the Midwestern Taxonomic System terminology was eventually either completely discarded or heavily modified. Wilford's successor at the University of Minnesota was Elden Johnson. He conducted the last major excavation at an Arvilla site in 1961, digging at the Haarstad mound in Marshall County in Minnesota. Later, Johnson (1973) organized Wilford's notes and his own finds into a monograph on what he named the Arvilla Complex. This became the defining 'culture' for the Red River Valley in the US, and for years archaeological work in the US portion of the Red River region was predicated on its place as a mortuary region. Arvilla was defined by work at over a dozen sites, including the old Arvilla finds from 1908. The burials were described in detail, along with the associated grave goods. These included bone and antler tools, marine shell beads, occasional copper artifacts, and, rarely, a mortuary ceramic vessel. Using a few carbon dates, Johnson placed the Arvilla sites between AD 600–900.

Other burial sites on the upper Red River not affiliated with Arvilla were also studied by Wilford (1970). Included was a mound on the Femco farm in Wilkin County, just north of the city of Breckenridge and only a hundred meters or so from the Red. Wilford dug here and found a burial associated with an Oneota ceramic vessel, seemingly much later than the Arvilla sites, probably dating after AD 1200, and presumed to be not related to other Red River mound sites. But it was left for other archaeologists, particularly in Manitoba, to lay out the non-mortuary archaeological remains typical of the Red River Valley.

Along the lower Red River north of Winnipeg R.S. MacNeish (1958) completed excavations at several sites in the early 1950s. These include Lockport, Larter, Cemetery Point, and Anderson. Cemetery Point and

Anderson were on the Winnipeg River to the northeast of the Red, and their finds were integrated with those worked on the Red. At Lockport, not far north of Winnipeg, MacNeish found a series of archaeological components some of which were in stratified deposits, one above the other and to a depth of over two meters. At other locations, such as Larter, only a single component was found; however, these materials showed similarities to one or another of the stratified components at Lockport. As a result, MacNeish was able to construct a culture-historical sequence extending far back in time. Furthermore, his finds were broadly similar in the ceramic collections to those described by Wilford for Minnesota, thus extending the orbit of some of the archaeological cultures in Minnesota north and west into the Manitoba prairie and parkland.

In all, MacNeish used nine sites, three of them stratified deposits and the others single component, to develop his sequence (Mayer-Oakes 1967: 344). The MacNeish sequence may be described as follows:

Whiteshell: 5,000-3,500 years ago. Bison hunters who used sub-lanceolate points known as McKean points, which are widely known from the Northern Plains to the west.

Larter: 3,500-2,500 years ago. Bison hunters using corner notched Larter (also known as Pelican Lake) points, commonly found farther west on the Northern Plains.

Anderson: 2,500-1,500 years ago. Hunter-gatherer-fishers using Laurel pottery. The cultural influences in this focus are decidedly from the southeast in northern Minnesota rather than to the west.

Nutimik: 1,500-1,000 years ago. This focus is usually regarded as similar to the Malmo focus defined by Wilford for central Minnesota. Nutimik featured ground and polished celts or axes and stemmed and notched projectile points. Pottery from this focus is cordmarked with little distinctive decoration.

Manitoba: after 1,000 years ago. The term Manitoba is now regarded as synonymous with Blackduck. The focus has in the past been strongly associated with the precontact Assiniboine, although that association is no longer widely held.

Selkirk: after 1,000 years ago. This focus is similar to Manitoba in many ways, but the pottery is fabric impressed, that is, as though a coarse-knit cloth or fabric had been impressed into the wet clay prior to hardening.

Today, very few archaeologists use MacNeish's terms. One hears Laurel instead of Anderson, and Blackduck instead of Manitoba, although Selkirk is commonly in use still today. Hlady (1970: 273) added two phases to precede Whiteshell, both dating to the later part of the Paleoindian period. There are also questions about MacNeish's dating, although in fairness to him, radiocarbon dating in the 1950s was not as advanced or as widely available as it is today. But MacNeish performed a valuable service to archaeologists in the Red River region by establishing a culture-historical sequence extending back over an estimated 5,000 years. In doing so, he also showed how the archaeological materials from the lower Red were related to other culture entities in nearby Minnesota or Northern Plains. He explained that the speculations of Fewkes and McKern about the Asiatic origins of North American ceramic technology had a significant shortcoming; namely, that there was no really very old pottery in the Manitoba sequence. Pottery was being used in the eastern US during a time equivalent to the Larter focus on the lower Red. Larter had no pottery at all, so it didn't seem possible that a diffusion of ceramics from northeast Asia could have passed through Manitoba before appearing in the eastern part of North America. However, the idea of diffusion, or the movement of cultural traits of one society to another was popular in anthropology at the time, and MacNeish conceded that the Manitoba pottery might still be affiliated with Asiatic sources if diffusion occurred from across the Bering Straits toward the western side of Hudson Bay, thence south to the eastern part of North America, from where pottery would have been transmitted westward to southeastern Manitoba (MacNeish 1958: 81).

In 1959 Elden Johnson conducted archaeological survey in the Minnesota portion of the Red River Valley (Johnson 1962). Part of his efforts focused on the beach ridges of Lake Agassiz, attempting to track the incidence and nature of archaeological sites found there. His work resulted in the discovery of 110 sites, many along the Lake Agassiz beach deposits. A substantial number of these sites he reported as preceramic. Johnson (1960: 4) felt that people from the earliest times, the Paleoindian period, lived along the shores of various glacial lakes as far north as the Mackenzie River, in a way comporting with Jenks' earlier notion that the Arvilla burials had "Eskimo" affiliations. He also reported a variety of copper artifacts, mostly spear points, in private collections mostly found along the Lake Agassiz beaches. This represented a westward extension of the Old Copper culture; a complex whose center was in the Wisconsin area as early as 6,000-5,000 years ago (Johnson 1964). The focus on Lake Agassiz

beach ridges reached its defining expression in Johnson's 1973 *The Arvilla Complex*, a monograph representing a compilation of Wilford's notes and some of Johnson's own work in the Valley. By this time, at least in the US portion of the Red River region, the precontact period was identified with the Arvilla burial sites. Some archaeologists believed that the only significant archaeological sites in the Valley were burials and that occupation or living sites were absent due to what they believed to be abnormally wet conditions characterizing the Lake Agassiz lowland prior to the building of modern drainage systems. The over 100 sites Johnson reported finding on his survey were not published, and the copper materials from the Lake Agassiz beaches were largely neglected in subsequent years.

In the North Dakota part of the Red River Valley most work conducted prior to the 1970s was survey, although burial excavations were conducted by Montgomery at dozens of mounds in the area just northwest of Grand Forks (Kapches 2003: 32). In the 1940s Richard Wheeler and Gordon Hewes conducted survey work along the Red River tributary streams in northeastern North Dakota, including the Tongue, Park, and Pembina rivers. In the 1960s Kenneth Cole completed surveys along the Forest and Goose rivers, with variable results, but overall, many new archaeological sites were recorded. In spite of this early work, no definable cultural entities comparable to the ones described for Minnesota or Manitoba were recognized in North Dakota (Picha et al. 2016: 9.10–9.14).

For archaeologists, by around 1970 the Red River Valley in a sense had several separate identities. In Manitoba, the Red River was understood as a typical archaeological landscape. There were ceremonial sites, like burial mounds and earthworks, and there were also occupation sites, some of which, like Lockport, were layered in the ground in stratified context. One Canadian archaeologist reviewing the archaeology of the Lake Agassiz region in the late 1960s neglected to discuss the US portion of the Red River region since so few archaeological sites from there had been described in any detail, and most of those that had been described were burial mounds (Mayer-Oakes 1967). In the US the Red River was regarded as a region barren of the typical archaeological remains in the lowlands of the Lake Agassiz basin and along the Red River itself. Instead, precontact life centered on the perimeter of the old glacial lake. Here, ancient people buried their dead in low, circular or elongate mounds. Furthermore, in the most ancient times, prior to the introduction of ceramics, these Lake Agassiz beaches were the home to Paleoindian hunters at the end of the Ice Age, and later, during the Archaic period, it was on

these beach deposits that the participants in Old Copper culture left their distinctive copper artifacts. Exactly what these earlier peoples might have been doing in the Valley was not clearly understood or explored.

Below is a brief summary statement of the sequence of currently used archaeological cultural periods identified for the Red River Valley. This cultural sequence is based on archaeological research since the late nineteenth century. In its details it is still actively debated, but the terms used in the discussion of the archaeological past must be understood, at least in outline form, for our discussion to proceed. There are other chronological schemes in use on the Great Plains. The one offered here is not perfect and will no doubt be changed in the future, but it will serve our needs for now.

Paleoindian: 12,000–8,500 years ago. This refers the archaeological remains left by the first people to live in the Red River region at the end of the Pleistocene. The glaciers receded from the southern Valley around 14,000 years ago when the Herman beach ridge formed, the oldest of Lake Agassiz strandlines (Lepper et al 2013).

Archaic: 8,500–2,400 years ago. In North American cultural chronology, this period follows the Paleoindian. It coincides with the development of more modern climatic and environmental conditions, and is distinguished from Paleoindian in the Red River region by a new technology.

Woodland: 2,400–750 years ago. During the Woodland additional cultural changes occur, distinguishing it from the Archaic. Burial of the dead in earthen mounds, pottery making, and occasional evidence of domestic plant use are typical of this period.

Late Precontact/Plains Village: 750–300 years ago. This latest of the archaeological culture-historical periods persists up to the appearance of European objects in the archaeological record. Farming was more common, and larger and semi-permanent settlements are sometimes found.

Figure 5.1. Clovis (left) and Folsom points.

Chapter 5
Paleoindian

The earliest Americans are usually called Paleoindians. Archaeologists believe that these people or their ancestors came from Asia. This is suggested by the physical similarities between northeast Asians and the Native Americans, by genetic evidence, and by the fact that during the Ice Age Siberia and Alaska were a single land mass, connected because enormous amounts of water locked in glacial ice lowered sea level and created a dry corridor between Asia and America, an area called Beringia by Quaternary scientists.

The early Paleoindians made a distinctive artifact known as the fluted lanceolate point, a more or less parallel sided spear tip which, in its earlier forms, had channel flakes removed from the base of the point into the midsection. The resulting flake scar created a 'flute' or longitudinal depression on both faces of the point. These so-called fluted points are known in an earlier and larger form named Clovis and a later and more gracile form known as Folsom. Clovis and Folsom points and their associated technologies are dated across much of North America to between 13,000-12,000 years ago (conventionally abbreviated BP for before present). Recent re-dating of Clovis using data from a number of sites indicates an age range from 13,050-12,750 BP. (Waters et al. 2020), while a recent study of Folsom radiocarbon dates suggests an age range of 12,845-12,255 BP. (Buchanan et al. 2021) (Figure 5.1).

There are sites now known in North and South America that apparently predate the 13,000-year-old fluted point finds in North America, suggesting that people were on this continent earlier than the Clovis point-using Paleoindians. Genetic and linguistic evidence have been combined to show that early peoples from northeast Asia expanded into the Americas by 15,000 years ago or earlier (Reich 2018: 159-160). Some think that Beringia may have been the home of early migrants who lived there until the Rocky Mountain glaciers melted around 14,000 years ago and allowed movement into the interior of North America. They began the use of fluted technology. Earlier groups arrived by some other avenue, perhaps by way of a coastal movement over the course of previous millennia and would have been responsible for the pre-Clovis archaeological sites.

During all the time that the American continents were being populated by the peoples who would become the Native Americans the Red River Valley was covered with glacial ice or flooded by meltwater. Around 13,300 years ago ice had receded west of the Red River Valley, and a spruce parkland developed (Yansa 2007: 121). Lake Agassiz formed at this time as water ponded in front of the ice and was blocked from draining by glacial till around modern Big Stone Lake on the Minnesota-South Dakota border.

Clearly no one could live in the area now occupied by the Red River during this time. However, ancient people by then had come to the Northern Plains and typical Paleoindian culture was introduced to regions adjacent to Lake Agassiz. Folsom points are known from central and western North Dakota at the Moe site and from excavations at several locations around Lake Ilo, not far from Dickinson, North Dakota (Schneider 1982a; Root 2001). In southern Minnesota near Appleton, not very distant from the southern outlet of Lake Agassiz, a Folsom point was found in a field by a private collector (see Figure 5.1), and Folsom fluted points have also been reported for several undocumented sites somewhere in the vicinity of Lisbon, southeastern North Dakota (Johnson 1962). Unfortunately, the Appleton and Lisbon finds were picked up by avocational collectors and their exact provenance is not known.

The Paleoindian is best known in the Red River Valley from materials found in Manitoba. Buchner and Pettipas (1990: 52-53) reviewed the Paleoindian presence in the province and found fluted points at several sites to the west of the Lake Agassiz basin. There seems to be a correlation with various beach ridges of Lake Agassiz after about 12,000 years ago. This makes sense, since by that time the glaciers would have melted back from their position in southwestern Manitoba and the perimeter of the glacial lake would have been open to human use. Boyd (2007: 199-205) notes the paucity of fluted points in the Assiniboine delta region even though it has the densest concentration of Paleoindian sites on the Manitoba prairie. Out of 28 Paleoindian sites in the delta region of southwestern Manitoba, only two are fluted point finds, 21 others are later Paleoindian (or Plano), and five are not classified. He argues that the lack of fluted points on the Lake Agassiz perimeter may have to do with the lack of a robust flora capable of sustaining the biota fluted point Paleoindians depended upon.

We may assume that any fluted point using peoples on the perimeter of Lake Agassiz lived in a fashion similar to that of other early Paleoindians from farther to the south and west. There, Paleoindians of Clovis and Folsom times left some well-preserved archaeological sites that have

been intensively researched. The fluted point cultures of 13,000-12,000 years ago are often described in the older archaeological literature as specialist hunters of the mega-fauna; the large mammals of the end of the Ice Age. These included mammoths, mastodon, horse, the Ice Age bison (*Bison antiquus*), camel, sloth, and caribou.

Early Paleoindians are often regarded as having been highly mobile, as would be necessary to follow the grazing and browsing habits of large, herbivorous animals. Occasionally, Pleistocene faunal remains are found in the Lake Agassiz beaches. Harrington and Ashworth (1986), for instance, report a tooth from mammoth in the Herman beach, about 50 miles west of Fargo, but neither this find or any others of similar nature are associated with cultural materials. We do not have any well documented, that is, excavated archaeological sites from this early fluted point Paleoindian period in the Red River region (cf. Magner 1994: 18).

Several recent studies show that although the early Paleoindians did hunt the mega-fauna, and on numerous occasions killed mammoth, an animal as large or larger than a modern elephant, there was probably not a specialized focus on these large creatures. Paleoindian diet during the fluted point time span was undoubtedly variable and depended on the nature of the animals encountered during routine hunting episodes. There is not much evidence that Paleoindians at this time were big game specialists. (Cannon and Meltzer 2004: 1955, 1981). In one study, a sample of 17 Paleoindian sites in North America with the appropriate evidence were examined. The results showed that at 12 sites, there was a mix of animal remains, while large game specialization was indicated at only five (Byers and Ugan 2005: 1636).

After about 12,000 years ago the production of very skillfully made lanceolate shaped spear points continued, but generally without the flutes typical of the earlier points. These points are assigned to a number of types including among others Agate Basin, Hell Gap, Alberta, Eden, and Scottsbluff. These later Paleoindian artifacts are often referred to as Plano. They are found across the Great Plains from after about 12,000 years ago to around 8,500 years ago. Plano points are found far more frequently in the region around the Lake Agassiz basin than fluted points. Boyd (2007: 212-215) argues that the presence of these later Paleo sites some distance behind the actual beach ridges has to do with avoidance of the cold conditions of the lake shore and the greater biotic density in the wetlands a few miles back from the lake edge.

Figure 5.2. Two Plano Points. Left, lanceolate point made on Knife River flint, found in a cultivated field below the Campbell beach near Glyndon, Minnesota. Right, Scottsbluff point from a private collection.

Although this period in time is still not well known, it is better documented than the Clovis and Folsom portion of the Paleoindian. By this time the Ice Age mega-fauna was all but gone from the Northern Plains and Midwest. Caribou were displaced farther and farther to the north, and the horse, mammoth, sloth, mastodon, and other large mammals became extinct in North America. Bison continued to flourish, perhaps in part because many of their grazing competitors disappeared. For the next 10,000 years the bison came to play a powerful role in the life of the people of the Red River Valley.

The Plano cultures show some evidence of changing life-styles. During earlier Paleoindian times ancient hunter-gatherers preferred to use high quality flints and other silicate rocks for their stone tools, such as Knife River flint from west of the Missouri River in North Dakota, or jasper taconite from the Lake Superior region. The general opinion among archaeologists is that the early Paleoindians were highly mobile, and during their regular movements from one hunting ground to another, they would visit areas where high quality stone material for tools could be found. But by the later part of the Paleoindian period, they began to make their stone tools from local raw material, more ready at hand. This pattern of using local tool-stone is found in southern Saskatchewan on the far northwestern edge of Lake Agassiz (Meyer et al. 2011: 36), as well as on the eastern edge of the Red River Valley (Peterson 1973). Still, the lanceolate point shapes continued to be made, but the poorer quality stone material led to less aesthetically pleasing artifacts. Why this happened probably had something to do with people spending more time in a circumscribed territory and diminished opportunities for the acquisition of high-quality, non-local stone for flint-knapping.

During the later stages of Lake Agassiz two groupings of Plano, or Late Paleoindian projectile points are recognized. On the western edge of Lake Agassiz in Manitoba this period is fairly well studied. One group of sites features well-flaked lanceolate points made into leaf- shapes (Figure 5.2). They include Agate Basin, Hell Gap, and Angostura, each of which gets its name from sites where they were discovered in the western Plains. Buchner and Pettipas (1990: 55) refer to the cultural entity responsible for this suite of artifacts as one of the major Plano complexes in the region. These artifacts were expertly made by driving very thin, broad flakes from the edge of the artifact toward the centerline, sometimes even across the entire surface of the point. This type of flint knapping is hard

to achieve and shows that the people who made these artifacts continued the Paleoindian tendency to focus a great deal of attention on the quality of their spear tips.

A second group of Plano points consist of equally well-made lance-shaped tips, but these are different insofar as they feature a distinct stem to serve as a hafting element. These include Eden, Scottsbluff, and Alberta points, a second major complex defined by Buchner and Pettipas (1990: 55). Early leaf-shaped forms, Agate Basin and Hell Gap forms are sometimes found below Lake Agassiz beaches. It is likely that these artifacts were deposited during the Moorhead low water phase of Lake Agassiz, when the lake waters retreated north of the international border. At a site northeast of Morden, Manitoba (DhLl-7) an Agate Basin point was found at an elevation lower than the Campbell beach. This is one of the sites that indicates Agate Basin-using people may have been exploiting the region during the Moorhead low water phase (Pettipas 2013: 37; 1976: 27). These materials may represent an eastward movement of Agate Basin using peoples as climatic conditions favored the movement of bison eastward toward the Manitoba-Minnesota region.

The stemmed forms of Plano are mainly distributed farther to the west, that is, outside the basin of Lake Agassiz. This would suggest perhaps Lake Agassiz was in the subsequent Emerson phase with higher lake levels than in the earlier Moorhead phase of the Lake. In any case, Buchner and Pettipas consider the two complexes, stemmed and lanceolate Plano, more or less coeval. These distributional studies are probably not adequate to solving the dating problem of which point styles belong to which time period. The radiocarbon chronology from excavated and dated Plano sites in other parts of the Great Plains shows that leaf-shaped points, especially Agate Basin and Hell Gap, generally precede stemmed lanceolate points, although there is overlap (Holliday 2000: 262-262; 270). In the Lake Agassiz region, they often appear contemporaneous.

Some of these Plano points have been classified "Red River Plano." This category is represented by leaf-shaped points along with a distinctive shallow-notched broad bladed lanceolate with a contracting stem and concave base. These latter are called "Manitoba points." (Pettipas 2004). They would appear to adumbrate the later Archaic period practice of using notched and stemmed projectile tips. Another described Plano point from the Red River area north of Winnipeg is described as Lovell Constricted, a leaf-shaped point with a slightly constricted basal area and concave base approximating a fishtail appearance. These styles of projectile tips are part of a point complex defined as the Nipawin complex, a

collection of point styles and associated materials that encompass the Red River Plano. Nipawin points are defined as leaf-shaped points similar to earlier Plano lanceolate points, but with less refined flaking patterns and usually made on local raw materials rather than exotic tool-stone (Meyer et al 2011: 36). All of the Red River Plano as described by Pettipas is regarded as the product of the eastward movement of groups from the Rocky Mountain foothills and western Plains to the prairies and woodlands of Minnesota and Manitoba. At the Red River, presumably, some of these groups moved north down the river valley toward Lake Winnipeg, while others continued to the east and south.

In any event, the regional variety of leaf-shaped points requires explanation. Variations in the precise shape of the points is often regarded as a temporal sequence of stylistic preferences. Vogues in these preferences changed through time, just as Folsom succeeded Clovis, and Plano forms succeeded Folsom, so the individual Plano styles themselves might represent a sequence of forms. Agate Basin points, for instance, were relatively early and near in time to Folsom. Scottsbluff points were later, and close to the transition to the succeeding Archaic period (Holliday 2000: 262–263), although as archaeologists in Manitoba have shown, some leaf-shaped lanceolate points are considerably later. Sometimes, several types of points are found together at a single site. Such a co-occurrence is often thought to be the product of different social groups, each preferring a distinctive type of projectile point. Another suggestion for contemporaneous variability in styles relates to the skill of the knapper, or the raw materials being worked, having an effect on the shape of the point. The use-history of the artifact has also been suggested as giving rise to variation in point shapes. This last notion about projectile point variability is that they were used, re-shaped slightly as they dulled with use, and then used again. In the course of re-working and re-using, the shape of the point changed. The archaeologist, finding points of slightly different shape is in reality observing the effect of re-working and tool maintenance.

So far, I have been discussing the Paleoindian occupation of the northern and western side of the Lake Agassiz and Red River region. There is Paleoindian material from the eastern perimeter of the Valley as well. Near and east of present-day Lake of the Woods where the borders of Minnesota, Ontario and Manitoba intersect, there are several surface collections that have provided good evidence of a Late Paleoindian presence. The sites are near the Rainy River and the old Campbell beach deposits on the eastern edge of Lake Agassiz. These surface collections taken together are defined as the Lake of the Woods/Rainy River Late

Paleoindian complex (Magner 2011). As with the Late Paleoindian materials described in Manitoba for the western edge of Lake Agassiz, there are both leaf-shaped and stemmed lanceolate points in collections. These are only part of a larger Late Paleoindian expression, known more or less entirely from surface finds, that extend into the Lake Superior basin. Most of the points are made from regionally available Lake of the Woods chert and Knife Lake siltstone. When exotic material is used, it is usually Hixton quartzite from west-central Wisconsin, or Knife River flint from western North Dakota (Magner 2011: 95-96).

One of the sites in the Lake of the Woods/Rainy River Late Paleoindian complex is the Pelland site, which contained a collection of Knife River flint blades. These are well-made, elongate flakes with a more or less prismatic cross-section which resulted from being removed in a systematic fashion from a core of rock. Schneider (1982a) described a similar set of blades from the Moe site in central North Dakota, also made on Knife River flint. Most of the blades were made into scrapers, end or side, and a few were used as gravers or knives. This blade core technology was spread across the Northeastern Plains and Upper Midwest in Late Paleoindian times. Since common diagnostic projectile points found in the region around both the Moe and the Pelland sites are Plano points, and since blade technology is common in Late Paleoindian expressions, the most likely association for the blade technology is with some Plano complex, possibly Agate Basin (Schneider 1982a: 129-133).

Generally, the US portion of the Red River Valley and the Lake Agassiz region has fewer Paleoindian sites of any age than is the case for Manitoba. In a review of the Paleoindian resources in the state of Minnesota, only about a half dozen finds from the Paleoindian period are recognized for the Red River region (Buhta et al. 2011: 35). The State Historical Society of North Dakota's Northern and Southern Red River Study Units list four Paleoindian sites for the Red River area, which includes areas outside the lacustrine plain (Picha et al. 2016: 9.11).

By the end of this Late Paleoindian period, around 8,500 years ago, the glaciers had more or less completely melted and much of Lake Agassiz had drained away. In the southern portion of the Lake the waters had dissipated before 9,000 years ago. Near Winnipeg, Lake Agassiz was gone before 8,000 years ago (Brouard et al. 2021). In fact, a major climatic shift around 8,400-8,200 years ago is often related to the final collapse of the Laurentide ice sheet (the Canadian ice that covered Hudson Bay, eastern Canada and the northern US during the Ice Age). What effect this shift might have had on early Native Americans in an immediate sense is

Figure 5.3. Lanceolate points from the Browns Valley site.

not known; however, around 8,200 years ago with the beginning of the Middle Holocene there was a shift to a more arid and perhaps somewhat warmer climate in the Great Plains.

Late Paleoindian Sites

Browns Valley

There are a few excavated archaeological sites from the Red River region that belong to the Paleoindian period, but unfortunately none of these belong to the fluted point phase of that time. Perhaps the most famous of these is one of the earliest to be discovered; the Browns Valley Man find. In 1933 a human skeleton and several artifacts were found by William Jensen at Browns Valley, Minnesota. Browns Valley is a town located between Lake Traverse and Big Stone Lake, at what was once the southern tip of Lake Agassiz. This is also the southernmost point of the Red River drainage basin. During work to remove gravel from a municipal soil pit for a grain elevator driveway, human skeletal elements and some

associated artifacts were discovered. Sifting and scraping at the gravel pit produced more of these materials. Most of the finds at the site were made prior to the arrival of archaeologists although when they did arrive, the archaeologists excavated in the vicinity of the find and recovered a few additional items.

The Browns Valley work was eventually reported by Albert Jenks (1937) and consists of a description of the skeletal elements and the artifacts. While it was not known at the time exactly how old the skeleton was, geologists determined that the gravel was probably from the Tintah beach of Lake Agassiz. This meant that the burial could not be more than 12,000 years old or less than 8,000 years old. Jensen's own account of his find is reproduced in Jenks' report, and he describes an 18″ wide, 12″ deep pit of somewhat cohesive, light-colored gravel containing the burial. There were patches of red coloring throughout indicating that the skeleton was probably placed in the pit with quantities of red ochre. A large flat stone was also found in the pit and was probably buried on top of the body (Jenks 1937: 7).

The artifacts found in the gravel deposits with the human remains included unfluted lanceolate projectile points that were given the name Browns Valley points (Figure 5.3).

There were also a couple of sandstone implements, probably abrading tools, recovered with the points. Two of the projectile points have small, longitudinal flakes removed from the center of the base, almost as though they were acknowledgements of an earlier fluting tradition. The points were made of Knife River flint. These are very similar to the type known as Agate Basin. The well-executed parallel flaking on the points suggest that they were probably in the tradition of the earlier Plano point manufacturing tradition, rather than the later, Nipawin pattern which involved using local raw materials and a more irregular pattern of flaking.

After Jenks' early report the Browns Valley artifacts made their way to the University of Minnesota; however, the skeletal material was retained by the landowner. For years the skeleton was believed lost until the late 1980s when it was discovered that the skull was still intact in a box of items kept by the discoverer's family. The bones were given over to study and two radiocarbon dates were obtained. The initial date was 8,790 BP $\pm$ 110. A second date of 9,049 BP $\pm$ 82 was eventually obtained as well, and together these assays, when calibrated, show that the Browns Valley Man was most likely buried at this location somewhere around 10,000 years

ago. It is one of the earliest skeletons ever discovered in the Americas, and it clearly belongs to the Plano or Late Paleoindian period (Dawson 1990; Shane 1991).

Browns Valley Man, as it came to be known, was a male of about 25-35 at the time of death. He stood around 5′5″ tall in life, and displayed a wide cranial vault base, narrow nose, flat frontal bone (forehead) and a forward extension of the upper portion of the face (Jantz and Owsley 2001: 150). The carbon isotopes in the bones show that he had a diet of animals that ingested C3 plants, that is, some grasses and probably woody plants. The suggestion of this finding is that the grasslands that today dominate southwestern Minnesota were undeveloped (Shane 1991).

The Browns Valley skeleton was reburied at the request of Native American organizations.

Greenbush

One of the less known Late Paleoindian sites was found in a borrow or gravel pit on one of the Lake Agassiz beach ridges near Greenbush, Minnesota. This is not far from the city of Roseau, near the US-Canadian border. It covered an area of about 70x30 meters. In the early 1970's archaeologists with the Minnesota Historical Society conducted excavations to save what they could of the site before it was destroyed for highway fill (Peterson 1973). The finds consisted of large quantities of fractured Swan River chert. This till-stone was used widely by native people in the Red River Valley. Other stone material included granite, basalt and flint. Only two pieces of non-local Knife River flint were recovered from the excavations. Animal bone, usually well preserved in Valley soils, was not present, nor was any other organic material suitable for radiocarbon dating.

There were four workshop localities defined at the site. These workshops consisted of areas where there was a concentration of flaking debris. In three of the four workshops were larger cobbles at the center of the flake concentrations. These were interpreted as hearth areas.

The site was probably a quarry where people came to mine beach cobbles of chert-like material. A large amount of angular and clearly flaked and fractured Swan River chert was recovered during the excavations. Although there were few tools, which would be expected at a precontact quarry site, basal fragments of three points were recovered. One of these fragments had a wide stem typical of the Plano point style known as Scottsbluff. Two other basal fragments were less definitive but appear to have been lanceolate forms typical of Plano. Other tools include

a few unifacial implements, a couple dozen expedient flake tools, and several bifaces in the early stage of manufacture. The flaking debris was mostly pieces with the weathered cobble cortex still adhering (decortication flakes), and larger, thicker flakes typical of the early stages of tool making. These flake types represent about 90% of the flake sample. The other 10% of the flakes were thinning debris from finishing the tool edge and shaping the implement to its final form. (Peterson 1973: 17, 28-31). Overall, the ratio of flaking debris to actual implements, including expedient flake tools, is about 78:1. The finds at Greenbush might seem disappointing to some, but archaeologists depend on sites such as this one to give us a picture of certain specialized aspects of ancient people's everyday life.

At Greenbush we are given a glimpse into the raw material acquisition activities of Late Paleoindian peoples. Here they quarried the Lake Agassiz beach deposits for an important raw material which they used to make tools such as spear points, knives, and other implements. Swan River chert is a difficult material to flake, and some archaeologists suggest that it probably needed to be heat-treated before it could be flaked into serviceable tools. It would seem that these people must have had good reason to resort to using it instead of much more appropriate exotic stone material. Perhaps their life-style was changing and traveling long distances to find higher quality stone material was impractical. It is also important to recognize that the quarrying of Swan River chert is something that would continue in the Red River Valley throughout the precontact period. At many sites in the Valley this raw material is more common than any other tool-stone.

DhLb-1

This is another gravel pit site on the Campbell beach deposits of Lake Agassiz in southeastern Manitoba, about 60 miles from the city of Winnipeg. The site is situated on the edge of three environmental zones: the Red River prairies, which extend to the west, the conifer-deciduous woodlands to the east and south, and the boreal forest to the northeast. Near the site is a spruce-tamarack swamp with pine, spruce, and fir trees. One aspect of the site's geology is that it was separated from the main shoreline of Lake Agassiz some distance to the east. Possibly, the site was used when the lake waters had to be crossed, something that might have been accomplished in winter when the lake surface was frozen.

Stanley Saylor (1975) excavated this site in 1972 and found about a dozen stone tools and tool fragments along with over 300 pieces of flaking debris from tool making. The artifacts were found about 40–50 cm below the ground surface and Saylor felt the materials were probably deposited sometime after about 10,000 years ago, but before 9,500 years ago, when Lake Agassiz laid down the Campbell beach. This conclusion is based on the fact that water-worn sands overlie the cultural deposit and would probably have been deposited by wave action from the glacial lake.

The site lacks diagnostic artifacts; however, well-made tool fragments include bifaces and scraping implements. The bifaces are made from an exotic green quartz, but the other tools are from locally available stone material. The site is regarded as Late Paleoindian in age based on the stratigraphy and sediments at the site. One of the bifaces consists of the basal section of a larger implement. The base is convex, while the blade is an expanding ovate shape. It was thinned by both percussion and pressure flaking and has a biconvex cross-section, all of which is suggestive of a well-made tool, possibly a projectile point. Even though it is only a fragment, it has the hallmarks of a Plano period projectile point.

The site was almost certainly a location where stone tools were made. Unfortunately, faunal material was not found, nor were any other organic remains that might reflect on the life-way of the people who used this site. The lack of bone or charcoal precluded radiocarbon dating. Given the location of the site, it is likely that the people would have come from the east or south, as the expansive waters of Lake Agassiz made access to the site from the north or west impossible. Altogether, it is of interest that DhLb-1 comprises another Late Paleoindian site related to the Lake Agassiz shoreline features.

Duck River

At the southern tip of Lake Winnipegosis, a Late Paleoindian site was discovered with four Nipawin complex points, which consist of variable leaf shaped projectile tips that occur in the latest portion of the Plano. It is not uncommon for these points to be confused with much earlier Agate Basin materials. These Nipawin points were found at Duck River with a number of expedient tools and cracked rocks (Haug 1981). The site is several hundred miles northwest of Winnipeg and is not within the Red River Valley; however, it is within the Lake Agassiz region. This Plano site may have featured butchery and hide working based on the nature of the tools, but even that is speculative considering the available evidence. In one part of the site there is an arrangement of rocks that might have

been used to anchor hides or other materials that formed a windbreak or small shelter of some sort. The size of the site and range of materials found suggest a short-term use, probably during the warm season. It is another example of a site from this period associated with remnant features of Lake Agassiz. It is also another example of how sparse are the materials available for interpretation of the Paleoindian period in the region.

Sinnock

One of the better studied and productive of the later Paleoindian archaeological sites from the Red River region is Sinnock, located on the Winnipeg River in southeast Manitoba on the eastern side of Lake Agassiz (Buchner 1984). Sinnock was a shallow site containing a variety of tool types, including projectile points, scrapers, bifaces, chopping tools, and many expedient implements that had no definable shape but which show clear evidence of use wear on their worked edges. The projectile points are late Plano leaf-shaped points. An AMS (accelerator mass spectrometry) radiocarbon date on bone eventually provided a single date of 8,030 $\pm$ 160 (Gillespie et al. 1984: 19). When calibrated, this date provides a calendar age for the site of about 9,000 years BP.

This site is regarded as part of a Late Paleoindian entity referred to as the Caribou Lake complex. Other sites in this complex indicate that these people used bison, but when unavailable, took advantage of other animals such as moose, caribou, and small game. Tools were made on local stone material such as rhyolite, quartz, quartzite, basalt, and granite. Trihedral adzes were made, probably for the purpose of wood working.

At Sinnock over 45,000 pieces of flaking debris were found during the excavations. Out of all of this stone debris there were only 26 cores and core fragments. The high frequency of debris suggests core tools were fashioned here and many of them carried away when the occupants left. The flaking debris, naturally enough, remained.

There appeared to be a good deal of horizontal clustering at Sinnock, indicating that people operated in discrete groups, perhaps families, or even smaller task groups. In this regard, Sinnock is similar to the concentrated debris at the defined workshops described for the Greenbush site. There was a single fire pit identified and the evidence suggests that it was used to heat limestone blocks to break them apart so that cherty rock inside, good for stone tool making, might be removed. This, together with the lithic debris and tools, all point to the site having a special function. The relative lack of features, the paucity of cores and abundance of flaking debris, the nature of the tools, all suggest a hunting camp. This

is reinforced by the position of the site near a river shallow where large game would probably have crossed. Here is evidence of Plano peoples on the border of the boreal forest in southeastern Manitoba. Their adaptation at the Sinnock site may reflect the gradual movement of people from the southwest moving to the northeast, where they would eventually develop an adaptation to the deglaciated forest county of the northwestern Great Lakes region.

Rustad

The Rustad site is situated in an alluvial fan on the northeastern edge of the Sheyenne Delta, the large, sandy landform formed where the Sheyenne River entered Lake Agassiz from the west (Michlovic and Running 2005). This is about 30 miles southwest of Fargo. A major Early Plains Archaic site was found here; however, a small deposit of pre-Archaic, Late Paleoindian aged material is found stratigraphically below the Archaic levels. The buried soil in which these materials were discovered is bracketed by radiocarbon dates (calibrated) of 10,200–9,400 years ago. Unfortunately, no diagnostic Paleoindian artifacts were found, but the lithic flaking debris consisted of almost entirely Knife River flint. The animal remains included bison, rabbit, and fish. The bison appear to be somewhat larger than their modern descendants and have been assigned to the taxon *Bison occidentalis*, although Widga (2014: 263) suggests it is more appropriate to classify all the bison for this period as *Bison bison*. Small game and fish, not commonly found at Plains Paleoindian sites, are clearly associated with these Paleo-aged materials. From sites such as this one it appears that the Late Paleoindian adaptation on this portion of the Great Plains was, perhaps, not so very different from that of the succeeding Archaic period.

While little more can be adduced from the limited Paleo-aged materials, it is clear that the people who lived at the site during this time were involved in more than big game hunting, but were using both large game, smaller animal resources, and fish from the Sheyenne River. Besides this, the almost exclusive representation of Knife River flint in the lithic collection, limited in quantity though it is, suggests some important differences with the subsequent Archaic settlement of the site. In the Archaic period, there is almost no Knife River flint from western North Dakota sources, but lithic artifacts are largely from lower-quality locally available rocks. Either the Paleoindians were far more mobile than their

Archaic successors, or for some reason access to the western Plains was interrupted in post-Paleo times, perhaps due to the droughty conditions of the Middle Holocene.

Other Finds

Paleoindian artifacts have been found during archaeological surveys in various portions of the Red River region. The University of Minnesota survey conducted by Johnson in the late 1950s and focused on the Lake Agassiz beach deposits identified a number of sites classified as Paleoindian in age (Johnson 1960). The survey involved examination of many private artifact collections which contained the early artifacts, such as the Folsom points found near Lisbon, North Dakota, on the southwestern perimeter of the Valley (Johnson 1962). As mentioned above Johnson felt that the earliest occupants of the region developed a specialized adaptation to the margins of a series of glacial lakes extending from Lake Agassiz in the southeast all the way northwest into the Mackenzie River basin of the Yukon and Northwest Territories.

Sometimes the interpretation of finds made during survey can be frustrating. I mentioned previously that an Agate Basin point was found north of Morden, in Manitoba. East of Moorhead, near Glyndon Minnesota, a well-made lanceolate point was recovered from a plowed field. The point was initially classified as Agate Basin, an early type of Plano. The point itself featured a heavy patina, or whitish weathered rind covering the entire surface. Archaeologists assume that some early Plano artifacts such as Agate Basin were deposited during the Moorhead low-water phase of Lake Agassiz. On the other hand, the point does not have the exquisite flaking pattern usually found on early Plano points. It is probably a type of Nipawin point characteristic of the later part of the Plano and dating to after the final stages of Lake Agassiz. The only other artifact in the field was a ground stone maul—a round cobble with a groove pecked into the surface all around. Some archaeologists feel that such pecked and ground stone tools post-date the Paleoindian, and in fact the two tools found in this field might not be related. Unfortunately, there is no good contextual information to help us understand when these artifacts were deposited, and what the people who left these artifacts behind were doing in the lake basin so many thousands of years ago. Since there has been little deposition on the Lake Agassiz bottom terrain since the lake's drainage, any archaeological sites, even very old ones, would necessarily be near

the ground surface, and since the Valley has been heavily farmed, it is unlikely that any of these Paleoindian occupations would have escaped the action of the plow.

One site sometimes regarded as a Paleoindian occupation is the Donarski site in Marshall County, Minnesota. The site is dated to the post-Paleoindian Middle Archaic by radiocarbon assays; however, two artifacts found there are regarded as possible Paleoindian. One is the tip of a point that is claimed as a Holcomb point tip. Holcomb points are Late Paleoindian lanceolate points defined for a site in Michigan. The second is a bifacially flaked mid-section of a point bi-convex in section. It is believed to be a fragment from a possible early Paleo point. Unfortunately, neither of the points are complete enough to be confident of Paleoindian assignment, and none of the radiocarbon dates from the site are earlier than the Middle Archaic (Buhta et al. 2011: 35). Donarski does not seem to have the dates or clearly defined Paleoindian artifacts to qualify for assignment to that cultural period.

Discussion

Paleoindian period sites (13,000–8,500 years ago) are often divided into several major categories in the Red River region, including fluted points, and Plano unfluted leaf-shaped and stemmed points. Recognition of sites belonging to this period rests on the presence of diagnostic artifacts, or in some cases it is based on the presumed age of the geological deposits in which the site materials are found. Folsom fluted points are occasionally recovered from areas adjacent to the Lake Agassiz region. The great majority of Paleoindian materials in the immediate Red River region belong to the Plano expression or Late Paleoindian.

On the western and northern side of the Valley Plano is sometimes divided into leaf-shaped lanceolate and stemmed lanceolate point types, particularly in the better-studied Manitoba area. On the northeastern side of the Valley, the Lake of the Woods/Rainy River materials exhibit similar styles of Plano projectile points, albeit manufactured largely on locally available materials such as Knife Lake siltstone. These sites have often been referred to as part of an archaeological unit known as the Caribou Lake complex. The Sinnock site would be part of this taxon. Leaf-shaped lanceolate points and bison are commonly found in association, but the Caribou Lake complex also contains evidence of forest resource use, such as the trihedral adze from Sinnock.

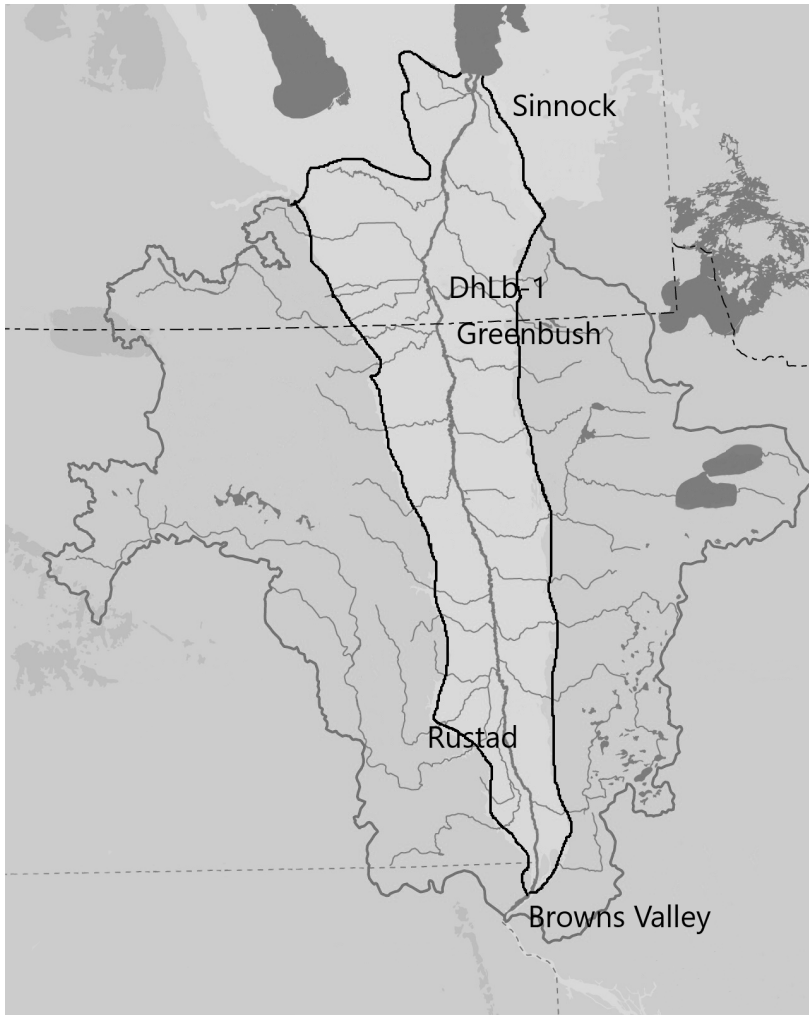

Figure 5.4. Map showing some Late Paleoindian site locations in the Red River Valley region.

Almost all of the Paleoindian sites known from the Red River region are associated with the geomorphic features left behind by Lake Agassiz, and almost all of the actual sites (as opposed to single artifact find spots) are from the later portion of the Paleoindian period; that is from the Plano culture complexes (Figure 5.4). This is doubtless because glacial ice still covered some of the regional landscape during Clovis and Folsom times, while Lake Agassiz was extant when the later Paleoindians using unfluted lanceolate points first moved into the region.

Even though the evidence is limited, we seem to see in the Paleoindian cultural materials from the Valley a range of site types, and they provide some insight into how people lived at this time. There is a stone quarry at Greenbush, Minnesota, where raw materials were taken from Lake Agassiz beach gravels, a possible kill site at Sinnock on the far northeastern edge of the Red River region, and a human interment at Browns Valley. Rustad was apparently a campsite where resources from the gallery woodlands, the Sheyenne River, and the open prairie were used. Besides this, the practice of prismatic blade manufacturing making use of high-quality Knife River flint was widespread from the Missouri River trench to the Rainy River region. The range of other artifacts found with Plano points include a variety of scrapers, gravers, knives, and even trihedral adzes and possibly ground stone tools such as grooved mauls. The variety of tasks such implements might be used for include butchery, plant fiber processing, mashing seeds, woodworking, and hide preparation.

The single burial site that was accidently exposed at Browns Valley near modern day Lake Traverse was set into a subsurface pit on high terrain overlooking the southern part of the Lake Agassiz basin. This use of high ground overlooking the old lacustrine plain would become a common aspect of later Woodland period burial practice, a tradition of burial placement with very ancient roots.

There are numerous finds of diagnostic Late Paleo artifacts from the Red River region, but excavated sites with good context are rare. But where *in situ* contextual evidence has been found, such as Sinnock and Greenbush, there are patterns suggesting activity areas, such as stone working or butchery. It would seem from the evidence at hand that the fundamentals of native life that would persist for millennia were established by this early date. A great deal of history would yet occur in the Red River Valley, and many changes were in store for future generations. Nevertheless, the basic pattern of life had been established.

Chapter 6
Plains Archaic

In the standard framework of North American archaeology, the Paleoindian period is followed by the Archaic. This is a strange term in more than one way. First, it gives the impression of antiquity, which might seem more appropriate for the preceding Paleoindian. Second, in the sense that the term "archaic" means outdated, or perhaps unusable, the term is hardly appropriate for this period, a long-enduring span of time during which important cultural innovations were made in the Great Plains region, probably including the tipi and pemmican-making. Some Canadian Plains archaeologists opt for the term Meso-Indian instead of Archaic, an obvious companion term to Paleo-Indian, although it is seldom used (see Forbis 1992), while others use the term Middle Prehistoric for the Archaic (cf. Reeves 1990). Yellowhorn (2003: 62) would go further and classify the Archaic as the Epipaleolithic, a period designation used in Europe to refer to the stone age peoples of immediate post-glacial times. As a matter of convenience, and to avoid taxonomic tedium, I use the term Archaic.

Here, we take the Archaic to mean a temporal span that comes after the Paleoindian, but prior to the many known ceramic-using cultures of later times when earthworks and even some domestic plants were introduced. Still, it has long been recognized that the division of ancient time in America into an Archaic period has its problems. Willey and Phillips (1958: 106-107, 113) pointed out the difficulty in making a distinction between the life-styles of the Paleoindian and Archaic, which they remark is especially true for the eastern portion of the Great Plains, which includes the Red River region. Not only does there seem to be continuity in life-style between Paleoindian and Archaic, but many Eastern US Archaic sites have dates that, on the American Plains, would place them firmly in the Paleoindian period. This is a perennial problem with classification schemes. The empirical evidence often washes over the boundaries of one temporal classification to the next. So, we will find in our regional archaeological record that the defining boundaries between our somewhat artificial cultural and chronological brackets blur and seem sometimes confusing. To give one example, Wright (1995: 113) feels that the Sinnock site, regarded above as Late Paleoindian based on

radiocarbon dating and projectile point forms, should be classified as part of the Shield Archaic. After all, the site features the trihedral adze, a classic woodworking tool commonly associated with the Archaic.

Ordinarily the Plains Archaic is divided into Early, Middle, and Late temporal spans. A standard and concise review of the Plains Archaic may be found in Frison (1998). Dobbs and Anfinson (1993) suggested that the Minnesota Archaic be divided into geographic variants; Shield Archaic to the northeast, Lake Forest Archaic in central and eastern Minnesota, Riverine Archaic along the Mississippi and its tributary streams, and Prairie Archaic in the prairie region of southern and western Minnesota. Almost all of the Red River region would fit into the Prairie Archaic, excepting a portion of the Valley in Manitoba where on the eastern side there are mixed woodlands. Some sites in this latter region might be assigned to the Shield Archaic.

Anfinson and Dobbs (1993) defined two phases for the Prairie Archaic that encompasses the Red River region; an earlier Itasca phase, and a later Mountain Lake phase. The Itasca phase was presumed to be a focal, big game hunting adaptation, while the Mountain Lake phase was regarded as a more diffuse routine, including both large game and the expanded use of various other regional resources available in the prairie lakes of southwestern Minnesota.

All of the Prairie Archaic sites of Minnesota may properly be understood as part of a larger Plains Archaic cultural expression. Whatever the terminology there is agreement that the Archaic is a post-Pleistocene archaeological phenomenon. Lanceolate Paleoindian point styles were replaced during the Archaic with notched and stemmed points belonging to a variety of named types. On the Plains, the Archaic period is understood to feature a sequence of artifact assemblages, each characterized by diagnostic artifacts. Earliest are side-notched projectile point types known as Logan Creek/Mummy Cave, which are defined for the Early Archaic. These point types are followed in time by the eared Oxbow point type (called Parkdale Eared by some). The Middle Archaic is known mostly by Oxbow, and by the McKean complex, with typical indented base sub-lanceolate McKean and broadly side-notched-to-stemmed Duncan and Hanna point types. The Late Archaic includes Pelican Lake points, sometimes referred to as Larter in Manitoba. Occasionally, Besant sites are included in the final portion of the Late Archaic as well, although more often Besant is regarded as an artifact type affiliated with the early part of

Figure 6.1. Archaic projectile point styles from the southern Red River region. Left to right: Mummy Cave/Logan Creek, Oxbow, McKean, Duncan, Hanna, Pelican Lake

the Woodland period on the Plains. It is worth noting also that Besant and Pelican Lake diagnostics are often found together in collections (Van Dyke and Head 1983: 230).

Dyck and Morlan (2001: 119, 121), dealing with the Northwestern Plains, note that in cases where stratigraphic sequences are available, Oxbow points are found above Mummy Cave materials, and that Oxbow continues to be present in McKean times. Also, points identified as Pelican Lake are found stratigraphically above McKean complex materials where a stratigraphic sequence is present. The simplified version of Archaic diagnostics from early to late would be: Logan Creek, Oxbow, McKean complex (McKean, Duncan, Hanna styles), and Pelican Lake (Figure 6.1).

The Plains Archaic is usually given more recent dates than those used for the Eastern United States (cf. Styles and McMillan 2009: 45). In the Plains, the Late Paleoindian or Plano, persists through what in the Eastern Woodlands would be regarded as the earlier part of the Archaic. The textbook version of the Plains Archaic dates may be found in Fagan (2005: 116, 127-131) where the Early Plains Archaic begins around 8,400 years ago, Middle Plains Archaic around 5,700 years ago, and Late Plains Archaic about 3,200 years ago. The dates in Fagan, as well as the dates for Paleoindian discussed in the last chapter, are based on radiocarbon dates that were calibrated.

Holocene Environment and Prairie Archaic Adaptation

The earliest part of the Archaic in the Red River prairies is coincident with the Middle Holocene, that climatic oscillation especially evident in the Great Plains that involved episodes of warmer temperatures and reduced precipitation. This period was formerly known as the Altithermal in the archaeological literature, and this term is still occasionally used. NOAA

(2008) dates the Middle Holocene to 7,000–5,000 years ago, but states that the idea of a pan-global warm phase is obsolete. Warming during this period was mainly in the Northern Hemisphere. Others see climatic fluctuations, generally above the modern average, lasting from about 8,000–4,000 years ago. In fact, in some areas warmer than modern summers were probably accompanied by colder than modern winters. Other recent work suggests that this period was characterized in the Plains more by aridity than by higher than modern temperatures. During this time droughts were more common than present, but these were interspersed with severe thunderstorms and resultant erosional events of a substantial magnitude. This erosion was a product of landscapes denuded of vegetation by arid conditions being suddenly subjected to heavy rainfall. Many regional lakes on the Northeastern Plains have over five meters of sediment from this period, illustrating extensive erosion, and perhaps the loss of many archaeological sites (Yansa 2007). Even so, phytoliths from the Rustad site, on the southwestern side of the Lake Agassiz basin, indicate that the regional grasslands were probably not very different from today at least in the earlier part of the Middle Holocene (Fredlund 2005).

Oases settings, such as lakes and rivers, were probably preferred locations for human habitation during the last part of the Middle Holocene (around 6000 years ago) when climatic conditions were most severe. Yansa (2007: 136) suggests that the area around Big Stone Lake and many of the glacial kettle lakes in the eastern Dakota uplands, along with major river valleys, served as refugia or oases for flora, for fauna, and for people. The open grasslands were probably less frequently traversed and used.

There are a few general comments about Archaic period cultural developments on the Plains, and the Northeastern Plains in particular, that should be mentioned here. During the Archaic there is a documented presence on the Western Plains of a stone tool cache dated to around 5,700 years ago. The cache has been used to argue that these Archaic people used a foraging system wherein hunter-gatherer groups moved in a predictable annual round of encounter-based subsistence activity that involved the repeated use of the same region (Kornfeld et al. 1990: 307–308).

Bison hunting was the primary subsistence routine on the prairies during the Archaic, although there is also evidence of other game animals, small game trapping, and of plant use. This, however, is also true of the Plano, so no real adaptive change seems to occur between later Paleo and Early Archaic. Some have suggested that bison hunting was a more substantial part of the subsistence base during the Middle Holocene due

to the more arid conditions, which may have made any substantial dependence of plant foods less successful. Several authorities argue that later in the Archaic, during Pelican Lake times, the system for mass bison kills was perfected and became more common on the Western Plains (Dyck and Morlan 2001: 121; Reeves 1990: 169). Such a development is not documented for the Northeastern Plains. Others suggest that during the most severe part of the Middle Holocene bison might have been less common and hunted on a less systematic basis (cf. Anfinson 1997: 41; Whittaker 1998: 310), which implies that alternative food sources must have been correspondingly more significant. Anfinson (1997: 39) argues that milling stones for grinding seeds appear in the Archaic, and indeed, milling stones are found in the Early Archaic layers at Cherokee, a site in northwest Iowa, indicating specialized tools for seed grinding.

The most obvious difference between Paleoindian and Early Archaic is a major shift in the form of weapon tips which has been associated with a presumed adoption of the atlatl. Atlatls are spear-casting aids in the shape of a short stick with a hook. The proximal end of a dart, or spear, was set in the notch and when cast, the atlatl served to extend the arm and give the dart a greater force. Atlatls were widely used in precontact times in many parts of the world. However, this explanation for the advent of notched points in the Archaic of the Plains is outdated since evidence of atlatl use with lanceolate Paleoindian technology is now available (Hutchings 2015). One of the more reasonable and functional explanations for notching is that the notches on the base of the point allow it to be hafted to a narrow shaft, while the blade of the point remains wide. When the point dulls from use, the blade is wide enough to accommodate resharpening and capable of continued use (Morrow 2015: 117). For the present it is not entirely clear why notched points were introduced in the Archaic, although they do appear earlier in the Eastern US and it is possible this preference, whether stylistic or functional, diffused from there to the Northeastern Plains.

Domestic dogs were found in the latest Archaic layer at Cherokee, around 7,200 years ago (Anderson et al. 1980: 266). Some archaeologists say that dogs were brought to America in a domesticated condition when the first people arrived from Asia, although recent evidence is that dogs arrived somewhat after the first people (Perri et al. 2018). In any case, their presence on the Northeastern Plains at sites such as Cherokee, indicates that people were probably using them as hunting companions, as pack animals, and possibly occasionally as food. Often, canid bones are found at sites. On the Red River perimeter, canid remains were found

at the Early Archaic component of the Rustad site; however, the faunal analyst regarded the elements as inconclusive and left their identity as dog/coyote/wolf. At many sites there are gnaw marks on bison bone that indicate they were chewed on by carnivores. It is possible that wild canids visited sites after their abandonment and left the gnaw marks. On the other hand, being that domestic dogs have been documented since Paleoindian times, and since they would have been fed discarded food scraps and bones, and since the Plains peoples used the dog widely in historic times, it would be reasonable to assume that canid bones at most sites are probably domestic dogs.

There has been some disagreement on the use of pemmican during the Plains Archaic. Pemmican is dried meat that is pounded and mixed with rendered fat, and often, crushed and mixed with powdered berries as well. Stored in hide bags, it was highly nutritious as well as long-lasting. Dyck and Morlan (2001: 118) suggest that it might have been used in the Early Plains Archaic, while Reeves (1990: 169, 180-182) feels that its use is well documented by the Middle Plains Archaic and was associated with the successful spread of the Oxbow and McKean complexes. The archaeological evidence for pemmican in the Archaic is the presence of splintered bone piles, which are assumed to have been produced by smashing bone and boiling the fragments to skim off bone grease or fat which was used to make pemmican.

Many archaeologists believe that the tipi was introduced during the Middle Plains Archaic, although Dyck and Morlan (2001: 118) argue, as with pemmican, for its possible use in the Early Plains Archaic. The archaeological evidence for tipis consists of circular arrangements of stones, in the approximate diameter of a tipi. The stones are assumed to have served as weights to hold down the tipi cover. Wooden pegs were probably used as well but are not preserved in the archaeological record. Tipi rings have been found with Oxbow materials around 4,300 years ago on the Northern Plains, and there are both larger and smaller rings, suggesting possible differences in status (Reeves 1990: 168, 180-181), although household size may be a simpler explanation. The poles and hides comprising the tipi were relatively cumbersome and heavy burdens. Even though tipis could be set up in a few hours, the frequent movements typical of historic times must have been somewhat more formidable undertakings without horses to haul tipi poles and coverings. On the other hand, during the Archaic tipis may have been somewhat different, and almost certainly smaller than the historic tipis of horse-riding Plains peoples (Brasser 1982).

So, we may accept the likelihood of several important developments during the Plains Archaic, including the use of the tipi, making pemmican as a way of preserving and storing food, and the manufacture of new forms of projectile tips for spears and darts. Milling stones for grinding plant materials are also found, although these were occasionally present in the later portion of the Paleoindian. Keeping this in mind, let us turn next to the description of some of the archaeological finds made in and around the Red River Valley belonging to the Archaic period. While our focus will be on sites within the Red River Valley proper, I will preface that discussion with a review of several very important sites from the Northeastern Plains region outside the Red River Valley proper. Naturally, these are selected to provide an impression of the main features of the archaeological record of the Archaic and are not meant to be exhaustive.

Signature Archaic Sites Outside the Red River Region

Archaic period archaeological sites have been identified in the prairie areas of Minnesota, North Dakota, and surrounding regions in the past fifty years. Surface finds, often documented in private collections, normally consist of projectile points diagnostic of the Archaic period and occasional Old Copper culture artifacts. Several important sites have also been excavated on the border regions of the Red River Valley. These include Itasca and Granite Falls in Minnesota, Cherokee in northwestern Iowa, and in Manitoba, the Eriksdale burials. There have been other excavations around the Red River region, but the sites reviewed here are important since each provides archaeological evidence from preserved deposits that were carefully excavated, and which produced useful information for the interpretation of Archaic sites situated in the Red River Valley.

The Itasca site is located east of the Lake Agassiz Plain at the headwaters of the Mississippi River. The site was discovered in 1937, excavated and analyzed by Shay (1971), and is justly famous as an early and authoritative demonstration of the paleo-ecological approach in archaeology. Shay identified two parts to the site; one located in a bog and another on nearby high ground. Most of the cultural material, over 2,200 items, were found on the upland portion of the site.

The site is known as a bison kill site and the bison bone are from the low, bog area. Most of the bison were immature, and female. Based on the study of the bones the site was estimated to be a fall season kill. Seasonality and age in bison and some other mammals may be calculated on the basis

of wear patterns on teeth, the eruption stage of various teeth, and on the degree of fusion in the epiphyses, or end joints, of leg bones. Also, since many mammals in the northern hemisphere give birth in the spring, the presence of fetal bone in a collection suggests a winter or early spring season. Aside from bison, other animals at Itasca included moose, deer, muskrat, and fish. Most of these were regarded as natural inclusions in the bog, since there were no indications of butchery marks on the bones of these animals. Artifacts from the site consisted of a few processing tools and several standard Early Archaic notched points. One of the interesting aspects of the point collection is their small size and similarity of some of the notched forms with types that were popular in much later time periods. Another feature of the artifact collection is the rarity of Knife River flint, comprising a very small percentage of the stone flaking debris.

One of the most important features of the site study was Shay's analysis of pollen samples from the bog deposit. He offered a reconstruction of the environment of northern Minnesota and showed a transition from spruce to pine to prairie vegetation from the early post-glacial through Middle Holocene. This demonstrated the impact of the Middle Holocene and the expansion of prairie grasslands to the east of their present position. The establishment of modern vegetation in the Mississippi headwaters occurred in the later part of the Holocene.

Recent re-study of the site by Widga (2014) shows at least two events at Itasca, with more of the site being attributed to natural causes than Shay originally thought. The formation of the Itasca site happened in two episodes dated from roughly 8,400 and 7,800 years ago. The site, Widga concludes, was more complex in terms of the deposition of the animal bones, and a good deal of it was laid down by fluvial action. Nevertheless, the site was used during the Archaic period, and bison were a major focus of activity at the site. Itasca stands as one of the most important Archaic sites in the Upper Midwest.

A second important Northeastern Plains Archaic site somewhat more distant from the Red River region is the Cherokee site in northwest Iowa (Anderson, et al 1980). This site was excavated in the 1970s and contains stratified components dating from the later Paleoindian through earlier portions of the Plains Archaic. A thorough multi-disciplinary study at this site examined lithic artifacts, animal bone, mollusks, soils, and sediments. The occupations were dated to roughly 9,400, 8,000, and 7,300 years ago in calibrated radiocarbon years ago, the latter two of these occupations being assigned to the Archaic.

Bison bone was dominant in all components and in each the faunal remains reflected winter occupations. The bone was invariably broken and highly fragmented, probably for removal of marrow, and possibly for processing bone grease. The maximum number of bison represented by the analysis of diagnostic elements was 15.

One of the clear findings of the work at Cherokee was that there was no real difference in the content of the three sequential components at the site. Each of them was a bison processing camp, and whether Paleoindian in age or Archaic, the lifestyle represented was the same. Bison hunting was a predominant activity throughout this time span. What seems to have changed most was the hafting pattern characteristic of the projectile points (Anderson et al 1980: 231).

A third Archaic site that merits mention is the Granite Falls Bison kill, also known as the Peterson site in western Minnesota (Kuehn 2016). Several radiocarbon dates place the site at around 7,500 years ago. A bison bone bed was found almost three meters below the ground surface. Over 4,000 bones were found, evidently only one of these was not from a bison. The interpretation of the site is that a nursery herd was killed here, consisting mostly of females and young animals. The event, calculated from various bones and teeth, occurred in the late fall or early winter. A minimum of 12 animals are represented in the collection, although as always with minimum number of individual counts, the actual number of animals represented here might be higher. Based on the size of the bones, the animals are classified as *Bison occidentalis*, a chrono-species of bison often placed between *Bison antiquus* and modern *Bison bison*. There is evidence of butchery, including cut marks on bones and spiral fractures, typically made when bones are broken apart to remove the marrow. Some of the immature bison are only partially butchered.

The projectile points are side-notched forms assigned to the category of Logan Creek (so named after a Nebraska site and with similar point styles). The other stone tools include implements for scraping, chopping, and cutting. The tools and flaking debris consist mostly of locally available Swan River chert and Red River chert.

A different type of site, in this case a burial, was found to the northwest of the Red River Valley at Eriksdale, Manitoba. This Archaic burial was found in the region between Lake Manitoba and Lake Winnipeg (Hoppa et al. 2005). It was accidentally uncovered during gravel removal in 1971, and was studied with the approval of the Lake Manitoba First Nation, which was interested in recording important heritage information. The site is Late Archaic in age, and consists of two burials, one male and one

female. The male is dated by carbon-14 to 3,700 BP and the female to about 4,000 BP. The male had a Late Archaic Pelican Lake point embedded in the femur. Grave artifacts were associated only with the male. Items found in that burial included a wolf canine, bird bone tubes from swan, shell beads, a copper fragment, and bison bone. It is notable that the copper must have originated in the Lake Superior region, while some of the shell is from large gastropods, probably from the Gulf of Mexico. Neither individual showed any pathologies, and chemical study of the bone indicates that the male had a mixed diet, including fish, while the female probably subsisted mainly on bison.

The Eriksdale burials are significant for showing that the Archaic peoples of the Northeastern Plains were involved in a wide network of trade relationships. They also show that their diet was varied, perhaps depending on the season of the year, or locally variable environmental conditions. Also, the spread of dates suggests that the same locale was being used for burial purposes over a period of several centuries.

Archaic Sites in the Red River Valley

Surface Sites

Copper artifacts associated with the Old Copper culture were once widely discussed as characteristic of the Archaic in the Minnesota prairie, and especially the Red River Valley. Old Copper culture is a term for an Archaic period cultural expression mostly in the western Great Lakes region. Native copper was mined during the Archaic and copper artifacts exported elsewhere. The Red River Valley copper artifacts are mostly from private surface collections found along the beach deposits of glacial Lake Agassiz. This copper supposedly came from float copper found in glacial till in eastern Minnesota and Wisconsin, or from copper mining on Isle Royale in Lake Superior. In forested areas to the east of the Red River Valley, these copper artifacts are often found associated with Archaic Raddatz or Durst projectile points. On the prairies, their association is with Oxbow Middle Plains Archaic points (Gibbon 1998: 33, 39-40). Gibbon feels that the high incidence of Knife River flint in Oxbow assemblages on the prairies may have something to do with the reciprocal presence of copper, suggestive of a system of exchange in raw materials.

During his work in the Red River region Johnson (1964) observed 62 Old Copper items, and of these only six were from the North Dakota side of the river, 56 were from Minnesota sites. The most common artifact was a type of copper point with an elongate, triangular blade, featuring a

Figure 6.2. Copper point, Norman Co, MN.

dorsal spine. At the base is a long stem that is folded back on both edges to create an open socket for the insertion of a shaft. Johnson (1962, 1964) made clear that the copper items post-dated the glacial lake. For a period of years after Johnson's work there was a common belief that copper artifacts had a special relationship with the Lake Agassiz beach deposits. Some have even argued that lanceolate shaped copper points may reflect their use during the latest portion of the Paleoindian period (Gibbon 1998: 43) (Figure 6.2).

Gibbon (2012: 84) offers dates of 5,800-3,200 years ago for regional Old Copper materials. Unfortunately, there are no well-excavated sites demonstrating the nature of the Old Copper life-style in the Valley. A copper point was found embedded in a bison skull near Kennedy, around ten miles east of the Red River in far northwestern Minnesota. Copper artifacts were also reported from the Torpet site burial on the Herman beach of Lake Agassiz, and several other such finds were made during gravel operations on various beach deposits (Gibbon 1998: 40-41). Except for these glimpses into Old Copper culture, for the most part, the nature of this adaptation in the western Minnesota prairies is obscure. We would know a great deal more about this Old Copper presence in the Red River Valley if the artifacts were found in an excavated context at an archaeological site with associated features and ecofacts. There is no evidence of copper tool making in the Red River Valley, only the importation of finished artifacts. Use of copper continues into Woodland times and is reflected in ornamental copper artifacts found in some much later Arvilla burials.

Private collections often contain large numbers of projectile points, which seem to be the most desired objects of collectors' efforts. The most common Archaic types I found in collections include Oxbow, Pelican Lake, and McKean complex points (McKean, Duncan, and Hanna). Specimens belonging to the Logan Creek/Mummy Cave series have been

notoriously difficult to identify as Archaic types in surface collections because of their similarity to later point types, such as Prairie Side-Notched, Avonlea, and Besant.

One collection of artifacts observed was from a single site near the place where the Maple River joins the Sheyenne, a few miles west of the Minnesota border. It is known as the Forness site, after the landowner, and most of the diagnostic points were Middle Plains Archaic styles such as Oxbow and McKean. The field was adjacent to alluvial features that suggested that it was once on the levees of the river, undoubtedly before it removed to its present channel. This is the instructive feature of this particular surface site. Even though there was no *in situ* cultural material in any of the test excavations, the surface was littered with 4,000-to-5,000-year-old artifacts. If this was an alluvial deposit where river flooding regularly deposited sediment, why weren't these Archaic-aged artifacts more deeply buried? The explanation was evident from topographic maps. The field showed the meander scars from an old river channel that once ran along the site perimeter. The present-day river is about a mile distant. Clearly, the river had changed channels, perhaps the result of the land rebounding after the glaciers and the waters of Lake Agassiz had receded and removed a great weight from the land. As the ground surface lifted, the river jumped to a new channel. Whatever the reason for this channel change, these Archaic artifacts were left without any additional alluvial sediment to bury them more deeply. Being near the surface, modern farming readily exposed them on the field's surface. Post-Archaic peoples would have located their settlements and camps closer to the new channel of the river, so in this location, the surface assemblage is Archaic in age, with little or no evidence of later occupation.

While there are numerous surface sites throughout the Red River Valley with Archaic artifacts, excavated sites are naturally less common. So, let us next turn to several Red River Valley sites from the Archaic period that have been excavated and revealed relatively undisturbed contexts for archaeological remains (Figure 6.3). I have not mentioned every site studied from this time period, but try here to discuss some of the more significant sites that have provided subsistence and settlement information, and allow us to place the site at some determinate place within the Archaic period.

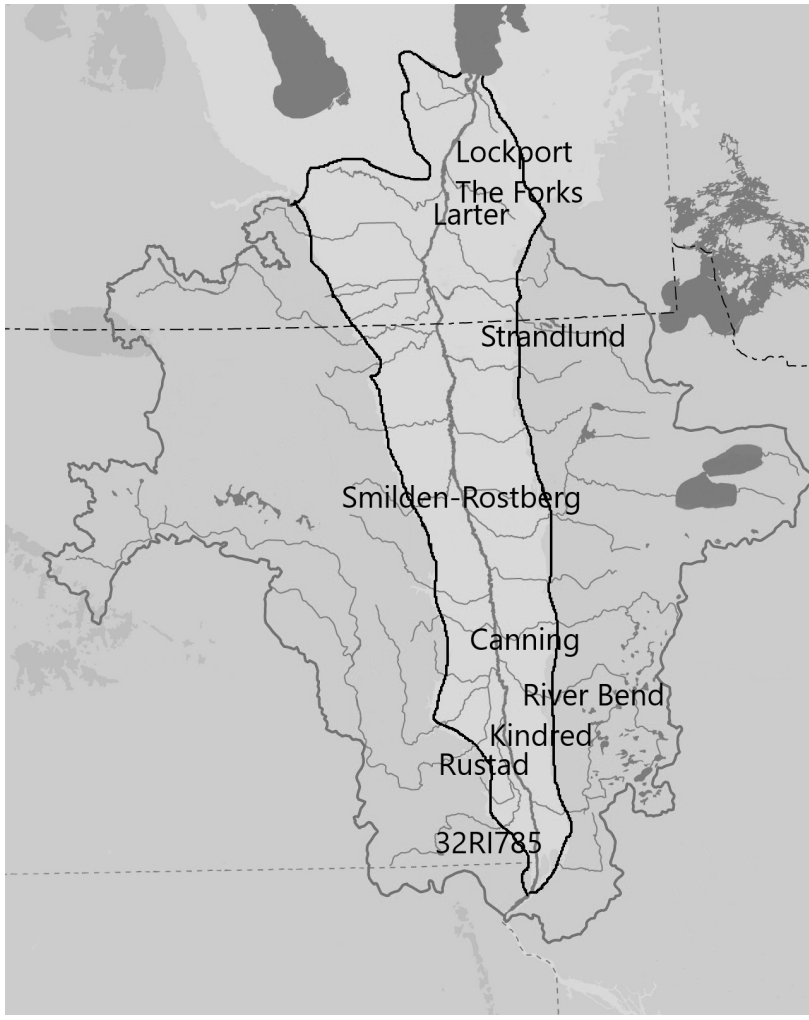

Figure 6.3. Map of the general location of Archaic sites reviewed in the text.

Strandlund site

Many Archaic sites on the Northeastern Plains are known only from surface collections, mostly from agricultural fields. The Strandlund site is a near-surface Archaic site. Excavated in 2010 as part of a Corps of Engineers project, Strandlund is located on the forest-prairie border in northwestern Minnesota (Jones 2013). It is a mixed assemblage of Middle and Late Archaic material with a very minor Woodland component. The site was disturbed by rodents and a portion of the site by a soil borrow pit. Most of the material recovered at the site consisted of bison bone, including limb fragments and a mandible. The depth of the cultural material had to be estimated since borrow activities had removed the original surface soil. Burial was presumed to be about 25–45 cm. below the original ground surface.

Archaic artifacts from the site included DeLong (an elongate triangular point) and Oxbow points, and a Woodland-age Prairie Side-Notched point. DeLong and Oxbow points would be classified as Early and Middle Archaic. Overall, the site has limited value as an Archaic station, but is typical of the nature of information available from near-surface deposits of this age. Unless a site of Archaic age is well-buried there is a likelihood that natural processes, whether arising from erosional episodes or some form of pedoturbation, will disturb or mix the materials with later occupational debris. It is unfortunate that in the Red River Valley there is very little chance that sites will be buried below the level disturbed by plowing unless they are near a river where alluvial deposits will bury them, or located in an alluvial fan deposit near the edge of Lake Agassiz. The open bottom of the old lake will probably not have buried cultural deposits. Even so, Strandlund does document Plains Archaic material associated with bison remains on the far northeastern perimeter of the Red River Valley in Minnesota.

Kindred Airport Site

The Kindred Airport site, as the name suggests, was discovered during planned expansion of the airport just outside of the City of Kindred in Cass County (Michlovic and Sather 1999). This site is actually on the western edge of the Lake Agassiz Plain near the Sheyenne River, a major tributary of the Red. Meander scars from the river's channel can be seen extending from the approximate south side of the site to the present position of the river. At one time in the past the Sheyenne River migrated from near the site area to its present position to the south. Since archaeological sites are

often situated near river channels there is reason to believe that perhaps this site was occupied when the Sheyenne River actually flowed through a channel adjacent to the site area, very much as was the case with the Forness site. This possibility is reinforced by the artifacts found there.

During a survey of the area prior to the expansion of the runways, artifacts were found in the plowed surface of the field where construction was planned. Flaking debris, a few cores from which flakes had been struck, and a fragment of a biface were picked up during a surface survey. There were also dozens of bone fragments, two of which were burned, suggesting some human involvement in the deposition of these ecofacts. Subsequent excavations were dug to 50 cm. The plow zone (the depth to which soil has been disturbed by plowing) here extends to 25 cm. The artifacts were found in the plow zone and in the upper B-horizon, mostly at a depth of 30-40 cm.

The cultural material from the site consists of bone fragments, burnt bone, lithic debris, and stone artifacts. There is no pottery. One of the reasons this is interesting is that during the past couple millennia when pottery was being used on the Northeastern Plains, it is commonly found at sites near permanent bodies of water, such as major rivers and larger lakes. Sometimes archaeologists find sites from the ceramic period where there are no ceramics, but these are usually small sites in upland settings away from permanent water sources. This is why Kindred Airport site is regarded as pre-ceramic rather than aceramic. It is found in a place we would expect ceramics to be present if this were a ceramic period site. Another reason for Archaic designation is that a single diagnostic artifact was found in one of the excavation units around 20 cm below the surface. This artifact is a projectile point with an indented base and side notches on the lower portion of the point blade that give the base of the point an "eared" appearance. The point is made from Knife River flint, and is classified as Oxbow, one of the Middle Plains Archaic point forms. As already mentioned, these artifacts are found widely over the Northern Plains after about 5,000 years ago. Given the location of the site on the perimeter of the Sheyenne meander belt, the lack of pottery, and the presence of an Oxbow point, it seems safe to classify this as an Archaic site, even though the precise age is open to debate.

What sort of activities went on at this site? Based on the presence of the bone fragments and the burned bone it would be likely that some domestic activity was conducted here, cooking, and perhaps butchery. The artifact collection, aside from the point, includes a hide scraper and a couple fragments of bifacially worked implements, possibly the blades

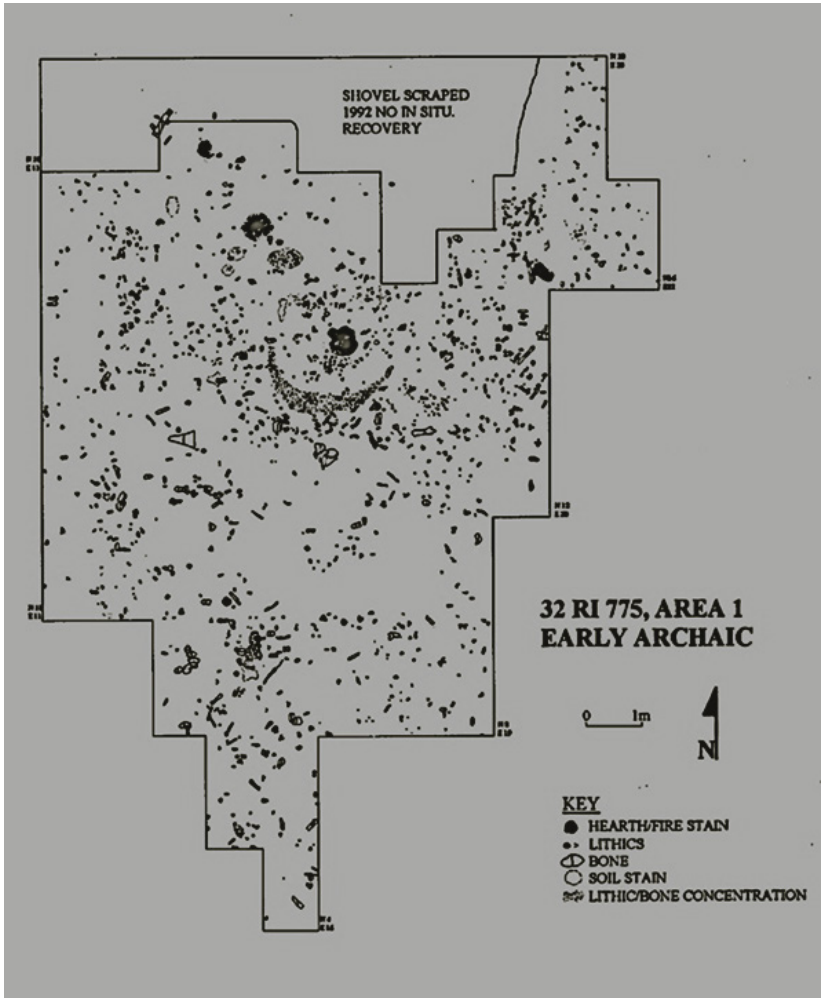

Figure 6.4. Early Archaic floor at the Rustad site, main area, showing scatter of bone and lithic fragments and fire hearths. Center hearth is in a semicircle of dense bone and lithic debris.

segments from broken spear points. There were also many flakes and two core fragments from which flakes were removed in the tool-making process. The flakes were large, thick pieces rather than the very small, thin flakes produced during the final stages of tool making. Most of this material was identified as regionally occurring Swan River chert.

Only three pieces of Knife River flint were found in either the excavations or in the surface survey. So, slightly less than 3% of the lithic sample was the high-quality Knife River flint that is often present in frequencies of over 25%, and sometimes 50% at sites in the Sheyenne Valley. The 3% figure is comparable to that quantity of Knife River flint present at the Rustad site (see below). The low frequencies of Knife River flint at Rustad are attributed to the fact that the site was occupied during the Middle Holocene climatic episode. Travel and trade across the North Dakota grasslands to the vicinity of the source area for Knife River flint in western North Dakota may have been interrupted by more arid conditions. Perhaps the low frequency of Knife River flint at the Kindred Airport site reflects the same Middle Holocene conditions that may have affected the movement of Knife River flint from the west.

Rustad site

The Rustad site is located adjacent to the Sheyenne River in southeastern North Dakota, about 12 miles west of the Red River. It is on the eastern edge of the Sheyenne Delta where it abuts the Lake Agassiz plain. The site is in alluvial fan deposits formed on the perimeter of the Sheyenne Valley by sediments eroded off the delta. The site was discovered in a soil pit, and much of the original overburden was removed, exposing some of the cultural material on the surface of the pit. Prior to soil removal, the site would have been buried under almost two meters of sediment. It was clear that digging soil from the site had removed the archaeological evidence from the central part of the component (Michlovic and Running 2005).

The site consists of a major Early Archaic occupation in two buried A-horizons (incompletely formed paleosols) that are welded together into a single dark layer in some exposures (Figure 6.4). There is a Late Paleoindian component dated to about 9,400 years ago in a small part of the site, as previously mentioned. No diagnostic artifacts were found in the Paleo level, but bison and some small animal bones were present. Most of the Paleo flaking debris was Knife River flint. At the top of the entire deposit was an ephemeral Woodland component identified by a

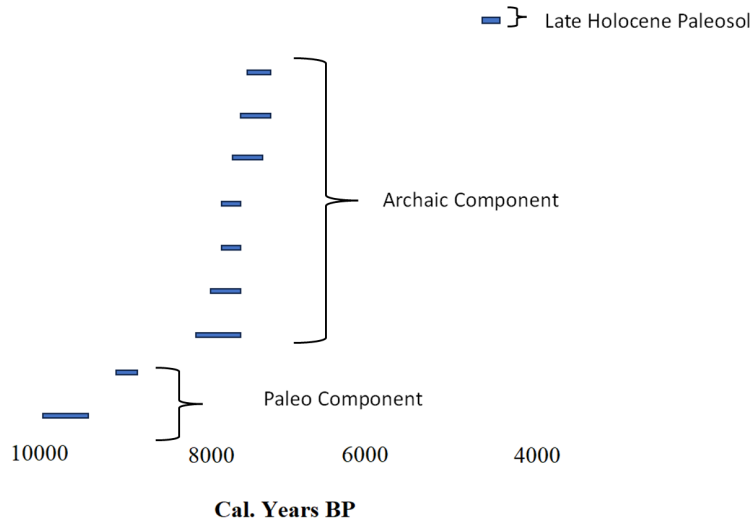

Figure 6.5. Calibrated radiocarbon chronology for the Rustad site. Oldest dates bracket the Paleoindian layer. Upper date is for the superincumbent soil. Seven middle dates are from the Early Archaic component.

couple potsherds, burned bone, and lithic debris. There are no dates on this material. The Early Archaic occupation floor is well dated to between 8,000–8,400 calibrated radiocarbon years (Figure 6.5).

The alluvial fan in which the cultural materials were found may be a reflection of climatic conditions during the Middle Holocene. A periodically drier environment allowed repeated erosion events from the nearby Sheyenne Delta and resulted in sediment flows that buried the archaeological site. On the other hand, a study of phytoliths (microscopic silica particles formed in grasses) from the site showed that in spite of the more arid conditions presumed to characterize the Middle Holocene, the grass assemblage was not very different from that of modern times (Fredlund 2005). This has been taken to suggest that although the Middle Holocene was a time of reduced rainfall and perhaps a warmer climate on the Great Plains, portions of the Plains, such as the Red River Valley, may not have been affected in a way severe enough to radically transform the environment. Dry years may have been more common and conducive to severe erosional episodes (in this way explaining the alluvial fan at the site), but these conditions were not persistent enough to have a major impact on the grassland community.

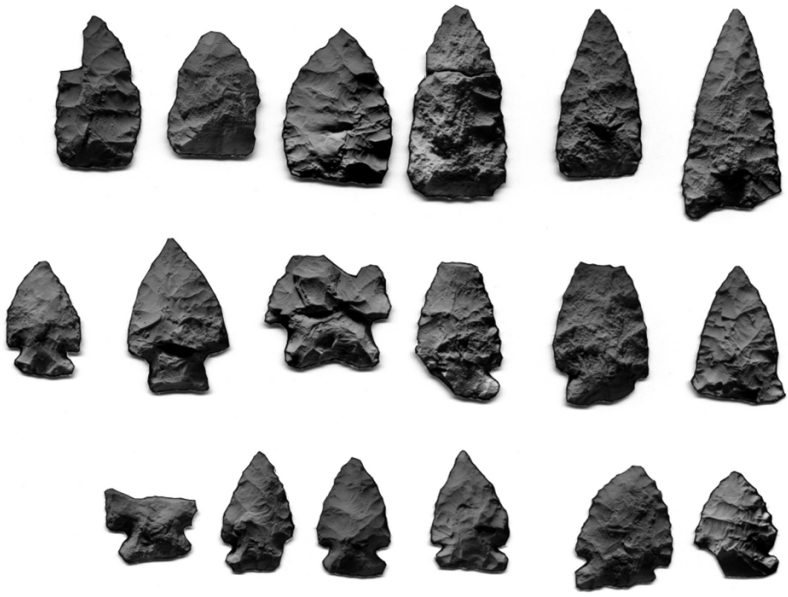

Figure 6.6. Points from the Rustad Site Early Archaic component.

The faunal material from the Early Archaic component at Rustad is primarily bison, and astragali measurements suggest they belong to the taxon *Bison occidentalis* (although Widga, 2014: 263-264 would dispute this assignment, regarding them as modern bison). Animals were probably killed during late summer or fall, based on analysis of dentition. The bison ranged in age from about 0.6 to 8 years. Most of the 18 animals represented at the site are cows and juveniles, with only a few bulls. The Rustad hunters were probably taking a few animals at a time and focused on animals in their prime (Haury 2005). This inference arises from the evidence at major kill sites where large-scale hunting events resulted in the killing of both sexes and all age groups of a herd. The nature of the animals represented at Rustad suggests selective, small-scale kills.

There is little or no evidence of bone grease production at the site, which would be reflected by large amounts of small bone splinters. Bone grease used in making pemmican came from smashed bones which were boiled (perhaps in hide-lined pits into which red-hot rocks were dropped). Piles of small bone fragments and fire-cracked rock are suggestive of this process, but such remains are not present at Rustad. Maybe pemmican was in use at this time, but evidence for it is simply lacking at Rustad; however, its absence at this Early Archaic station suggests perhaps its origin lies later in time, as some others have suggested.

The diagnostic point collection includes a surprising number of triangular forms, some of which may be classified as DeLong points. These elongate, isosceles triangular points may be a development out of earlier lanceolate styles. Other roughly triangular forms are anomalous and reminiscent of small versions of later Paleoindian forms. Most of the remaining points are side-notched or corner-notched and may be fit into the Logan Creek/Mummy Cave category. Some of these points look very much like much later Plains Woodland forms, and at least one resembles a Middle Archaic Hanna point. Altogether, it would appear that at least four projectile point styles are present in the collection. The surprising aspect of these point styles is that they span much of the Archaic period, but they were all found in a securely sealed and well-dated deposit (Figure 6.6).

There are late- and early-stage bifaces as well. Bifaces are tools flaked on both sides or faces, and they may be thick in cross-section with relatively few flake scars on each face, suggesting they were in the early stage of production, or they may be more thinned in section, with many and smaller flake scars, indicating that they were probably finished tools. Also found were end scrapers for working hides, hammer stones for flaking stone cores, along with expended cores themselves. There were miscellaneous utilized flakes as well.

Knife River flint, which is common at most precontact sites in the region, is rare in the Rustad Early Archaic (in contrast to the Paleoindian component at the site), representing less than 5% of the lithic collection from the Archaic component. Even so, many of the tools, particularly the end scrapers, are made of Knife River flint. Almost 77% of the lithics are locally available Swan River chert. The little Knife River flint that was present was put to use to make scrapers for hide-working, indicating that hide preparation was an important task and merited the highest quality raw material to be had.

Several hearth features were found in the main area at Rustad (Figure 6.4). These were uncomplicated and roughly circular fire stains with charcoal and blackened and reddened earth. One of these was surrounded by a dense scatter of bone fragments and some lithic debris in a rough semi-circle about 1.5 meters in diameter. The fire hearth was centered in the debris field semi-circle. Between the hearth and the field of bone fragments and flakes was an area bare of debris. The patterning here may represent a shelter of some sort, although it was the only such feature found at the site. If this was a structure, it was small and insubstantial, perhaps little more than a wind break or shade cover. All of the hearth features were concentrated in an area of about 5x10 meters and were on the

same level. They are interpreted as representing three or four domestic groups in the eastern part of the site. Another hearth feature from the west side of the site provided a radiocarbon date consistent with the dates taken from features on the east side. This shows that the Early Archaic occupation may have extended across the entire soil pit area and comprised a major warm season campsite, the time of year being based on the study of the bison bone.

The spacing of the hearths at Rustad, along with the semi-circular debris field with central hearth are indicative of rather closely-spaced, circular living areas. Besides this, there are no storage pits at the site. Many of the tools are bifacial implements of a sort that might be used for a variety of tasks. All of these traits are typical of settlements formed by what human ecologists and archaeologists refer to as immediate return communities. These groups are characterized by the use of local resources for the amount of time that they sustain the people of the community. When local resources diminish beyond the threshold of worthwhile investment in acquisition, the group moves to a new location. Food storage is limited, and sharing food and other resources is common, serving as a way for each family to ensure that when it is in need, its neighbors will repay earlier sharing that benefited them (Smith 2020).

The Rustad site was strategically placed between the sandy, well-drained upland of the Sheyenne Delta and the clay-rich, mesic tall grass prairie of the Lake Agassiz lowlands. The advantage of this location for Early Archaic hunter-gatherers was manifold. There was water in the Sheyenne River, and in ponds or springs in the sandy delta sediments. There were woodlands along the river and clusters of trees flourishing in wet areas on the delta surface. Small game, fish, berries, seeds, and timber were all nearby. Of course, the expansive grasslands, while superficially homogeneous, would have provided enormous stores of forage for bison, and further, the variety of grassland environments on the delta and in the Agassiz-lowlands may have been attractive to bison for much of the year.

The strategic location of the Rustad site make it reasonable to assume that it was the location for a major campsite, perhaps for a macroband of dozens of families in the warm season. This opinion is based on the scatter of features at the site, which is suggestive of domestic groups evenly spaced over the occupation floor. On the other hand, it is also possible that this location attracted people to settle time and again, with the successive occupations creating a dense cultural deposit at the site. This is the recurrent problem with the interpretation of archaeological sites from thousands of years ago. There is almost always more than one way to interpret the

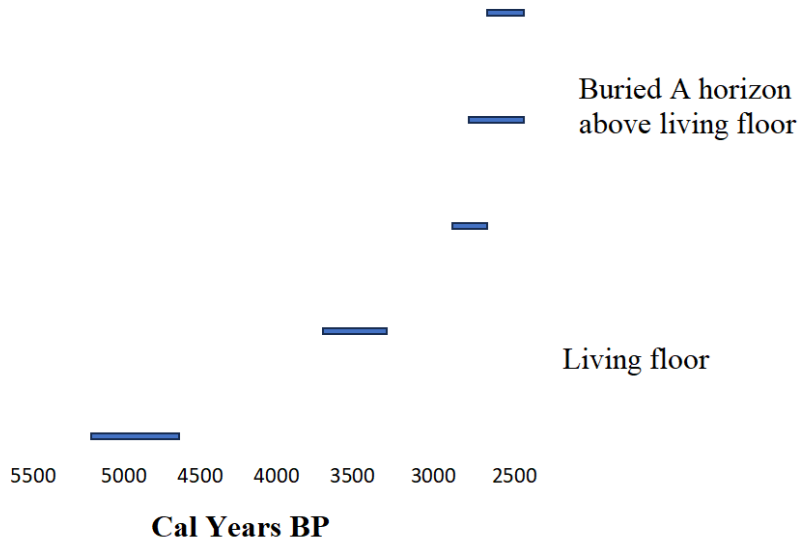

Figure 6.7. Calibrated radiocarbon chronology for the Canning site. The oldest date is on charcoal from feature 1 (hearth), next oldest is a date on bison bone. Upper three dates are from charcoal in buried A-horizon immediately above the occupation floor.

evidence. For now, we opt for the likelihood of a single major use of the site during the Early Archaic, with perhaps minor uses of the area in Late Paleoindian times, and again during the Woodland period.

Canning site

The Canning site is a buried Middle Plains Archaic site in alluvial deposits on the Red River in Norman County, Minnesota. The site was found during a survey of the county in 1980. Canning had already been defined as an archaeological site featuring an extensive Sandy Lake (Late Precontact/Plains Village period) occupation described for the plow zone, originally found by Elden Johnson during his Red River work. A standard testing procedure to find buried sites discovered the deep component in levee sediments of the Red near the town of Hendrum. The Archaic occupation was extensively excavated in 1981–1982 (Michlovic 1986).

Five radiocarbon dates were obtained for the site, three on charcoal from a buried A-horizon above the cultural deposit and two from the living floor. The dates above the occupation ranged from about 2,600–2,850 years ago (Figure 6.7). Two dates were recovered from the living floor, one from bison bone and one from hearth charcoal. These range

Figure 6.8. Bison mandibles from the Canning site, from young to old, top to bottom. Rearmost molars are to the left.

from 3,166–5,299 years ago using calibrated radiocarbon dates. The midpoint age for the bison bone on the living floor is about 3,600 years ago, while the charcoal from feature 1 provides a midpoint age of about 4,950 years ago. Since the samples were from the same level at the site, and are about 1,350 years apart, the radiocarbon chronology for the site is not entirely clear. It is obvious that the site dates to before about 2,700 years ago, the age of the overlying buried A-horizon. The explanation for these dates that seems most consistent with their location in the profile is that the two living floor dates provide a range for the age of the site occupation, giving it a calibrated age in excess of 3,600 years ago, but probably less than 5,000 years ago. The other dates from charcoal in the overlying buried-A horizon are possibly from fire that produced patches of charcoal on the gallery forest floor.

The Archaic living floor, or occupation level, included a layer of bison bone with artifacts, several hearth and ash features, and miscellaneous ecofacts including micromammals and gastropods. This was roughly one meter below the surface. The most common item in the assemblage from the Archaic component was bone, which totaled over 25,000 identifiable and fragmented pieces. Identified bone were almost all bison, and many unidentified fragments were assumed to be bison since they had a thick cortex, as we would expect in a large mammal. Also, when identifiable

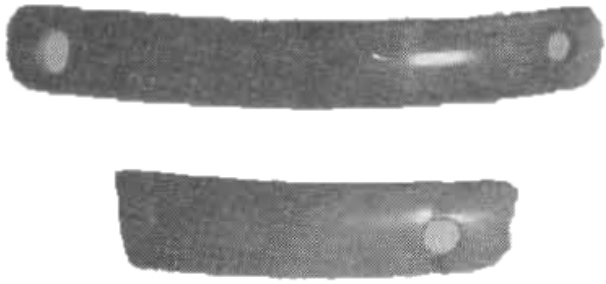

Figure 6.9. Two drilled beaver incisor teeth.

items were present, they were from bison. The bone sample weighted almost 55 kg, of which about 2.5 kg were burned. The identifiable bone consisted of over 600 elements, all but about 30 being from adult bison; and the others from juvenile animals. This count does not include isolated teeth, which consisted of adult teeth by a 7:1 ratio (Figure 6.8). The minimum number of individual bison necessary to create this assemblage of bone is 14 adults, including two bulls and 12 cows. The distinction between sexes is made on the basis of the size of the element, bison males being substantially larger than females. There were also six juveniles identified based on elements that were not completely grown. Several fetal bones were also recovered, indicating that at least one of the cows was pregnant.

Medial portions of fragmented ribs were common, but articular rib fragments were mostly absent. Only six horn and six vertebral fragments were found; all the remaining identifiable elements were limb elements and a few from the shoulder and pelvis. The deposit clearly represents a bison processing station, probably some distance from a kill site. The reason for this conclusion is that at a kill site there are normally skulls, vertebrae and relatively large numbers of pelvic and shoulder elements. These are often the bones from which the meat is stripped, cut up and dried for transport to a camp or settlement. The limbs and lower jaws were usually cut away from the trunk and the meat attached to those bones carried to a campsite. A number of the bison bones had cutmarks from butchery, many of these marks being noted on limb fragments.

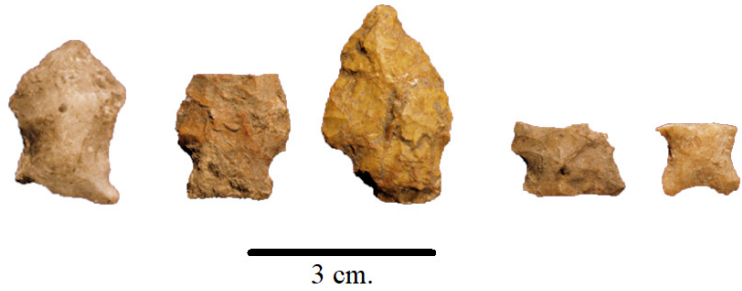

Figure 6.10. Points from the Canning Site.

One other game animal represented at the site is beaver, which were only present in the form of drilled incisor teeth, obviously meant to serve as ornaments (Figure 6.9). There is no evidence that beaver was being used as food. About two dozen river mussels were also found, although it is not clear that they were used as a food source.

Artifacts from the Archaic component consist of stone implements, lithic flaking debris and a few beaver incisors with holes drilled on either end. The tools from the site include scrapers, bifaces, utilized flakes, and projectile points. All the tools were heavily used, worn, and often broken. Considering the nature of the lithic debris it does not appear likely that much tool making occurred at the site. Implements were heavily used and discarded, but not many seem to have been made at this location. This is an educated guess based on the relatively low frequency of debris in relation to the number of tools and used flakes found at the site (about 40:1, debris: tool/utilized flake).

Nine points and fragments are classified as belonging to the McKean complex, specifically Duncan and Hanna forms (Figure 6.10). There were slightly more scraping tools, although some of the used flakes or expedient tools would have been appropriate for scraping or for butchery. The bifaces may have been used as knives. The entire tool kit reflects butchery and hide working. Ground stone tools for pounding stakes, crushing seeds or plant fibers, or other heavy-duty tasks were absent from the site, giving the overall impression of a limited number of activities being conducted here.

About a 25% of the stone debris collection consisted of Knife River flint. Less than 10% of the remainder was a quartzite-like stone archaeologists call Tongue River silica. It may have come from South Dakota or Iowa, although I have found small cobbles of this material on the perimeter of the Red River Valley. In any case, most of the stone material

was local Swan River chert, found in gravel or till deposits just outside the Lake Agassiz plain. Knife River flint flaking debris was mostly smaller than ½″ diameter in size, suggesting that large pieces were not available to the people at the Canning site. An fair inference would be that they probably obtained their Knife River flint from intermediaries on the Plains to the west, and this would most likely mean that large cobbles were not very likely to make the repeated transfer through intermediary groups between the Knife River quarries and the Red River Valley. Knife River flint was apparently carefully husbanded, reflected in the fact that while only a quarter of the debris is Knife River, almost half of the actual tools are made from this material.

The Canning Middle Archaic component is regarded as a winter bison processing camp. A winter occupation is suggested for several reasons. The site deposit contained significant numbers of gastropod (snail) species that are found in riverside woodlands, and some of these are regarded as semi-aquatic or aquatic. The landscape that contained the site would have been a relatively wet setting during the warm season and potentially uninhabitable. Indeed, the Red River gallery woodlands today are often infested with mosquitoes, and in the past would have been similarly inhospitable in the summer. Further, the presence of fetal bison bone in the collection suggests that the animals were killed during the winter. Finally, the eruption and wear patterns on the bison teeth suggest a degree of wear that would be found on animals that had lived through three seasons, or several years plus three seasons, which, if they were born in spring, would mean they were killed in winter.

Canning is one of only a few buried and stratified sites on the Red River. Its Archaic period age makes it even more significant, since excavated sites of this age are not common on the Northeastern Plains. The dates for the site range from 3,600-5,000 years ago in calibrated radiocarbon years, if we accept the well-established living floor associations for the two earlier dates. The presence of McKean style points in the collection also point to an age of the site as indicated by the radiocarbon dates from the occupation level. Given the discrete nature of the deposit, the Canning site looks like a single event.

Smilden-Rostberg

The Smilden-Rostberg site is in the Turtle River Valley of northeastern North Dakota (Larson and Penny 1991). This is a Red River tributary stream. The site is located near the city of Larimore, and was excavated in advance of road construction. Local informants indicated that the field

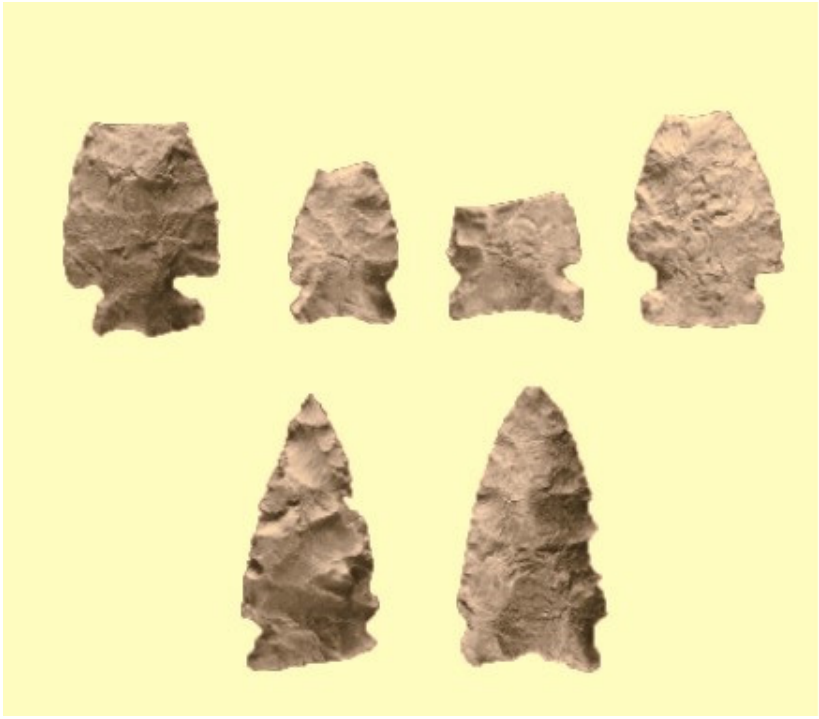

Figure 6.11. Points from the Smilden-Rostberg site. (Larson and Penny 1991).

containing the site had never been farmed. The site is set in delta and shoreline deposits related to Lake Agassiz, and is between the Herman and Norcross beaches. Geomorphic study of the locale suggests the occupation was on sandy and gravelly bar deposits formed in the Turtle River during the Middle Holocene. At this time, low water levels resulted in rivers such as the Turtle clogging with sediment, creating a braided stream system. Unable to carry its sediment load, the river dropped bar deposits, and it was on one of these high sediment bodies in the braided stream environment that the Smilden-Rostberg site was formed.

Several radiocarbon dates give us an age for the occupation. Two dates for the occupation floor average about 5,800 BP in calibrated radiocarbon years, which is taken as a reliable age for the use of the site. This would place it in the later portion of the Early Plains Archaic (Larson and Penny 1991: 33).

The archaeological remains from the site include almost 800 pieces of lithic flaking debris. While some cultural material was found in shallow levels, the occupation layer at the site was about 90-100 cm. below the ground surface. On the living floor about 15% of the lithic material was

Knife River flint. There were 59 stone tools that included projectile points, bifaces, scraping tools, and worked and used flakes that functioned as expedient implements. The projectile points were variable, as they are at many Red River Valley archaeological sites. At least one point was classified as similar to Late Archaic Pelican Lake, another as Oxbow. One of the points is similar to Avonlea, a type of point normally found thousands of years later in time. The remainder are grouped as side-notched. Like Rustad, the variety of projectile point forms at Smilden-Rostberg is confusing (Figure 6.11). While archaeologists continue to regard point types as chronological indicators, we have yet to deal decisively with a problem that appears at many sites, certainly on the Plains, that projectile point typologies are not really as useful as we often assume.

Investigators at the site tried to determine the nature of the plant community, and the human use of plants, but the results of pollen and phytolith study were not very robust. Animal bone, on the other hand, revealed a heavy use of bison, the presence of domestic dog, and the remains of one turtle and weasel. At least four bison were represented in the bone collection, including one juvenile and at least one cow. Fetal remains were also present. The location of the occupation on a sand and gravel bar, and the fetal bison remains, both suggest that the site was used in the winter. Measurement of some of the diagnostic bison bone led to the classification of the remains as *Bison occidentalis*. Some of the bones were bulky portions of the bison skeleton, which indicates that the Smilden-Rostberg occupation was not far from the location where the animals had been killed. Furthermore, the number of animals represented at this occupation reflect a small-scale kill.

The bison remains, the projectile point collection, and the radiocarbon dates all indicate that the site is Early Archaic in age. The relative abundance of Knife River flint suggests that perhaps the site was used as the Middle Holocene conditions were beginning to ameliorate and flint quarries west of the Missouri River were again open to peoples living in the Red River Valley. The number of bison indicated on the occupation floor also compare to finds made at other Red River Valley sites, and the body parts represented show that bison were often taken in small numbers, rather than in mass kills.

32RI785

This unnamed site (the alpha/numeric designation is the Smithsonian Institution system for recording archaeological sites in the US) was excavated to protect a cultural property threatened by construction of major

Figure 6.12. Pelican Lake points from 32RI785 (Dobbs, 2000).

pipeline in Richland County, North Dakota (Dobbs 2000). The site is near the Wild Rice River at a point where the river cuts through Lake Agassiz strandlines. This is in the extreme southwest of the Red River Valley. There are several natural stratigraphic units at the site related to Late Pleistocene features associated with Lake Agassiz, and to Holocene eolian deposits. The cultural materials are found in two layers. One of these is on a lag deposit of gravel at the top of the deeper strata defined at the site (lag deposits are coarse sediments left after finer particles have been removed, often by the action of wind). The other component is found above the first component in the eolian sandy loams near the site surface. Fortunately, portions of the site were in undisturbed pasture and cultural stratigraphy was preserved.

Two Plains Archaic components were found stratigraphically distinct at the site (Dobbs, 2000: i–iv). One rested on the gravelly lag deposit. This component is a Middle Plains Archaic debris field defined on the basis of Oxbow and McKean projectile points. Sometimes in Plains Archaic sites these two types of point are sequential in time, with Oxbow being found in deposits below McKean. At other sites Oxbow and McKean may be found together, as at this site. Above this Middle Plains Archaic component was a second occupation characterized by Pelican Lake projectile points, typical of the Late Plains Archaic farther north and west (Figure 6.12).

There were other important differences between the Middle and Late Archaic components at the site. In the Middle Archaic the lithic raw material used for tools and comprising the debris sample was mostly Swan River chert, which in this region is locally available. Non-local Knife River flint made up a minority of the lithic sample at around 16%. In the Late Archaic occupation over half of the lithic sample consisted of Knife River flint. Several pieces of obsidian were also recovered in this component. Aside from the differences in the raw material frequencies

Figure 6.13. River Bend site on the Buffalo River, Minnesota (Photo courtesy of George Holley).

the nature of the tool assemblages differed as well. In the lower, Oxbow/McKean component, a large number of the implements were utilized and worked flakes, expedient tools apparently used to process soft materials. The other functional indicators of the stone tools suggest hunting, hide working, butchery, and making tools. By contrast, in the later component most of the tools are points and knives used in a more restricted number of activities, probably related mostly to hunting.

The conclusion is that later Archaic groups at this site probably used this area in a manner different from those in the Middle Archaic. For the Late Archaic this was a hunting camp, whereas for the Middle Archaic people the site functioned more as a multi-purpose settlement, perhaps a residential camp. Both occupations indicated primary use of bison, although some other animal resources were used as well, including canids, muskrats, and rabbit.

Datable organic material was not collected from the site. A sample of bone submitted for dating was deemed useless for that purpose by the radiocarbon lab. Diagnostic projectile points and inferred climatic events were used to estimate the age of the two occupations. The Middle Plains

Archaic at the site is believed to be around 5,000 years ago, while the Late Plains Archaic component is estimated at around 4,000 years ago (Dobbs 2000: iv, 293).

River Bend Site

A site with Archaic point forms and radiocarbon dates was found buried in eolian deposits on the floodplain of the Buffalo River in Clay County. This is at a point where the river cuts through a Lake Agassiz beach ridge (Figure 6.13) (Holley 2021). The site deposits were episodic as reflected in several buried A-horizons. One of these buried layers provided a date on animal bone of about 5,200 years ago.

The sandy matrix was formed by sand blowing off point bar deposits along the river. Excavations in 2015 probed to about two meters and uncovered artifacts spread through much of the deposit below about 60 cm., and continuing to a depth of about 1.5 meters. Augur probes show that the cultural deposit extends to as much as 2.5 meters below the surface.

A thick concentration of burned rock was found in one unit, and over 3,200 bone fragments were recovered. Almost 80% of this was burned. The artifact collection includes expedient flake tools, nine points and fragments, several scrapers, a biface, drill, and cores. Several of the cobbles found at the site indicate that they were used, possibly as anvils or as grinding stones. There are projectile points in the deposit similar to Early Archaic types such as those found at the Rustad site, and perhaps one Kirk point, an Eastern US Early Archaic corner-notched point type (Figure 6.14). Almost a third of the lithic material was Knife River flint, but also recovered was an obsidian fragment, and various other imported cherts including Grand Meadow and Prairie du Chien cherts, Lake of the Woods siltstone, black chert, and jasper. These materials are assumed to originate respectively in the Western Plains, the Minnesota-Ontario border area, and the area near the Minnesota-Wisconsin border to the southeast. Projectile points similar to Early and Middle Plains Archaic types are in the lower portion of the deposit, and a Late Plains Archaic point closer to 60 cm below surface. Bison bone was found in association with the cultural material, but a detailed analysis of the faunal material is not yet available.

Figure 6.14. Selected points from the River Bend site (Holley2021).

The River Bend site was clearly not a kill site, but bison were the major food source. The large amounts of burned bone present, along with the lithic debris indicate that the site was probably used for normal domestic activities associated with hunting-gathering groups who visited the site repeatedly over substantial periods of time during the Archaic.

Lockport, Larter, and related sites

Lockport and Larter were excavated by R.S. MacNeish (1958). These sites are situated in alluvial deposits along the Red River north of Winnipeg. The sites, along with others on or near the Winnipeg River farther east, contained stratified deposits from the Archaic on. Lockport itself featured a stratified sequence of materials from the Archaic through the Late Pre-contact period, and from the description of the early materials at the site it would appear the sequence begins in the later portion of the Archaic with Pelican Lake materials associated with bison remains. The raw material for stone tools was mostly a white chert found near the mouth of the Red River, with a few darker quartzites from the Canadian Shield to the east (MacNeish 1958: 22-23). The Larter site, south of Lockport and on the west side of the Red, contained, in MacNeish's estimation, a single component which dated to the Late Archaic. As with the Archaic at

Lockport, the Larter component featured mostly bison bone, comprising over 95% of the bone recovered (MacNeish 1958: 38). East of the Red, at the mouth of the Whiteshell River is the Cemetery Point site. This is another stratified site with an Archaic component at the base of the profile. The diagnostic artifacts belong to the McKean complex, but being on the edge of the boreal forest the raw materials tended to be primarily quartz and quartzites from the Canadian Shield, with only a few of the cherts usually found in the Red River area.

From these sites MacNeish defined two Archaic foci. The earliest he named the Whiteshell focus, containing McKean projectile points with bison bone in association. This was followed stratigraphically by the Larter focus, with Larter points as a diagnostic point. As mentioned earlier, Larter points are usually called Pelican Lake. Radiocarbon dates were not available at first, but MacNeish made comparisons with stratigraphic sequences elsewhere on the Northern Plains. Using dendrochronological data from North Dakota, and radiocarbon dates from western sites on the High Plains, MacNeish (1958: 54) very reasonably dated the Whiteshell focus to 5,700–3,700 years ago, and Larter to 3,700–2,600 years ago (I have given approximate calibration dates to MacNeish's original dates, which he based on radiocarbon assays from other localities). This material from the Whiteshell focus would be roughly coeval with the Canning site, while site 32RI785 in southeast North Dakota would correspond with both the McKean related Whiteshell material and with the Larter component on the Red River at Larter.

In a review of the precontact period of the Lake Agassiz basin in 1967 Mayer-Oakes (1967: 337) had little besides MacNeish's work to outline the Archaic period in the Northeastern Plains of Minnesota, North Dakota, and Manitoba. He did note that the Archaic Whiteshell and Larter foci of Manitoba were both characterized by large amounts of bison bone, while later Woodland components at the lower Red River sites contained the remains of forest-living game animals.

Buchner (1980a) re-studied the Larter site in 1978 and determined from surface collections that there was more than a single Archaic component at the site. The diagnostic points included Larter, which Buchner notes should be classified as Pelican Lake, along with Oxbow and McKean as well. There are also points representing the Woodland period. For Buchner, the Larter site is obviously multi-component and MacNeish's work should be regarded as of historical rather than interpretive significance (Buchner 1980a: 59–60). Buchner (1980b) also re-studied materials from Cemetery Point and documented a stratified sequence including

Plano, Logan Creek (Early Archaic), Oxbow (Early-Middle Archaic), and Pelican Lake (Late Archaic). He also determined that the term Whiteshell focus should probably be abandoned, reverting to use of the Middle Archaic category McKean.

The Forks Archaic Site

An important Archaic site was found at the juncture of the Red and Assiniboine rivers at Winnipeg (Kroker and Goundry 1993). This is in the heart of the city and has been well-studied and developed for visitors. The Forks is a National Historic site and features walking paths, restaurants, an amphitheater and a major museum. The archaeological site resting beneath this development is stratified with several components or occupations. The one of interest here is an Archaic component on a layer of silty clay and dated to about 3,000 years ago. Over 40 meter-square units were dug, and in excess of 80,000 artifacts and ecofacts recovered.

Two fire hearths were recorded for the occupation floor. The hearths were elongated and may have been designed to function under a drying rack. Fire cracked rock was relatively common at the site, and the lithic raw materials used for tools included a wide variety of materials from eastern and western sources. Swan River chert was the most common material, and Knife River flint was relatively rare. Agate, quartzite, jasper taconite, Tongue River silica, rhyolite, quartz, and several other stone materials were found in the occupation. These materials derive from western Manitoba, northwest Ontario, southeast Manitoba and western North Dakota. Tools include points, scrapers, bifaces, unifaces, and worked and used flakes. The projectile points consisted of at least two Hanna points and one Pelican Lake point. Another projectile point was an eastern, or Shield Archaic form. Bone awls and a bone needle were recovered as well, suggesting that clothes were made at the site. A harpoon was also found, reflecting specialized tools for exploiting aquatic resources.

Most of the remains at the site were fish bones, making up about 80% of the total. The large number of fish bones suggest that perhaps fishing was done with weirs (a trap built in the river) during spawning season, or in backwaters where they would be relatively easy to catch. The fish show that the site was used in spring or early summer, or alternatively, during the late fall. The species recovered were walleye, northern pike, perch, bullhead, and suckers. Mussel shell at the site, mostly *Amblema plicata*, also attests to the importance of riverine resources for the people living here. Some of the shell was worked into small beads and pendants. Other faunal remains from the site include bison, moose, deer, bear, wolf, coyote, fox,

fisher, otter, mink, beaver, and squirrel. The recovered wood fragments were mostly ash, a common tree along regional rivers. Other wood was identified as elm, oak, willow, and maple.

The significance of the Forks Archaic site is obvious. Here, the bison hunting pattern found at so many Red River Valley sites is absent, and instead there is a clear emphasis on fishing, along with a broad range of large and small game. And just as the food sources reflect a range of prairie, riverine, and woodland environments, the lithic materials indicate a broad range of tool stones from the east, west, and southwest. Obviously, the people who lived at this site were broadly connected across environmental boundaries in their adaptation and in their cultural affiliations.

Discussion

The Archaic cultural expression varies across North America and merits different terms in different geographic areas. There are, among others, a Desert Archaic in the West, an Eastern Archaic, a Shield Archaic in the Hudson Bay boreal forest region, a Maritime Archaic in the Northeast, and in the Great Plains, a Plains Archaic. Minnesota and Manitoba are on the border of the deciduous forests of the east, the boreal forests to the northeast, and the grasslands that extend from western Minnesota to the Rocky Mountains. The hunters, gatherers, trappers, fowlers, and fishers of the Archaic made use of different resources in each of these biomes, and naturally, the cultural features typical of Archaic communities in each of these regions varied according to the resources they depended upon. The Prairie Archaic found in the Red River region of Minnesota, North Dakota, and Manitoba was part of the Plains Archaic, but the proximity of the Red River area to other major environmental zones is an important factor in understanding the variety of cultural material found at regional Archaic sites. A typical Plains life-way is found at most sites in the Red River Valley; however, occasional influences, seen in artifact styles, and often in raw material usage, from the east, south and north are not uncommon. This is apparent at the Archaic component found at the Forks, for example. Here, fishing predominates the faunal assemblage, but grassland and woodland resources, along with the lithic materials, reflect use of more than one adjacent environment.

The Archaic in the Plains region is normally dated from about 8,500–2,400 years ago, a span more or less consistent with the radiocarbon chronology from excavated and dated sites like Itasca, Cherokee, Rustad, Smilden-Rostberg, and Canning. It is the longest of any precontact period on the Great Plains, and in the Red River region as well. In dealing

with Archaic dates, it is important to recognize that calendar dates diverge from the radiocarbon chronology as we proceed from later to earlier portions of the Archaic. For instance, while a radiocarbon date of 2000 yields a calibrated date of about 2000 years ago, 4000 becomes 4500, 6000 becomes 6900, and 8000 calibrates to about 9000 (I used the online Calib 8.2 program with a standard error of 55 and rounded numbers).

In the Eastern US, the Archaic is often given temporal (calibrated) values of about 11,500-3,200 years ago (see Styles and McMillan 2009: 40). Dates for the Archaic, east and west, must simply be understood as variable, with earlier dates in the east and later ones in the Plains. The problem seems to be that the Archaic is treated often as a time period, or a span of years, and at other times as a cultural stage, meaning a way of life characterized by a distinctive assemblage of artifacts and features. It would simplify the difficulties in one sense if the Archaic was understood as a defined period in time. But here's the problem; archaeologists understand the Archaic in terms of the artifact content of sites and an adaptation or way of life inferred from those artifacts. Why define "Archaic" as an arbitrary time span divorced from cultural content?

Another issue of concern is that if we examine the developing complexity of culture in the Eastern US during Archaic times, as Kidder and Sassaman (2009) outline, for instance, with the kind of developments seen on the Plains, there are obviously such profound differences that it seems unwise to lump together such widely divergent phenomenon by calling them all Archaic. In the Southeast US the Archaic involves construction of earthworks and extensive trade. While I can offer no solution to this problem here, I can suggest that this at least highlights the problem of definition. The Archaic adaptation on the Plains created archaeological site content that differed from that in the Eastern Woodlands, and it persisted over a different period of time. Given the uneven temporal appearance of cultural traits across the continent, and the presence of different traits in different areas, there is no simple way for the archaeologist to synchronize time with culture. Dobbs' and Anfinson's (1993) use of Prairie, Riverine, Lake-Forest, and Shield Archaic as enduring traditions may in the end be the way to solve the stage-period dilemma, by breaking the Archaic into regional traditions instead of using a unitary, pan-continental culture-historical entity like the Archaic.

At this point it does seem safe to assimilate the Prairie Archaic into the larger Northern Plains Archaic sequence of Early, Middle, and Late sub-categories. Reviewing the site content from both excavated and surface collections it appears the presently known sequence of diagnostic

artifacts for the Northern Plains Archaic fits well with that of the Red River prairie. It is true that some Eastern Archaic diagnostics have been documented for sites such as the River Bend site and some surface collections as well, but these appear as exceptions to the general pattern, and for the present are mostly on the eastern boundary areas of the Red River Valley.

Another major issue facing archaeologists dealing with the Plains Archaic is the nature of the cultural response during the Middle Holocene, or what Plains archaeologists regard as the Early to Middle Plains Archaic. This period of increased aridity, often referred to as the Altithermal, was more arid than hot. The ongoing debate revolves around a complex of ideas about adaptations to a drier environment and the geomorphic implications of decreased rainfall and the visibility of archaeological sites. On the one hand, Gryba (1980) and Sheehan (1995) make a case that a drier Plains would have forced human groups into oasis settings; places where water was likely to be found and forage for game more abundant and reliable. River valleys and certain other areas where moisture might be captured would have been preferred habitats for game and for human hunters. Sheehan suggests that his data show that Early Archaic sites manifest the use of a wider range of resources than found in Plano or Middle Plains Archaic sites. He uses data from pipeline surveys to show that most Early Archaic sites tend to be in river valleys, while Paleo and Middle Archaic sites are more likely to be found in upland settings. Gryba (1980: 42) points out that some areas in the Lake Agassiz basin, such as the Swan Valley in western Manitoba, may have been highly attractive to bison hunters during arid periods, while under more mesic conditions, these same areas became swamps and bogs. Overall, during arid periods we might expect that communal hunts diminished and bison hunting became small-scale and occurred on an encounter basis. The upshot of these discussions is that during the Middle Holocene archaeological sites would be located in a more selective fashion than at other time periods, and therefore, they would be less visible in the record of the past.

Reeves (1973) and Artz (1996) disagree. They feel that conditions during the Middle Holocene created denuded landscapes in many instances. This led to severe erosional episodes in uplands, and to the clogging of smaller streams with sediment. The result would have been meandering streams that destroyed some Archaic sites. Add to this the great age of the Early Archaic sites and it makes sense that occupations of this age that were not destroyed were much more likely to be deeply buried and difficult to find. Reeves (1973) and others have suggested also that the style of

diagnostic artifacts used during the Early Plains Archaic, often classified as Logan Creek/Mummy Cave, were small side-notched types that are easily confused with later types, such as Prairie Side-Notched, Avonlea, or even Besant. Thus, it is possible that some surface collections believed to be of Plains Woodland age are in fact Early Archaic.

Another issue relevant to our understanding of the Archaic is the historical significance of the Archaic life-way on the prairies. Two authorities on the Archaic of the Eastern US quoted Howard Winter, an archaeologist from a past generation, that many students see the Archaic as a population of 'idiot savants' who were only capable of hunting and gathering, changing the style of their artifacts, and making an occasional nice ground stone tool. Kidder and Sassaman demur, and argue that new evidence shows that the Archaic in the Southeast US was much more than this. In the Archaic, they say, we see evidence for larger populations, increased sedentism, long distance trade, technological innovation, and social differentiation.

By the Middle Archaic, after 8,000 years ago in the Eastern US, the construction of planned communities, monumentalization of architecture, modification of the landscape, and embodiment of symbolic meaning in material culture demonstrated Archaic social, political, and ideological complexity (Kidder and Sassaman 2009: 668).

The presumed egalitarianism of earlier times was gone and progress ascendant. Naturally, there are places around the world where, in ordinary terms, we can see evidence of adaptive changes in certain aspects of culture, such as technology, or indications of more and more complex social organization. These are matters of real interest to archaeologists. However, the archaeologist is also, to an extent, an anthropologist. While it may be our purpose to differentiate the peoples of the past according to their levels of "advancement," whether technologically or socially, it is not appropriate to evaluate them according to these criteria. As it is for the anthropologist, it is also for the archaeologist. Cultures are not more or less important. They are not better or worse. The suggestion that Archaic cultures would be uninteresting if they were "nothing more than" hunters and gatherers who never showed evidence of development or advances in culture is a value judgement not worthy of anthropological status, and, I think, inappropriate in an archaeological study. Bison hunters were not "idiot savants" for hunting bison for thousands of years. They made their life-style decisions in the same way that other peoples do, and for them, it is apparent that hunting bison made better sense on the American grasslands than other subsistence tasks.

The megafaunal associations, ice age geology, and high-quality lithic craftsmanship of the Paleoindian are missing in the Plains Archaic, as are the dramatic earthworks and ceramic technology of the succeeding cultures. This is not to say cultural changes did not occur during the Archaic on the Great Plains. They simply receive little attention in the literature. At some point during this period the tipi was developed, although probably not a tipi using the identical support system of the Historic period. These earlier structures were more likely not as tall and possibly used four major support poles such as those found in other circum-polar regions. Tipis of this sort are inferred from stone rings found on the Plains at some Archaic sites as early as 5,000 years ago (Brasser 1982: 314). They seem not to be present at Early Archaic sites in the prairie region, and no evidence of tipi lodges are evident at Cherokee or Rustad, even though fairly large areas were exposed at both sites.

There is ongoing debate over whether pemmican was introduced in Early or Middle Plains Archaic times; however, it must have appeared at some time during the Archaic. This is evident in the presence of large quantities of highly fragmented bone and quantities of fire-cracked rock found at some Archaic sites, which is suggestive of bone grease production that was part of the process of making pemmican.

By Archaic times on the Plains a sustainable adaptation involving food preservation and storage (pemmican), domestic structures that were readily moved (tipis), and a bison hunting routine that involved occasional large and small-scale kills established a life-way on the grasslands that persisted for thousands of years and represents one of the most durable adaptations visible in the post-Pleistocene history of humans. While some regard this as a mark of cultural stagnation, the stability of an adaptation based on the husbanding of large game prey species such as bison, along with the efficacious use of many subsidiary resources, was a guarantee of long-term survival in a difficult environment. It may have been during Archaic times that the bison came to be increasingly incorporated into religious ideologies and ceremonies, which probably occurred to a lesser degree with other resources as well. This conflation of the natural and cultural worlds was undoubtedly passed down from Paleolithic ancestors, but the characteristic elements of a cosmology that united culture with nature that we find among Historic period Plains peoples may have had its foundation in the hunting traditions developed by the Archaic populations of the interior grasslands of North America. Along with the other innovations made at this time we may regard the Plains Archaic as a chapter in human history quite worthy of serious attention and study.

Chapter 7
Plains Woodland

The standard definition of the Woodland was formulated in the 1930s to account for various archaeological sites and complexes east of the Mississippi River. The Woodland was understood to be a variety of archaeological cultures characterized by the use of pottery, the construction of burial mounds and non-mortuary earthworks, and the use of domesticated plants. These Woodland features were associated with larger and more sedentary communities, and the transformation of lifeways indicated by these additions to the cultural practices of the Archaic suggested that the Woodland was a new stage or level of cultural development.

On the Great Plains, including the Red River Valley, the term Woodland is often modified to Plains Woodland. This leads to the odd image of a grassland-forest environment, something of an oxymoron, rather than an archaeological complex of cultures. Unfortunately, this failure to adequately name these archaeological cultures persists in spite of the attempt by some to replace it with terms such as Neoindian, Late Prehistoric, or Neolithic (cf. Yellowhorn 2003), any of which would be an improvement over currently accepted terminology. As with the Archaic, I use the term "Woodland" to avoid confusion and the necessity of a protracted discourse on archaeological taxonomy.

Plains Woodland is perhaps the most widely discussed and possibly best known of any archaeological time period in Red River archaeology. Partly, this is because the Woodland is more recent than previous archaeological periods and sites belonging to it are superimposed above older sites and more readily discovered. Remember, the Red River Valley is an agricultural area where most of the countryside has been cultivated. Shallow sites are susceptible to being plowed up and visible to archaeologists and to artifact collectors. Second, until recently most archaeologists in the region regarded the Woodland period as lasting until the arrival of the Europeans, so it comprised a substantial period of time. Third, the Woodland period is defined largely by the presence of pottery at archaeological sites, making it of special interest to archaeologists since ceramic studies are one of the most fruitful interpretive methods in the archaeologist's tool-kit. Fourth, the practice of burying the dead in earthen mounds began during the Woodland period in the Northeastern Plains and

Upper Midwest. Not only are mounds highly visible on the landscape, but archaeologists have had an overriding interest in the mounds since the beginnings of American archaeology in the mid-nineteenth century and persisting through the mid-twentieth century. Finally, the Woodland period witnessed the beginnings of plant domestication in eastern North America, and such a significant, life-changing development is of prime importance to archaeologists interested in understanding the development of native North American cultures. Usually, the Woodland is regarded as both an archaeological stage and a period at the same time, just as the earlier Paleoindian and Archaic. As a stage, the North American Woodland consists of cultures that display some combination of the characteristic Woodland features; ceramic technology, plant domestication, and burial rituals that included the construction of ceremonial earthworks or mounds. The assumption drawn from these features of the Woodland is that the constituent societies must have been socially complex to the degree that they possessed ceremonialism adequate to support the construction of burial mounds and other earthworks; and that these groups probably lived in single locations for longer time periods to both work their gardens and build the mounds. Even simple agriculture requires preparing garden plots, cultivation, harvesting, and processing the crop. Highly visible cemetery features housing the remains of ancestors suggests societies concerned with territorial rights and physical markers to signify those rights. If people were making pottery for storage and cooking, raw clay of the right kind had to be identified, collected, and transported to a settlement. Time would need to be set aside to make the vessels, build hot fires for firing, to say nothing of the time needed to learn how to make pottery vessels in the first place (see Goltz 2018). Pottery making is something that requires some considerable skill, and from the ethnographic record we know that very often women who were adept at this skill made pottery for other families as well. In return, they received something of value in exchange. This kind of exchange would create new social ties and inter-family bonds. When we think about what the Woodland way of life involved, then, it should be clear that many changes must have been occurring in societies. Perhaps some of them were not dramatic and life-altering, but the complexion of society would certainly be different where people changed their settlement habits, their technology, and as evident in the construction of burial mounds, their ceremonial behavior as well. This is what archaeologists mean when we think of the Woodland as a cultural stage, or a new way of living.

Besides being a stage of cultural development, the Woodland is also regarded as a cultural period, or a specific span of time. For archaeologists in the Eastern US, the Woodland is divided into early, middle, and late sub-periods. This temporal framework has been imported to the Plains, where the chronological parameters of these sub-divisions are as follows: Early Woodland, 2,600-2,000 years ago, Middle Woodland 2,000-1,500 years ago, and Late Woodland 1,500-500 years ago (Adair 2012: 220). This chronology is problematic since the features regarded as characteristic of these sub-periods in the East are not always present in the Plains. In the Red River region, I find the subdivisions difficult to apply and will simply deal with what I consider Woodland sites and phases or complexes, instead of the standard early, middle, and late designations. Phases are groups of sites that are related to each other because of a similarity in artifact content (most often ceramics), age, and geographic contiguity. The following presentation will make clear that given the time span involved, some Woodland period phases are represented earlier in the Woodland period while others are later.

These well-developed themes and dates about the nature and timing of the Woodland period make the archaeological record seem well established and easy to understand. Naturally, it isn't that simple. A site is usually defined as Woodland simply because pottery sherds are present, and this is often the only indicator that a site belongs to this period in time. Pottery, however, is used throughout the succeeding Late Precontact/Plains Village period, so its use as a Woodland indicator is sometimes compromised. At many sites only small fragments of pottery are recovered, making the assignment to one or another culture or portion of the Woodland-Plains Village continuum difficult, and often, more or less educated guesswork. In the northern part of the Valley pottery styles identified as Woodland types continue to the Historic period, while in the southern Valley, new styles of ceramics are introduced after about AD 1200.

Mound building, initiated in the Woodland period continues into the Plains Village/Late Precontact period and it is often not possible to distinguish mounds belonging to one or another of these periods. Besides this, burial mounds are not present everywhere but tend to be found in certain topographic locations, and they are far less common than ordinary occupation sites. For these reasons mounds in the Valley are often difficult to use in the classification of a site as Woodland or not.

There are also problems with the Woodland being defined by the presence of domestic plants. There actually is not very good evidence of the Plains Woodland peoples in the Red River region relying on or

having domestic plants. These do show up in regional archaeological sites in the following Plains Village period, but evidence for domesticates is rare in the Woodland. Sometimes, their presence in the regional Woodland is based on microscopic evidence such as starch granules or phytoliths adhering to ceramic vessel fragments. One of the North American plants domesticated in the Woodland was Chenopodium. Chenopodium, a forb also known as goosefoot, produces very small, roundish black seeds, and the domestic variety is somewhat larger than the wild seed. These seeds, wild or domestic, could be mashed and made into a flour. The greens were also used as a potherb. Being a weedy plant, Chenopodium grows in disturbed soils, and is often common around human settlements. Finding Chenopodium at archaeological sites is fairly common, but it is not always clear whether it was domesticated, or simply the wild form being used as a foraged resource, or perhaps simply a weed that got mixed in an archaeological deposit even though it was not used in any way by the people who lived there.

A final issue regarding the definition of Plains Woodland sites is that in some instances sites are assigned to the Woodland based on the presence of diagnostic projectile points. This is especially common in areas where hunting was the primary subsistence pursuit, including the grasslands of the Red River Valley and areas to the west. Projectile point styles are far less useful indicators of cultural affiliations than are ceramics, and it is not too unusual to find Archaic style projectile points in Woodland assemblages, just as I mentioned in a previous chapter that there are occasional Woodland-like point styles present in Plains Archaic deposits.

Keeping these issues in mind, let's proceed now to a discussion of the Plains Woodland cultural entities known for the Red River Valley and surrounding areas. From there, we can move on to a treatment of some of the better-known Woodland period sites for the Red River Valley proper.

In Minnesota one of the early ceramic traditions involved the manufacture of net and fabric impressed pottery known as Brainerd ware. Brainerd pottery was often made by pressing clay in a net-like bag. After the pot dried the bag was peeled away and the vessel fired and hardened. The result was a clay vessel with net impressions on the surface of the pot. This pottery is found in the forested areas is associated with a typical Woodland period life-style and across the ecotone on the eastern side of the Red River region. Net impressed ceramics in Manitoba are known as Rock Lake pottery, and are found extended to the west onto the Northeastern Plains. On the prairies these groups would have been making use of bison and elk, while in wooded areas to the east deer, smaller mammals,

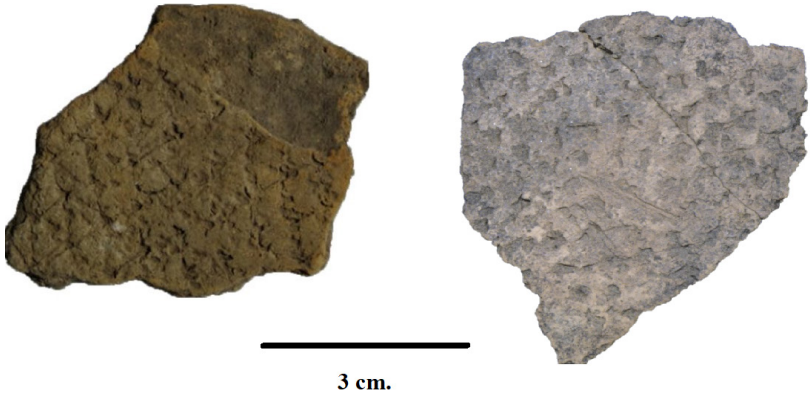

Figure 7.1. Net impressed sherds

fish, shellfish and other aquatic resources would have been important. Some have suggested that wild rice was also being used by Brainerd pottery users in the Minnesota forest country. It is likely that resource use was adjusted over the seasons of the year to take advantage of abundance in one or another environmental region. The people involved in making this style of pottery, and their associated life-way, have been defined as Elk Lake culture (Hohman-Caine and Goltz 1995: 127).

There is some debate about Brainerd, or net and fabric impressed pottery found in Minnesota and Manitoba (Figure 7.1). Some of the very earliest dates have been discarded, but it still seems that Brainerd pottery flourished for a substantial period, from about 800 BC-AD 300 (Hohman-Caine and Syms 2012; Meyer and Walde 2009). Some of the early dates were based on organic residue from the charred interior of vessels, leading to some skepticism about the early end of this time span. Early dates and stratigraphic context from the Lockport site do tend to reinforce this early age for Brainerd/Rock Lake (Meyer and Walde 2009: 68). Research on unusually early radiocarbon dates is continuing, and perhaps time will tell more accurately the age of Brainerd, and whether it indeed is as old as these early dates.

A less controversial Woodland culture is known as Laurel. Originally defined by Wilford as the Rainy River aspect, Laurel culture, as it is now commonly referred to, is understood to extend from northern Minnesota into northwest Ontario, southern Manitoba, and northward to the southern edge of the boreal forest on the Manitoba-Saskatchewan border. It is reported at sites in the northern Red River Valley. Laurel was originally defined in the Minnesota-Ontario border region. Here groups using

Figure 7.2. Replica Laurel ceramic vessel (Office of the Minnesota State Archaeologist.)

Figure 7.3. Malmo rim sherds. (Photo courtesy George Holley).

Laurel pottery constructed numerous burial mounds, including the Grand Mound at the Smith site, perhaps the largest burial mound in Minnesota. Laurel is usually defined for sites on the basis of pottery, which in this case consist of vessels that are conoidal in shape with straight rims, both smooth and cord-roughened surfaces, and stamped or incised impressions on the rim area. These impressions include dentate or tooth-like marks, wavy-incisions called pseudo-scallop shell impressions, bosses, punctates, and cross-hatched incisions (Gibbon 2012: 122) (Figure 7.2).

The Laurel culture life-way was based on a diffuse, or generalized hunting and gathering, including use of moose, elk, caribou, deer, beaver, hare, muskrat, loon, mallard, turtles, fish, shellfish, and in the prairie areas, bison (Boyd and Surette 2010: 119). Some archaeologists believe wild rice was an important resource even though wild rice is not very common at Laurel sites. They seem to have had a relatively structured hunting-gathering life-way, possibly collecting wild rice in the early fall, fishing in fall and spring, and perhaps bison hunting in other seasons (Gibbon 2012:131-132; Anfinson et.al 1978). The study of phytoliths and starch granules scraped from the interior of clay vessels used for cooking has led some to suggest that Laurel people had access to maize (Boyd and Surette 2010). If maize was being used it is unlikely these people were growing it themselves, but rather traded for shelled corn from groups farther to the south. If they were themselves growing maize archaeologists should find cob and kernel fragments in excavations, and so far, this has not been reported.

In central Minnesota is a Woodland culture known as Malmo, named for a town near Lake Mille Lacs, Minnesota. The overall features of this culture are much like Laurel, although it is usually distinguished by its ceramic technology. Malmo pottery is grit tempered, relatively thick and smooth surfaced. Decoration, as with most Woodland pottery in this region, is near the rim, and consists of various impressions including bosses, or bosses alternating with punctations, some incising and cross-hatching, and impressions made with a comb-like stamp (dentate stamps) or a stick or dowel wrapped with cordage impressed obliquely along the top of the rim (cord-wrapped object impressed) (Figure 7.3). Lake-forest hunting and gathering and mound building characterize the Malmo adaptation. Its presence in the prairie areas is known only from the presence of occasional finds of distinctive Malmo pottery. A mound group at the headwaters of the Otter Tail River, a tributary of the Red, is

often affiliated with Malmo, and MacNeish suggested the Nutimik focus at Lockport was similar to Malmo, but very little Malmo material can be described for the Valley proper.

There are a variety of changes in ceramics that appear through time in the Woodland period. Vessels in later times tend to be globular in shape, while in in earlier times they were often more elongate from top to bottom, and the base of the vessel was often shaped more like the bottom of a cone, that is, forming something of a point. Later vessels had a rounded bottom, and the rims, rather than being straight, were often more out-flaring above a constricted neck. The decoration on these vessels also tended to be distinctive of the times. Sticks or other objects wrapped with cordage, or perhaps with something like sinew, would be impressed into the wet clay of the pot prior to its being fired and hardened. This would create an intricate pattern of herringbone-like designs on the lip and rim of the pot. Often, these markings would be interspersed with punctations, often between horizontal rows of the cord-wrapped object impressions. Usually, the bodies of the vessels below the neck were cord marked. There may also be more variety as the Woodland period develops over time. In fact, some archaeologists have surmised that the increase in stylistic variability in the last part of the Woodland period is the result of more and more areally defined ethnic groups able to survive successfully in restricted territories, where artifact styles may develop their idiosyncratic features.

One of the ceramic types associated with some of these changes is known as St. Croix (Figure 7.4). While it is more common in archaeological sites east of the Red River, it does occur sporadically in the Red River region, although no well excavated sites are known to have this ceramic ware as a dominant part of the artifact assemblage. Gibbon and Caine (1980) discuss the St. Croix phase as a type of adaptation that ended around AD 800, and involved an intensified use of wild rice. So successful was this new resource that population in the wild rice lake district of central and eastern Minnesota presumably outpaced that of the maize using farmers in southern Minnesota of the same time period. The St. Croix phase is known for a distinctive ceramic style that is transitional between the earlier wares and later pottery types. Vessels were sub-conoidal (rather than globular), and were generally cordmarked with dentate stamping used extensively on the pot rims. Occasional St. Croix sherds were sometimes found in burial mounds (Gibbon and Caine 1980: 61). It was once believed that the St. Croix phase was an early adaptation involving use of several biotic zones, both lake-forest and prairie. This is now known

Figure 7.4. St. Croix sherds, left, (Catalog No. 1984.41.23.1, courtesy Minnesota Historical Society, right, small sherd from Upper Red River, courtesy George Holley).

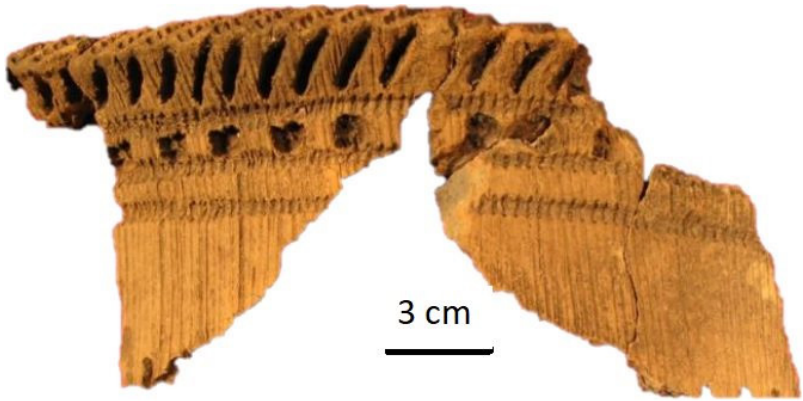

Figure 7.5. Blackduck vessel rim and neck from the Dead River site at the Red River headwaters in Otter Tail County. Note the wedge-shaped rim, oblique and horizontal stamping intersected with punctations, and vertical combing.

to have occurred earlier, and was certainly evident in the first part of the Woodland. In any event, the developing use of wild rice and the changes in ceramic technology make it reasonable to highlight St. Croix ceramics even though they are rare in the Red River region.

One of the dominant ceramic wares found east of the Red River Valley is Blackduck. This is a pottery style characterized by globular vessels with constricted necks and outflaring rims. Vessel surfaces are normally cordmarked, and the paste is tempered with sand or crushed rock. The decoration is distinctive, and consists of cord-wrapped object impressions, sometimes on the lip, often oriented on the upper rim in an oblique angle from the top of the vessel. Punctations are common, and will often encircle the rim above the neck. They are often bordered by cord-wrapped impressions both above and below the punctations. Classic Blackduck pots have wedge-shaped lips, although many sites with Blackduck pottery lack this feature. Sometimes, there is a decoration known as combing, where fine vertical striations are formed from the rim or lip down the side of the vessel (see Goltz 2018, for a detailed video presentation of making a Blackduck vessel) (Figure 7.5 and 7.6). Blackduck has often been dated over a span of about 600 years, from AD 800-1400 (Lugenbeal 1979: 23). More recently, later versions of this ware have been absorbed by the Rainy River composite (see below). There is also a similar and contemporaneous ceramic ware in central Minnesota known as Kathio. Some archaeologists informally regard Kathio as a variety of Blackduck, although that notion has never been formally argued. Kathio type ceramics are represented in the southern Valley, as described below.

In central Minnesota Blackduck groups made use of wild rice, and of course, a typical range of other wild plants and animals, including fish and shellfish. In the Red River Valley Blackduck has been associated with bison hunting. One study of Blackduck occurrences in the Canadian prairie provinces shows that at some of these Northeastern Plains Blackduck sites there is circumstantial evidence for the use of corrals or pounds used in mass bison kills. At other sites there are indications of smaller groups and more modest kills, perhaps of only a few bison at a time. At still other sites where Blackduck materials are found near lakes there are more varied faunal assemblages, with bison, small game, fish, waterfowl and mussels. Clearly, Blackduck populations were exploiting the Northeastern Plains, including portions of the Red River Valley, in a multifaceted manner, and were adept at modifying their subsistence routine to match seasonal resource availability, or local environmental opportunities (Hamilton et al. 2007: 102, 128).

Figure 7.6. Replica Blackduck vessel. (Office of the Minnesota State Archaeologist.)

It is widely believed that Blackduck ceramics are associated with larger populations, given that their distribution is more widespread than many earlier ceramic traditions, and Blackduck pottery is normally far more abundant at sites than earlier ceramic wares. Blackduck culture extended from central Minnesota northward into northwest Ontario, around Lake Superior to the northeast, and into southern and central Manitoba to the boreal forest (Meyer et al. 1999). Syms (1977: 131) has made the argument, one which is widely accepted, that Blackduck ceramics were the product of several related Algonquian-speaking peoples, such as the Ojibwa and Cree. In the early portion of the Historic period, the area where Blackduck pottery is common was also home to these very same populations. Study of the human remains from Blackduck sites suggests that the Blackduck cultural assemblages were the product of more than one ethnic group, possibly Cheyenne and Dakota (Ossenberg 1974:29-31).

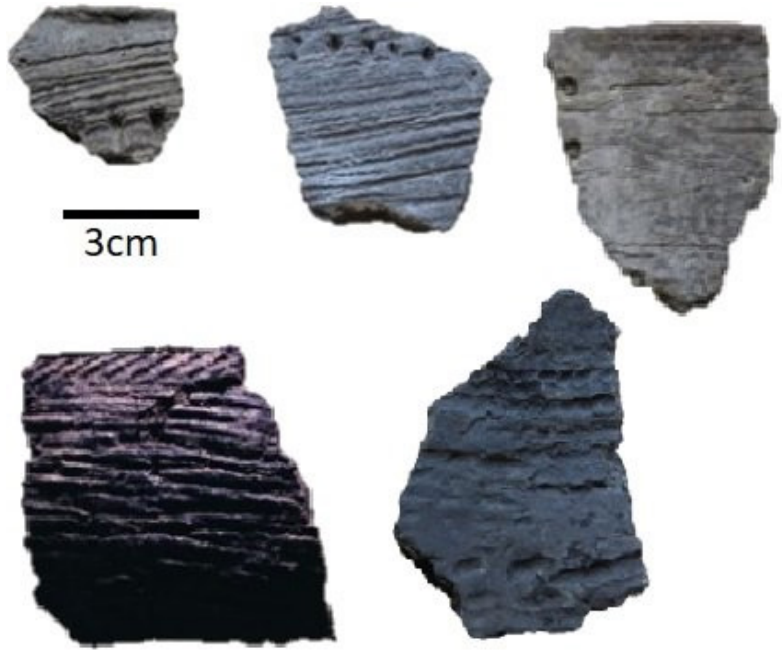

Figure 7.7. Dahnke phase pottery sherds (Photo courtesy George Holley).

Sometimes the different ceramic groupings I have been discussing are used in a restricted region to define a set of archaeological sites that are believed to be related to each other. These related sites, if they share other features such as similar lithic tool assemblages and faunal and floral remains indicating a similar life-way, will be placed together in what is called an archaeological phase. When pottery is absent, as is the case on the Plains to the west of the Red River in the western Dakotas and prairie provinces of Canada, projectile points may be used in a similar fashion. The ceramic materials described here, including Brainerd, Laurel, St. Croix, and Blackduck, have been used to define a number of phases in the Red River Valley which, taken together, last more or less throughout the Red River Woodland period.

In the upper Red, Holley and Carr (2023) define two earlier Woodland phases; Dahnke and Kent. The Dahnke phase is characterized at sites such as Dahnke-Reineke, at the Red-Sheyenne juncture, and the occupation site at Slininger in Norman County, Minnesota, which was originally defined as an Arvilla burial mound site. The pottery is relatively thick walled, somewhat coarse tempered with crushed rock fragments, and occasionally cordmarked on the surface with horizontal and vertical

cord impressions. Decorations are simple and often consist of bosses or punctations, sometimes alternating just below the rim of the vessel. Dentate stamping and twisted cord decorations may also appear (Figure 7.7). The pottery shares features with Malmo, and with Fox Lake, a ceramic type found in southwestern Minnesota and adjacent areas. The Dahnke phase is dated 400 BC–AD 300.

The Kent phase, although poorly attested at sites in the Valley, is characterized by net impressed pottery similar to Brainerd ceramics, which extends from the central Minnesota forests into the eastern portions of the prairie in the Red River Valley, as well as onto the northern part of the Great Plains. Although this style of pottery is found in scattered collections, and from occasional finds in excavations, there are no components where this ceramic type is dominant. This phase is tentatively dated from AD 300–600.

Following Kent is the Sand Hills phase. It was created to accommodate the very occasional presence at some sites of dentate stamped St. Croix pottery. These ceramics have been found only rarely in the Valley, including being identified in at least one Arvilla burial site. St. Croix ceramics have been associated with certain significant changes in life-style, including an increased reliance on wild rice and an economy more focused on certain high yield resources rather than one based on a diffuse utilization of many resources (Gibbon and Caine 1980). It has not been established whether such subsistence routines are typical of the Sand Hills phase sites in the Red River region.

A recently defined ceramic phase has been proposed for the upper Red River Valley near the river's headwaters. This is the Wolverton phase, defined from several sites near Breckenridge, Minnesota (Holley et al. 2023: Appendix A). The pottery is reminiscent of Blackduck in the use of cord wrapped object impressed decorations on the rim and neck of the vessel, but lacking some of the diagnostic features of Blackduck, such as wedge-shaped lips, combing on the vessel neck and shoulder, and the less frequent use of punctations (Holley et al. 2023: Appendix A.1). Some of this material comes from private collections, and some from sites that have been heavily disturbed and have mixed cultural deposits (Figure 7.8). The ceramics are similar in various features to Kathio pottery. At least one of the sites where this phase is present is the Femco site, where a multicomponent site revealed materials from the Archaic through the Late Precontact/Plains Village periods.

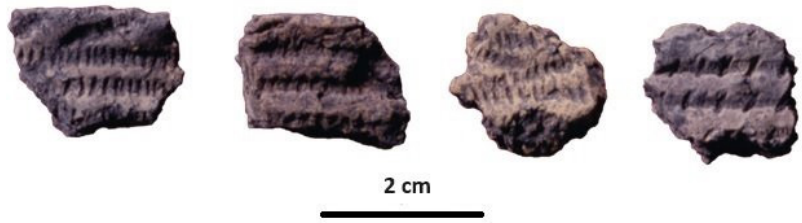

Figure 7.8. Wolverton phase potsherds from near Breckenridge, Minnesota (photo courtesy of George Holley).

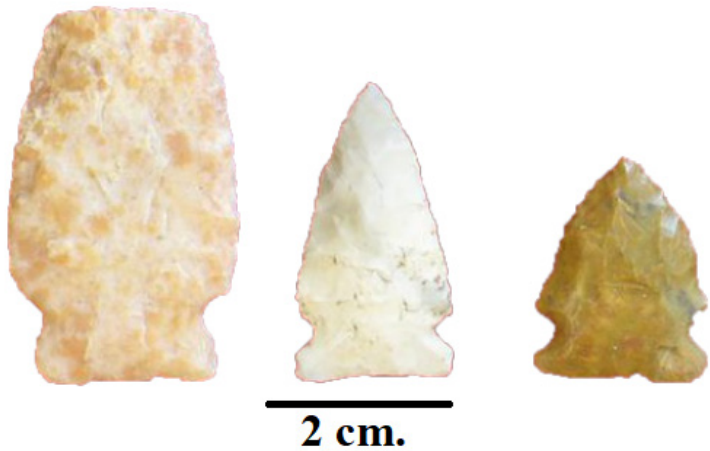

Figure 7.9. Some Plains Woodland Projectile Points. Left to right, Besant, Avonlea, Prairie Side-Notched.

A phase that would have been more or less contemporary with Wolverton is somewhat more fully documented in the Red River region. This is the Bluestem phase (Holley et al. 2021). The associated ceramics might best be described as Blackduck on the prairies of the Red River and nearby ecotone. The Bluestem phase is represented at the Dead River site at the head of the Otter Tail River in the ecotone east of the Valley. It is also found at site 21CY39, above the Buffalo River on the Lake Agassiz beach deposits east of Moorhead. In the Red River Valley, it is associated with bison hunting, but hunting bison on a routine encounter basis rather than in major kills.

Other complexes of archaeological materials dating to the Woodland in the Red River Valley include MacNeish's old foci (often regarded as equivalent to a phase) Anderson, featuring Laurel pottery, Nutimik, with Laurel and Malmo ceramics, and Manitoba, characterized by Blackduck pottery. Later in the Woodland of the northern Valley are the Rainy River and Selkirk composites (Lenius and Olinyk 1990; Meyer and Russell 1987). The Rainy River composite comprises several ceramic types known as Duck Bay, Bird Lake, and Winnipeg River. They are regarded as a development out of Blackduck and began appearing in the far northern Valley around AD 1100 or so. In fact, Rainy River composite ceramics were in an earlier day referred to as late Blackduck. The ceramics are grit tempered and cord roughened on the surface, and much of the decoration includes different forms of stamped impressions in the clay. Winnipeg River pottery is the latest of the three types, and seems to persist until the mid-1600s. The life-style is similar to that of Blackduck; that is, generalized hunting, gathering, and fishing. Selkirk pottery, is a fabric impressed ceramic type, meaning the surface has been impressed with some sort of burlap-like cloth. It is often found along the lower Red River, and is present in the upper levels at the Lockport site. For the most part Selkirk is a ceramic ware and associated adaptation found in the boreal forest of Ontario, Manitoba, and Saskatchewan. It is necessary to point out that these Woodland ceramics are found throughout a time period that is regarded as the Late Precontact/Plains Village in the upper Valley to the south (that is, post AD 1200). In the lowermost portion of the Red River Valley, the Woodland may be regarded as persisting until the arrival of Europeans, although there is an exception to this generalization that will be discussed in a later chapter.

There are a number of Plains Woodland projectile point types, including Besant, Avonlea, and Prairie Side-Notched (Figure 7.9). Archaeologists in the Canadian prairies have defined phases characterized by

Besant and Avonlea points, these phases lasting from 200 BC to AD 500 for Besant and AD 500–800 for Avonlea. Unfortunately, these artifacts, used as tips for spears, darts (cast by a spear thrower or atlatl) and arrows, are often variable in their diagnostic features, namely, the part of the point that is hafted to a shaft. Furthermore, sometimes they overlap with other cultural periods. Besant points, for instance, are sometimes dated early enough to be regarded as Archaic, Prairie Side-Notched points persist into post-Woodland times, and Avonlea is found over a period of about 800 years, spanning most of the Woodland period Meyer and Walde 2009). At some Red River Valley sites, a Plains Woodland affiliation is sometimes identified on the basis of these point types (Meyer and Walde 2009).

Besant is defined in part on the basis of a projectile point style. The points are somewhat elongate parallel sided blades with notches on the lower portion of each side. The bases of the points are straight to slightly concave. Besant clearly corresponds in time with the earlier portion of the Woodland of the Northeastern Plains, although since they are often found at sites with no ceramic remains, Besant materials are occasionally believed to date to the Late Archaic. Besant has attracted a lot of attention from Plains archaeologists, partly because there are so many sites with Besant points. Knife River flint was in common use among the people who created this complex, and it has been suggested that the presence of Knife River flint in the Hopewell Interaction Sphere of the central Midwest—Indiana, Illinois, Ohio—had something to do with trade between the Midwest and the Northern Plains during Besant times (Clark 1984). Also, there are burial mounds in the central and eastern Dakotas called Sonota mounds, which often contain Besant projectile points, and many archaeologists think of Sonota burials as the mortuary behavior of the Besant people. In some western states and Canadian provinces Besant sites provide evidence of highly efficient bison hunting. A corral was constructed at the Ruby site in Wyoming by Besant hunters. There was an interior post some interpret as a shamanic facility for attracting the bison with spiritual invocations. Besant corrals such as the one at Ruby would have been used to trap bison so they could be killed more easily. For this reason and others, many archaeologists regard Besant as a cultural climax on the Northern Plains (Forbis 1998: 63–64).

There are descriptions of the use of corrals such as the ones inferred from the archaeological remains. Henry Youle Hind, in an account of his travels through the Canadian prairies in the 1850s, describes one such corral, and how it was used in buffalo hunts. He states that it was 120

feet across and made of tree trunks that were laced together with flexible branches. Robes were used as coverings to prevent the animals from seeing through it. The corral, or pound, was located between sand hills and at the end of lines of converging stacked branches called "dead men." After scouts had enticed a herd to enter the embracing arms of the "dead men," the bison would be edged on, and when they veered from the path leading to the corral, men stationed along the route would show themselves, perhaps waving a robe, to keep the buffalo from deviating from the predetermined path. In this way they were stampeded toward the corral, where once in, they circled wildly trying to escape the trap, while the hunters made kills, one after another (Hind 1860: 357–358).

No corrals have been identified at archaeological sites in the Red River Valley; however, Alexander Henry mentions that the Park River, one of the Red River tributaries in North Dakota, got its name from the Assiniboine, who made a "park" or pound here to trap the buffalo (Coues 1965 [1897]: 93). It would appear likely that bison hunting in the Red River Valley sometimes matched the hunting techniques found farther west on the Plains.

In the Red River Valley Besant points are found at surface sites and in excavations. Sometimes they are found in context with Woodland ceramics. They have been recovered from contexts that show evidence of bison hunting, and also the common presence of Knife River flint. In these ways, the Besant complex of the high plains is replicated on the tall grass prairies of the Northeastern Plains and the Red River region.

Overlapping in time, although in general somewhat later than Besant is a complex of archaeological materials on the Northern Plains known as Avonlea (Cloutier 2004). Originally recognized by thin, small, side-notched points with indented bases, Avonlea is considered the beginning of routine use of the bow and arrow for Plains peoples. Dated from about AD 400 to as late as 1100 or so, Avonlea is not common in the Red River region, although it does appear at some sites in the Sheyenne Valley to the immediate west of the Red (Michlovic and Holley 2022: 80). Like the Besant adaptation, Avonlea populations were bison hunters. Pottery is found occasionally at Avonlea archaeological sites. These ceramic vessels are sometimes impressed with a net-like pattern on the exterior surface similar to the Brainerd pottery. Some archaeologists associate Brainerd ware with Plains Archaic point styles such as McKean, Hanna, and Pelican Lake, part of Elk Lake culture, and which is seen as something of a continuation of Archaic life-styles (Hohman-Caine and Goltz 1995: 126–127). Others see Plains Woodland period Avonlea as the proper

association with Rock Lake/Brainerd pottery, which is a view taken here as the more appropriate one, at least for the moment (Meyer and Walde 2009: 54–59).

Over time the complexion of assemblages in Plains Woodland sites throughout the Northeastern Plains begins to change. Most projectile points tend to be smaller and suggest the bow and arrow was in routine use. Sometimes small points are referred to by collectors as "bird points," arising from the idea that the points were used for small animals and fowl. But archaeologists have always argued that the small size of the points had little to do with the kind of game hunted with these weapon points, but with the type of projectile they were used to arm; that in fact these points were used as arrow tips. While Avonlea points indicate use of the bow fairly early in the Plains Woodland, by later dates small points and evidence of the bow and arrow comes to be more clearly in evidence. Spears were undoubtedly still in use, but the bow was dominant.

Let's turn next to a description of several archaeological sites from the Plains Woodland in the Red River Valley (Figure 7.10). This will provide a sense of the kinds and disposition of materials found at these sites. This is not an exhaustive list of excavated sites, but a sample of those that have been important to the understanding of the Valley's precontact period and for some, sites that I am especially familiar with from my own excavations.

Dahnke-Reinke

This site is in a field that crosses a property boundary, hence the double name. The site was reported in detail by Thompson (1990) and in a much shorter comment by me (Michlovic 1987a). The site has at least two components, and possibly four; Late Precontact on the cultivated surface of the field, two buried Woodland components, and an ephemeral, poorly represented Archaic. Here I am concerned only with the Woodland materials from the site.

The Dahnke-Reinke site is located at the juncture of the Red and Sheyenne Rivers, a few miles north of Fargo, North Dakota (Figure7.10). There are several steps or terraces in the field that increase in height from the river. The surface of the field has a scatter of Sandy Lake pottery and associated artifacts from the Late Precontact period. The buried Woodland components are 60–120 cm. (about 1.5–4 feet) below the ground surface. Several radiocarbon dates were obtained from buried features and

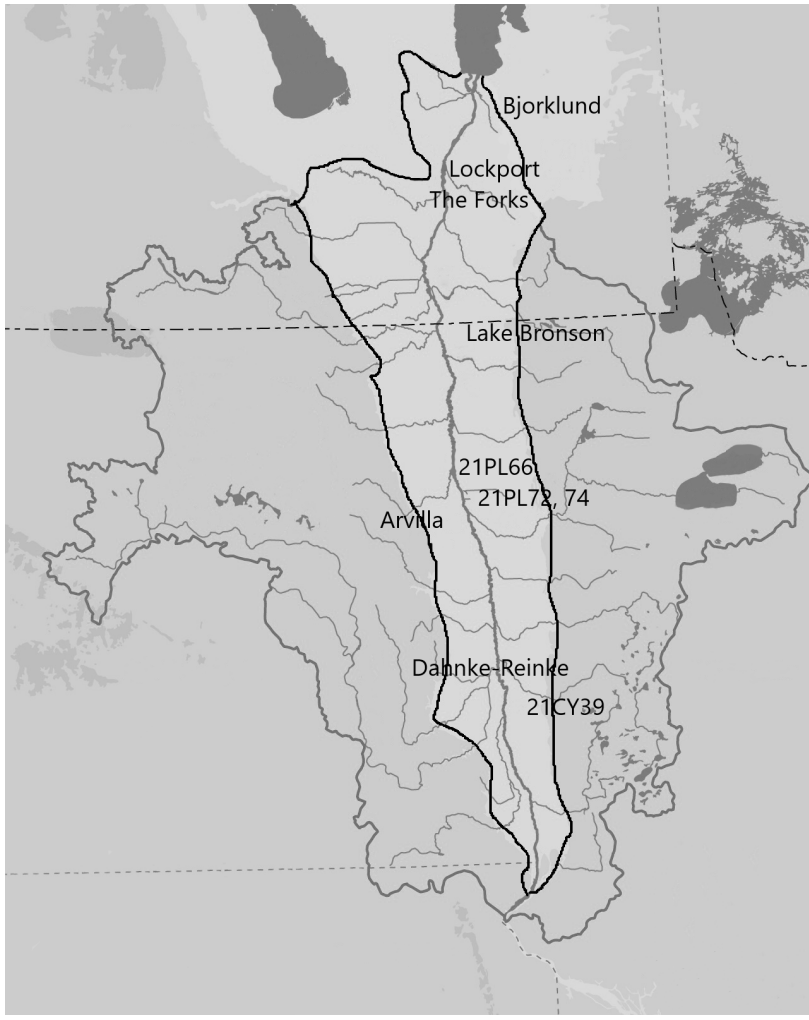

Figure 7.10. Location of Woodland site mentioned in the text.

they range from 259 BC – AD 177 when calibrated. The dates put the subsurface components of the site in the earlier portion of the regional Woodland.

Organic remains from the features include a few plant macrofossils and animal bone. The plants include hackberry, hazelnut, and an abundance of Chenopodium. There is no evidence of domestic plants. Bison bone was recovered, as was catfish and several small animals that were probably natural inclusions in the deposits, including frogs and voles.

The artifacts from this component include Avonlea, Besant, and Prairie Side-Notched points. Observation of wear on the edges of some of these points indicate their use for jobs must have included work with plant tissue, since silica polish along with phytoliths, the microscopic silica bodies in plants, were found on the edges of some of the points. Other lithic tools such as scrapers and bifaces of various sizes were also present in this component. In the buried Woodland at the site about 80% of the lithic debris consisted of Knife River flint.

Woodland pottery from the buried components was nondescript. The ceramic sherds were from buried soil horizons at 60 and 90 cm. below the surface. The 60 cm. horizon contained undecorated sherds up to seven millimeters thick, some with horizontal cord-marking, and others with net or fabric impressions on the vessel surface. Such sherds fit comfortably with projectile points like Besant, also found at the site. The most likely affiliation for these materials would be Brainerd Net-Impressed pottery that is part of the Elk Lake cultural assemblage (Homan-Caine and Goltz 1995: 127), although the horizontal cordmarked ceramics might also be related to pottery found in southwestern Minnesota known as Fox Lake. This uppermost of the buried components at the site may be assigned to the Kent phase.

At a depth of 90 cm., thick, coarse grit tempered pottery was recovered which may be assigned to Fox Lake, although such a determination was mostly guesswork since few diagnostic decorative motifs were present on these sherds. The occasional presence of bosses and punctations is suggestive of Fox Lake, a ceramic ware documented for other sites in eastern North Dakota (Adair 2012: 213). The co-occurrence in these deposits with Besant and Avonlea projectile points would be consistent with the ages of the ceramic styles. The materials from this deeper component may be assigned to the Dahnke phase based on the ceramics, dates, and the stratigraphic position of this component. Dalan (2006), using a novel technique for detecting the magnetic signature of buried deposits, showed that the buried horizons at the Dahnke-Reineke site registered a higher

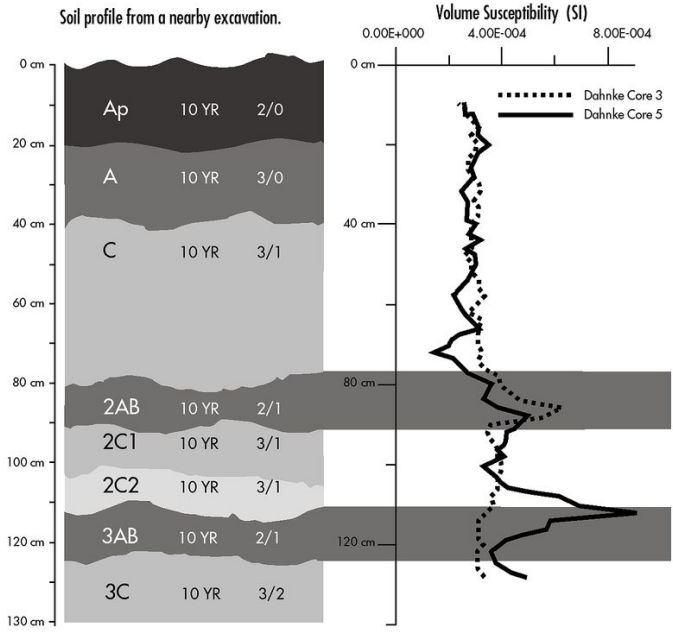

Figure 7.11. Dahnke-Reinke soil profile on the left. Right shows enhanced magnetic susceptibility in buried soil horizons with Woodland cultural material. (Courtesy Rinita Dalan).

magnetic susceptibility than might otherwise be expected. This enhanced signature was due most likely to the presence of fire-modified sediments associated with the occupation, and serve as additional evidence for the depth of the two occupation floors (Figure 7.11).

21PL66

A flood control project at East Grand Forks, Minnesota, led to the discovery of site 21PL66 (Florin et al 2001). It covers about an acre of land near the divergence of two streams that flow into the Red River, which is about a quarter mile distant. There is a Plains Village/Late Precontact surface scatter, and a deeply buried Archaic component here, but the main occupation discovered in the excavations was a relatively early Woodland period occupation. The artifact collection was modest consisting of about 200 items total. The pottery, being plain surfaced and decorated with

bosses was identified as Laurel. It was found mostly between about 40-50 cm. below the surface. There was a small cluster of obsidian, or volcanic glass, associated with the Laurel materials. Obsidian would be from the Rocky Mountains. Most of the bone belongs to bison, although canids, probably dogs, and a small number of fish bones were recovered from the Laurel levels. Bones from all portions of the bison skeleton were found, suggesting that bison were both killed and processed at or near this site. Two radiocarbon dates for this component provide a calibrated probable age range from AD 370-560, which are considered good dates for a Laurel component.

Heartsville Coulee: 21PL72 and 21PL74

These two sites are on the Red Lake River, a major tributary of the Red, on either side of Heartsville Coulee that enters the Red Lake River from the south (Harvey et.al. 2005). The Red River is about one mile to the west. The sites are situated in loamy and clayey deposits re-worked by the Red Lake River. Cultural materials are scattered through over a meter of the profile at both sites, although there were certainly layers at both where the artifacts were more concentrated. The sites are regarded as Middle Woodland in the original report. They were excavated prior to construction related to flood protection for the City of East Grand Forks, Minnesota.

21PL72 is a single component site defined by the excavators as a bison kill and processing site. A single radiocarbon date provides an age of around AD 770-990. Most of what was found were bison bone and a limited collection of artifacts. Only a very small number of ceramic sherds are present in the assemblage. A single corner notched point assigned to the Pelican Lake type was also found. The presence of this last artifact is somewhat unusual since Pelican Lake points are normally associated with the Late Archaic on the Plains; however, it is not entirely surprising to find them in later deposits.

The cultural material consists almost entirely of animal bone. There were only two potsherds and eight lithic items in the excavation deposits. The two sherds are identified as Laurel. Over 10,000 bone fragments were found. Most of these were bison representing at least three young animals. Ribs, lower jaws, vertebrae, sacral bones and lower limbs from calves were found, often with cut marks from butchery. Examination of the teeth suggest that the animals died in November or December. Since

the bones of different parts of the body were present, including the skull and spine, there is a possibility that the animals were killed and butchered either at this site or very nearby.

There were a fair number of catfish bones in the deposit, along with walleye and beaver. The presence of these fish remains might be taken as evidence that the site was used more than once, and that the fish were caught in a warm season. It is also possible that the river was not frozen when the site was used and that the people who lived here, for however short a period, were able to supplement their diet with these aquatic foods.

21PL74 is on the opposite side of Heartville Coulee from PL72. This site is somewhat richer in cultural indicators than its companion site. There are two components, one found between about 30-90 cm. deep, and a second at 130-165 cm. The dates are both regarded as Plains Woodland. Radiocarbon determination for the earlier of the components is AD 340-650, and the later one AD 860-1030.

The artifacts are more revealing of cultural affiliation than PL72. Hundreds of ceramic and lithic items, and over 24,000 animal bone fragments were found. The projectile points associated with the upper component include types such as Pelican Lake and Besant. These are good indicators for a Plains Woodland use of the site. Just over 30% of the stone flaking debris consisted of Knife River flint, while the rest of the lithic collection was local raw material. There was also a good deal more pottery at PL74 than at PL72. The potsherds include several rim and decorated fragments that feature narrow exterior punctations and bosses. The rims are straight and fit comfortably within the Laurel pottery ware identified for wooded country in the Rainy River region. Even though Laurel pottery is normally earlier than this late date range, in the Canadian prairie provinces it does tend to date to later portions of the Woodland period.

Like its sister site on the opposite side of the Heartville coulee, 21PL74 appears to be a bison kill and processing location. There are mostly adult animals with large portions of the skeleton, including spinal column sections, skulls and other body parts. Some of the long bones have been broken open, presumably in order to remove the marrow from the bone. Butchery marks from dismemberment and de-fleshing are common. As with PL72, the presence of the skull and axial skeleton from bison suggest a place where a kill was made or very near such a place. There were a number of unidentified bone elements and fragments found at the site, but only bison are confidently identified by the archaeologists. Unlike 21PL72, there are no other identifiable animal remains at the site, and no fish bones. The differences between the two sites are interesting, both

in the lack of fish at PL74 and in the fact that adult bison rather than calves were found. Although bison use seems to be the dominant activity at both sites, the importance of fish and other foods is suggested by the materials at PL72. Whether these differences reflect different seasons of use or different groups of people, different dates of occupation, or the varying availability of resources is not something that the evidence allows us to conclude at the present time. Another interesting feature of this pair of sites is that radiocarbon assays at both sites provide Plains Woodland dates, but at both, Late Archaic Pelican Lake points are present.

Lake Bronson

The Lake Bronson site was identified by A.E. Jenks who visited the site in 1936 and recognized at once that the nine mounds there fit within the set of other Red River burial mounds that would come to be identified as Arvilla. At the time, some of the mounds were in pasture, but others had been plowed over. Two Arvilla mounds at Lake Bronson were excavated and it is one of the few Arvilla sites that contained any diagnostic pottery; in this case a small mortuary vessel previously identified as an aberrant form of Blackduck. Today, the same vessel would be included in the category of Rainy River composite. In 1976 excavations were necessary because of planned road construction. Digging was at an occupation area near where the Arvilla mounds were located. The mounds are difficult to detect today, although at the time of the excavations a few of them could still be recognized, albeit much reduced from their original size. Highway construction eventually demolished much of the occupation, and today, the precontact occupation site has more or less disappeared under the impacts of development.

The site is located on the McCauleyville beach of Lake Agassiz in a loamy-sand soil with lenses of gravel and coarse sand (Anfinson et al. 1978). The Two Rivers is north of the site, where it has been dammed to create Lake Bronson, part of a Minnesota State Park. The site is just outside the park boundaries. Preliminary work performed by a University of Minnesota crew suggested that perhaps there was a deeply buried occupation at the site dating to the Paleoindian period, and deposited on the McCauleyville beach at a time soon after it formed along the shore of Lake Agassiz. The 1976 excavations were designed, in part, to discover whether or not this early occupation was actually present.

A single intact feature was found at the site, as luck would have it, during the last two days of excavation. This was a fire hearth consisting of a circular pad of fire-stained cobbles with bone fragments and charcoal.

Figure 7.12. Lake Bronson hearth feature dated to about AD 300.

The feature was found at a depth of about 30 cm. below the surface. The hearth was not accompanied by any major concentration of cultural material. There was another fire hearth found at the site, but it had been burrowed through by a large animal, perhaps a badger. A few charcoal flecks and a meaningless clutter of cobbles were left behind. Both features were at about the same level suggesting that the living floor at the site was at about 30cm below the surface (Figure 7.12).

A radiocarbon date on charcoal from the intact feature provided a calibrated age of about AD 300. A second date from a small test dug later was also on charcoal, but taken from a different portion of the site. This assay provided a calibrated age of about AD 600–700. This gives a likely date range for the occupation as AD 300–700, and this is a range that fits comfortably with the mixed ceramic assemblage that includes a variety of Woodland wares. The earlier date associated with a fire hearth and bison bone do offer insight on the activities of the people who lived here during a Laurel occupation.

The scatter of artifacts and animal bone spread over the several hundred lineal feet covered by the excavations was very light. Most of the cultural material was found between 30–40 cm below the surface of the ground. The soils had been disturbed by rodent burrowing, and the dark subsoil traces of their tunnels and dens were obvious during the excavations. Because of these disturbances, artifacts were found extending from

near the surface of the field to far below the layer where most of the artifacts were deposited. In other words, rodents had moved artifacts up and down in the profile, but the farther down the profile below the feature layer that the excavators dug, the fewer artifacts they found. By around 80 cm or so, almost no cultural material was present. The supposed early occupation on the Lake Agassiz beach was never found, and its presence was most likely hypothesized on the basis of artifacts that drifted down through the soil profile under the impact of pedoturbation. It serves as another reminder that no matter how intense our efforts are at preserving archaeological sites from human disturbance, the forces of nature are inexorable and will inevitably reduce preserved patterns of human activity and occupation to largely meaningless messes of artifacts and ecofacts scattered through the profile of the soil.

The ecofact collection consisted only of animal remains, the vast majority being bison elements. There were very few body parts from the heavier portions of the bison—horn, skull, vertebrae—suggesting initial butchery some distance from this settlement. A few beaver bones were also found. The most unexpected faunal elements were 15 bones from black(?) bear, although 14 of these were from a single paw. These bear remains may have been left from some non-subsistence practice, for instance, the use of bear paws in a ceremony, or perhaps as part of someone's medicine bundle. Ceremonial treatment of bear and bear remains is widespread among Native Americans in the northern part of the continent, including Minnesota (Mather 2019). Unfortunately, the context of the find does not permit any definitive statement about the use of the bear paw at this site. In any case, the clear message from the animal bones is that the primary food source was bison.

The stone material, amounting to a few thousand items, was mostly local chert, but about 20% was Knife River flint. However, Knife River flint accounted for over 50% of the actual tools found at the site. Obviously, if Knife River flint was available it was the preferred material used to make tools, a pattern found at most Red River Valley sites of any age. There were several projectile points that helped situate the site within the Woodland period. Eighteen points and fragments of points, many of which could not be assigned to any identifiable type, were recovered. Several were usable for typological purposes, including Prairie Side-Notched, two Besant points, and one broken point that has similarities to a Middle Archaic Hanna point. The Besant points are consistent with some of the pottery found.

Perhaps the most revealing artifacts from the Lake Bronson excavations were ceramics. The ceramic collection consisted of only a couple hundred sherds, but about 20 of these could be used for purposes of classifying the ceramics into types. One Blackduck rim sherd was found, which might be associated with a use of the site that also produced one small triangular point and the later radiocarbon date. Both of these artifacts are typical of the later part of the Woodland time period. Five other sherds, probably from the same vessel, are believed to belong to a type known as St. Croix pottery. This ceramic style is classified as belonging to the later portion of the Woodland, although in truth it is not very well documented or understood in the western portion of Minnesota. Most of the diagnostic pottery belongs to the Laurel category. At Lake Bronson it was clear that Laurel people were using the prairie perimeter for hunting bison, perhaps on a seasonal basis to supplement their more typical lake-forest adaptation.

Bjorklund

Bjorklund is a stratified, multicomponent site with Archaic, and Woodland occupations (Buchner 1976). The site is situated on the Whitemouth River near its confluence with the Winnipeg River in eastern Manitoba. This is to the southeast of Lake Winnipeg. The site was excavated in the mid-1970s. Here, I focus on only the Woodland materials. The dates for Laurel materials at the site are around AD 700, although Steinbring (1980: 81) feels that the Laurel presence at Bjorklund is possibly much earlier. This is reinforced by the fact that there are stratified Blackduck materials overlying the Laurel layer. Blackduck at Bjorklund is dated to between about AD 1000–1300. Earlier Blackduck at the site seems to show more similarity to Laurel materials, perhaps suggesting that the two ceramic traditions represent a developmental sequence. (Steinbring 1980: 101–107). The site is within the northeastern portion of the Lake Agassiz plain on the Winnipeg River and in the boreal woodlands of Manitoba. As it is on the northeastern borderlands of the Red River Valley, Bjorklund is unlike the sites considered so far in this discussion of the Woodland. The environment is decidedly not a prairie, but rather a lake and forest setting.

The artifacts from the site include a standard panoply of items expected from a Woodland occupation. The ceramics are grit tempered sherds deriving from conoidal Laurel vessels. Decorations include dentate stamping, cross-hatching, pseudo-scallop shell patterning, incised lines, bosses, and punctates. One of the interesting features of the Bjorklund ceramic assemblage is the presence of vessels that appear transitional between

Laurel and later Blackduck pottery, although the excavator is cautious regarding this matter, and wonders whether the transitional-looking vessels are simple aberrant Laurel (Buchner 1976: 167; Steinbring 1980: 81). The Blackduck materials are standard forms for Blackduck as generally understood, with cordwrapped stick decorated vessels.

There are notched and triangular projectile points. Associated with the Laurel levels at the site are larger triangular points and notched points, while the Blackduck component features Prairie and Plains Side-Notched and small, unnotched triangular points. Scrapers, bifaces, and worked and utilized flakes were also recovered. Several pipe fragments were found in the Woodland deposits, although unlike many pipes from Northeastern Plains sites, these were not made from pipestone, but were ceramic, with a fine paste composition. Two carved steatite pipe fragments were found in mixed Laurel/Blackduck levels as well. One interesting feature of the artifactual collection is the presence of small flakes of obsidian from a likely source in the Rocky Mountains (Steinbring 1980: 88). The Woodland levels at the site also include pestles, hammerstones, awls, barbed harpoons, columella beads, and ornamental copper (Buchner 1976: 244-245). This site on the edge of the boreal forest had far-flung connections.

The ecofactual remains clearly reflect the environment in which the site is located. The faunal elements associated with the Laurel component include little that would be familiar to an archaeologist working on the prairie portion of the Red River region. Here there are moose, bison, black bear, beaver, muskrat, marten, otter, turtle, hare, wolf, woodchuck, lynx, sturgeon and pike. Moose, bison, beaver, and fish were the most common remains. The site may have been used from the spring through the fall; a winter use was not considered likely (Buchner 1976: 167-168, 1982: 115). Bjorklund illustrates in a small measure the elasticity of the hunter-gatherer adaptation. Considering the artifact content of this site, it was clearly produced by the same general population who left Laurel materials at Lake Bronson and 21PL72 and PL74. The differences in the food remains left at prairie and forested sites illustrates the dramatic differences in daily activities that must have characterized the life-style of these peoples when they were in the forest-riverine-lake country during some parts of the year, as contrasted with their life as bison hunters on the prairie in other seasons.

Figure 7.13. Blackduck and Rainy River rimsherds from the Lockport site (photo courtesy of Jackson Carr).

Lockport

Lockport is a major archaeological site and one of the sites that helped establish the sequence of precontact cultures for the Red River Valley. The site is about ten miles north of Winnipeg on the banks of the Red River near a set of rapids. The Woodland is represented by several foci (I use the term phase) that MacNeish identified. The earlier of these he called Anderson and Nutimik, Anderson being the more deeply buried of the two. MacNeish described the pottery from the Anderson focus as being smooth-surfaced with some dentate stamping, in both of these traits the ceramics are very similar to Laurel pottery, which archaeologists in Minnesota had by that time recognized as a common precontact ceramic ware of the Rainy River and northern Minnesota region.

There was also some net impressed pottery similar to Brainerd ware which MacNeish called Rock Lake. It is contemporaneous with Anderson and Nutimik and is found above the Late Archaic Pelican Lake materials at the site. It is an interesting fact that there are no Avonlea points associated with this net impressed ware at Lockport, since such an association is found farther to the west (Stewart 2007: 24, 51). Hohman-Caine and Goltz (1995) have defined Elk Lake as the larger unit to which the pottery ware belongs.

Stemmed and notched projectile points were common and found with animal remains that included deer, hare, elk, and bison. In the succeeding focus, Nutimik, there is pottery that MacNeish felt to be similar to Malmo ceramics from central Minnesota, but newer wares are present as well. A few sherds are even painted red, something more common in the Plains Village period. One of the other differences between the two foci is the heavier representation of forest and riverine resources in Nutimik. Fish, deer, elk and beaver are more common, and bison occasional (MacNeish 1958: 21-23).

MacNeish (1958: 23) found materials he referred to as the Manitoba focus above the Laurel and Malmo materials. This focus featured pottery the same as Blackduck pottery in Minnesota. Knife River flint was common in the deposit and some obsidian was found, undoubtedly from the Rocky Mountains. Projectile points were small triangular and Prairie Side-Notched arrow points, similar to those found in Blackduck levels at Bjorklund. Various large and small mammal and plenty of fish remains were found in the deposit with the Blackduck ceramics (Figure 7.13). Here is yet another site with evidence of the variability in the Blackduck adaptation.

The Blackduck layers at the Lockport site provided several radiocarbon dates, although the range of these dates may be somewhat misleading. Of five reported dates, three have error factors of 250, 270, and 280. When taken together, the five dates offered for Lockport in Hamilton et.al. (2007) range from AD 429-1950 (!) when calibrated. The obviously erroneous early and late outliers in this set of dates still allow for the Woodland placement of Blackduck in the Red River Valley.

Mammalian and bird bone represent bison, moose, elk, beaver, hare, muskrat, dog, coyote, wolf, fox, otter, and raccoon, along with duck and some pigeon bones. Bison were fairly abundant and the bones suggest heavy butchery of mostly high-meat content upper limb bones. There is good evidence beaver were being eaten, and the common presence of beaver skulls in the deposit may be because their incisor teeth were useful as engraving tools.

Flynn (2002) has suggested some revisions of the Lockport Woodland sequence based on work done in the 1980s, but I feel that the more significant changes in our understanding of the Lockport site, and its major contribution to Red River archaeology, are matters concerning the Late Precontact/Plains Village period. I will deal with these issues in the next chapter.

21CY39

Site 21CY39, known only by its Smithsonian Institution trinomen, is situated on an upland above the Buffalo River, a tributary of the Red, where it cuts through beach deposits of Lake Agassiz (Michlovic 2005) (Figure 7.14). This is about 15 miles east of Moorhead Minnesota. CY39 is a Woodland site with a discrete cultural horizon 20-25 cm. below the uncultivated surface. Blackduck ceramics were recovered associated with a faunal assemblage consisting mainly of bison. Few finished lithic tools were recovered, but flaking debris was common and included a variety of raw materials, both local and exotic. The site is important as one of only a few single component Blackduck sites, and as a representative example of Woodland use of the Northeastern Plains environment. This site was excavated intermittently between 1985 and 2002.

A single radiocarbon assay provides a date for the site. The material used for dating were bison bones from a refuse deposit (Feature 2). This consisted of a small pit filled with bone and some other cultural debris, including Blackduck pottery. An approximate calibrated date for the deposit is AD 1100, or around the end of the Woodland.

Figure 7.14. 21CY39 view across the site. Trees are on the edge of the valley rim above the Buffalo River. Rodent disturbances visible in foreground.

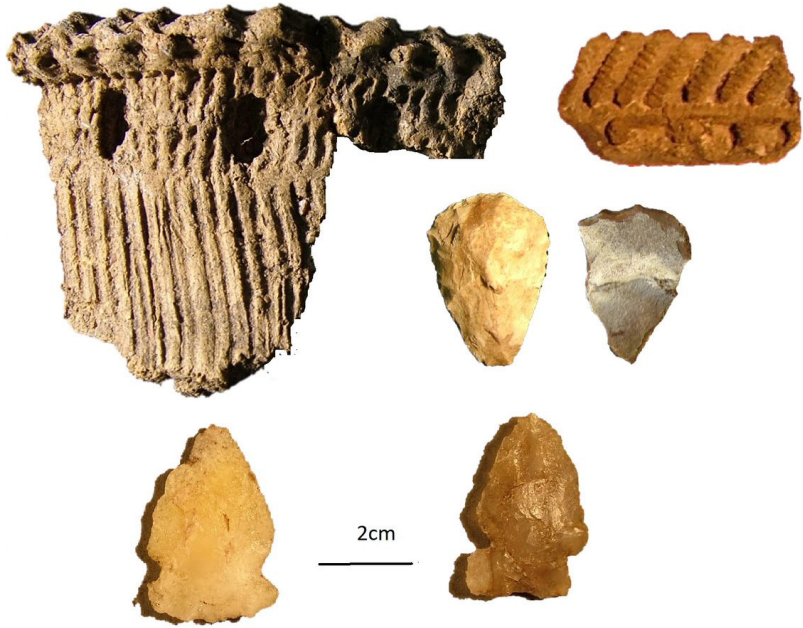

Figure 7.15. Artifacts from 21CY39. Above, Blackduck ceramic rimsherds. Middle, two end scrapers, below, Prairie Side-Notched projectile point on left, Plains Side-Notched on right.

21CY39 is located in an ecotone which lies between the woodlands of eastern Minnesota and the true prairies of the Red River Valley. The terrain of the region consists of three features: 1) the lacustrine plain of ancient Lake Agassiz west of the site, 2) the beach ridges which bound this plain and 3) alluvial features created by the Buffalo River.

The bison bone indicates at least four animals were partially butchered here, and the presence of fetal bone suggests at least one late winter/early spring use. Turtle and clamshell indicate some camps were probably used in the warm season, perhaps summer. The site may not have been used in the same season every year. Except for feature 2, there are no concentrations of bison bone debris. This site is decidedly unlike the Stott site in Manitoba, where large deposits of bison bone are found in several cultural layers (Hamilton et al 1981). 21CY39 must have been visited on several occasions by relatively small groups, perhaps several families, who made use of a few bison prior to moving on. The relatively small ceramic vessels (15-20 cm diameter) would indicate small task groups. There is nothing at this site to indicate a massive communal drive and kill. This finding is, at least in part, contrary to the views of some archaeologists (e.g. Walde et al 1995:56), that Blackduck people moved onto the Plains for the purpose of communal bison hunts. At least in some cases these hunts were not communal, large-scale kills.

Plant remains were not found at the site, except for phytoliths taken from the burnt residues on pottery sherds. The examination of phytoliths produced a surprising result; namely, that maize was prepared in the tested vessels. Blackduck groups are not known to have practiced farming or gardening, so the presence of maize phytoliths was unexpected. Since there is no evidence here or at other Blackduck sites of local horticulture it is most likely that these people had trade contacts with other groups who produced maize, and they may have obtained shelled corn through trade (Robert Thompson, pers. comm.).

The stone tools include items for piercing, cutting, scraping, boring, incising, and hammering. The tool sample from the site includes seven categories defined on the basis of artifact form. These are point, scraper, biface, graver, spokeshave, awl, and hammer. Projectile points and scrapers dominate the tool collection. Together these account for about 60% of the tools. They are almost certainly related to the procurement and processing of bison. Other activities probably undertaken at the site include woodworking (spokeshave, graver), lithic reduction (hammer stones, as well as cores), and hide finishing (awl). If we couple this with the range of debris types, the variety of lithic reduction activities, and the

relative abundance of ceramics, which are more common at the site than lithics, it seems that the occupation of this location involved a variety of procurement, processing, manufacturing, and domestic activities.

The ceramic collection represents as many as 13 vessels. The sample is not highly variable in terms of vessel form. Almost all vessels with measurable diameters provide values of about 20 cm. These would comprise modest sized cooking jars large enough to prepare a meal for a nuclear family sized group, but certainly not for a large social gathering. Many of the rimsherds are encrusted with burnt food residue showing the vessels were employed in food preparation. These were probably not for storage or other special uses. One of the surprising aspects of the CY39 collection is the slight predominance of ceramic over lithic material. One might expect that big game hunting camps would contain more butchery material than cooking vessels. This, along with the variety of lithic reduction phases and the variety of tools, is regarded as unusual in a specialized, hunting camp, so CY39 must be characterized as a more generalized activity location (Figure 7.15).

The 13 ceramic vessels identified in the site collection are quite variable in terms of their decorative treatments. Frances Densmore (1979: 162–163) mentions a Chippewa cemetery on Lake Winnepegoshish, Minnesota, which was exposed by erosion in 1918. The graves were only a few decades old. Over 200 pot fragments were found, decorated with twisted cord roulettes, stick and fingernail impressions. The pottery description she offers sounds like Blackduck, or perhaps Rainy River composite. Even though the pottery came from a single community cemetery and was about the same age, there was a lot of variety. Densmore says that hardly three or four duplicates could be found in the entire collection. Perhaps variability in Historic period pottery making among northern Minnesota Chippewa might have arisen from family decorative traditions rather than general ethnic affiliation. The same may be true for precontact times.

This site offers mixed messages. The ecofacts are mostly animal bone, and the vast majority of those are bison. It was probably not very near a kill, since there are few skull elements, vertebrae or pelvic bones. But the phytoliths recovered from ceramic vessels interiors tell us that people here were using maize. Was this a small amount of corn transported from elsewhere? Or were these Blackduck peoples involved in a kind of lifestyle here that does not fit our current notion of hunter-gatherer seasonal rounds? It is possible that the people at CY39 could have obtained maize from farmers or gardeners in the Missouri Valley (near the Knife River

quarries) or from southern Minnesota or northern Iowa. If nothing else is assumed, it is important to recognize that the evidence from this site raises the possibility that Blackduck groups not only utilized the large game resources of the grasslands, but that they had access to domesticated plant foods as well. The question of whether they themselves may have produced domestic plants is very important but unfortunately, cannot be answered with data from this site.

The site is significant since it offers several insights about Blackduck culture. Clearly, Blackduck extends farther west in Minnesota than previously believed (cf. Lugenbeal 1978: 49), and this supports Syms' (1977: 131) claim that Blackduck is evidence of the movement of peoples throughout the aspen-parkland and adjacent prairie of the Upper Midwest in the latter portion of the Woodland period. It also provides an opportunity to obtain a detailed description of Blackduck site content without the complication of other components. The stone tools in particular provide insights about Blackduck technology. For instance, both Prairie Side-Notched and Plains Side-Notched points are contemporary here. Finally, the faunal remains illuminate not only the subsistence activities of these people, but the nature of prairie environment use by this predominantly lake-forest culture.

Meyer and Hamilton (1994: 122) suggest that Blackduck groups penetrated more deeply onto the Plains than their Laurel predecessors. Reeves (1990: 173) argues that one of the important features of the successful use of the northern Plains was the communal hunt. If these two claims are correct, it may be that the social structure of Blackduck peoples allowed their success on the prairie, where they had the organizational skills to make full use of the bison herds. Furthermore, the enormous forage production of the Northeastern Plains would have encouraged larger, more stable bison herds (Bamforth 1988: 185; Gordon 1979: 43). This dependable resource would have been a major attraction for properly equipped and organized hunters able to take advantage of a highly desirable resource such as bison. However, it is not necessary to assume bison use was everywhere the same. Communal hunts were clearly used in some areas (cf. Hamilton et al. 2007). In others, perhaps smaller groups may have culled herds for a few animals at a time. 21CY39 may be one of those locations. The behavioral variability reflected in the lithic and ceramic collection, the maize phytoliths, and even the presence of a small storage facility (feature 2) indicates that there was more to the activity of Blackduck peoples at these camps than bison processing.

The Forks

Several archaeological projects have been completed at the juncture, or forks of the Red River and the Assiniboine at modern-day Winnipeg. Peach (1999) studied the faunal remains from Blackduck levels at this location. Her conclusion about the Blackduck materials is that they most likely belong in a temporal span from after AD 500 until about 1000.

Peach's work was with animal remains. Her analysis of the bones from the Woodland at this site focused on over 8,000 elements. The faunal sample at the Forks is quite diverse and indicate that people were using the site in the spring, summer, and fall. Fish remains were abundant and included catfish, sturgeon, pike, walleye, perch, burbot, sucker, and a few other species. Most of the identifiable elements were fish, and many of these were heads, while the trunk body parts were absent. This suggests that primary processing was at this location, but final use occurred elsewhere. Mammals consisted of bison, elk, moose, beaver, rabbit, raccoon, dog, fox, otter, and wolf. The Blackduck use of the site probably consisted of repeated, but short-term visits.

Peach (1999: 331) suggests that the Forks location Blackduck assemblage shows a subsistence system in a transition from an adaptation based on forest resources to one focused more on the grassland environment. This would fit with the hypothesis that over time Blackduck peoples moved from the forests to the prairies across southern Manitoba. The lower Red River would have been something of an intermediate point in this movement or re-adaptation.

Mounds and Mound Building

In other parts of North America, especially the Southeast, mound building began during the Archaic period. Earthen mounds in Louisiana are about 5,400 years old, perhaps the oldest earthworks in all of North America. In the Northern Midwest and Northeastern Plains mounds are normally assigned to the Plains Woodland or later.

Mounds are present on the Northeastern Plains in various sizes and shapes. Most mounds today, certainly in the Red River Valley, are not imposing. It is not uncommon to find mounds reported over a century ago to be barely visible today, and many in farm fields have been plowed away. Rarely is a burial mound more than five or six feet in height. Mounds are often circular in outline, and more or less low, flattened, and conical in shape. There are also linear mounds that may be a few dozen to hundreds of feet in length. Many locations feature mound groups consisting of two

or more mounds. Occasionally, both conical and linear mounds are found together at a site, sometimes with two or more conical mounds linked by linear embankments. Linear mounds in the Northeastern Plains and the Red River Valley particularly, date from the Woodland into Plains Village times. They were sometimes not used for burials; at least as far as limited excavations have shown (Chomko and Wood 1973).

The excavations into burial mounds were done largely up to the 1960s, and many were dug into by "pothunters." After about 1970 mound excavation by archaeologists throughout the region ended due to protests from Native American groups who were opposed to opening these burials. Since that time regional burial mounds were occasionally opened by archaeologists at the request of native authorities when a mound was accidentally disturbed by construction work, or if some other factor was involved in its disturbance. In these cases, archaeologists usually work as instructed by some supervisory authority, and after physical anthropologists identify and characterize the skeletons, and archaeologists document the funerary accoutrements, everything is returned to one of the tribal groups for reburial.

Snortland (1994: 52-53) reviews mortuary practices among Northern Plains people in the Historic period and describes burial customs ranging from scaffold burial, interment in the ground, and occasional cremation. These practices varied from one group to another, and even from one season to another. Burial in the ground, for example, would not be practical during a Northern Plains winter. For the precontact period, Snortland identifies three major complexes or traditions of mound building. They are Sonota, Arvilla, and Devils Lake-Sourisford, arranged from earliest to latest. The traditional chronology is AD 1-600 for Sonota, 500-900 for Arvilla and 900-1400 for Devils Lake-Sourisford, this last date straddles the Woodland and Late Precontact/Plains Village periods. However, none of these burial complexes are securely dated. Some sites have contradictory dates, and, in general, there are not a great many dates available for the sites that make up each of these burial complexes. It is worth remarking here that some archaeologists today are skeptical of "mound-building cultures." Mound burial was widespread in the Plains Woodland and Village periods, and the content of the burials often reflect a range of cultural materials, suggesting that they were not part of a single cultural expression, or if they were, the mounds should be affiliated with that defined culture, rather than having the culture defined for the mounds.

One of the important conclusions of Snortland's study, and a conclusion arrived at in part from her own work on the mound complex at Jamestown, North Dakota, is that mounds were used as cemeteries for centuries-long periods. Some for over a millennium. One of the mounds studied had interments extending over a period of 1,300 years! Also, features regarded as characteristic of a burial complex often occur irregularly, and sometimes are not even present in half the sites of the complex (Syms 1982). This is strong evidence against the definition of "mound cultures," and suggests that their construction might instead be a trans-cultural ceremonial practice that persisted for many centuries among peoples in the Northeastern Plains.

One of the earliest descriptions of mounds in the Red River Valley proper was presented by Winchell (1911). He felt that the headwaters of the Red (that is, the Bois de Sioux) at Lake Traverse was a distinctive locale and demarcated from the rest of the Red River Valley by the presence of many mound sites and earthworks. He believed, appropriately so, that the combination of lakes, rivers, woodlands, and prairie in the Lake Traverse area would have been especially inviting to ancient people. Early maps and written accounts tell us that the area was used by the Teton, and later by the Sisseton-Wahpeton. Winchell also recognized the relationship of mounds and earthworks to elevated locations, like the Lake Agassiz beaches.

Using notes from T.H. Lewis, Winchell (1911: 305) described mounds near the bluff edges above Lake Traverse consisting of both conical and flat-topped mounds. One flat top mound was connected to a conical mound by an earthen embankment hundreds of feet in length. Overall, Winchell notes about two dozen conical and flat top mounds above Lake Traverse. He also mentions mounds near the Red River at Breckenridge where the Otter Tail River joins the Bois de Sioux to form the Red. Other mounds were noted in Clay County, to the north in Polk County on the Red Lake River, on the Lake Agassiz beaches near the Sand Hill River and some farther to the north in Marshall and Kittson counties (Winchell 1911: 361-363).

An unusual cluster of mounds is located along the Otter Tail River where it enters the Lake Agassiz plain. Clearly positioned to overlook the Lake Agassiz lowland, the mounds and an associated enclosure at the Orwell site have been dated to the earlier part of the Woodland (Gibbon 2008) even though some of the ceramics are clearly Plains Village materials from post-Woodland times. One of the interesting features of the site is that a number of bison were found buried in one of the mounds.

This is one of two significant mound sites in the Upper Red River region featuring bison burials in mounds along with humans. The complex of multiple mounds within a shallow enclosure, and possibly spanning a period of hundreds of years, has not yet been satisfactorily interpreted (Holley and Michlovic 2013). It does not seem likely that the shallow ditch surrounding the site was meant for defense, but it must have been meant for some other purpose. For now, it is not possible to assign this site to any particular period or cultural entity, nor to assign to the site any function other than a mortuary and ceremonial one.

Arvilla

Jenks and Wilford called the mounds of the Red River region Arvilla, named after the burial discoveries west of Grand Forks that were described by Jenks (1932). Many of these are found on the Lake Agassiz beaches in Minnesota, and in the far south of the valley, near Lake Traverse (Johnson 1973: 5). There are some mounds near the Red itself that are not included in Arvilla. The Arvilla mounds on the beach ridges seem to be the earliest mounds, while those near the river may be later, this conclusion being based on the pottery found in the mounds.

There are descriptions of the Arvilla burial sites and of some of the other mound excavations in the Red River region (Johnson 1973). Out of consideration for the sensitivities of descendent communities, I will not describe or illustrate mound architecture and content in detail, but only summarize some of the cultural and demographic features of the mounds.

Johnson referred to Arvilla as a complex and used Wilford's fieldnotes to characterize it as a precontact burial system that mostly extended along the Lake Agassiz beaches in Minnesota south to the Lake Traverse area and northward into Manitoba. Arvilla is defined by Johnson as a burial tradition involving primary and secondary burials in sub-soil pits beneath low linear and circular mounds. The burials include various utilitarian and ornamental accoutrements, including elbow pipes, clam shell gorgets, bone and stone artifacts, occasional copper items, and in a few sites, pottery vessels belonging to St. Croix, Blackduck, or Rainy River ceramic wares. These pottery types span much of the Woodland period.

In his list of Arvilla sites in the Red River Valley Johnson counts eleven sites with a total of 35 mounds, ranging from one to nine mounds at any given site. Of the eleven sites in his list, 15 are linear mounds, and 20 are circular. Seven of these sites are on Lake Agassiz beaches, two are on delta deposits and two others are at the southern terminus of Lake Agassiz

near Lake Traverse (Johnson 1973: 58). Arvilla is best known from the Red River Valley in the US, but there are similarities to burial structures extending across central Minnesota toward the Wisconsin border, northward along the Red River floodplain north of Winnipeg, and to a few mound sites on the Missouri River near the North and South Dakota border (Johnson 1973: 2, 65). This reinforces the notion that mound building was not the practice of any single cultural group, but a burial practice widespread in the Upper Midwest and Northeastern Plains.

The dating for Arvilla is not very solid. Four dates are reported, two from the De Spiegler site in northeastern South Dakota near Lake Traverse, and two from the Haarstad site in the central Red River Valley. Raw radiocarbon dates with error factors were not reported, so these are simply the reported conventional dates without calibration. One date from each site is on bone, and those are AD 600 for De Spiegler and AD 785 for Haarstad. However, each of these sites also provides discordant dates; on tree bark from De Spiegler is a date of AD 1280, and for Haarstad clam shell provides a date of 1250 BC. Johnson accepts the bone dates and records Arvilla as dating to between AD 500/600-900 (Johnson 1973: 65-66).

Williams (1997) examined 158 individuals from various Arvilla sites prior to their reburial. There were 62 children between 1-10 years old at death. Another 18 were juveniles under the age of 20, while the remaining 78 were adults. None of these were over 60 years old at death. Study of the bones showed the people suffered from a variety of diseases, including osteoarthritis, osteophytosis (bone spurs), periostitis (inflammation of the connective tissue around bone), porotic hyperostosis (spongy condition of cranial bones, possibly caused by certain types of anemia or iron deficiencies), scurvy (vitamin C deficiency), dental caries, enamel hypoplasia (defects in tooth enamel) and Potts disease (tuberculosis that affects the spine). The incidence of dental caries was relatively low, but periostitis was more common than expected (Williams 1997: 76ff).

Ossenberg (1974) completed a study of the Arvilla skeletal remains using an unorthodox method involving the identification of over two dozen discrete anatomical features in the skull. Her conclusions indicate that the Arvilla population was heterogeneous. She distinguished between a northern Arvilla group that she argued is ancestral to the historic Cheyenne, and a southern Arvilla population that shows affinities to Blackfoot (Ossenberg 1974: 29, 33). The result of her study is that Arvilla was not created by a single cultural entity, but that the burial complex represents more than one ethnic group.

Many of the Arvilla burial mounds are adjacent to archaeological remains representing ordinary settlements, with a normal range of Woodland artifacts; pottery, lithic tools and debris, kitchen refuse and the like. Reporting on fields near several Arvilla sites in the central Red River Valley of Minnesota, Thompson (1985) describes debris scatters near the Natwick, Slininger, and Warner mounds. Natwick, which overlooks the Wild Rice River has a single mound. It is still visible today but was once reportedly ten feet high. Thompson dug several test units in a nearby field and recovered an Avonlea point, a single triangular point, about 500 miscellaneous lithic items and nearly 100 potsherds, including a distinctive Blackduck vessel rim. At the Warner site, to the north in Polk County, mounds that were present in an earlier day are no longer visible. Surface finds in a field near where the mounds were reported also contained ordinary occupation debris, including a triangular point and a Blackduck rimsherd.

At the Slininger site five mounds were reported by Wilford. Thompson searched for cultural remains in a nearby field and found 300 artifacts, including potsherds and lithic items. The projectile points consisted again of an Avonlea point and one Prairie Side-Notched point. The lithics, excepting for Knife River flint were all local materials. A more recent study of the collections from Slininger was completed by Holley (2023). He examined over 160 sherds from various projects at the site and noted very early Woodland period materials belonging to the Dahnke phase, along with Late Precontact Sandy Lake and Northeastern Plains Village sherds with trailed line decoration and shallow punctates. The accidental disturbance of a part of the site led to mitigation work around 2010. This involved the re-examination of the faunal materials found by Wilford during his mound excavation, and the description of animal remains from the recent mitigation. An impressive collection of fauna from the site included identified elements from bison, elk, moose, possibly caribou, black bear, beaver, raccoon, badger, otter, fisher, skunk, grouse, duck, turtle, fish, and river mussel. One of the turtles identified was a Red-eared slider, native to the Illinois region (Mather 2019: 279-283).

Thompson (1985:25) feels that what is important about these finds is not the similarities or differences in the burial practices described by earlier excavators, but that at all of these sites there is good evidence from ceramics that people from the lake-forest country to the east extended their adaptation onto the prairies. It also seems safe to infer that the mounds are situated nearby to settlements, and that based on the types of artifacts found at the settlements that both the burials and the settlements span

much of the entire Woodland period and continue into the Late Precontact/Plains Village. There is one other important point to make based on the Slininger finds. It is clear that a wide range of animal resources was being used at this site, and being on the eastern border of the Valley on the edge of the forest-prairie ecotone, the variety of faunal remains represents a use of the multi-faceted local environment not evident in some other portions of the Valley. We might assume that if plant remains were preserved at the site, they would show the same range of species.

The Arvilla burial complex, as defined by Johnson and Wilford, has received some serious criticism from archaeologists. Syms (1982) reviewed the evidence and assembled an extended critique of the Arvilla concept. For one, some archaeologists, such as Waldo Wedel, one of the pioneers of Plains archaeology, saw little reason to distinguish Arvilla from the Late Woodland Blackduck culture. Physical anthropologists who studied the human remains prior to their reburial indicate that the people interred in the Arvilla mounds were actually a heterogeneous group. Ossenberg, as mentioned above, regarded north and south Arvilla as two different ethnic groups, one ancestral to Cheyenne and the other to Blackfoot. Even more damaging to the Arvilla concept is that the traits used to define the complex—artifacts, burial placement, skeletal condition—appear irregularly at any single site. For instance, 54% of the defining traits are found at only a single site. On the other hand, the most common defining items of the complex are present at fewer than half the sites. The most distinctive traits, clam shell gorgets and elbow pipes, are actually present at only a few Arvilla stations. Finally, some of the traits used in the definition of Arvilla are so common they are found at practically all Woodland archaeological sites in the Midwest and Plains.

Other Mounds of the Red River

Between the middle 1930s and 1950s Wilford worked at several mounds in the Red River region that are not part of the Arvilla complex (Wilford 1970). These include the Lindholm mound at Lake Traverse, and Femco and McCauleyville mounds on the Red River north of Breckenridge, Minnesota, near the juncture of the Bois de Sioux and Otter Tail rivers. All of these mounds contained pottery that was smooth surfaced and globular in shape. The ceramic vessels at Femco and McCauleyville were tempered with shell. The vessel surface condition, shape and temper all suggests a date after about AD 1100 or so. I forego a detailed description of the

burials, which in any case are not unlike those of the Arvilla mounds, but do note that burials were common in the mound itself rather than only in pits below the original surface.

One unusual mound was found on high ground east of Lake Traverse. It is known simply as Round Mound. There were many burials in pits below the mound, on the ground surface under the mound as well as in the mound fill itself. A rock cairn was discovered near the center of the mound near a hearth. Some of the burials were treated with red ochre, an iron oxide pigment. On the northern perimeter of the mound were nine bison burials consisting mostly of complete bison skeletons, similar to the bison burials at the Orwell mounds. A single radiocarbon date was AD 930 (Arzigian and Stevenson 2003: 506–508). The presence of a rock cairn, the bison skeletons and the burials found throughout the mound comprise a fascinating look into ancient mortuary rites. Obviously, this mound was used over some considerable period of time since there were burials under and within the mound. The rock cairn and bison indicate a complex web of rituals and beliefs that surrounded burial of the dead, and indicate that bison had a special ritual significance to the people who built the mounds.

The Fidler Mounds, on the lower Red River floodplain north of Winnipeg, are another set of mounds that deserve mention. The first intrusion into these two mounds was in the nineteenth century. In 1963, archaeological work was conducted prior to construction of a river diversion around the city of Winnipeg. The two mounds were between about 55 and 62 feet in diameter. Numerous burials were found in the mound fill itself. A single radiocarbon date from this 1960s work was 380 years before present; however, eight more recent AMS (accelerator mass spectrometry) carbon dates show the mound was probably used for over a millennium, from about AD 400–1600. The many burials are regarded as representing several different cultural groups over that long-time span, and this suggests some pan-ethnic significance for these special mounded cemeteries (Hewitt et al. 2008). An isotopic analysis of teeth from several of the individuals in the Fidler Mounds showed that over the course of their lives the individuals studied must have drunk water from different areas indicating long-distance mobility from the Woodland through Late Precontact/ Plains Village times (Bruggencate 2008: 131–132).

Meaning of the Mounds

It is entirely appropriate to think of mounds, at least most of them, as cemeteries and to treat them in the same way. But just as modern cemeteries

are only part of a larger system of mortuary rituals and beliefs, so too were the ancient burial mounds. Understanding the beliefs and behavioral practices behind the mounds has been an interest of archaeologists not only in North America, but everywhere that mound burials are found, for example in prehistoric Europe and Western Asia. Many archaeologists in North America are satisfied that mounds were in some manner markers on the landscape that had significance to their builders. For some archaeologists these marked territorial claims, that is, mounds were a physical symbol of territorial control and outsiders who saw them recognized that the region they were travelling in belonged to the group that built the mounds. They may also have served as markers for members of the group that built them, a reminder of those earlier members of the community from whom the present-day descendants received their claims to the land and its fruits. One archaeologist sums up this notion that mounds were a way to assert a claim to regional resources by placing a marker on the landscape, in this way establishing a "proto-territory." (Topping 2010: 246).

> "…mound building is a form of 'signing' the land, a means of establishing a presence and physically sedimenting cultural information into the landscape. This cultural information can then signpost and legitimize claims to land or resources through embedding the dead of the community at significant locations and demonstrating the longevity of the claim—in effect 'writing' the story of the land and its people with earthworks." (Topping 2010: 250).

In past decades many archaeologists assumed that the construction of mounds was coincident with the domestication of plants. This new life-way—farming—freed people from the drudgery of foraging constantly for food, providing the freedom to undertake other activities. One of the corollaries of a farming society is a larger population, which in turn, necessitates routines or activities to bring people together in cooperative efforts. Mound building was regarded as one of those cooperative activities. Calculations were made about the time mound building would require, and the conclusion was usually only groups with a significant amount of leisure time would be able to handle the construction of mounds. However, experiments showed that a modest mound could be built in about a day by a dozen or so workers (Odyssey 1981). Considering the fact that many mounds were used, and probably added to over

decades or even centuries of time, a five or ten-foot-high mound does not necessarily indicate heavy labor investments during any single episode of construction activity.

Whatever the leisure time needed, or the amount of labor required, mound building did come into vogue during Woodland times on the Northeastern Plains and in the Red River Valley. Most archaeologists assume that this practice diffused to the Plains region from the Eastern United States, where mounding began earlier and flourished in more dramatic fashion. And in the east mound building in a much-modified form has persisted. Miller (2015) reports that even today, small mounds are re-mantled in ceremonies in over a dozen places in Oklahoma. In recent decades small mounds have been built in North Carolina by Cherokee who add a turtle shell of soil from their yards to signify unity within the community.

In these contemporary ceremonies, mounds are considered safe spots on the volatile and dangerous earth, and they serve to keep it from spinning out of control. Mounds weigh on the earth, keeping it anchored. Dances on mounds were meant to tamp down the earth itself and keep it from creating chaos. Mounds with flattened tops were meant for dances. Mounds, therefore, may not only have been for burial purposes, but used as part of a larger system of beliefs. Conical mounds related to the sky, while linear mounds were associated with the underworld, and they served as physical stages for various rituals which sustained life and atoned for faults. They are related to notions of fertility, birth, death, emergence, and protection. Ongoing additions to mounds by the living assured the continued vitality of the community. In at least some belief systems the mounds were thought to be hollow and churned up earth that provided access to the underworld and thus were a conduit for power (Miller 2015: 20–21, 52, 57–58, 123, 129).

Miller's description of mound activity today reflects practices in the Southeastern US, and there is a natural tendency to ascribe these beliefs and ceremonial practices to that part of North America. But if mound building on the Northeastern Plains diffused from the east, we are probably safe in assuming that a substantial amount of the meaning mounds had in Eastern North America came west with the custom of mound construction itself. The mounds we find in the Red River Valley which we describe as burial grounds or cemeteries, and possible territorial markers for ethnic groups, may have been far more implicated in the ceremonial life of the people who built them. Under this view, they were the focus not only of mortuary ceremonies, but of dances, songs, and rituals

concerned to enhance the spiritual and secular safety of the community, bringing people together on a repetitive basis for the purpose of reinforcing social and ideological bonds. In this view, mounds were not only places for the burial of the dead, but may have been related to other social and religious activities.

Discussion

The Plains Woodland period witnessed several significant changes in the cultures of the Red River Valley. The introduction of pottery was a major technological addition to the tool-kit, useful for cooking plants that were otherwise difficult to prepare for easy consumption, and probably serving as vessels for the temporary storage of foodstuffs, keeping them from the depredations of the ubiquitous insect and rodent. Pottery, being readily decorated with impressions while the clay was soft, often encoded the decorative preferences of local populations. For this reason, pottery is usually used to identify social groups and connections between groups in the archaeological record. Also, being so malleable, pottery styles may change over relatively short periods of time and are commonly used to provide rough dates for archaeological assemblages, particularly when other dating methods, such as radiocarbon, cannot be used for lack of datable material.

Mound building, on the other hand, is a reflection of important ideological changes in regional societies. These were undoubtedly transferred from the Eastern US, where mound building had its beginnings millennia earlier. Many archaeologists traditionally interpreted mounds as territorial markers and as monuments to ancestors who provided title to a territory of use. Miller (2015: 15–21) has suggested that the mounds in the Eastern US often had much broader ceremonial and religious meaning. Whether all of Miller's notions about the meaning of mounds and their construction are appropriate to apply to the Northeastern Plains, he provides us with a much richer understanding of the sorts of complex beliefs that very well could have been involved in the building of these structures.

The mounds of the Red River region were sometimes, perhaps usually, used as long-term cemeteries. The Fidler Mounds in Manitoba were used for over 1000 years. At several of the Arvilla sites in Minnesota the occupation debris in the fields adjacent to the mounds contain pottery from throughout the Woodland time span, a possible indicator that the mounds were in use over long time periods. Besides this, the ceramics found in some of the Arvilla mounds are typical of both earlier and later portions of the Woodland period.

Although mounds are no longer excavated, studies of skeletons from mounds completed prior to their reburial have given us some information on the people who were buried in them. For the Arvilla population we know that there were no individuals studied who lived past the age of 60. These people suffered from a number of ailments that are visible in the bones. Arthritis, scurvy, periostitis, anemia, enamel hypoplasia, and Pott's Disease were diagnosed. Furthermore, we know that the physical traits noted in the skeletons indicate that more than a single group was involved in the Arvilla Complex, and that the northern and southern Arvilla mounds may have been ancestral to ethnically separate and distinct groups.

A very important cultural change that occurred during the North American Woodland period was the inclusion of domestic plants into the subsistence routine of people. It is known that native people of the Eastern US domesticated certain indigenous plants in the Woodland period—*Chenopodium, Iva, Polygonum, Helianthus, Curcurbita* (goosefoot, marshelder, knotweed, sunflower, squash)—which came to be known as the Eastern Agricultural Complex.

Evidence for farming of any sort is not common in the Red River region for the Woodland period, although in the subsequent Plains Village period it is certainly evident. Boyd and Surette (2010) describe microfossils, such as phytoliths and starch granules, that reflect the use of domestic plants in the regional Woodland. Phytoliths are microscopic silica bodies found in certain plants, mostly grasses (like maize), that are somewhat distinctive for certain plant types; starch granules are left over from the preparation of starchy foods. Both of these may be recovered from burnt residues on ceramic vessel interiors. These microscopic remnants indicate domestic plant use as early as AD 500 at some Laurel sites and suggest that by AD 1000 maize and beans were widely present at sites in the northern Red River Valley. Maize phytoliths at 21CY39, on the Buffalo River east of Moorhead, Minnesota, are associated with a Blackduck ceramic assemblage of the Bluestem phase. It should be understood that these microfossils indicate that domestic plants were available, but perhaps not locally produced. In other words, they were gotten through trade, and do not reflect the dramatic changes in life-style that we normally associate with the use of domesticated plants. The local production of domestic foods is found in the succeeding Plains Village period in the Red River region, but for now, the Woodland period manifests the presence of domesticates, but not necessarily their local production.

Early on in the study of the Woodland period in the Red River Valley Wilford and MacNeish identified what they felt were clusters of archaeological materials that could be used to define recognizable cultural entities. Wilford named Arvilla as a focus in the early 1940s, and a decade later MacNeish named several sequential foci (phases) for the lower Red, including Anderson, Nutimik, Manitoba, and Selkirk. More recently Holley and Holley and Carr set up a tentative sequence of phases for the upper and middle Red, including Dahnke, Kent, Sand Hills, Wolverton and Bluestem. Phases such as Besant and Avonlea, based on diagnostic projectile points, are used to organize the Plains Woodland materials from north and west of the Valley. Altogether, these phases are, in my opinion, more appropriate for dividing the Woodland into manageable segments than earlier categories such as early, middle and late Woodland. They have the added advantage that phases are more reflective of the assemblage variability that characterizes the Red River over the entire span of Woodland times, and they can more readily be modified when additional finds require.

Many archaeologists think of people of the Great Plains hunting bison using mass drives and corrals for large-scale kills. The archaeological record for Northeastern Plains Woodland sites farther to the north and west sometimes show that this was occasionally true. In the Red River Valley large scale bison kills are not much in evidence. Sites with bison remains mostly indicate that a few animals were taken at a time in small-scale events.

Large game hunting, mostly involving bison, was clearly dominant in the Red River Valley, however, at some sites, especially sites near river junctions such as the Red-Sheyenne or the Red-Assiniboine, other resources were used. Fish, small game, and near marshlands, waterfowl were exploited. There was variability in resource use related to the nature of the local environment, but probably also, to the season of the year in which the site was being used.

Trade is indicated in the presence of exotic raw materials found at most sites, such as Knife River flint, occasional pieces of obsidian, and even fragments of copper from the Great Lakes region. The discovery of maize phytoliths and starch granules indicative of domestic plants suggests that the people of the Red River region were involved in the acquisition of these domestic foods no doubt in exchange for something they were able to provide; possibly prepared food items such as pemmican, or perhaps buffalo hides. The reader may recall from an earlier chapter that the Assiniboine people travelled from southern Manitoba to the Mandan

villages on the Missouri River in North Dakota to trade for corn in the eighteenth century. It is likely this sort of trade and travel was operating during the Plains Woodland as well.

Plains Woodland sites in the Red River region normally yield small notched projectile points that most archaeologists believe were used to arm arrows. In the earlier portion of the Woodland, Besant points are more common and were more likely used as spear or dart tips. Avonlea, Prairie Side-Notched and Plains Side-Notched points were small enough to be used with the bow and arrow, and these are usually associated with the later portion of the Plains Woodland sequence in the Valley. Experiments show that the bow and arrow may have been more effective at longer range than spears, and that shaped projectile tips (rather than unshaped, sharp flakes) were more likely to penetrate deeper into the prey target, as well as being easier to haft (Odell and Cowan 1986: 202, 209).

The dates for the Woodland in the Red River Valley are not identical with dates for this period in other parts of North America. In the Valley, the earliest Woodland sites are found in both ends of the Valley. In the north, radiocarbon dates on the lower Woodland levels at the Lockport site, containing Laurel pottery, date to 365 BC, or about 2,300 years ago. At the juncture of the Sheyenne and Red rivers north of Fargo, the Dahnke-Reinke site has radiocarbon dates on a buried occupation roughly 270 BC-AD 150, or about 2,200-1,800 years ago. At the Lake Bronson site Laurel is dated to about AD 300, but a Laurel component at one of the Heartsville Coulee sites in Polk County, Minnesota, is dated at AD 850 more or less. Woodland sites with Blackduck ceramics date to around AD 1100 at 21CY39, and at Lockport, between AD 550-1300 or so. By the end of this time span we are overlapping with the Late Precontact/Plains Village period.

It is debatable whether or not archaeologists can successfully correlate archaeological complexes and phases from the Woodland as being ancestral to historically known native groups, but it has often been tried. Blackduck assemblages in Manitoba were early on thought to be a product of the precontact Assiniboine, a notion now fallen out of favor. Lenius and Olinyk (1990: 101) speculate on the basis of linguistic data that Cree and Ojibwa, both Algonkian languages, separated from a common ancestral tongue around AD 1000. Since Selkirk is found mostly in northwest Ontario and Manitoba, an area used in historic times by the Cree, while Rainy River pottery is found generally in the region used by the Ojibwa, the hypothesis offered is that these ceramic types represent the ancestors of those peoples respectively. It is interesting to note that one of

the Lake Bronson Arvilla mounds contained a funerary vessel that I would classify as Rainy River pottery. The Arvilla mounds are clearly pre-European contact in age, and there is little evidence of Ojibwa in Minnesota prior to around 1700. It would be surprising if precontact Rainy River pottery was produced by the ancestors of the Historic period Ojibwa, although the possibility should not be ruled out, since it is possible that archaeology might be useful in supplementing the historical records on this point. The Ojibwa hypothesis regarding the Rainy River composite surely deserves additional study. Ossenberg (1974) offered evidence that the Arvilla mounds, especially those such as Lake Bronson in the north of the Valley, were physically most like the Historic period Cheyenne. Attempting to identify ethnic groups as far back as 1000-1500 years ago is difficult. The peoples who lived in the Valley were members of small-scale societies that were mobile and fluid in their membership. Using artifact styles as ethnic markers becomes somewhat easier in the last part of precontact times when we are only a few hundred years in the past. For the Woodland period it is more of a problem. This issue will be re-visited in the next section.

Chapter 8
Late Precontact and Plains Village

I will regard the time from AD 1200–1700 as the Late Precontact and Plains Village period. This is a cumbersome compound term, and for simplicity I will use Late Precontact when referring to materials affiliated to the lake and forest country. When discussing material related to more southern and western cultures in the grasslands, I will use Plains Village. The period ends with the intrusion of Europeans from the east and south. This end date is an estimate. Radisson and Groseilliers were in Minnesota territory in the mid-1600s, Louis Hennepin described his visit to the Mille Lacs region in about 1680, and by 1700 Le Sueur established a post in southeastern Minnesota around Blue Earth. In North Dakota one early and well-documented European visitor was La Vérendrye in the 1730s. The rough date of 1700 seems to be an appropriate date for ending precontact times in the Red River region. A beginning date for this period is more of a problem.

By AD 1200 strong influences from the central Mississippi River Valley were apparent in regions adjacent to the Red River Valley. Across southern Minnesota and northern Iowa an expanding culture spread a new lifestyle of bison hunting and agriculture based largely on maize, squash, and several other domesticates. New forms of pottery appear as well. For one, tempering ceramic vessels with crushed clam shell became common. Also, the decorative motifs used on ceramics witnessed a dramatic change. Previously dominated by cord-wrapped object impressions, punctations, and various types of stamp impressions, ceramic decorative motifs change to incised decorations, often referred to as trailed lines, or broad incisions. In the Red River region, they are sometimes sharply angled and sometimes curvilinear motifs, usually on the shoulder of the vessel below the constricted neck. The stone tool assemblage continues with many forms previously used; however, there is a noticeable change in the style of projectile points. While small stone tips in the later portions of the Woodland period almost certainly reflect use of the bow and arrow, the small points of the Plains Village are distinctive in that they seem to be more commonly made as small unnotched triangular shaped points. Other points during this period continue to be notched, but the notches tend to be small, and higher up from the base on the side of the

Figure 8.1. Plains Village points, Sprunk site, Cass County, ND.

point. They are referred to as Plains Side-Notched, and are distinguished from the slightly earlier to somewhat contemporaneous points known as Prairie Side-Notched, which have broader notches somewhat lower on the side of the point (Figure 8.1). Another feature of the Plains Village lithic assemblage, especially in the middle to later part of the Plains Village, is the frequent presence of red pipestone (also known as catlinite) at sites. Sometimes this is in the form of incised pipestone tablets or disks, but more often, simply small pieces of pipestone waste fragments from making finished artifacts. Pipestone, a hardened form of claystone, pink to red in color, was used in Historic period times for pipes, but also for inscribed amulets. It had ritual significance to people who used it. The quarries from which this pipestone was taken are about 125 miles directly south of Lake Traverse and are today still regarded as culturally significant by native peoples in the region.

One important feature of the Plains Village period that reflects on the social life of the people of the Northeastern Plains is the appearance of hamlet-sized communities surrounded by dry moats or fortification ditches. Usually around an acre or so in size, these sites are found on high ground overlooking bodies of water. They are found at the headwaters of the Red River drainage around Lake Traverse, and on the Maple and Sheyenne Rivers in North Dakota, both tributaries of the Red. Often, evidence of gardening is recovered from these sites. None have been documented along the main stem of the Red, but the artifact assemblages associated with these hamlets are similar to ones found along the Red River itself. Besides the ditched settlements, there were also some linear and geometric earthworks on the Northeastern Plains, especially in the Sheyenne and James River valleys to the west of the Red, and also around Lake Traverse. These are difficult to pin down in temporal terms, but their proximity to Plains Village habitation sites, including at Lake Traverse and on the Sheyenne River, makes an association with the Plains Village period a reasonable assumption.

Perhaps the most significant feature of the Plains Village period throughout the Northeastern Plains was the spread of farming, or to use a phrase preferred by some, horticulture. Although this must have had an important impact on the lives of people, it is often difficult to find or see evidence of this in the archaeological record. Plant remains are usually poorly preserved at regional archaeological sites, and there are numerous previously reported sites where no mention is made in reports of the community's reliance on domestic plants, yet which probably made use of them in any case. The appearance of domestication in the Northeastern Plains coincides with the approximate middle portion of the Medieval Warm period. This climatic episode, variously dated, but roughly from about AD 900 to 1300, saw warmer temperatures in the Northern Plains. This may have had something to do with the diffusion of small-scale farming into areas such as the Red River Valley (Gregg 1994: 83), although the alluvial sequence in the Central Plains suggests it was also a period of heightened aridity (Daniels and Knox 2005). Perhaps the diffusion of cultural influences, or the subsistence needs of the regional population, were more significant than climatic factors.

In the previous chapter I discussed some of the changes associated with the adoption of domestic plants into a hunting and gathering economy. During Plains Village times small-scale farming is well documented for the Northeastern Plains, and it is appropriate to emphasize again some of the implications of this for regional populations. Archaeologists often associate farming with larger or more densely constituted populations, and with sedentary living. This leads to some important cultural changes. Larger populations require more intensive use of resources, but the size of the group reduces the possibilities for mobility. Once settled in a long-term community, nuclear families tend to grow, since carrying immobile children during foraging episodes was no longer necessary. In other words, farming, sedentism and population growth are intimately related. Of course, larger groups require more food and more reliable sources of food. Domesticating plants and establishing gardens serves the purpose of providing a very important resource, but it also means that more time must be spent in the area where gardens are planted. Gardens simply require some degree of sedentism. Pottery is somewhat related to gardening, being an important tool in processing a variety of foods, especially plant foods, into edible condition, and ceramics are abundant in Plains Village sites.

Larger, settled communities did require more elements of social control, what anthropologists call extra-familial organizations such as sodalities, clans, age-grades and the like. The reason for these kinds of organizations is widely believed to be related to the simple fact that when society includes more people there is a greater chance for interpersonal conflict, which in turn threatens the peace of the larger community. Partly this is because if there are conflicts, say over land rights, that involve people from two different families, each family and their relatives tend to line up as allies against their opposing neighbors. A conflict between two people can rapidly escalate into a community-wide dispute. The social institutions of so-called tribal groups, like clans and age grades, mitigate against such conflicts.

Think of the many differences in daily activities if a group of people changes their lifestyle from one of hunting and gathering and fishing to one that included all that plus maintaining a sizable garden, say of about an acre. That is a large area to clear of growth so a garden can be established. Then, of course, the proper seeds have to be collected and planted. As the crop grows there is weeding and perhaps even watering to be done, constant attention to keep rabbits, groundhogs, raccoon, deer, birds, and other garden denizens at bay. Finally, the crop has to be harvested, processed, and possibly stored for a time. These various gardening or farming tasks were not all performed by the same person. In historic times, men often cleared land for gardens, while women handled the actual planting and care of the crops. Youngsters might be used for weeding and chasing off garden pests.

At some sites in the Red River Valley and at locations to the west there is fairly good evidence of domestic plant use, primarily maize. Schneider (2002) has presented convincing evidence for the widespread practice of gardening on the Northeastern Plains, which he refers to as subsistence horticulture. He shows its presence, or likely use, based on maize kernels and cupules, or the presence of gardening tools, at ten different sites in eastern North Dakota and southern Manitoba. All of these may be assigned to the Plains Village period. Earlier notions that areas such as the Red River region were too cold for growing maize are put aside; in fact, native varieties of maize do quite well in contemporary gardens planted in mounded hills after the fashion of the Plains peoples. Overall, Schneider sees a practice of garden cultivation as one important part of the Northeastern Plains Village adaptation, but one that might vary from one location or time to another. Horticulture may provide a minor input to the diet of some foragers, may be equal to hunting in dietary importance

for some peoples, is continually supplemented by wild plant foods, and could fluctuate in importance dependent upon year-to-year variations in climate and the availability of alternative food resources (Schneider 2002: 46).

The use of maize in gardens could have come to the Northeastern Plains from several directions: up the Minnesota River from the Blue Earth region, up the James River from Missouri River villages in South Dakota, or from North Dakota Mandan and Hidatsa communities eastward over the grasslands to the James and Sheyenne valleys. Precisely when it arrived is unclear, but it was being used at some point after the Plains Village period began.

True enough, on the Northern Plains plant domestication is known from the ethnographic record; however native groups in the Historic period normally spent only part of their subsistence efforts on domestic products. For them, cultivating plants was a matter of clearing small parcels, small that is, when compared to modern agricultural fields. These gardens were often in river bottoms that were cleared of trees. The garden produce comprised only a fraction, probably less than half of their food needs. Samuel Pond (1986) noted that in the nineteenth century the Dakota at Lake Traverse were probably the most devoted of all the Dakota to growing corn, but their gardens did not provide for year-round subsistence.

To the east, in Minnesota lake country, there is a focus during Late Precontact times on the use of wild rice. Some archaeologists have speculated that the increase in wild rice use at this time might be due to the development of a processing technology designed for using maize, being transferred to the processing of wild rice. There has been some suggestion among archaeologists about the use of wild rice in the Red River area, and in fact, Red River tributaries in both Minnesota and North Dakota are named Wild Rice River. It is also reported historically that wild rice was growing in the nineteenth century along the banks of the Wild Rice River, south of Fargo in North Dakota (Hoheisel and Nielsen 2007: 82). Direct archaeological evidence for its use in the region is lacking.

Important developments were also occurring farther to the southeast in the central and southern Mississippi River Valley. Archaeologists have named this the Mississippian culture. The societies that belonged to the Mississippian featured large towns with often massive ceremonial structures, especially large earthen mounds with wooden buildings on their flattened summits. The settlements were large and might be called towns or cities. They flourished after AD 1000, and in some places lasted

Figure 8.2. Oneota pots. Note globular shape, strap handles, and broad incised decoration (Photos courtesy of Scott Anfinson).

Figure 8.3. Oneota vessel with falcon/hawk/thunderbird feather design (Photo courtesy of Jasmine Koncur).

until the European intrusions. These communities were supported by an agricultural economy and featured large populations numbering in the thousands with a clearly hierarchical society. Some of this we know from European accounts of groups such as the Natchez who lived in the southeastern part of the US. They had a class structured society with rulers, mound centers, and intensive systems of food production and trade. Mississippian society as a whole probably featured a royal, or chiefly elite, possibly with priestly authority as well, at the top of the social pyramid.

Naturally, societies with complex social hierarchies and large populations had an inevitable impact on neighboring peoples. The Mississippian heartland, which was located from Illinois south to the Gulf of Mexico and east to the coast of the Carolinas, influenced a culture known as Oneota, extending to the north and west of Mississippian. In fact, Oneota was previously referred to as "Upper Mississippian" for its location around the upper Mississippi River drainage. Pottery of the Oneota style is found from northern Illinois to eastern Nebraska and South Dakota. It occurs occasionally in the Red River region (Holley and Michlovic 2010). Oneota vessels are globular with smoothed surfaces, shell temper, occasional loop handles, and broad incising and notching making up the bulk of the decorative motifs (Figure 8.2). The decorations are often in the form of chevrons with shallow punctations appended below the V-shaped designs. Sometimes the vessels have shallow incised lines from top to bottom, perhaps mimicking a pumpkin. Most archaeologists assume the Oneota chevron designs are representations of hawk breast or tail feathers, and some believe this reflects an aggressive symbolism associated with belligerent and expansionist practices which helps to explain the rapid spread of Oneota into Wisconsin, and the prairies of Iowa, southern Minnesota, eastern South Dakota, Nebraska, and northern Missouri (Figure 8.3). Others feel the chevron motif arrangement represents the Thunderbird, bringer of rain, and that the ceramic designs have less to do with expansionist ideology than with cultural notions of rain and the fertility of the land.

Henning (1998) offers a detailed summary of Oneota archaeology. Oneota groups practiced the dual economy that featured a dependence on hunting and gathering, especially bison hunting, and household-based gardening of maize, with lesser amounts of squash, beans, tobacco, and perhaps sunflowers. Wild plants such as goosefoot (Chenopodium) and acorns were also used. In the prairie expressions of Oneota, bison are usually a dominant faunal resource, although in other areas deer, or even fish were important. This economy sustained somewhat larger

settlements than were previously found on the Northeastern Plains, or at least settlements that may have been somewhat more stable than most hunting-gathering camps. The Grant site, in northeast Iowa, was an early Oneota community that consisted of perhaps four long houses at any one time, each about 25x75 feet, and providing living quarters for at least 60 people, and possibly more (McKusick 1974: 206). Cache pits indicating food storage were also found. The Grant village was a settlement occupied for some substantial amount of time as indicated by overlapping house features indicating re-building episodes.

Oneota culture persists until the beginning of the Historic period in the central prairies. It is widely believed by archaeologists that the Oneota archaeological culture was the immediate predecessor of Chiwere speaking Siouan groups, including the Ho-Chunk or Winnebago, Iowa, Oto, and Missouri people, who lived in the territory where Oneota archaeological remains are found when Europeans first contacted them. Others involved in Oneota manifestations probably include predecessors of the historic Omaha, Osage, Kansa, and Mdewakanton Dakota (Henning 1998: 353).

There is another cultural expression of the Plains Village culture that reaches to the southern and eastern perimeter of the Red River Valley. This is known as Cambria, best known for the lower portions of the Minnesota River Valley in southeastern Minnesota. The Cambria archaeological culture is typified by a dual economy similar to Oneota, sometimes large settlements indicating a sedentary style of living, and a set of ceramics that include grit tempered, globular vessels with broad incised decoration. Some of the decorative motifs are strikingly similar to those found at the Mississippian cultural center at Cahokia. This has led some archaeologists to speculate about an actual movement of Mississippian peoples into the Minnesota region. Occasional Cambria pottery is found in far southern parts of the Red River region around Lake Traverse, but no actual Cambria settlements have been found along the Red River itself.

While there was a clear Oneota impact in the Red River Valley, influences on the Red River region did not come exclusively from the south. In the southern to central portions of the Red River Valley archaeological sites from this period are commonly found to contain a type of pottery known as Sandy Lake. This cultural expression is distinct from Cambria and Oneota, even though influenced by the latter. It is, therefore, not part of what is commonly regarded as Plains Village even though it is contemporaneous with those complexes. Here it will be referred to as Late Precontact. Sandy Lake sites are especially common along the main stem of the Red River itself, and in one extensive survey between the

Figure 8.4. Sandy Lake ceramic vessels. (Photos courtesy of Scott Anfinson).

towns of Perley and Shelly, Minnesota, almost every one of over 40 sites found contained mostly Sandy Lake pottery (Michlovic 1982). Archaeologists believe that this pottery has its origins in the lake-forest country. In central Minnesota, especially around some of the major lakes such as Mille Lacs, there are numerous sites containing the nondescript Sandy Lake ceramic ware. This pottery normally consists of simple bowls or globular jars with mostly unadorned rims and lips, and surfaces cordmarked or smoothed over cordmarking (Figure 8.4). The temper is often crushed shell, as is found in Oneota pottery, although just as commonly it is grit. Occasionally, there are decorations consisting of lip notches, or Woodland-period style cordwrapped object impressed stamps, and sometimes, finger impressions. Rarely, there are also broad, shallow incisions reminiscent of Oneota vogues. Scott Anfinson referred informally to vessels with such decorations as "Sandy-ota," that is, representing a merging of Sandy Lake and Oneota styles.

Sandy Lake pottery is part of a precontact culture called Psinomani by Gibbon (1994), who suggested using the Dakota term for wild rice to refer to this archaeological culture (Dakota *Psiŋ* = wild rice). This term is somewhat compromised by the common presence of Sandy Lake in the Red River region where wild rice was not common, if it was present at all.

The Psinomani culture is usually characterized as essentially a foraging adaptation based on the use of wild plants and animals, with wild rice being one of the major components of the diet. Some gardening may have been practiced, and maize, squash, and tobacco have been reported at some Sandy Lake sites, but domesticates are not generally recognized as an important part of the subsistence routine, and some of these domesticates may have been brought in by trade (Arzigian 2008: 136-137). I feel this view is obsolete and I will demonstrate below that Sandy Lake people did indeed use and grow domestic plants, at least in the Red River region.

Most archaeologists feel that Sandy Lake, or the Psinomani culture, represents the archaeological signature of the Late Precontact Dakota. It is found in dated sites immediately before the Historic period in the central Minnesota homeland of the Dakota people. In the early Historic period Bradbury phase, French trade goods are found associated with Sandy Lake ceramics. Since the French were the first Europeans to contact the Dakota, it makes sense to regard these sites with Sandy Lake ceramics and European trade items as belonging to the Dakota people (Gibbon 2012: 195, 198).

In the northern part of the Red River Valley, and extending from western Ontario to eastern Saskatchewan, are different archaeological complexes that continue the ceramic fashions of the Woodland into the Late Precontact period. One of these is Selkirk, a ceramic tradition of the Woodland period that continues into the Late Precontact period and extends into the boreal forest. Another is dated from about AD 1200 to the time Europeans arrive. Many archaeologists would simply refer to these materials as Late or Terminal Woodland given their stylistic features. Here, these ceramics are classified as belonging to the Rainy River composite, a set of pottery types that reflect many of the decorative motifs of the earlier Woodland wares such as Blackduck and Laurel. Like contemporaneous vessels farther south, Rainy River ceramics are globular in shape, and tempered with grit. Vessel surfaces may reflect paddling with cord or fabric wrapped paddles. Some were probably also made in woven bags. The decorations on the vessel surfaces are often stamps, and cordwrapped object impressions in horizontal and oblique orientations to the vessel lip. Some vessels have these impressions placed in a herringbone pattern near the top of the pot. Prior to the definition of the composite by Lenius and Olinyk (1990), these materials were usually simply referred to as late Blackduck. Certainly, Rainy River composite pottery continues some earlier ceramic decorative motifs, and are sometimes believed to be a combination of two earlier ceramic traditions; Laurel and Blackduck. Most likely these northern peoples who made the Rainy River and Selkirk ceramics belonged to some Algonquian groups; perhaps Ojibwa for Rainy River, probably Cree for Selkirk, or some combination of associations. Whether or not the Rainy River pottery represents the presence of some other Algonquian speaking people (Arapahoe, Atsina, Cheyenne, Blackfoot) who eventually moved to the west is a matter that cannot be settled here.

Extending from the Red River Valley and to the west the Plains Village period witnesses a ceramic tradition that has ties to Oneota and perhaps the Middle Missouri Valley cultures of North Dakota—the archaeological cultures that would eventually become the Mandan and Hidatsa. The ceramics are modest-sized jars with variously treated surface features; sometimes cordmarked, sometimes simple stamped, often smoothed. The temper is almost always grit. Decorations are common and include shallow incised lines and wide, shallow punctations. These are occasionally in the style of Oneota with chevrons drawn in a hawk breast or tail feather design. The ceramics are named after the precontact culture that they are associated with; namely, the Northeastern Plains Village (NEPV) tradition (Toom 2004).

This tradition persists through most of the Plains Village period as defined here. It is characterized by the distinctive ceramics, and by funerary practices described by Syms (1979) as the Devils Lake-Sourisford Burial Complex. Although archaeologists have not excavated burials in the past several decades except as required for some necessary reason, earlier work made it clear that on the Northeastern Plains of North Dakota and southwestern Manitoba many low, conical burial mounds contained ceremonial ceramic vessels with typical NEPV shapes, body treatments, temper, and decorations. These decorations include zoo-morphs such as salamanders and thunderbirds, shell gorgets, and inscribed stone tablets. Syms argues that these mortuary practices arose as part of the far-flung Mississippian influence sphere. The Devils Lake-Sourisford complex was, in his estimation, left by Siouan peoples following bison herds from the plains to the aspen-parklands of the lower Red River Valley and adjacent areas. Syms (1979: 304) appears to favor one or another of the Teton, Assiniboine, or Crow as likely groups involved in creating this complex.

Another feature of the NEPV tradition is the association with hamlet-sized communities surrounded by defensive ditches. These settlements are normally no more than about an acre or so in size. Perhaps the most important feature of the NEPV is the substantial evidence for the use of domestic plants, including maize, squash, and tobacco. Recovery of actual domestic plant remains has come from sites on the western perimeter of the Red River Valley in North Dakota, and also from the lower Red River north of Winnipeg. Northeastern Plains Village artifact assemblages are also found associated with cultigens at sites in the James Valley of North Dakota (Schneider 2002). More circumstantial evidence for gardening, such as bison scapula hoes, has come from other sites in the region.

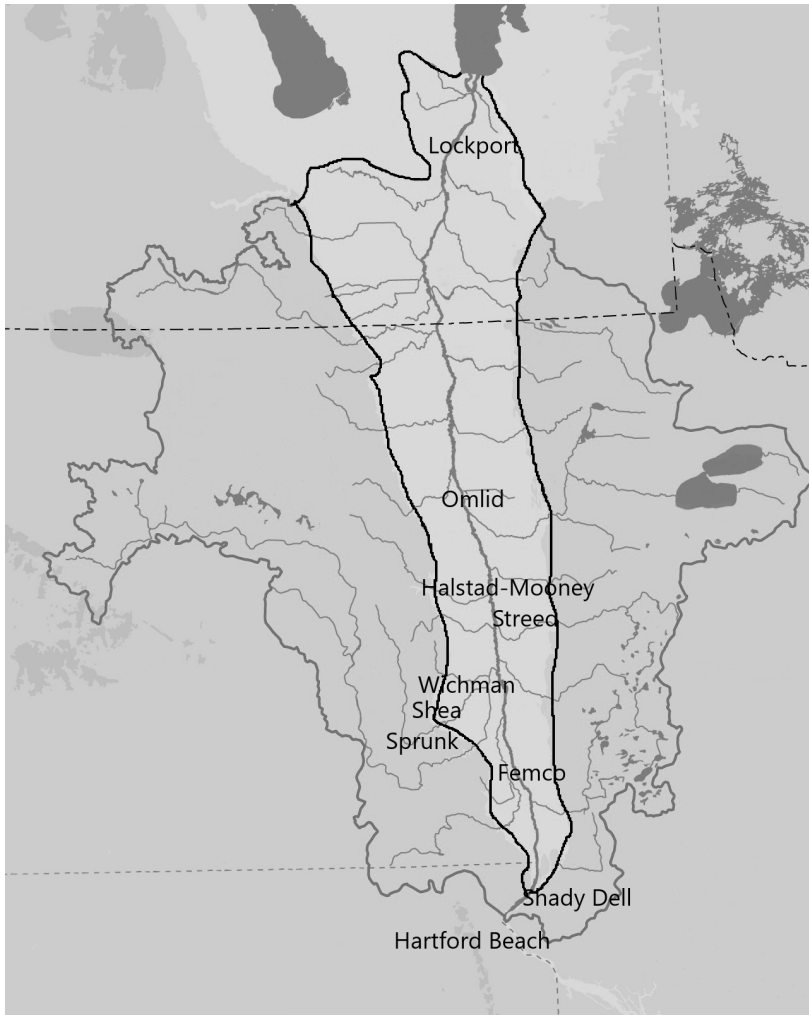

Figure 8.5. Map of Late Precontact/Plains Village sites mentioned in the text.

The Plains Village is that time period for which archaeologists often speculate about the actual ethnic identity of the people who lived at the sites being investigated. The people who lived in the Valley and surrounding areas in the eighteenth and nineteenth centuries obviously did not appear suddenly out of nowhere but must have been resident on the Northeastern Plains for some time prior to their being witnessed by European-Americans. As mentioned earlier, Assiniboine, Ojibwa, Dakota, and Cheyenne were often noted as residents in or around the Red River region. Others have traditions of having lived in the area: the Hidatsa and Arapahoe, for instance. I will discuss some of these ethnic issues later in this chapter.

We see, then, several distinctive ceramic traditions for the Late Precontact/Plains Village period in the Red River Valley, and these are connected to the south (Oneota), the east (Sandy Lake), north (Rainy River composite and Selkirk) and west (Northeastern Plains Village wares). Cambria is so rare in the Valley as to not require any special attention, although it is present at Hartford Beach, a site just south of the Red River drainage. Some of what these ceramics and their affiliations might mean for regional culture history is understood, but those issues that are clear do not entirely answer the questions archaeologists would like to answer, one example being the exact relationship of these ceramic traditions to Historic period ethnic groups.

Keeping in mind these various traditions in and around the Red River Valley, let us turn to some of the finds from sites in the region to come to a fuller appreciation of the real nature of the archaeological record of precontact times (Figure 8.5). Naturally, it is not possible to review all of the archaeological sites from this period excavated in the Valley and its environs, but some sites that have been reported in published form, and sites from which there is a substantial amount of evidence regarding the nature of this final temporal period will be the focus of this discussion.

Late Precontact and Plains Village Sites

Streed

The Streed site is in the central Red River Valley just south of the town of Perley, Minnesota (Michlovic 1982). The site was discovered in a cultivated field, but test excavations were conducted in adjacent woods. Cultural materials were limited to the upper 30 cm. of the soil. Although no features were found at this site, there was at least one dense bone cluster. Most of the bone was unidentifiable large mammal, almost

certainly bison. A few fish bones were found but could not be classified further. There was also the mandible of a mink. Only a few lithic items were found, including three small, unnotched triangular projectile points typical of the later Precontact period. The pottery consisted of a couple hundred potsherds, and over half of these were shell tempered and cord-marked. About 16% were grit tempered and some of the sherds were too fragmented to characterize. The four diagnostic rimsherds were all classified as Sandy Lake.

While the Streed site is not remarkable in any way, the finds are typical of most other near-surface sites in the central Red River Valley. They date to the Late Precontact/Plains Village period, they generally have lithic collections that contain small projectile points which archaeologists regard as arrow tips, and they contain Sandy Lake pottery. The Streed site is offered here as an example of the content of many sites that normally receive little attention, since they are without features, radiocarbon dates, or much in the way of ecofactual data.

Wichman

The Wichman site is on the floodplain adjacent to the Maple River in Cass County, North Dakota (Michlovic 1987a). This is the interior of the Lake Agassiz plain, distant from both the Red River to the east, and the Agassiz beach deposits to the west. The site is bounded to the south by woods that were not tested, and to the north and west is the Maple River. In the plowed field that occupies part of a river loop, an artifact scatter was found that covered several acres. The concentration of artifacts from the surface survey was greatest on the north side of the field, so test excavation units were placed there. Cultural materials were recovered from all units.

There was no association between soil horizons and frequency or type of artifact, except that frequency decreases below about 50 cm. There are no buried soils at this site. The cultural materials were most abundant in shallow levels, although a bimodal stratigraphic distribution is apparent. There is no clear difference in the diagnostic materials from shallow and deeper levels. Artifacts and bones often assume this bimodal vertical distribution as a result of rodent activity (Erlandson 1984). Rodents are strongly suspected because it is most clearly apparent in bone weights, and bones are more likely than artifacts to have been moved by rodents. Furthermore, the second, or deeper mode, appears as an "echo" of the shallow mode, indicating a single period of cultural deposition which has drifted through the soil, and, given the nesting behavior of rodents, assumed a secondary peak in frequency 30-40 cm. below the occupation level. Rodent gnaw marks on bones support this conclusion.

The collection of lithic artifacts and debris consisted of an assortment of raw materials common in the Red River Valley. The comparative composition was somewhat unusual in that Tongue River Silica was abundant and Swan River chert relatively scarce. Lithic artifacts from the surface and excavation include nearly two dozen tools and tool fragments, and one piece of worked pipestone, possibly part of an elongate pipestone bead. The tools include small bifaces, three small unnotched triangular points, one endscraper and several utilized flakes. Most of these tools are from the surface collection. The small triangular points suggest a Late Precontact/Plains Village affiliation and date. No notched points were recovered.

The ceramic collection from Wichman includes close to 400 sherds representing at least 10 vessels. The majority of the pottery came from excavations rather than from the surface. Three rims are shell tempered, cordmarked sherds with no decoration and are classified as Sandy Lake. One grit tempered rim is also classified as Sandy Lake. One shell tempered and undecorated rim is anomalous; it is smooth surfaced but appears in all other regards (temper, 1ip form, rim shape) to be Sandy Lake. The other 6 rims are smooth surfaced, grit tempered sherds with either trailed lines or exterior notching. They are classified here as Northeastern Plains Village ware, similar to the Late Period cultural materials identified by Schneider (1982b) for the James River of North Dakota. Of the remaining diagnostic sherds (i.e., body sherds with decoration), most have a variety of wide to narrow trailed lines on smooth surfaces with grit temper. They are classified here with the Northeastern Plains Village ware rims. Diagnostic ceramics were not distributed in a stratigraphically patterned way.

Bone was fragmented and rodent gnawed in many cases. Identifiable remains were not present.

The Wichman site is a Late Precontact/Plains Village occupation on the Maple River, as indicated by diagnostic triangular points and Sandy Lake and Northeastern Plains Village wares. While the materials may represent more than one use of the site, the artifacts and bone indicate that all artifacts were laid down on one land-surface, buried, and then slowly drifted through the soil profile as a result of faunalturbation. Some dislocation of materials may have been produced by sedimentary episodes as well. Cultural materials are more deeply buried in units nearer the river. This may be due to heavier deposits there, or to the loss of soi1 from the plowed, central parts of the field. None of the units in the plowed field or in the wooded field edge yielded evidence of an undisturbed living floor.

No plow zone was present in the excavation unit dug in the field edge and it is likely that relatively undisturbed sites may be found in similar contexts in other locations.

Femco

The Femco site is located about five miles north of the city of Breckenridge, Minnesota, in the southern Red River Valley. It is situated on a low elevation above the Red, which is 20 meters away from the edge of the site. T.H. Lewis recorded a solitary mound here in 1886. Lloyd Wilford dug into the mound in 1940, when the mound had already been heavily disturbed by cultivation. In 1984 a precontact settlement west of the mound was excavated (Fie 1986). The portion of this habitation on higher ground nearer the mound was cultivated and later entirely removed by gravel operations. The mound too is now gone. The portion of the site on lower ground within a river loop was relatively undisturbed in 1984 when excavations into the habitation area were completed.

Wilford's mound excavation discovered 12 individuals associated with a rock cairn (Wilford 1970: 16-17). The Federal Register (1999) lists a total of 40 individuals from the Femco mound that were reported under NAGPRA provisions. I am aware of the discrepancy, but unable to explain it. Several of the burials were primary (the entire articulated skeleton present) flexed inhumations. A few artifacts were found in the mound, including a dentalium shell bead and a plain surface, shell tempered Oneota ceramic vessel. In spite of this, Wilford classified the site as aberrant Arvilla even though it was clearly associated with ceramics not like other Arvilla sites, or even like other Woodland sites of which Arvilla was supposedly a part. The human remains and associated artifacts from the now destroyed mound were reported in 1999 under the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA).

The 1984 excavation probed to depths of up to 2 meters. The soils were silty loams, somewhat different than the clayey soils farther downstream. A buried soil with a C14 date of about 2,400 years before present was found at 160 cm. deep, and although a few pieces of debris were found no diagnostic artifacts were recovered. No radiocarbon dates were available for the shallower levels in the top 50 cm. of the soil profile, but two ceramic sherds were dated by thermoluminescence to roughly AD 1325, although these dates range from AD 1175 to 1470. Thermoluminescence dates are approximate temporal indicators, but in this case, they

do sustain a claim for a Late Precontact/Plains Village age for at least some of the materials in the upper component at the site, although some are clearly from various portions of the Woodland as well.

The lithic collection included just under a hundred tools and worked flakes, but 70% of these were worked flakes. There were several scrapers and over a dozen bifacial tools, along with nine projectile points. Fifty-three percent of the tools and worked flakes were Knife River flint, the remainder being Swan River chert, Tongue River silica, Red River chert, jasper and quartz. The flaking debris totaled about 1,800 items. But in the debris sample, only 16% is Knife River flint, once again reflecting the importance of this imported flint for stone tool production. In the Red River region, Knife River flint seems always overrepresented in the prepared tool sample and underrepresented in the debris collection.

The projectile points are mostly broken or re-worked. Six are notched points and interestingly, resemble Archaic forms. There is one Oxbow point, another is a Middle Archaic Hanna-like form, and another is a Late Archaic Pelican Lake point. Two points are small triangular points typical of the Plains Village times; however, all of the points come from the same deposit that contained the late ceramics. This may be due to pedoturbation, or soil mixing, but the earlier point styles may be related to some of the Woodland ceramic types found at the site.

There were about 900 fragments of pottery found, representing several types. These included Woodland ceramics that may be assigned to the Wolverton phase. A few of the rimsherds reflect the even earlier Woodland Dahnke phase at the site, thus explaining some of the anomalous early projectile points. The Late Precontact/Plains Village wares included Oneota, Sandy Lake, and Northeastern Plains Village pottery. About 60% of the pottery was cordmarked, the rest being smooth surfaced. Three of the smoothed sherds were painted with a red slip, and a single grit tempered strap handle was found.

No plant remains were recovered from the site. The animal bone that could be identified consisted of mostly bison or large mammal, with small mammal, fish, turtle, and mussel shells. The animal bone collections at other sites along the Red River are comparable to that found at Femco. As is usual in the Valley, bison is preponderant in the assemblage.

Mooney and Halstad

The Mooney and Halstad sites are located in and near the city of Halstad, Minnesota, about equidistant from Fargo-Moorhead and Grand Forks, North Dakota. The Red River is immediately adjacent to the Mooney

site in Minnesota, and the Halstad site is on the opposite side of the Red River in North Dakota. Part of the Mooney site was in a cultivated field, part of it has also been disturbed by dike, road, and bridge construction. Excavations were completed over two separate seasons, one in 1983 and a second in 1994. Both of these were required by statutes protecting archaeological resources threatened by development, in this case, flood control and bridge and road construction (Michlovic 1987b; Johnson 1995). The Halstad site was worked in 1996 ahead of road realignment and construction of a new bridge across the Red River (Larson et al. 1997). The two sites will be discussed here sequentially.

The Mooney site has two components, one is Archaic in age and about 3,800–3,400 years old once the two radiocarbon dates are calibrated. This component was not well exposed and consisted of bison bone and lithic flaking debris. Some of the latter was Knife River flint, reinforcing the conclusion that this light scatter of material was cultural in origin. The later occupation was originally dated with the thermoluminescence (TL) method to about AD 1000 and classified as Woodland. This was problematic since the material used for the TL date was Sandy Lake pottery. At the time this appeared to be about the earliest date known for a Sandy Lake site. Since Sandy Lake is most common in lake-forest country it was unusual to find such an early date on the prairie. The 1994 work in another portion of the site recovered charcoal and provided several C-14 dates, which are far more reliable than TL dates. Six dates from the Late Precontact/Plains Village period Sandy Lake levels at the site date that occupation to between AD 1300–1500 (Johnson 1995). Here, I take a date of about AD 1400 as appropriate for the site materials.

The Mooney site was formed in vertical accretion sediments on the floodplain of the Red River. The Late Precontact/Plains Village component consisted mostly of an artifact debris scatter in the top 50 cm. of the soil profile. There were only a couple features in this part of the profile, one being a cobble scatter that was probably once a hearth subsequently disturbed by burrowing animals. Another was a small bone cluster of bison remains and several ceramic and lithic items. No clear living floor or occupation level was evident at the site.

The pottery consisted of two major groups: Sandy Lake and Northeastern Plains Village wares. Refitting sherds along with rim count and decorative motifs suggest that about 51 Sandy Lake vessels and 13 Northeastern Plains vessels were represented in the 1983 collection. Some of the Sandy Lake was cordmarked, but a substantial minority of the Sandy Lake material was plain or smoothed over on the surface. This pottery was

Figure 8.6. Northeastern Plains Village sherds from the Mooney site.

grit or shell tempered. Occasionally, Sandy Lake sherds had stick or cord-wrapped stick impressions on the lip or rim interior. The Northeastern Plains Village pottery was grit tempered and smooth surfaced, some of the sherds being burnished. A few of these vessels had broad, shallow incisions typical of Northeastern Plains Village ceramics (Figure 8.6).

The stone tool collection from the site consisted of several types of raw material, including mostly local stone such as Swan River chert, white chert, quartz, chalcedony and Tongue River silica. The one obvious imported stone at the site was Knife River flint, which comprised about 22% of the total lithic debris. Three points were recovered, two of which were roughly triangular, but not well formed, or perhaps, heavily worn. Both of these were made from Swan River chert. A third point, made of Knife River flint, had an indented base and side notches, giving something of the appearance of an Archaic Oxbow point. It is not clear whether this was from the bottom of the late component at the site, or whether it might have been moved upward in the soil profile from the Archaic component. Other artifacts include several bifaces, possibly used as cutting tools, and scrapers for processing hides. There were also amorphous flakes, almost

all Knife River flint, that showed clear signs of having been modified on the edge, either purposely or as a result of expedient use. They were most likely used for scraping or cutting tasks for a short period and then discarded.

No plant remains were recovered from the site, or at least none that could not be attributed to modern intrusions into the deposit. Animal remains were common. About 450 grams of fish bones were found. These were from pike and catfish. Also, there were bones from snapping and box turtles. Most of the faunal remains were from mammals, including squirrel, beaver, muskrat, skunk, weasel, deer, dog or wolf, and bison. I leave out of consideration here the bones of numerous burrowing animals like ground squirrel, gopher, snake, and field mouse or vole, since they were probably not important to the people who lived here and are only incidentally present in the archaeological deposit.

Many of the game animals were represented by only one or a few elements. Ten beaver elements represented at least three animals, eleven squirrel bones another three individuals. Muskrat and dog/wolf bones represented one of each. Only two large animal species are in the collection, one deer element, and 84 bison elements, indicating at least six individuals. While there are many different animals in the collection, bison were not only the most common, but would have far outweighed other meat sources in terms of the amount of food and hide they provided. Whatever the relative importance of different animals might have been to the people who lived at this site, it is of special interest to note that the occupants of the Mooney site were using riverine (fish and snapping turtle), riparian woodland (box turtle, muskrat, beaver), forest edge (skunk and deer), and grassland species (bison).

The presence of fish and turtle suggest that the site was used in the warm season, although it is also possible that people used this location repeatedly in different parts of the year. It might also be imagined that the two different types of ceramics at the site indicate two independent uses of this location. However, at other sites, to be discussed below (Shea and Sprunk), it is clear that the co-occurrence of Sandy Lake and Northeastern Plains pottery in at least some cases clearly belong to a single group using these ceramic wares simultaneously.

The Halstad site is on the North Dakota side of the Red River and is roughly contemporary with the Mooney site. It provided radiocarbon dates of AD 1282 and 1290, which are on the early end of the series of dates Johnson obtained from his work at the Mooney site. As with Mooney, most of the cultural material was found in shallow levels and near or in the

plow zone. One pit feature was found containing small amounts of pottery, lithic debris, and a few bones. Using heavy equipment to strip some of the overburden, the project at the Halstad site illustrated some of the disturbances common in the Red River Valley soils. Dark stains extending from the A-horizon into much deeper levels in the profile are common. These are the result of desiccation cracks from shrinkage when the soil is dry. Other soil features suggest disturbances from freeze-thaw cycles.

The ecofacts at the Halstad site include a few bison elements, beaver, fish, and some mussel shell. Overall, there was little in the way of faunal material. A few Chenopodium and Amaranth seeds were found, but only one was partially charred, and it is not clear whether the inhabitants of the site actually used these plants. One of the more interesting finds were a few phytoliths of squash, suggestive of the presence and use of a domesticate.

The artifact collection included a small triangular, late period point, and a larger wide-notched form which I am hesitant to classify. Surprisingly, the most common lithic material was Knife River flint, which was about twice as common as Swan River chert. Some of the lithic material was Grand Meadows chert, known from a quarry area in southeast Minnesota, about as distant from the site as the Knife River flint quarries in North Dakota. The lithic flaking debris indicates that tool maintenance was likely at the site rather than the manufacture of implements. The pottery at the site consisted of Northeastern Plains Village ceramics, much of it smooth-surfaced and grit tempered. A few of the sherds feature wide-incised or trailed decoration. Sandy Lake pottery is also present, as at Mooney. The co-occurrence of these two ceramics at single sites is common in the Red River region.

Omlid I

Omlid I is situated on two terraces of the Red River just north of the city of Grand Forks, North Dakota (Blikre 2008). There are diagnostic cultural materials on both terraces; however, the upper terrace has the greater archaeological potential. Radiocarbon dates for the lower part of the site range from AD 1160–1430. Dates are somewhat confusing for the upper terrace component since a bone collagen date on bison teeth indicate an age of 180 BC–AD 140. Charcoal in the fill of a presumed house depression provide a range of AD 1400–1700. Given these dates and the nature of the cultural materials, the excavators believe the site date is probably somewhere around AD 1300.

The most surprising find at Omlid 1 is the presence of shallow house pits, found on both terraces, and associated with post molds, fire hearths, cooking pits, and concentrations of artifacts. On the upper terrace there are four purported houses, roughly circular to oval in shape, and a single structure is posited for the lower terrace, also roughly oval in outline. The diameter of these structures is about 5-6 meters. We might estimate a structure of this size would accommodate about half dozen people. The interpretation of features at Omlid led the excavators to suggest that there were three superimposed houses on the upper terrace, and perhaps another house nearby. This would suggest a small group, possibly only a couple families using this location. Of course, there may have been other structures not intersected by the excavations so it is difficult to know how many people lived here.

House imprints or features are actually a rarity in the Red River Valley. The thick A-horizons in heavy clayey soils make shallow disturbances and features difficult to identify. Any house pit has to penetrate below the level of the black topsoil in order to be seen by the archaeologist. Furthermore, clayey soils such as those in the Lake Agassiz basin are susceptible to extreme shrinking when dry, and comparable swelling when wet. This shrink-and-swell aspect of the local soils mixes sediments and often results in unusual soils patterns which may be mistaken for cultural features. Furthermore, dark stains at the base of the A-horizon are often the result of irregularities in the ground surface as sediments are deposited. For the topsoil-subsoil interface to show irregularities that might mimic house stains is to be expected sometimes. For this reason, the definition of multiple, superimposed houses at Omlid is a not only a rarity in the region, but it is a finding that has sparked some critical discussion regarding the true nature of these features.

The pottery from the site consists almost entirely of Sandy Lake vessel fragments. The sherds are shell and grit tempered with cordmarked bodies. Decoration is sparse, but when present comprise dowel impressions on the interior of the rim, or on the vessel lip. There are a few sherds from Northeastern Plains Village pots, including a vessel with an everted rim, and a few sherds with broad incising and wide punctations. Vessel bodies on these Northeastern Plains vessels are simple stamped, which is typical of these types of ceramics. Altogether, the ceramic collection of several hundred sherds is typical of a Late Precontact/Plains Village ceramic assemblage from the Red River Valley.

The lithics include the standard variety of Red River Valley toolstone, including Knife River flint, Swan River chert, and other locally available stone from glacial and lacustrine beach deposits on the Valley perimeter. One worked flake of obsidian was recovered, and an X-ray fluorescence examination suggests its origin in the Powder River region of Wyoming and Montana. Various stone tools include end scrapers, perforators, several ground stone grooved mauls, worked and used flakes, and several projectile points. These points include small triangular and Plains Side-Notched forms, and an Oxbow-like point. It is interesting that a similar Oxbow-like point was found at the Mooney site as well. Apparently, this point type with indented base, side notches and drooping ears had an enduring popularity on the Northern Plains. Finally, there was a good deal of fire-cracked rock at the site. This is normally assumed to be from domestic fires. Ordinary granitic-type cobbles were used for hearths, and one of their presumed functions is to retain heat after a fire had burned out.

Most of the animal remains were from bison, and the presence of many portions of the bison skeleton at the site suggests a kill made nearby. The eruption and wear patterns on the teeth of the bison show animals that were killed between October and December, making at least some of the occupation of the site a late fall-early winter presence. There were also bones from canids, probably dogs, and skeletal elements of skunk, some fish, and possibly an elk. River mussel shell was also present.

The people who lived at Omlid had gardens since there were maize kernels and cob fragments recovered from the flotation samples. The maize was probably the same sort of corn used by the villagers along the Missouri River in the Dakotas. Another domesticate found at the site was tobacco. The type of tobacco identified was *Nicotiana quadrivalvis*, a milder form of tobacco with less nicotine than *N. rustica*. This variety of tobacco was often used in the Historic period on social occasions rather than in religious ceremonies. Other plant remains from the site include Chenopodium, which is slightly larger than wild seeds of the genus, raising the possibility that it may have been cultivated. Wild plants from the deposits were Amaranth, purslane, plum, grape, rose, hickory, hazelnut, and acorn.

Shady Dell

Shady Dell is situated at the Red River headwaters on a high bluff above Lake Traverse. Access to the site has been denied for many years, although in 1952 Lloyd Wilford was able to conduct limited excavations

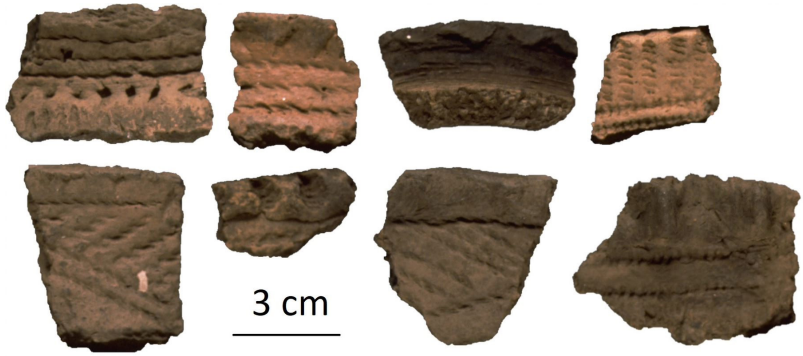

Figure 8.7. Decorated rimsherds from the Shady Dell site (photo courtesy of George Holley).

Figure 8.8. The author in the ditch at Hartford Beach. The site today is protected in a state park.

at the site (Wilford, nd). The site as defined here is a more or less circular enclosure defined by a ditch about two feet deep and 20 feet across at the time of the excavation. Wilford described the area enclosed by the ditch as about 100x60 feet. The site was surveyed by T.H. Lewis in 1885. There are two mounds nearby, one to the west and another and larger mound to the south.

The excavation included a sectioning of the ditch, which turned out to be quite shallow, being only about three feet deep originally. Since its construction, it has not filled in to any great degree. No evidence of a palisade was found on either side of the ditch. A few potsherds, bison bone and shell fragments were recovered from Wilford's excavation. A storage pit was also discovered at the site, and the infilled sediment contained potsherds, as well as animal and fish bones. At the bottom of the pit was a large cobble.

The pottery consisted of just under 400 sherds, most of them being quite small. The pottery was almost all cordmarked, but plain surfaced sherds were present and more common in shallow levels of the excavation (Figure 8.7). Wilford was not certain that there was a real change from cordmarked to plain through time since the site was, he surmised, occupied for only a short time. Decoration on the rimsherds was largely single corded impressions, followed in frequency by cordwrapped object impressed, incised line, and dentate impressed. Wilford classified a few of the potsherds at the site as Cambria, the culture of village-living horticulturists found mostly in southeastern Minnesota. Overall, the sherds appear to be representative of very late Woodland styles and similar to styles of decoration found on some village-type ceramics in the Dakotas. That they are associated with a ditched enclosure in this location is not surprising, and is another indicator of the emergence of new lifestyles at the end of the Woodland period.

Aside from the pottery there were few other artifacts recovered. A single, small, notched point was present, along with several scrapers, all of which Wilford describes as brown chalcedony, which is almost certainly Knife River flint. This was the preferred material for scrapers at most Red River Valley sites. The short report that is available does not describe flaking debris.

Wilford was not certain whether the site was enclosed by a ditch for defensive purposes, or for some ceremonial reason. He classified the site as Woodland even though I would give more weight to the similarities between the Shady Dell materials and some Plains Village ceramic wares. Furthermore, the storage pit and ditch both suggest a settlement more

similar to Plains Village practices than to Woodland on the Northeastern Plains. In any case the site may certainly be classified as something of a bridge between the Woodland and Village periods.

Hartford Beach

The Hartford Beach site is located on the South Dakota side of Big Stone Lake, south of Lake Traverse and immediately south of the Red River drainage basin. This is a ditch-enclosed site similar to Shady Dell, situated on a high bluff overlooking the lake. The site is presently in a state park. Excavations were completed over several seasons beginning as early as the 1920s and again in the 1980s to early 2000s. The site is an enclosure measuring about 40x50 meters, but a large scatter of artifacts on the blufftop extends over about three hectares (about 7.5 acres) (Haug and Fosha 2008).

The ditch was sectioned and proved to be about one meter in depth (Figure 8.8). Interior to the ditch was a line of post-molds indicating a wooden palisade. Other features at the site consisted of a number of pits, some of which were filled with rocks. Some were bag-shaped and are assumed to have functioned as storage pits later filled with refuse. Numerous post-molds inside the enclosure were probably part of structures of some sort; however, no clear patterns were observed and the nature of any domestic architecture is a matter of conjecture.

The artifact collection from the site included bone, stone, and ceramic remains. Bone tools consisted of bison scapula hoes, fleshers, and at least one awl. Lithic artifacts included small projectile points typical of the terminal Woodland and Plains Village. Ceramics were common in the deposit and the collection was dominated by Cambria pottery, primarily a variety known as Linden Everted. Globular vessels had well-defined shoulders and everted rims. The bodies of the jars were smoothed or smoothed-over cordmarked. Decoration was mostly trailed lines, or broad incising, often in curvilinear designs. In addition to the pottery, several ceramic pipe-stems and fragments were found in the deposit.

Faunal remains were not abundant at the site, although bison bone was found, as well as fish and mussel shells. Charred corn cob and kernels were recovered, and along with the scapula hoes show that the people who lived at Hartford Beach were growing maize in local gardens.

Figure 8.9. Barely visible low, circular burial mound near the Sprunk site.

Three radiocarbon dates were assayed from charcoal found in a feature. Although one of the dates is somewhat early at around AD 1160, two other dates are probably more reflective of the actual age of the site, given the nature of the cultural materials. These dates are calibrated to about AD 1350 as a rough average.

Hartford Beach stands as a fortified settlement of the Cambria culture and as perhaps the best known of the northwesterly Cambria expressions. While many regard Cambria as a Plains Village culture related to developments in the central Dakotas along the Missouri River, it is undoubtedly related to other fortified Plains Village sites in the Red River region as well.

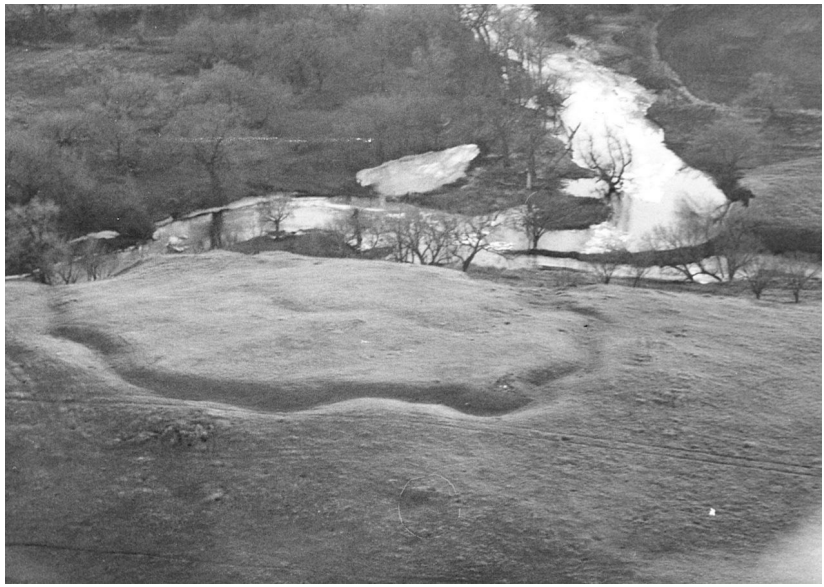

Figure 8.10. Faint outline of an interior ditch at the Shea site may be seen in this black and white aerial photo about halfway beyond the outline of the exterior ditch and the bluff edge.

Figure 8.11. Shea site interior ditch profile showing alternating sterile and artifact-rich layers.

Shea and Sprunk

The Shea and Sprunk sites are twin settlements situated on the Maple River, which flows into the Sheyenne, a major tributary of the Red (Michlovic 2008; Michlovic and Holley 2022: 108–123; Michlovic, Holley, and Dalan 2019; Michlovic and Schneider 1993). The sites are both on the upland above the Maple and are in mostly fine sands related to shoreline features of Lake Agassiz. The native vegetation in the vicinity of the sites would have been mixed grass prairie, with riparian woodland in lower elevations near the river. The Shea site is nearer the Lake Agassiz lowlands, while Sprunk is about three miles farther upstream. They are in almost identical topographic settings. Neither of these sites have been farmed.

There is a single low, conical mound a short distance north of the Shea site, and two mounds are adjacent to the Sprunk site. I assume that the mounds served as cemeteries for the people who lived at the sites. None of these mounds have been excavated or otherwise disturbed, a credit to the farmers who owned the land (Figure 8.9).

The sites are distinguished by ditches, assumed to be for defensive purposes, which surround the sites on three sides, while the un-ditched portion of each faces a steep slope overlooking the river. The area enclosed by the Shea ditch is the larger of the two, being about an acre, although the area of occupation documented outside the ditch is considerably larger. The Sprunk ditch encloses about half an acre; however, as at the Shea site, there is cultural material found outside the ditch.

The ditches at these sites were cross-sectioned with excavation trenches. Both had a substantial amount of discarded cultural material tossed into them during the site occupation. The ditches are largely infilled today, but excavation showed that they were originally about 1.5 to 2 meters deep. The debris deposits in both cases were separated by culturally sterile sediments, suggesting that the occupations at these sites were periodically interrupted. I suggest that during the cold season the people moved to the wooded lowlands to take residence in winter lodges, moving back to the upland enclosures in the warm season. The sterile sediment in the ditches would have been the in-filling that happened with the spring snow melt. At the Shea site, there were actually two ditches, the main exterior ditch, and a smaller, entirely filled-in ditch interior to it (Figure 8.10). When this interior ditch was sectioned with a trench, it showed a much more complex pattern of infilling than the outer ditch. There were indications here of about 10 or 12 layers of culturally rich, and sterile sediments. I assume that this represents the approximate time

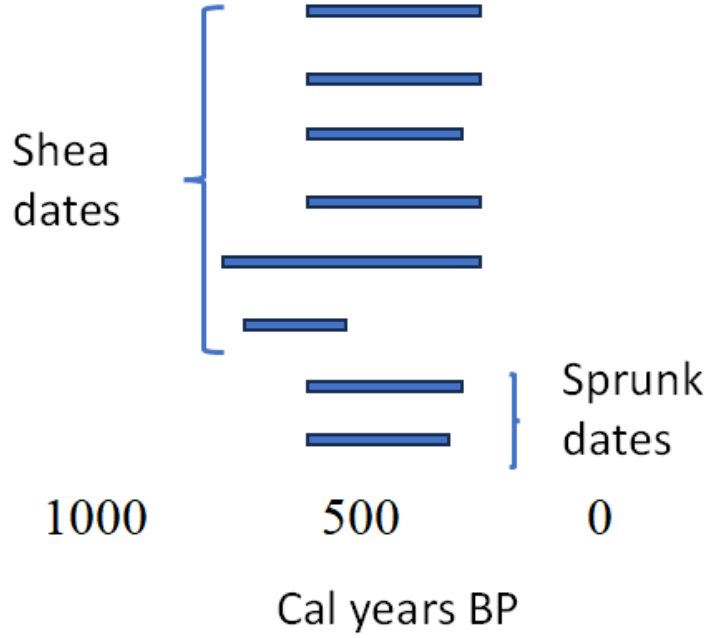

Figure 8.12. Calibrated C14 dates for the Shea and Sprunk sites.

in years that the site was used. Adding several years for the accumulation of sediments into the exterior ditch, I estimate the occupation to be about 10–15 years minimum (Figure 8.11).

One of the notable feature types found at the Shea site were bell-shaped pits. They were under a meter wide at the mouth, and expanded toward the bottom. They were roughly a meter deep. These are the form of storage pit used by other Plains Village peoples such as the Hidatsa and Mandan living to the west on the Missouri River. These pits were usually lined with bark or grass, or corn cobs, and packed with garden produce and other foods, being opened when the need arose. After they were emptied, they were often used for garbage disposal, a boon for archaeologists, since broken pots and stone tool debris, along with organic scraps, would end up here preserved for discovery.

Remote sensing procedures were used at both sites to determine whether features might be located. The Shea site was so heavily used that return signals showing house outlines or other discrete features were not found. At Sprunk a series of five more or less oval subsurface patterns

showed up on an electrical resistance survey. Unfortunately, there was neither time nor funding to undertake an excavation of any of these. A block of twelve meters square uncovered fire hearths within the thick A-horizon, showing that any structures that did not have deep pit foundations would likely not be visible in a standard excavation, since the black A-horizon would mask any disturbance left by a shallow pit or decayed post or wall pattern. Even so, the oval patterns are suggestive of domestic structures.

Shea and Sprunk sites have both been dated by carbon-14. While there are some differences in the dates, they match fairly well with each other. There are six radiocarbon dates for the Shea site and two for Sprunk. The average for both is somewhere in the middle of the fifteenth century, or around AD 1450. The most recent part of the ranges for the dates extends into the early seventeenth century; however, the lack of any European trade goods makes it unlikely that the sites were being used in the Historic period (Figure 8.12).

The ecofacts from both sites reflect a subsistence system based in good measure on bison hunting. Bison bone is the predominant item recovered at both sites. At Sprunk, bison bone accounted for 164 of the 221 identifiable animal bones. Both mature and immature animals are present in the collection. These bones represent just about every major part of the bison, including bones from the skull and mandible, ribs, shoulder, pelvis, vertebrae, and leg. For this reason, I assume the people at Sprunk probably hunted and killed bison near the site.

There were animal remains from other species found at Sprunk. These include identifiable elements from canids, probably dogs, beaver, badger, otter, one deer, a few fish, a turtle, and a fair number of bird bones, specifically from Wood Duck, Northern Shoveler, and Mallard. Only a mile or so west of the Sprunk site are shallow pothole lakes, which are seasonally attractive to migrating waterfowl. This probably explains the abundance of waterfowl at Sprunk, and their relative scarcity at Shea, which is located somewhat farther to the east. A few fish bones were present, as were a large number of river mussel shells. The mussels are almost exclusively *Lampsilis sp.*, which suggests some preference on the part of the people who were collecting these from the Maple River.

As part of the study of artifacts from Sprunk, several ceramic vessels were examined using microprobe analysis, and a process known as FTIR (Fourier transform infrared spectrometry). The microprobe study of the vessels revealed a thin veneer of organic material on the interior of several vessels, possibly a type of organic glue. One also had a coating of very

small phosphorous particles, almost certainly from bone. The interior of some vessels contained the signatures of bison bone marrow and elk blood. Even though elk bones were not found at the site, it is possible that meat from this animal was eaten at the settlement. The bison bone marrow suggests that people were boiling bone to remove marrow fat, which was an important part of the manufacture of pemmican. Pemmican, of course, was jerked meat capable of storage or for provisioning for a trip.

At the Shea site there were almost 300 identifiable animal bones, and an additional 200 or so were large enough to be assigned to the category of bison or elk, but no actual elk were identified in the sample, so we assume most of these were also bison. The bison bones at Shea represent over a dozen individuals. The bison bone sample suggests that the animals were probably killed in small scale hunts rather than in mass kills.

There were also identifiable elements from beaver, dog, skunk, and rabbits. A few fish bones were also present. Two differences between the Shea and Sprunk faunal remains are that mussel shell is more common at Sprunk and occurs in clusters that were not as prominent at the Shea site. Also, waterfowl were clearly more common at Sprunk. On the other hand, at both bison were predominant.

Domestic plants were found at both sites as well. Maize kernels and cob fragments were relatively common in the flotation samples, and at Sprunk there were also seeds from tobacco. Cherry, plum, Chenopodium, and Amaranth (goosefoot and pigweed) were found at one or both sites, and at Sprunk, charcoal from elm, oak, ash, hackberry, and birch were recovered. Birch is a northern woodland tree and the bark of the tree was used for baskets and trays. Perhaps birch was brought to Sprunk from somewhere in Minnesota. Obviously, at both of these locations gardening was practiced with maize and probably tobacco, while wild plant foods supplemented the domestic produce.

The stone tools from the sites tell similar stories. Knife River flint comprises a little over a third of the lithic material at Shea, but almost two-thirds at Sprunk. The remainder of the lithic sample is approximately similar in terms of raw material presence; Swan River chert, Tongue River silica, and various other tool-stone types found in regional till deposits. A rare piece of obsidian from the Rockies, and small fragments of copper from the Lake Superior region occur. At Shea fragments of pipestone were found, including a fragment from a fairly sizable bead.

The stone tool collection at these sites comprised mostly triangular points, which is typical for Plains Village sites on the Northeastern Plains. There were also occasional Plains Side-Notched forms as well.

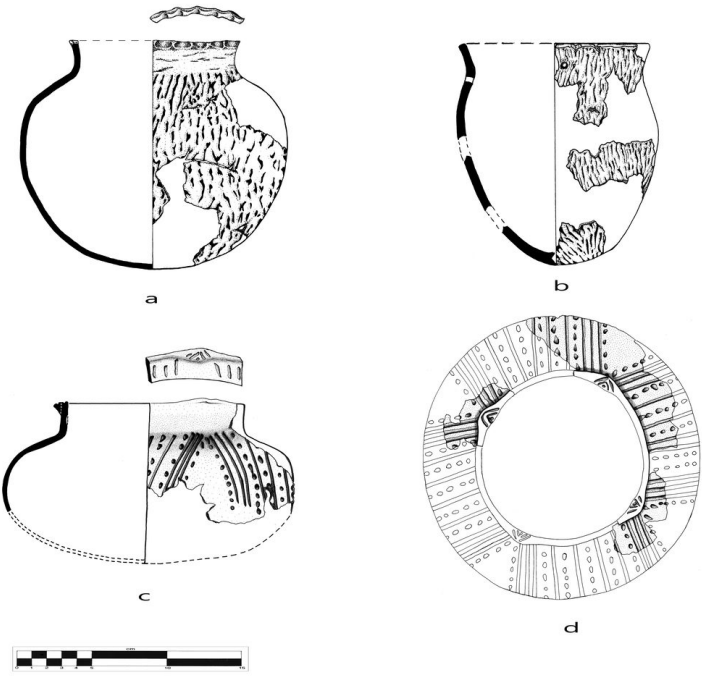

Figure 8.13. Sprunk site pottery vessels. Above, Sandy Lake. Below, Northeastern Plains.

Presumably, these small points were used to arm arrows rather than spears or atlatl darts. Scrapers for hide, and possibly wood working were common in the deposits, and the preferred material for making scrapers was Knife River flint. Altogether, the lithic collection fits comfortably with the Plains Village stone tool assemblages of other regional sites. One curious matter is that Knife River flint is about twice as common at Sprunk as it is at Shea, but that could be a matter related to the fact that more than twice as much area was excavated at Shea than at Sprunk. On the other hand, we archaeologists prefer explaining differences like this as a product of people's behavior. Taking this tack, we might assume that Sprunk and Shea were not used at the same time, but were perhaps sequential occupations. At the time of the Sprunk occupation, there was more open access to the Knife River flint source area on the far side of the Missouri Valley. During Shea times the situation was reversed. Were there changing alliances with groups to the west of the Maple River that

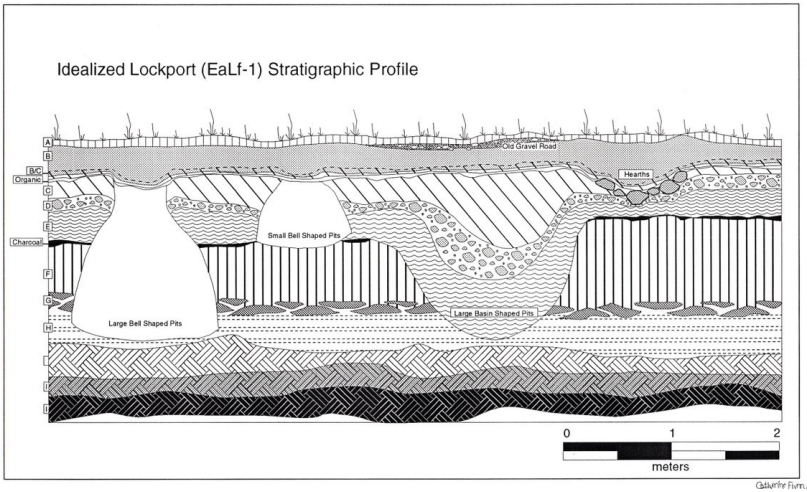

Figure 8.14. Idealized profile of the Lockport site showing pits extending down from the Horticultural layer. (Drawing courtesy of Catherine Flynn; modified from Flynn 2002: 429).

interrupted the transfer of raw materials? It will be interesting to see what future work uncovers as more sites from this time period in the Northeastern Plains are excavated and studied.

The ceramic collections at Shea and Sprunk tell a most interesting story (Figure 8.13). At both sites there is a similar pattern of ceramic ware co-occurrence and stylistic blending. Two types of pottery, roughly equal in frequency, were recovered. One type is the pottery popular in Late Precontact lake-forest country of Minnesota, Sandy Lake. The other is the Northeastern Plains Village ceramic ware. While Sandy Lake is the usually cordmarked, shell tempered and sparsely decorated pottery at these sites, Northeastern Plains Village ceramics are grit tempered, often smooth surfaced (at least near the rims), and more commonly decorated. The decorations often consist of broad and shallow incisions, sometimes accompanied with shallow punctations. One vessel even has what may be a stylized raptor, or thunderbird motif. The decorations on the Northeastern Plains Village ceramics are similar to the decorative attributes found on Oneota ceramics. And not coincidentally, a few Oneota sherds have also been found at these sites. In some cases, traits of Sandy Lake and Northeastern Plains Village pottery were both present on the same vessel. At the Sprunk site, vessels of both types were found in the same deposit in the lower part of the ditch. Both of these aspects of the ceramic

assemblage make it clear that these two types of pottery do not represent sequential or separate occupations at the site, but that the people who lived at Shea and Sprunk used both of these wares simultaneously.

The upshot of this ceramic assemblage is that maybe two different groups of people lived at these sites. Perhaps intermarriages between different people resulted in the mixing of two pottery-making traditions. Another possibility is that a single group of people lived here on the perimeter of the Red River Valley. Some of them had relatives or connections to the east, where Sandy Lake pottery was popular, while others participated in a local ceramic tradition common in the eastern part of North Dakota; say the Sheyenne and James River valleys, where the Northeastern Plains Village material is widespread. Intermarriage, co-residence or some other similar process brought people using different pottery styles together in the same settlements. These options might be kept in mind as we remember that at the Mooney and Omlid sites, on the main stem of the Red River, both of these ceramic wares were also found, but there the Sandy Lake pottery was predominant, and Northeastern Plains Village ware was a definite minority. And in the James River Valley, about 50 miles west of the Maple, Sandy Lake is an occasional find, while Northeastern Plains Village pottery is common.

Lockport

Archaeologists sometimes use the term "site unit intrusion." It refers to a component at an archaeological site that seems to come from somewhere else, that is, something that does not develop in the area of the site but represents an intrusion into an otherwise local developmental sequence. The Lockport site has a site unit intrusion in its upper levels (Figure 8.14). It is referred to sometimes as the horticultural horizon for the obvious reason that it contains good evidence of agriculture. It is regarded as an intrusion because the local Woodland pottery gives way to a dramatically different ceramic style, and the features at the site and miscellaneous artifacts include good evidence of a new lifestyle based on domestic plant use. It is succeeded by a return to more Woodland-like cultural materials.

The stratified Lockport site was already mentioned in relation to its Woodland period materials, and also its place in the history of archaeology in the Red River Valley. Now it is necessary to return to Lockport since some of the most significant finds made at this location date to Plains

Figure 8.15. Bison scapula hoe from the Lockport site. (Courtesy Kevin Brownlee and the Manitoba Museum).

Village times. The following review of Lockport is largely taken from Catherine Flynn's (2002) detailed thesis completed at the University of Manitoba.

Lockport is in an area with easy access to Lake Winnipeg, the Assiniboine, and Red rivers, and is within relative proximity to boreal forest, parkland, and prairie environments. There are also local rapids in the Red River that make for good fishing, while usable stone material is found in limestone outcrops. Clay for making pottery and the many plants and animals in the riparian forest along the river made Lockport an attractive location for a settlement.

The disposition of cultural materials throughout the stratigraphic profile at Lockport has been clarified since MacNeish's work by several additional excavations during the 1980s. Almost 100 square meters were excavated to over 2 meters below the surface. Several dozen features were found, mostly in a clearly identified stratum near the top of the profile. This is the horticultural layer, sometimes called the organic layer. As the terms indicates, it is enriched with organic material that discolor the soil and make it easy to discriminate from other horizons above and below. It also contains evidence for the practice of gardening.

Figure 8.16. Portion of a ceramic vessel from the Lockport site Horticultural layer. Note the incised design on the vessel shoulder, just below the rim, showing the feather patterning of a raptor (hawk/falcon). (Photo courtesy of Kevin Brownlee and the Manitoba Museum).

Figure 8.17. Drawing of reconstructed vessel from the Lockport Horticultural layer with repeated chevron design (Drawing courtesy of Catherine Flynn, see Flynn 2002: 462).

Flynn (2002: 128) believes that this layer dates to around AD 1350-1450, and is certainly Plains Village in age. There is no doubt about the presence of domestic plants in this level, although in this case the domesticates consist entirely of maize, specifically the Eastern 8-row variety. The presence of kernels and cupules (part of the cob) of maize indicate that it was grown locally rather than traded from another place to Lockport. It is generally assumed that traded maize would have consisted of bags of kernels rather than cobs, which had no real food value, and would have been too cumbersome to transport in any quantity. In addition to the actual remains of maize, there are also scapula hoes in the Lockport deposit, identical to the type of tools used in the Historic period to prepare and work gardens and fields in the Plains Villages along the Missouri River (Figure 8.15). Altogether, this is probably the best evidence we now have of domestic plants this far north in the middle of the North American continent.

Other plants found in the horticultural layer include Chenopodium (goosefoot), Amaranth (pigweed), Polygonum (knotweed), hazel nut, wild cherry, raspberry, and strawberry. Chenopodium was often domesticated at sites dating from the Woodland period and later in the Eastern US; however, there is no very good evidence that it was a domesticate at Lockport. Faunal resources included bison, moose, rabbit, beaver, muskrat, grouse, pelicans, and cranes. Some of the identified fish were walleye, pike, catfish, and sturgeon (Laberge 2020).

As surprising as the presence of maize at such a far northern position is for archaeologists, it is equally surprising to find an artifact collection as unusual as that found with the maize in the horticultural layer. In the layer below this one is typical Woodland pottery. Above this layer is a deposit containing Selkirk ceramics, a ceramic style not too different than Sandy Lake, with more or less globular shape, weak shoulders, fabric impressions on the exterior surface, and few decorations, other than punctations. Rainy River pottery is also found with Selkirk pottery. But in the horticultural layer the ceramics are decidedly different. This pottery is generally smooth surfaced on the upper body, with everted rims and sometimes tabs on the vessel lips. The decorations are broad incisions in distinctive patterns or motifs. One reconstructed vessel has incised W-s on the upper body, another vessel features what are clearly raptor or thunderbird representations (Figures 8.16-17). The pottery is very much like the Northeastern Plains Village ceramics from eastern North Dakota in the James and Sheyenne valleys, and from some sites on the upper Red River itself. The distinctive ceramics and the good evidence of gardening indicate that there was a movement of people into the Lockport area with a non-local ceramic technology and a novel subsistence system. McKinley (2001) has named this particular constellation of culture traits the Kenosewun complex, the term coming from the Cree language meaning a place with many fish.

The horticultural layer at the Lockport site clearly appears to be an intrusion of farming people from the south, probably a prairie-oriented group rather than one from the Woodlands of Minnesota, since the prairie is where most of the Northeastern Plains Village archaeological sites are located. Here in the horticultural layer are a number of distinctive features not found in other layers at Lockport, or at other sites in southeastern Manitoba; bell-shaped pits for storage, maize, exotic ceramics, all suggestive of a population moving into the northern Red River region. The superincumbent layer at the site represents the demise of this particular adaptation. The century or so sojourn of the horticulturists comes to an end before the European intrusion.

The reason for the movement of a group from the south might have had to do with any number of factors, such as population crowding, or improving climatic conditions that made northern areas more conducive to small-scale farming. However, my own guess would be that any such re-location of a group of Northeastern Plains Village peoples would most likely have had to do with inter-village conflict. These small villages south of Lockport are often fortified and this would indicate that warfare or raiding was a concern that might induce a group to move north down the Red to find a location where it might safely avoid whatever conflicts they were trying to escape in the south.

The Forks

Before building the Canadian Museum for Human Rights in Winnipeg, archaeological work was done to rescue precontact materials that would be destroyed by construction. In about 150 square meters of excavation, almost 380,000 artifacts were recovered from eight cultural layers. The layers contain numerous hearths, indicating intact living floors, and are securely dated to roughly AD 1100-1300.

The artifacts are varied in terms of their functional types, and the projectile points include late forms such as Prairie Side-Notched and triangular tips. A standard tool kit including scrapers, bifaces and preforms, drills, choppers, knives, cores, and worked and utilized flakes was also recovered. Knife River flint is more common in earlier layers, while Swan River chert seems more common later. The ceramics have little in common with the contemporary forms found along the upper Red in the US, where Sandy Lake and Northeastern Plains Village pottery is found. The ceramic material at the Forks is mostly Rainy River composite types, with stamped impressed decorations and elongate and circular punctations.

Bison remains are present in low frequencies in the various layers of the site, while fish and small mammals are more common. This is not unexpected for a site on the prairie-woodland edge. Plant remains were sparse, although plum and hazelnut pits were identified. Food residues on the interior of ceramic vessels were studied and found to contain signatures of several local wild plants. Two domesticates documented by pollen and starch granules were maize and bean, the latter of which was found on most of the analyzed vessels. Common wild plants identified in residues include acorn, pine nuts, sunflower, and wild onion (Quaternary Consultants 2013).

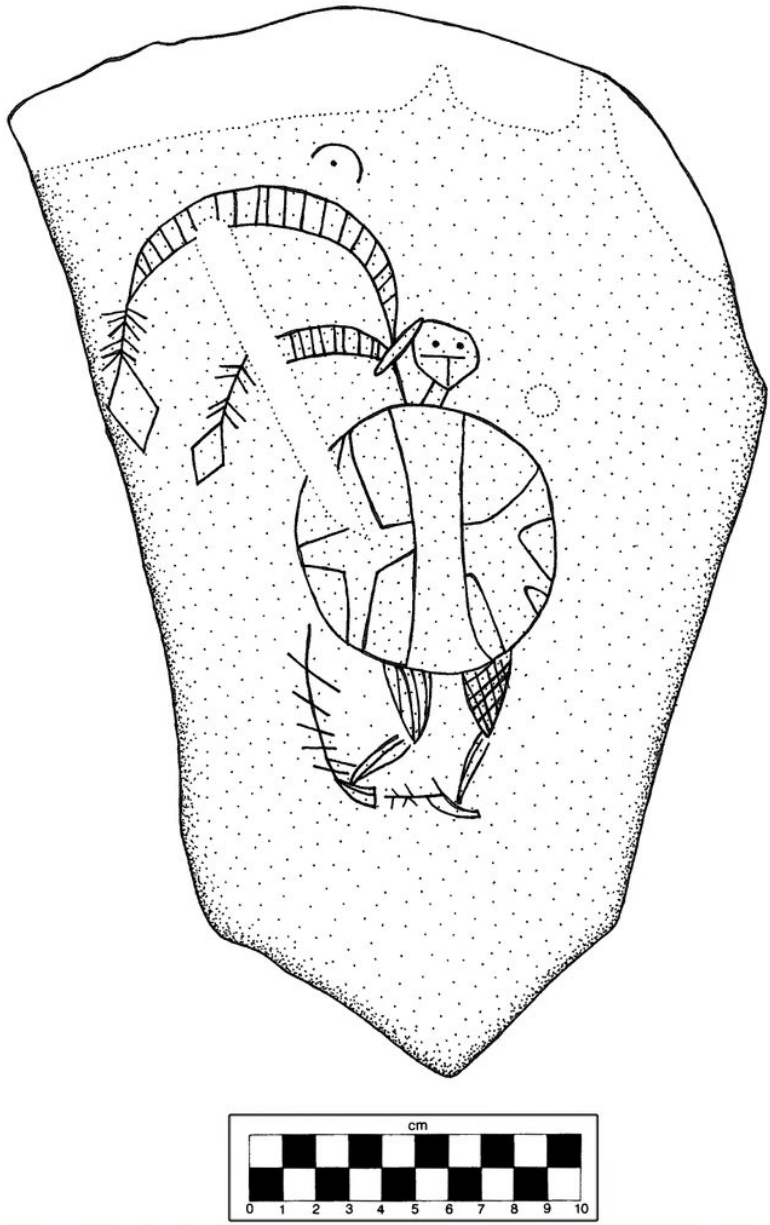

Figure 8.18. Pipestone tablet depicting warrior with shield. (Figure courtesy of George Holley, drawing by Bea Franke).

Oneota Occurrences and Pipestone Tablets

There are no well-documented Oneota sites in the Red River Valley, that is, actual occupations. Some private collections, along with a few instances of limited excavated finds, show that Oneota ceramics do occur in the southern portion of the Red River Valley. The Oneota presence is dated to between AD 1300–1550 (Holley and Michlovic 2010). Oneota decorative themes are found in the ceramics of sites such as Lockport, in Manitoba, Shea and Sprunk in eastern North Dakota, and at the Mooney site in far western Minnesota. Oneota sherds were recovered from two sites along the Red River not far from the Mooney site. They were collected from the surface and remain in a private collection. The majority of the ceramics from these sites, 32CS11 and 32CS12, are not Oneota but Sandy Lake. Oneota influenced sherds were recovered from both the Mooney site and the Wichman site, but both have mostly Sandy Lake ceramics. Along the upper reaches of the Red River, near Abercrombie, North Dakota, full blown Oneota vessel fragments have been found in fields by collectors, although none of the sites where this pottery occurred were excavated since access was denied. One site in the Valley where an Oneota presence was documented was the Femco site, where a mound dug by Wilford contained a complete Oneota vessel.

At several locations along the Red River in the vicinity of the mouth of the Sheyenne a private collector accumulated a set of pipestone tablets from surface sites. Pipestone is a red mudstone that is easy to carve and was used widely by native people on the Plains and nearby areas. Most pipestone in the Northeastern Plains was obtained from the Pipestone Quarry in far southwestern Minnesota. The material is found layered within deposits of Sioux Quartzite. Pipestone was, and still is, a ceremonial material often made into smoking pipes, amulets, and incised tablets. It was used in the Plains Village through the Historic period and is especially prominent in Oneota assemblages. Oneota people often carved tablets of pipestone figuring them with various images: anthropomorphic, zoomorphic, and geometric. Incised tablets are also found in the Devils Lake-Sourisford complex, an assemblage of cultural materials largely recovered in earlier excavations from burial contexts. The tablets from the Red-Sheyenne locality are described in Holley and Simonson (2016).

There are nine tablets in this set from the Red-Sheyenne confluence, some of which have discernable images, others with heavy scratching or other modifications in no clearly definable shape. The tablets show obvious Oneota influence, and stylistic conventions that link the images on the tablets to other regions in North America. The iconography of the

pipestone plaques and their association with Oneota allow an approximate date for these surface items as Plains Village to Protohistoric (being the time prior to European intrusion, but after the influx of European trade goods from the east).

I focus here on a few of the tablets with definable imagery. One of the tablets shows a warrior figure carrying a large shield (Figure 8.18). There are elongate plumes trailing in an arch-like fashion behind the figure, and a single feather descending from the crown of the head. The shield is divided by a vertical bar and has star-burst images on either side. Behind each foot is a trailing design, perhaps to indicate decorative paraphernalia like an animal tail attached to the back of the footgear. The bent legs in the image may reflect movement. A second tablet features a U-shaped niche with a cross-hatched face and two diamond-shaped eyes and fangs or jagged teeth extending out of the mouth. It is defined by Holley and Simonson as a water spirit or underwater panther. There are several other figures fronting this creature, although they are difficult to identify. The niche image and the underwater spirit are familiar images in other parts of the US. A third tablet has a number of pod-like images with interior lines drawn on them, and feathery protrusions from one end of the figure. These are interpreted as bison with upraised tails, suggesting a state of excitement, perhaps animals in motion during a hunt.

Many of the tablets are heavily scratched, and the imagery on them is difficult to see through scratch marks that have been placed either before or after the image was carved. The plaques may, in some cases, represent a palimpsest or a series of marks placed one atop the other. As for the many scratch marks, Holley and Simonson (2016: 126) suggest that since pipestone was commonly used for making pipes, perhaps the plaques were sometimes used as appropriate platforms for tobacco cutting. In this matter, it is important to remember that pipes, smoking and tobacco were important in many religious and social ceremonies among the Native Americans, so pipes, tobacco, and pipestone tablets were all alike infused with ritual significance.

The tablets show in a small way something about the mythic symbolism and belief system of the Red River peoples. The water panther, for example, was an important spirit among some groups and stood in opposition to the Thunderbird, one being a spirit of the underworld, the other of the sky. The underwater panther was also popular in the southeast US, and among some Great Lakes area peoples, it was considered a patron of copper. There is a story told to Lame Deer by a Dakota woman of a great flood that killed many people, whose blood became the red stone

that is now used for pipes—pipestone (Lame Deer 1969). The water spirit Unktehi was the force behind this catastrophe, and we might imagine, the figure on the pipestone plaque.

Shields, depicted on one of the plaques, were popular in warfare prior to the introduction of guns. The symbols on shields reflected the power of the bearers and might be meant to frighten the enemy. Shields might also be used by shamans to represent their personal power. They were one of the most important possessions of a Plains warrior, and were distinctive for various groups. Symbols on shields might come from dreams, and there were taboos and obligations associated with owning a shield (Mooney 1901). Corroborating the meaning of shields for warfare are studies of rock art on the Northwestern Plains where pedestrian figures are shown with shields while brandishing weapons. The figures are dated to Plains Village times (Keyser and Klassen 2001: 239-240).

The imagery on the pipestone plaques from the Red-Sheyenne area give us a little glimpse into the art, the symbolism and even the belief systems of the people who lived in this area hundreds of years ago. The presence of a water spirit can be associated with native etiological stories, while the image of a shield bearing individual reinforces the suggestion that inter-group conflicts may be inferred not only from fortifications at some of the regional sites, but from the iconography found on these invaluable plaques.

Discussion of the Late Precontact/Plains Village Period

The period from AD 1200-1700 was one of dramatic change in the Red River Valley. There is archaeological evidence of this in the discovery of maize and other domesticates at sites, the appearance of fortified settlements, new ceramic stylistic traditions, and probably, the incursion of peoples, or at least powerful influences, from the south and east.

Most of the sites in the southern and central portion of the Red River Valley are identified as Sandy Lake. Surveys in Clay and Norman counties, Minnesota, display a remarkable number of Sandy Lake sites on cultivated field surfaces. Farther south in the Valley occurrences of Oneota pottery are slightly more common along with Sandy Lake, and the similarity of the two ceramic wares in terms of shell tempering, and occasional similarities in decorative attributes, suggest that there was some connection between the peoples who used these types of pottery. On the other hand, in the northern or lower Red River area Sandy Lake is less common, and other wares, including Rainy River and Selkirk ceramics are preponderant. The exception is the horticultural layer at Lockport,

where Northeastern Plains pottery dominates the assemblage. From the Red River Valley to the west, Northeastern Plains Village ceramics and associated cultural material, including good evidence of subsistence horticulture, become more apparent.

The Plains Village peoples of the Northern Plains are often described by archaeologists as practicing a dual economy. That dual economy involved bison hunting and subsistence horticulture, or household farming. This notion diminishes the importance of wild plant foods, small game, fish, and mussels that were obviously significant in the economy of people throughout this region. Every archaeological site that produces plant remains includes a variety of wild foods that must have been of routine importance in the diet, as well as remains of small animals. Domestic or household farming, bison hunting, wild plant gathering, and small game hunting, fishing, and trapping were all integral parts of the life-way of this late period.

For two of the sites reviewed here there is tentative evidence of domestic structures. These are Sprunk and Omlid I. At the Sprunk site a resistance survey identified five subsurface features, or anomalies, that were circular to oval in shape and about five meters in diameter. At Omlid, a number of soil features were identified as house pits; however, only one was associated with a post pattern suggestive of a house. This feature was circular to oval in form and about six meters in diameter, that is, about the same size as the presumed structures at the Sprunk site. A roughly circular structure of this size would provide about 28m^2 of living space. Wedel (1979) basing an estimate of household occupancy on historic Plains peoples, believed that five square meters were needed for each person. A twenty square meter (5-meter diameter) house would thus provide for about four people, and a 28 square meter (6-meter diameter) house for five occupants, or in either case, roughly a nuclear family.

The large villages of the Mandan, Hidatsa, and Arikara on the Missouri River in the Dakotas typically featured bigger lodge structures that housed several families. These extended family structures were part of a system of kinship and social organization that held much larger populations in social equilibrium. Larger populations always require social mechanisms to mediate conflicts that become likely with more people in a community. The elaborate social system of village groups such as the Mandan, with extended families, clans, and special societies, was distinct from the Dakota system that focused more on the family as the organizing principle of community life. Considering the information on the size of houses in the Red River Valley region, limited as it is, there is reason to

suspect that the organization of the communities in the Valley was generally family-centered and that the social structure of these peoples was more like the Dakota and distinct from the Mandan-Hidatsa and other major Plains Village groups.

The influence of cultural developments emanating from the central Midwest and Southeast US are in clear evidence in the Red River Valley in the last portion of the precontact period. Syms (1979) recognized this in the burial paraphernalia described by early investigations into regional cemeteries. The Oneota ceramics and the influence of Oneota iconography on the ceramics of the Northeastern Plains Village culture also reflect a cultural stimulus from the Mississippi Valley. Shell tempering of pottery and broad incised designs are common in Mississippian ceramics, and similar attributes in Oneota show up in Northeastern Plains Village ceramics, and occasionally on Sandy Lake pottery as well. The precise nature of this Mississippian influence is not very well understood. Whether there were actual population movements, or simply what anthropologists refer to as stimulus diffusion where cultural influence is passed from one group to another largely by imitation of desired behaviors or cultural traits, such as vogues in ceramic decoration, is presently unclear. In at least one case, the horticultural horizon at the Lockport site, there seems to be an actual intrusion of people from the south, appearing relatively suddenly with maize farming and the technology—storage pits, bison scapula hoes, grinding stones—that go with it. This intrusion is also reflected in the Northeastern Plains Village pottery that features Oneota-like decorative preferences. There must have been something happening farther south where such subsistence and ceramic practices were widespread, and which stimulated a northward migration by people influenced by these practices into a region where such a cultural complex stood out as unique.

By this time, after AD 1200, archaeologists find it tempting to speculate on the ethnicity of the people who left the archaeological signatures at sites across the Valley. Sandy Lake is widely recognized as the product of some Siouan peoples, more specifically, of the Dakota. A proto-historic archaeological sub-period known as the Bradbury phase is associated in the central Minnesota Mille Lacs region with French trade items and Sandy Lake pottery. The French records of the time show that they were in contact with the Mdewakanton Dakota in this area. If Dakota were making Sandy Lake pottery in central Minnesota, they or their close relatives, perhaps the western Sioux, or Teton (Lakota), were using it on the prairies of the Red River Valley (Michlovic 1985). Or, perhaps they were Yanktonai Dakota, or the Sisseton or Wahpeton, or some group

that eventually developed into people who were recognized in the eighteenth and nineteenth centuries as the Dakota/Lakota. The Participants of the Lake Superior Basin Workshop (1988: 43) offer their opinion that Sandy Lake pottery was produced by the Assiniboine, but since these people are closely related to the Yanktonai Dakota it is possible that they were also engaged in making this particular style of pottery. In the far northern Valley, near the mouth of the Red at Lake Winnipeg, and in the shallow layers of the Lockport site, there are Selkirk ceramics. Archaeologists in Canada often associate this ware with the Cree people, who moved southwest out of the boreal forest. The Rainy River composite pottery, also found in the lower Red River and Lake of the Woods region, was likely being produced by some other Algonquian-speaking group, perhaps ancestors of the Ojibwa. On the other hand, in the eighteenth century, when La Vérendrye travelled through this country, he reports the Assiniboine living on the lower Red. These were Siouan-speaking people related to the Yanktonai and could also have had a part in producing the Rainy River composite ceramics.

We are no more certain of who might have made the Northeastern Plains Village pottery found throughout the Red River Valley, from Lockport to Femco. Toom (2004) has speculated that perhaps the Hidatsa were responsible, and the resemblance of some of this ceramic ware has previously been linked to a Middle Missouri archaeological culture identified with the Hidatsa. The Hidatsa themselves claim that they at one time previous to their move to the Missouri River lived in and around the Red and Sheyenne Rivers, and the Devils Lake region in North Dakota. On the other hand, Syms (1979) feels that the burial ceramics that are usually regarded as Northeastern Plains Village pottery were left by some other Siouan peoples such as the Teton, or perhaps the Crow or Assiniboine. Could Teton or Yanktonai have been on the Plains in the Plains Village period and participating in the manufacture of these ceramics? The answer may be forthcoming with future excavations in the region of the Red.

Chapter 9
Concluding Discusion

Archaeology in the US has usually been presented as a sub-discipline of the field of anthropology. One of the first and most important lessons that any student of anthropology learns is that every culture is worth knowing and understanding. There are no insignificant people. For the anthropological archaeologist, the same must hold for the study of past cultures and peoples. It is true that we have much to learn from the history of the "great civilizations," but this does nothing to diminish the importance of learning from the myriad other cultures of the past. The people of the Red River Valley's past represent a series of cultures that I have outlined here. The record of their deep history is disjointed and has countless missing chapters. It is a task for another generation of archaeologists to write these chapters and to fill this history with the details that will make the one offered here, I hope, a worthy beginning.

Archaeology is a unique method for studying the past; however, it is not the only method. There are other avenues to the past, or to history in the broad sense. Archaeology should be not be understood in competition with these other methods, whether they be oral traditions, ethnohistories, linguistic reconstructions, or even mythic stories. Any view into the past based on usable evidence that can be fairly examined, checked, and cross-checked, is worthy of our attention. On the other hand, those who wish to study the past must be alert to claims about history based on self-serving, ethnocentric, and sometimes, even racially charged claims. There are other, and sometimes truly odd developments that arise without an understanding of the archaeological record, and when proper scholarly and scientific standards are set aside. The saga of the Kensington Runestone that has endured since the beginning of the twentieth century, is an example. Proponents of the Runestone dismiss archaeology as irrelevant and rely on poorly devised "scientific" tests to advance the notion that Europeans claimed the central US for themselves in the fourteenth century, and incredibly, some arguing that the Red River Valley itself was Vinland (Wynland), the location of Leif Erikson's settlement of the early eleventh century! Ignoring the evidence of the past leaves open the possibility for historical free-for-alls, where anything anyone wants to believe becomes a matter of "historical reality."

The archaeologist, like a historian, uses a variety of methods to discover events that occurred in the past. The historian, like a sort of detective, strings together evidence from documents or inscriptions, or recollections and the like to create a picture of the past. Most events, of course, are not known, and it is the job of the historian to configure the particles of information, incomplete as they always are, into a meaningful narrative or story. The archaeologist must do much the same, except that instead of working mostly in archives the archaeologist works mostly in soil, and after assembling the evidence from the earth, tries to make a reasonable story about what happened at this or that site, and during one or another time period. Like the historian, the archaeologist creates a narrative out of incomplete evidence. It's not a perfect system in either case, but it's the best we have without time machines.

In the archaeological record, we use the concept of style, normally phrased as artifact types, to stand as proxies for groups of individuals who share standards about the proper way to make artifacts, whether they be projectile points or pottery vessels. Sharing standards about how to make things suggests proximity within social groups. The similarity in decorative motifs on ceramic vessels, or the particular configuration of the base of a projectile point, are often assumed to be the product of shared ideas within communities of interacting agents about how artifacts should be made, or decorated. After all, such similarities as we find in artifact styles are not random. We know from ethnographic descriptions of Plains populations, and from others the world over, that the production of artifacts in traditional societies is learned within households and families. The proper way to make a tool or a pottery vessel is passed from old to young, and furthermore, members of a community are aware of how artifacts are made by their neighbors. On the microscopic scale of family dynamics, we know how similarity in artifact production operates. But when examining the archaeological record, it is difficult to determine when looking at slight variations in types of ceramic decoration or minor differences in projectile point hafting elements whether these are due to separate village communities within a larger ethnic group, or whether they might be the result of individual preferences within a single settlement. In the same regard, the widespread distribution of some artifact styles requires consideration of the types of social interaction between communities, and even ethnic groups, responsible for the spread of that particular artifact style seen in the archaeological record. As we examine the artifacts from different periods and note their designations and names, it is well that we keep in mind that these styles are the product of some sort of interaction

between people making these artifacts over space and through time. Exactly what these interactions might have consisted of is a knotty problem that archeologists continually ponder.

Archaeological resources in the Red River Valley are patterned over the landscape in fairly well-known fashion. Multiple archaeological surveys have demonstrated that sites are most common along the main stem of the Red River, at the headwaters of the river at Lake Traverse, at the junctures of the Red and its major tributaries, along tributary streams themselves, and especially where those streams create valleys carved into uplands adjacent to the Lake Agassiz lowland plain. The work of Holley and others (2021) along the Buffalo River in Minnesota, and my own survey of the Maple River in North Dakota (Michlovic 1993) illustrate the rich resources of these small river valleys as they carved out broad, wooded bottomlands in the Lake Agassiz beaches and deltas. Away from the multiple tributary streams, in the open Lake Agassiz lowland and away from the Red itself, there are few archaeological sites. Furthermore, buried and preserved sites are likely only where there are depositional environments, such as river levees where flood deposits accumulate, or the occasional alluvial fan on the valley edge. In the Lake Agassiz plain, there has been so little sedimentation over time that almost all archaeological materials are near surface and easily probed by shovel testing, or if in cultivated fields, probably exposed on the surface.

I have laid out the archaeology of the Red River Valley here in a straightforward and chronological manner, the way traditional archaeology has usually presented culture history. Before we can discuss the nuances of all of the evidence from precontact times, it is important to have the basic outlines of that past set down in order. Here, I have offered that outline as consisting of several periods; Paleoindian, Archaic, Woodland, and Late Precontact/Plains Village. This division of precontact time is based on a system that was developed in the middle of the last century and is gradually becoming obsolete. Some archaeologists prefer terms like Paleoindian, Mesoindian and Neoindian. Others prefer Early, Middle and Late Prehistoric times, each of these with modifiers to divide it into smaller units of time, such as early, middle and so on. But whatever the system of nomenclature, the archaeological materials used in reconstructing the past are the same. None of them adequately describe archaeological reality in the Valley.

There is a debate that began over a century ago, and one which continues today, about the age of the earliest people of America. In the Red River Valley, there is no evidence of very early peoples prior to the

Paleoindian period. The Paleoindian begins on the Great Plains prior to 13,000 years ago and is usually characterized as an adaptation to Ice Age conditions; hunting a variety of large game animals such as mammoth, horse, Ice Age bison, and other Pleistocene animals on the Plains. No doubt these early hunters also gathered plants, trapped and hunted small game, fished, and used any number of resources. For some of this Paleoindian time, large parts of the Northeastern Plains were covered with glacial ice, and when the ice receded elsewhere, the Red River Valley was under the waters of Lake Agassiz, which only drained in the later portion of the Paleoindian period. Most of the Paleoindian remains from the Red River region consist of surface finds of projectile points belonging to the Plano complex of point styles. Many of these finds suggest an origin to the west and south of the Valley, and most are associated with Lake Agassiz beach or inter-beach surface formations. Some have suggested that the actual shoreline of Lake Agassiz would have been a cold and windswept environment and one without any substantial resources useful to humans. The hummocky and swampy areas behind the shore, where earlier and abandoned beach ridges were more likely vegetated and populated with game and fowl, might have been likely locations for Paleoindian use. The few excavated Paleo components do shed a little light on the Paleo life-way. At Greenbush, in Minnesota near the Manitoba border, there is a Swan River chert flint-knapping workshop with a Late Paleo Scottsbluff point. By this time Paleoindians in the Lake Agassiz region were obviously using local tool-stone. But at the Rustad site, a Paleo-age component turned up a very high frequency of imported Knife River flint. The component contained bison, which is entirely consistent with the image of Paleoindians as big game hunters. But also found were remains of fish and small game, suggesting that by Late Paleoindian times, if not earlier, people were using a range of resources and not focused only on large game.

The Archaic period in the Red River Valley, dating from over two thousand to eight thousand years ago, is documented by several intact archaeological deposits. These include Lockport, Smilden-Rostberg, Canning, Rustad, River Bend, and 32RI785. The Archaic continues an important focus on big game, namely bison, for subsistence. From several sites on the Northern Plains, we know that several innovations occurred during this time period. Evidence for tipis is found in the form of circular stone arrangements, or tipi rings, that were no doubt used to hold the hide coverings of the structures securely to the ground. Pemmican, or jerked meat, was developed as a means of preserving a high protein food

source. Bone marrow fat was normally used for preparing pemmican, and the presence of broken bones, and sometimes piles of bone splinters, are evidence that marrow fat was being used. By the Archaic, the lanceolate points of the Paleoindian were mostly gone, replaced by notched projectile tips. While some have argued that this was directly related to the use of the atlatl or "spear-thrower," this is not very likely, since the atlatl has now been documented for the earlier Paleoindian. Notched points occur earlier in the Eastern US, and it might be best to understand the spread of these point styles on the Plains, including the Red River Valley, as a result of diffusion from the east. The advantage of notches and stems might have been to provide a narrow hafting element for a wide blade, which could be resharpened and used repeatedly.

Woodland sites in the Valley, though more recent, are in some ways more problematic. Previously, the very common Sandy Lake surface sites were regarded as Woodland, but here I have classified them as post-Woodland or Late Precontact. The dating, shell tempering, occasional decorative motifs suggestive of Oneota, and the common association with Northeastern Plains Village ceramics all speak for a post-Woodland assignment. For this reason, most surface sites, particularly those along the Red itself, are regarded as part of the Late Precontact/Plains Village period. Woodland sites are more common in the northern part of the Valley, where Rainy River composite sites may be classified as Woodland. There are Arvilla mounds on the beach deposits that are defined as Woodland, and beach ridges also contain some later Woodland Blackduck sites, such as 21CY39. Earlier Woodland materials have been found in buried deposits at Dahnke-Reinke at the Red-Sheyenne confluence, and are present at other sites along the Red itself such as Lockport.

While in eastern parts of North America the Woodland is characterized as containing pottery, mound building, and use of domestic plants, only pottery and mound building are presently found in the Red River Valley Woodland. There have been studies in the northern Valley suggestive of domestic plant use based on phytoliths and starch granules, but there is no good evidence of the local production of domesticates in the Red River Valley. Even so, if domesticates were being traded for it indicates that the people of the Northeastern Plains and Northern Midwest were familiar with domestic plants, and that their trading systems were involved in procuring domesticates from distant locations, presumably to the southeast and southwest. This may have impelled populations in the region to interact more intensely with groups in that direction. We need look no further than the case of Assiniboine-Mandan to understand the

importance of trade between groups like the Mandan that grow crops, and others such as the Assiniboine who trade for them. The non-agricultural Assiniboine arranged a good part of their routine activities around a trip of about 200 miles to trade products of the hunt for Mandan crops.

The construction of burial mounds is a reflection of new ways of treating the dead, and perhaps of marking off territories. Did this innovation signify a major social transformation? The building up of earthen mounds shows that monumentalizing burial grounds was regarded as important to people, and the mounds were used over centuries of time. While we might not be able to say how earlier people felt about location or place on the landscape, by Woodland times certain places had ritual or ceremonial significance. Mound building appeared much earlier in the Eastern US, and the presence of similar structures in the Red River regions is a clear mark of eastern influences. We know from ethnographic reports that mounds in the Southeast were not only used for burial, but had significance as cosmic symbols related to the underworld and were sometimes connected to the idea of maintaining the land and keeping it from collapsing into chaos. Conical mounds perhaps reflected the dome of the sky, and beneath the surface, the world below, the source of life to which the dead returned. Flat top mounds, such as those found in the area around the headwaters of the Red River might have been so designed for dancing, or stomping down the earth to keep it in place, a metaphysical belief among some eastern US peoples. Perhaps mounds in the Red River region had a similar cosmology surrounding their construction and use.

Did pottery represent a major change in lifeways, or was it a simple and convenient addition to an Archaic adaptation? Habitation sites that have been excavated to date seem to indicate a primary Plains Woodland period reliance on bison, much like the previous Archaic, along with plant gathering, fishing, and small game hunting. Ceramics are used mostly by archaeologists to track cultural influence across space, or to place archaeological sites within a certain time period. But pottery made food storage and cooking more convenient, and these features of ceramic use should not be underestimated. Many plants that might otherwise be regarded as inedible may be made palatable by boiling, and thus ceramics may represent an important advance in subsistence capability. Consider also the facts that pottery was somewhat difficult to transport without breaking and might have been related to greater sedentism, and that the procurement of usable clay, and the manufacturing and firing process represented labor inputs that must have involved some important changes in the everyday life of people who made ceramics.

The Late Precontact and Plains Village period, extending from about AD 1200 to the arrival of Europeans, is the last entirely indigenous period in the Red River Valley past. I make the decision to define a Late Precontact and Plains Village period rather than continue the Woodland period to the time of European contact for a couple reasons. The period after AD 1200 provides us with the first good evidence of farming in the Northeastern Plains, including the Red River Valley. There is evidence of local production of maize and other domesticates in Manitoba and in North Dakota. This includes sites such as Lockport, Shea, and Sprunk. A second reason for defining a new period at this time is that on the western perimeter of the Valley are small settlements, circumvallated by ditches, presumably for defensive purposes. Nothing similar to this is evident in regional Plains Woodland sites. There were also certain changes in ceramics, including the introduction of shell tempering, and the use of broad incised decoration. Some of the ceramics display images representing bird motifs, and pipestone disks with anthropomorphic and theriomorphic images. All of this apparently emanating from areas to the south and east and indirectly related to the Mississippian culture of the central and southeastern United States.

Perhaps it is inappropriate to review the human history of a region with a discussion of a prey species, but this is a review of archaeology, and there can be little doubt that our finds at archaeological sites are to an unusual extent finds of bison remains. The bison and the prairie are part of an ecosystem, an integrated set of relationships between the grassland and the keystone species that occupied it. Bison were a dominant presence. As the grasslands sustained the herds, the bison themselves helped to maintain the prairie, removing mature plants and creating space for new growth, providing fertilizer, opening niches through their trails and wallows for new species of plants to grow and in this way contributing to the prairie's floristic variety. The patch vegetation not only enhanced the prairie, but also occasionally provided a space for growth of plants useful to people (Knapp et.al. 1999).

If we take almost any site in any part of the Valley, we invariably find bison bone. Even when we consider the multifaceted subsistence talents of these native groups over the vast time-scale under consideration, it is hard to look at the archaeological record and not recognize the overwhelming significance of bison to the people of the Red River Valley. The sites reviewed here invariably show that bison were hunted, that they were hunted in various seasons, and that they were mostly killed in small numbers rather than in massive drives. This is evident in the patterns of bison

bone element representation, and from the age and sex ratios of bison at sites. Mass kills normally show up archaeologically as large numbers of individual animals with all ages and both sexes represented—something that would be likely if an entire herd was killed in a single episode.

The peoples of the Plains used the bison in ways that were often advantageous to the herds. The firing of the prairie attracted bison to new and more nutritious forage where they could be hunted. Besides this, from most of the sites described in the Red River region, from periods spanning thousands of years, bison are present. Over-exploitation did not seem to be a problem. Some authors note historical accounts of Native American hunters killing many bison in major hunts, using only a fraction of the animals. There are also studies that show in some parts of the Plains that bison numbers fluctuated over time (e.g., Dillehay 1974), but they do not seem to diminish in frequency of occurrence through time.

To understand the native peoples of the Plains and their relationship to bison, it is important to recognize that among many native groups there was a social relationship with the environment in which they lived. For the Plains people, the concept of a community included animals and plants in what some refer to as a "kincentric ecology" (Pierotti 1997: 38). Animals were part of the community, but were also needed for survival; thus, when trapped or killed it was because the animal wanted to be of help to people. Humans, therefore, should be grateful to the animal that sacrificed itself for the good of people. Perhaps this helps to explain the presence of bison skeletons in some regional burial mounds. This way of thinking has been termed Traditional Ecological Knowledge (TEK). It comprises understanding spiritual and ecological reality as blended together (Pierotti 1997: 35-43). How widespread such ideas might have been in the past is not known directly, but if they were commonly held beliefs, it would help to explain the long-lasting predator-prey relationship between native people and bison which involved their exploitation for food, clothing, shelter, and other needs, while preserving the great herds for succeeding generations over a period of many millennia. The management of the herds did not involve domestication, but an alternative system combining a sort of ecological ideology with systematic resource use.

Some archaeological sites in and around the Valley feature other, and sometimes, quite varied fauna. Along the Red, especially near its confluence with tributary streams such as the Sheyenne or the Assiniboine, fish are found in archaeological deposits. Away from the prairie environment in the northeast, sites such as Bjorklund, near the boreal forest boundary,

yielded a varied forest/prairie resource composite, with bison, moose, and various small game. Sites such as Mooney, on the edge of the Red River gallery forest, produced evidence of prairie, deciduous woodland, and riverine faunal remains. On the western edge of the Valley near the pothole lake region it is not uncommon to find waterfowl in the archaeological deposits. So even while bison were a predominant resource, the peoples of the Valley used many other animal resources when they were at hand.

The archaeological record of the Valley also documents long-term patterns of established trade. Practically every site in the Valley contains some quantity of Knife River flint. Variations in the frequency of this imported stone material in some cases may be due to the vagaries of excavation. At some sites we may miss locations where it is abundant, while at others the archaeologist digs in the areas where the exotic flint happens to be most abundant. But the near-ubiquitous presence of Knife River flint reflects a system of procurement that must have involved more than long-distance travel to the trans-Missouri region to mine the flint from the ground. The diminishing frequencies of Knife River flint at sites farther and farther from the quarries indicates down-the-line (or group to group) trade rather than direct acquisition. Sites with Knife River flint often feature an unusually high number of finished artifacts, but little in the way of flaking debris. Perhaps some finished artifacts were being imported, but more likely blocks of raw material were imported or traded for and subsequently worked into finished implements. The reason for this conclusion is that Knife River flint debris, although not as common as might be expected from the number of finished tools present at a site, does occur at most sites and indicates that some working of this flint was occurring. At a few locations private collectors report having found caches of Knife River flint on their property, these consisting of tabular blocks of flint not yet reduced to complete artifacts. The reduction of blocks such as these would explain the high proportion of artifacts to flaking debris in some site assemblages.

Occasional finds of copper from the Great Lakes area occur as well. These finds are sometimes copper spear points on Lake Agassiz beaches, but in excavations they are usually small pieces or scraps rather than finished artifacts. Copper is also reported for some of the regional burial sites excavated in the earlier part of the twentieth century. Obsidian from the Rockies is found in small quantities, sometimes two or three flakes at sites. At 21PL66, a Laurel station in Polk County, Minnesota, a small cluster of obsidian was found, as it was also at Lockport. At the Omlid I site obsidian was sourced using X-ray fluorescence to the Powder River region

of Wyoming. Fragments of pipestone are sometimes found in the Plains Village sites, and occasionally there are bead fragments, as at the Shea site, or even inscribed tablets, such as those found at the Red-Sheyenne junction. The pipestone source area is over 100 miles south of the Red River Valley.

Historic period trade was normally between villagers and nomads, not between villagers. The mobile hunting peoples of the Plains wanted the garden produce of the villagers, who in turn sought the meat and hides their nomadic neighbors provided. In order for the trade to flourish, both groups had, in effect, to overproduce so that they would be able to exchange their surpluses (Ewers 1968: 22). Sometimes, nomadic groups would camp near farming villages for weeks at a time while trade was being conducted. Ritual adoptions, various friendship ceremonies, and undoubtedly, intermarriages, were a typical feature of these trading exchanges. It is not difficult to imagine the transfer of ideas about artifact making, stylistic vogues, and other impacts to material culture that might occur if we project such situations into the precontact past.

If we leave out the European trade items, the villagers traded with the nomads for dried meat, fat, prairie turnip flour, dressed skins and robes, furs, shirts, leggings and antelope hide ornamented with quills, and in return provided the nomads with corn, beans, melons, tobacco and quantities of other plant foods. Trade was accompanied by dancing and gifting, the latter type of exchange called "on the pipe", presumably since it was accompanied by tobacco smoking ceremonies. Trade between villages and nomads also involved adoption ceremonies to further solidify trading ties between groups (Jablow 1950: 44-48).

This was an arrangement of exchange that encompassed the Great Plains through the Rockies all the way to the northwest Coast, and south to the Gulf of Mexico. W.R. Wood (1980: 99) made important observations about the Great Plains trade in the later portion of the precontact period. He notes that at a single village site on the Northern Plains archaeologists recovered shell beads from species of snail native to Tennessee, sea snail shells from the Gulf of Mexico, Marginella (a gastropod) shells from Florida, an Olivella shell ornament from the Atlantic Coast, and Dentalium (a tooth-like projection from a mollusk) from the Pacific Ocean. Obviously, the trade network that extended from the Missouri Villages and through the Red River Valley in the Historic period was more or less continental in scope. There were trade centers on the Souris, the Assiniboine, the Minnesota, the James, and Des Moines rivers in Saskatchewan, Manitoba, Minnesota, South Dakota, and Iowa, all interconnected with

the Missouri villagers. These trade centers, whether they were established villages, or temporary trade fairs, were kept operating by the mostly nomadic hunting and gathering peoples who moved between the farming villages (Ewers 1968: 16-20).

From our understanding of the ethnographic materials, we know that many groups split apart, merged with others, or developed their own identities independently. Moore (1994: 925) describes this as ethnogenesis, a process where we come to recognize that present-day, or historically known groups derive not from a single parent population, but instead develop from the involvement of more than one antecedent group. Along with other scholars such as Sharrock (1974) and Albers (1993), Moore recognizes the importance of emphasizing the fluidity of ethnic boundaries among Plains peoples. As an example, he notes the Cheyenne, a group he studied closely, had a Ute band, a Ree (Arikara) band, and two Sioux bands (Moore 1994: 936).

Sharrock (1974) showed that during the Historic period several Native American Plains peoples joined together regularly in a variety of interactions, alliances and mergers. Sometimes these associations were between peoples who belonged not only to different ethnic groups, but to entirely different language families, and occasionally, new ethnic groups were formed. The Assiniboine and Cree, Siouan and Algonquian speaking people respectively, formed long-term associations. These people were mutually bilingual, cooperated in warfare and in trade, regularly intermarried, formed polyethnic groups with members of both groups of people, and on occasion actually fused into hybrid ethnic units (Sharrock 1974: 115). All of this was documented for the Historic period. If similar kinds of associations were prevalent in precontact times, we may understand the kinds of technological and stylistic transfers that might occur, or the types of mixed assemblages this might give rise to in the archaeological record. The Sandy Lake-Northeastern Plains ceramic constellation at the Mooney, Shea, and Sprunk sites are examples of what might be expected under such unions of ethnic groups with varying ceramic traditions.

E.L. Syms (1977) proposed that many people have misunderstood the Native American conception and use of space in the Midwest and Plains regions. Rather than occupying discrete territories, native peoples in areas such as the Red River Valley used geographic areas in variable fashion. They normally had a core territory where they spent much of their year, but a secondary resource area that was used on a more or less seasonal basis when resources recurred there. Finally, there were tertiary zones that were utilized sporadically when they provided some important resource.

The three types of resource areas encompassed rather extensive territories, and depending on the season, or perhaps the year in question, a particular group of people might be found in any part of a vast area. Many sites with mixed assemblages in shallow deposits, say with two or three different types of diagnostic artifacts, have often been interpreted as places where the stratigraphy has been "collapsed," meaning that people came to that place over time leaving artifacts from different time periods, but since there was no sedimentation occurring, all of the artifacts are mixed in a single cultural stratum. For Syms, this is often the wrong way to interpret the site. He suggests that the location was visited by different peoples who used that place as part of their secondary or tertiary resource area, visiting it in different seasons of the year, or in different years within a short span of time. Under this rubric, the various types of artifacts found at a site might have been more or less contemporary products of different ethnic groups using the same location at different times of the year for different reasons.

Artifact styles, which almost certainly represent people involved in communication with each other, or with traditions of practice handed down over generations, do not necessarily belong to a single ethnicity or tightly bound set of communities, but may spread as the carriers of a style move over time to become part of several communities in an anastomosing process, where groups split, connect with others, or in time, re-connect with their former compatriots. As artifact styles evaporate in one region, a carrier group may join with another people in a nearby area and the style catches on and achieves a new and extended life. For the archaeologist looking back on the record of the past it seems as though a popular style, well dated in one region, now continues in another adjacent area. Consider in this regard the disappearance of Laurel ceramics from the Minnesota-Ontario-Manitoba region, only to seemingly find new life in western Manitoba and nearby Saskatchewan and extending into much later times.

Notions about trade, multi-ethnicity and variable ranges, such as those offered by Ewers, Wood, Sharrock, and Syms provide plenty of circumstantial evidence for the nature of interaction that might have resulted in the kinds of archaeological assemblages we find in different parts of the Red River Valley. The occasional Laurel or Blackduck site, reflecting cultures of the lake and forest country to the east, may have been the product of forest living peoples moving onto the prairie seasonally to hunt bison or elk. The Oneota pottery found in the central Red River may be understood as possible trade items, and the mixed assemblages of Northeastern

Plains and Sandy Lake pottery found at sites such as Mooney, or Shea and Sprunk, the result of intermarriage and mixed ethnicity. And there are, of course, other possibilities. The "horticultural layer" at Lockport seems to suggest an actual movement or migration of southern peoples into the lower Red River Valley of Manitoba for a generation or two. In other words, the archaeological record may be seen from this perspective as the record of dynamic historical processes, different in detail, but not necessarily in kind, from the sort of history found in the written records of peoples from other parts of the world.

One of the unusual aspects of the archaeological record in the Red River region is the relative lack of evidence of any cultural contacts with the village cultures of the Missouri Valley in central North Dakota. During later Woodland and Plains Village times, the Missouri River in North Dakota was the focus of the ancestral Mandan and Hidatsa. Here they developed major villages or towns with populations numbering in the hundreds. The villagers had a highly successful agricultural system based on maize, beans, squash, sunflower, tobacco and probably other native plants such as Chenopodium. Ewers and Wood have shown that their trading system ramified as far as the Pacific Northwest. In the earliest Historic period, the Assiniboine are recorded as making regular trips to the Missouri villages. Yet in the archaeological record of the Woodland and Plains Village of the Red River region, there is little indication of contact with the Missouri villages, unless the regular occurrence of Knife River flint, which was found in the region west of the villages, is evidence of such contact. Little in the way of ceramic styles are presently known that reflect such contacts. It would seem almost certain that the peoples of the Red River had some association with the Missouri River villagers, but the lack of stylistic sharing comparable with that from central Minnesota (Sandy Lake) and southern Minnesota and Iowa (Oneota) indicate that the type of interaction with the Missouri River populations was of a different sort, perhaps involving the trade or transfer of plant foods rather than the exchange of goods such as ceramics, or intermarriage, which might result in the transfer of artifact stylistic similarities.

Inter-group conflict, whether raids or outright warfare, was also a part of native life on the Northern Plains. This is well attested in the historical documents, and in the memory of old-timers who were interviewed in the earlier part of the last century. It is unlikely that intergroup warfare sprang up only when Europeans arrived. In rare instances, there is actual archaeological evidence of violence. The most egregious example of pre-contact conflict in the Northern Plains is quite distant from the Red River.

At a few sites along the Missouri River in South Dakota archaeologists found bodies with signs of violent death (Zimmerman and Bradley 1993). Usually, evidence for conflict comes from the defensive architecture of sites in the form of ditches surrounding the site. There are arguments that ditches may have been used as community disposal facilities, that is, garbage dumps, and it is true that ditches tend to contain substantial amounts of kitchen debris. Some have also argued that ditches served to channel water away from lodges. At the Shea and Sprunk sites, on the western edge of the Red River Valley, both sites are surrounded by ditches that border the sites from the upland side, but terminate at the edge of the bluff overlooking the Maple River, above which the sites rest. Being on high ground, there is no reason to dig ditches to channel water away from the sites, and at both locations the soil from the ditch was piled up interior to the ditch, seeming to form an additional barrier to unwanted entry. At the Shea site, post stains on the interior edge of the ditch indicate the presence of a wooden wall, or palisade. These features suggest that the ditches were not for ceremonial purposes or for water control or disposal, but were in fact what they seem to be, defensive ditches.

One other archaeological indicator of warfare are images found in Plains rock art. In the Red River Valley, there is an inscribed pipestone disk from the area around the Sheyenne-Red confluence with a shield warrior, an obvious indicator of defensive armament.

It is probably not coincidental that farming begins in the Late Precontact/Plains Village period along with the appearance of defensive site architecture. It was not easy to break the tough prairie sod without draft animals, plows, or machinery. Native American farming on the Plains was mostly in the river bottoms where trees were cut, burned, and soil in the cleared parcels mounded with hoes to plant seeds. Prime farmland was, therefore, confined to river gallery woodlands, which were a relatively scarce resource on the Northern Plains. Besides this, farming, even on a modest scale, entails settled communities which must remain in place long enough to prepare fields, plant, cultivate, and harvest. Settled living commonly results in larger populations, since decreased mobility removes pressures to keep families small. Competition for this farmland resulted in conflict over rights to land. Thus, evidence of farming in the Red River region coincides with evidence not only of settled communities like the Shea or Lockport sites, but with evidence of defensive fortifications. Consider also that settled villages make a convenient target for raids in which surplus foods might be taken without the effort of producing them. Finally, it has been suggested that the climatic regime of the twelfth

century and later, known as the Pacific episode, was somewhat drier on the Great Plains, making any sort of farming a more precarious activity (Zimmerman and Bradley 1993). If domestic plant production was reduced for this reason, limited crop production could certainly be related to increased levels of conflict.

We come inevitably to the question of who were the people who lived in the valley of the Red River of the North. I have briefly reviewed the historical and ethnographic record of known occupants from the seventeenth through the nineteenth centuries. We know that at one point or another, the Teton, Assiniboine, Yanktonai, Sisseton, and Ojibwa lived in and used the region as their home. Traditional histories tell of earlier occupants such as the Hidatsa and the Arapahoe. At least one physical anthropologist suggests that the Blackfeet were also present, and the Cheyenne as well. Linguists have lent a hand in suggesting a possible linguistic chronology of peoples in our study region. Proulx (1980) feels that linguistics may assist us in identifying language affiliations back as far as AD 800. Sometime after this date the Cheyenne movement toward the Plains may have begun, as well as the association of the Cree and Ojibwa. Springer and Witkowski (1982:75) suggest that various groups of the Dakota; Santee, Yankton/Yanktonai, Teton, were established language communities well into precontact times. Exactly where these peoples might have been living is not clear for the present.

The archaeological record, as I pointed out earlier in this volume, is irreplaceable. Once any part of it is destroyed it cannot be restored, but if properly excavated, it may be re-created by the effort of the archaeologist who carefully examines its content. Yet archaeological sites are destroyed routinely by everyday activities and developments. Many of these, of course, are unavoidable. Farmers plow through cultural deposits as they plant their fields, and dig them up when they put down drain tile or dig drainage ditches. Roads cut through sites, dams create lakes, and the wave action on the shorelines erode sites. Urban development, wastewater ponds, pipelines, and a host of other construction activities have destroyed unnumbered sites in the Red River Valley. It is important that when sites can be preserved that they are saved, and if they cannot be saved, that they be studied and understood before the chapter in our past that they represent is lost forever. To insure this, we need to keep in place the regulations that protect our cultural heritage, and we must train new generations of archaeologists to undertake this work. In turn, this means that our universities and colleges must continue to instruct and sponsor archaeological programs and field studies so that contracting and

consulting archaeological firms can continue to staff their operations and do the important work of preserving and protecting our history, that is, our real history; not statues and monuments to the well-known heroes of our collective memory, but the actual data of the past, a vital element of the authentic history of our land.

Fortunately, archaeologists today have a much-improved array of methods for detecting the material traces of the past. Lidar imaging allows researchers to study geographic regions in far greater topographic detail than previous aerial photographs allowed. Techniques for subsurface investigation such as magnetometry, electrical resistance, and ground penetrating radar, make it possible to dramatically increase the success of excavations to detect significant buried features. X-ray and spectrographic techniques are now used to discover chemical signatures of foods cooked in ceramic vessels, and new dating methods, such as optically stimulated luminescence make it possible to ascertain the age of deposits where organic remains are not available, but buried quartz crystals are present.

The archaeological record provides a voice for the prehistoric past around the world, in the Americas, and in the Red River Valley. True enough, like a foreign language, that voice has to be interpreted, and here I offer a preliminary effort to translate that ancient language of material remains that make up the Valley's archaeological record. Admittedly, the interpretation here is based on spotty coverage and mostly rudimentary techniques. While the past finds a voice through archaeological study, there remain many silences. The half dozen or so Archaic sites excavated in the Valley hardly provide coverage for a time span of six thousand years. For the Paleoindian period there are practically no very well-preserved and studied sites, and the coverage for excavated Woodland sites is not very extensive either. The Late Precontact/Plains Village is better known, and the complexity of that record, with indications of extensive trade, cultural impulses from practically every quarter, site unit intrusions, evidence for warfare, complex religious symbolism, all make it clear that the archaeological record of earlier times is probably comparably complex, yet for the present, mostly mute and awaiting other archaeologists to coax it to speak.

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With so many competent colleagues and advisors, readers might expect a flawless presentation in this volume. I realize that mistakes are inevitable and they rest on the shoulders of an imperfect author, who nevertheless stands by the content presented here.

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