THE PHASE I ARCHEOLOGICAL RESEARCH PROGRAM FOR THE KNIFE RIVER INDIAN VILLAGES NATIONAL HISTORIC SITE

PART II: ETHNOHISTORICAL STUDIES

NATIONAL PARK SERVICE
MIDWEST ARCHEOLOGICAL CENTER

THE PHASE I ARCHEOLOGICAL RESEARCH PROGRAM FOR THE KNIFE RIVER INDIAN VILLAGES NATIONAL HISTORIC SITE, PART II: ETHNOHISTORICAL STUDIES

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LIST OF ABBREVIATIONS USED

The following abbreviations/acronymns appear in the four parts of this volume:

BP	before the present (calculated from AD 1950)
C-14:	carbon-14, or radiocarbon
IASP	Interagency Archeological Salvage Program
KNRI	Knife River Indian Villages National Historic Site
KRF	Knife River Flint
MWAC	Midwest Archeological Center
MNI	minimum number of individuals
NARS	National Archives and Records Service
NISP	number of identified specimens
NPS	National Park Service
RCYBP	radiocarbon years before present (calculated from AD 1950)
SHSND	State Historical Society of North Dakota
SIRBS	Smithsonian Institution River Basin Surveys
SMU	Southern Methodist University
TL	thermoluminescence
TRSS	Tongue River Silicified Sediment
UGA	University of Georgia
UND	University of North Dakota

PREFACE

In 1974, the Congress of the United States authorized the establishment of the Knife River Indian Villages National Historic Site in Mercer County, North Dakota, to preserve archeological vestiges of the Hidatsa and Mandan Indians and to commemorate the cultural history and lifeways of those important native peoples of the Northern Plains. Starting in 1976, the National Park Service undertook an extensive program of archeological and ethnohistorical research designed to illuminate the archeological and historical resources of the newly- authorized park. This research, which was termed the Phase I research program for the park, was cooperatively carried out by the Service's Midwest Archeological Center and the Department of Anthropology of the University of North Dakota, as well as by researchers at other academic institutions in the United States, most notably the Department of Anthropology of the University of Missouri-Columbia.

This volume of the Midwest Archeological Center's *Occasional Studies in Anthropology* series reports the results of that decade-long research program. It is issued in four parts, each of which deals with a particular aspect of the research. Part I (Chapters 1-10) describes the overall program in general, particularly emphasizing the objectives and methodology employed in the research. Part II (Chapters 11-16) recapitulates a series of ethnohistorical studies that complements the archeological research and provides an ethnohistorical backdrop against which the archeological record of Hidatsa culture change can be interpreted. Part III (Chapters 17-21) summarizes the analysis of various classes of material remains recovered during the research program, principally the pottery, lithics, modified and unmodified fauna, and Euroamerican trade goods. Part IV (Chapters 22-27) broadly interprets the park's archeological record and offers a revised culture-historic taxonomy for what is proposed as the Knife region of the Middle Missouri subarea.

Most of the chapters contained in this volume were completed circa 1985-1986. Some effort has been made to update aspects of the data and conclusions offered in them by referencing certain key published and unpublished studies which have appeared since that time, but the lack of time and funds has precluded a comprehensive revision of the entire corpus of papers contained herein. Nevertheless, it is believed that this summary of the Knife River Indian Villages Phase I research program will be of substantial interest to Plains scholars and considerable utility in telling the story of the Hidatsa and Mandan Indians to the public.

CHAPTER 11

THE ETHNOHISTORY RESEARCH PROGRAM FOR THE KNIFE RIVER INDIAN VILLAGES NATIONAL HISTORIC SITE

W. Raymond Wood

INTRODUCTION

The Knife River Indian Villages National Historic Site is on the Missouri River in Mercer County, North Dakota, just above the point where the Knife River empties into the Missouri River. This locale was once inhabited by the Hidatsa Indians, whose ancestors first settled along the banks of the Missouri in this general area about AD 1200. These people were the first known village farmers to occupy this part of the Missouri valley, and they continued to occupy the area down to the historic period.

The group that has come to be known as the Hidatsas is in fact a composite one, consisting of three separate subgroups, now known as the Hidatsas-proper, the Awatixas, and the Awaxawis (Amahamis), although there are many synonyms for them in the literature. This tripartite division of the Hidatsas, their long and obviously intimate ties with the nearby Mandans, and the as yet unresolved question as to from which subgroup or groups (and when) the historic Crow Indians were derived, all combine to make the decipherment of their culture history—and of the cultural processes underlying that development—a complex task.

The historical record of the Hidatsas, beginning in the late 1700s, includes two accounts which attained worldwide attention at the very time the Hidatsas and their neighbors were subjected to savage smallpox epidemics, events which all but erased the Mandan tribe in the mid-1800s. The accounts and paintings of George Catlin, plus the journal of Prince Maximilian and the artistic productions of Maximilian's illustrator, Karl Bodmer, provide massive documentation for the early 1830s. No other Plains tribes have the documentation and ethnohistorical interpretive potential equal to that of the villages of the Hidatsas and Mandans at the mouth of the Knife River.

Ethnohistory may be defined as the use of historical documents and of the historical method in anthropological research. A variety of historical documents was critically examined during the ethnohistorical research program. The following projects were undertaken by personnel at the University of Missouri in close collaboration with Midwest Archeological Center personnel.

1. A review of the historical resources of the Knife River Indian Villages National Historic Site was undertaken. The resulting document (Wood 1977a) recommended that certain steps be taken in the ethnohistorical program. These recommendations, and the subsequent actions taken on them, are summarized below.

2. An overview of the historical cartography of the region was also initiated (Wood 1986a). Significant data bearing on the Knife River villages were obtained by so doing. This work is synopsized below.

3. A special effort was made to review Hidatsa mythology and other traditional accounts of their origin (Wood 1986b), a study that is reviewed in Chapter 12.

4. A major part of the program was the preparation of a study summarizing the history of the fur trade between traders based on the Assiniboine and other rivers in south-central Canada and the Mandan and Hidatsa villages. During this study it was found that many of the historical records documenting that trade were poorly transcribed. This fact necessitated the preparation of several new transcriptions. The final product of this work (Wood and Thiessen 1985) is summarized below and in Chapters 13 and 14 of this volume.

5. Hidatsa responses to introduced epidemic diseases were important to the overall study, for population decline significantly affected all phases of local Hidatsa history. These responses are synopsized by Michael Trimble in Chapter 15. Studies of the smallpox epidemic which struck the Mandans and Hidatsas in 1837 were produced by the same person (Trimble 1985, 1986).

6. The cultural anthropology of the Hidatsa villagers was the focus of two special studies which reviewed the forces for change, and the cultural practices significant for the archeological program (Hanson 1986, 1987). The latter study is summarized in Chapter 16.

Many of the studies cited below were supported, directly or indirectly, by the Midwest Archeological Center. These references are indicated in the "References Cited" by asterisks preceding the date of the study.

HISTORICAL RESOURCES STUDY

The first study completed, *Historical Resources of the Knife River Indian Villages National Historic Site* (Wood 1977a), reviewed the historical resources of the park. Some of the recommendations made in that study relate rather more to interpretive programs than they do to the initial archeological and ethnohistorical studies now completed. Consequently, fewer of these resources have been exploited than those detailed in subsequent chapters of this volume.

American Museum of Natural History

Between 1908 and 1918, Gilbert L. Wilson devoted much of his time to interviewing Mandan and Hidatsa Indians on the Fort Berthold Reservation, North Dakota. His field notes for these years are on file with his sponsoring institution, the American Museum of Natural History, in New York City. These notes, consisting of some 5,000 double-spaced, typewritten pages, were the source for Wilson's published papers on the Hidatsas.

About one-third of the contents of these notes remained unpublished at the time of his death. Bella Weitzner subsequently synopsized these notes in a publication recently issued by the American Museum (Weitzner 1979). Such summaries, however, eliminate many of the nuances and the richness of detail in his notes, so constant reference to the originals is necessary. For this reason, Wilson's notes on Mandan and Hidatsa pottery-making were collated by Wood and Lehmer, and verbatim quotations were published (Wilson 1977). The integrity of these notes is beyond reproach, as Wilson was a careful and conscientious field worker. They are, of course, subject to the biases attending the time they were collected. They are nevertheless an indispensable source for any study of Hidatsa culture, especially in the spheres of material culture and cultural ecology.

Copies of the original notes were made available by W. R. Wood to the Midwest Archeological Center; copies were then deposited at the University of North Dakota and at the headquarters of the Knife River Indian Villages National Historic Site. Wilson also made a large collection of artifacts during his fieldwork, most of them Hidatsa. All of this material appears to be in the American Museum of Natural History and at the Minnesota Historical Society. At the American Museum, much of it is stored in a hermetically sealed vault measuring some 16 feet on a side, and part of it is on display in the museum. The collection includes several hundred items of standard ethnographic interest: samples of native foodstuffs (e.g., corn, prairie turnip), clothing, household goods, tools (scapula hoes and rakes), and the like.

Although both the American Museum and Minnesota Historical Society collections are dominated by ethnographic materials, there are a few items of special interest for archeologists. For example, the American Museum collection contains eight native pottery vessels made for Wilson by his informants; a bone snow sled made from bison or bovid ribs; and a large, bell-shaped clay item having no ready ethnographic or archeological analog. Few if any of these items have been formally studied, although it is likely that Wilson's brother Frederick used them as models for the drawings he made to illustrate some of Gilbert's publications.

A formal study of these and other specimens of Hidatsa material culture in other museums is still needed.

Minnesota Historical Society

Many of Gilbert Wilson's personal belongings were donated to this institution by his wife after his death. This collection contains a number of items relevant to the Knife River research program. Most important is a photograph album of 269 pages (Volume 44 of his archives in the Historical Society). The album contains about 400 photographs taken in and around Fort Berthold Reservation between 1903 and 1918. Only a few of them have been published and, whereas most of them are not especially good photographs as such, they provide excellent documentation of many aspects of Hidatsa life in the early reservation period. These photographs will be invaluable

sources for interpretive displays at the park's visitor center.

Although most of Wilson's ethnographic and archeological collections were deposited in the American Museum of Natural History, his own personal collection is now in the Minnesota Historical Society. Although somewhat smaller than the material in New York, it contains a number of artifacts not duplicated in that collection. That collection was the focus of a major exhibit at the Minnesota Historical Society that opened in 1987, entitled *The Way to Independence: Memories of a Hidatsa Indian Family, 1840-1920*. The exhibit was accompanied by a detailed catalog which contained several articles on "The Hidatsa World," including "Origins and Settlements of the Hidatsa," by W. Raymond Wood, "The Hidatsa Natural Environment," by Jeffery R. Hanson, and "A Guide to the Wilson Collections," by Mary Jane Schneider (Gilman and Schneider 1987).

State Historical Society of North Dakota

The State Historical Society's museum in Bismarck contains a number of important collections, above and beyond their archeological collections from the Knife River mouth area. Most important here are the large numbers of Mandan and Hidatsa ethnographic specimens, some of them on display. Many of these items were made by individuals whose name and role in native society is well known. This material should be inventoried for eventual formal analysis.

Joslyn Art Museum

The papers and related documents describing and illustrating Prince Maximilian's visit to the upper Missouri River in 1833-1834 were purchased in 1962 by Northern Natural Gas Company (subsequently InterNorth and Enron). They were donated to the Joslyn Art Museum, in Omaha, Nebraska, by Enron in 1986. These documents include:

1. Maximilian's original diary, copied from his now-lost field notes, consists of some 500,000 words. The original published version of this diary runs to about 300,000 words. The English version is somewhat shorter due to the deletion of some material (Thomas and Ronnefeldt 1976:6). The original recommendation was that this material be freshly translated and published. Since that time, InterNorth and the Joslyn Art Museum have founded the Center for Western Studies, headed by Dr. Joseph C. Porter. Paul Schach is now translating the journals, and he and Porter are editing them for publication, in four volumes, by the University of Nebraska Press (Maximilian n.d.). Since the new version contains a great deal of information deleted from earlier editions it will prove invaluable in future studies.

2. Among Maximilian's documents is a set of maps of part of the course of the Lewis and Clark expedition. William Clark made the originals of these maps during the famous expedition itself in 1804-1806, but the originals of some of them have been lost. The maps, also in the Joslyn Art Museum in Omaha, were made under the direction of Major Benjamin O'Fallon, William Clark's nephew, for Maximilian's use on the Missouri River. Their history, condition, and coverage were the subject of a study by Wood and Moulton (1981), and full-size facsimiles of the maps were later published by Moulton (1983). The maps contain data supplementing and explaining some of the entries in Lewis and Clark's journals relevant to the locations of Hidatsa villages, some of which were previously the subject of much speculation.

3. Most of the original field sketches and watercolors made by Prince Maximilian's artist, Karl Bodmer, are part of the collection. Some of these were recently published for the first time (Thomas and Ronnefeldt 1976). The Joslyn Art Museum recently released a volume of Bodmer's watercolors and sketches from which Maximilian's atlas was prepared (Goetzmann et al. 1984). The book contains many new illustrations which will be important for both archeological and ethnographic studies. A few Bodmer paintings and drawings (mostly copies of those in the Joslyn) are also in the Newberry Library, Chicago. There are also drawings at the Newberry that are preparatory sketches for some of the published engravings.

Recommendations Made and Subsequent Action

A new synopsis of Hidatsa ethnohistory is badly needed. Existing studies are either superficial or are devoted to specialized topics. Such a synthesis cannot be seriously undertaken without a new look at the basic historical sources. As part of this program, the original field notes for David Thompson's 1797-1798 visit to the Mandan and Hidatsa villages were transcribed and pub-

lished (Wood 1977b). An updated review of the problem of Hidatsa-Crow relationships was also made (Wood and Downer 1977), as well as a summary of some of the ethnohistorical problems involved in the Hidatsa-Crow schism (Hanson 1979).

Thiessen has also summarized the available published and unpublished information concerning the nature and location of several of the fur trade posts that once existed in the vicinity of the Mandan and Hidatsa villages at Knife River. Brief statements on Jusseaume's Post, Lisa's 1809-1812 post, Fort Vanderburgh, Tilton's Fort, Kipp's unnamed post at the Mandans, Sublette and Campbell's trading house among the Hidatsas, Fort Clark, and Fort Primeau were prepared circa 1982-1983 and appear as Chapter 14 of this volume. This research was done primarily to synopsize information of value to future efforts to locate the elusive archeological remains of most of these posts.

Related projects included Stephen Chomko's summary of ethnohistorical data on the Knife-Heart region (Chomko 1986), and Gregory Fox's (1988) study of the Garden Coulee site, a village of late nineteenth-century Hidatsa dissidents. These studies and others, together with the new transcriptions described below, will permit a more detailed and accurate ethnohistory to be produced. This recommendation is therefore being implemented in a systematic manner.

A formal study should be undertaken of Hidatsa material culture. No study exists of this sort, although there are great numbers of artifacts extant. Major collections are in the American Museum of Natural History, the Minnesota Historical Society, the State Historical Society of North Dakota, the Heye Foundation, the Smithsonian Institution, the University of Colorado Museum, the University of Michigan, Peabody Museum, and Carnegie Museum (Mary Jane Schneider, personal communication). Such a study remains to be initiated.

A cultural ecological study of the Hidatsas is needed. There is a great deal of relevant ethnographic and archeological data. Traditional studies of the Hidatsas benefit from contemporary approaches to the study of culture change and ecology. This goal has been partially realized in a study produced by Jeffery R. Hanson (1987), as outlined in Chapter 16.

A new edition of Maximilian's journals and Bodmer's paintings is needed. This recommendation was not pursued, since the Center for Western Studies at the Joslyn Art Museum will soon publish Maximilian's journals and related documents (Maximilian n.d.). The full collection of Bodmer works in the Joslyn Art Museum has recently appeared (Goetzmann et al. 1984).

HISTORICAL CARTOGRAPHY STUDY

Another early study undertaken in the ethnohistory subprogram was *Historical Cartography of the Upper Knife-Heart Region* (Wood 1986a). This report summarized the cartographic data relating to Hidatsa and Mandan tribal and village locations as depicted on contemporary manuscript and published maps. Since this study, originally completed in 1978, is now in print (Wood 1986a), an overview of its principal results will suffice.

No accurate or detailed cartographic data exist for the upper Knife-Heart region before 1796, although French explorers reached the Mandan villages as early as 1738. The mid-1700 maps of La Vérendrye are too generalized to be of any real value, and those of Arrowsmith and Soulard as late as 1795 are not much better. The first-hand experience of James Mackay and of John Evans among the Mandans and Hidatsas in 1787 and in 1796-1797 found expression on both the Evans 1796 map and the Indian Office map of 1797—both of which were carried on the Lewis and Clark expedition. A few pre-Lewis and Clark maps reflect information resulting from Mackay and Evans' charts. David Thompson's 1798 map of his visit to the Mandans and Hidatsas was also carried by Lewis and Clark.

The charts resulting from the latter's expedition below the mouth of the Yellowstone River, therefore, are "secondary and supplementary" to these earlier maps. Charts made from 1804 to 1855 continued to reflect William Clark's mapping of the Missouri River, but later surveys by the Topographical Engineers and others appreciably refined cartographic data for the river. Manuscript sketches produced by Theodore E. Lewis, and maps by personnel from the State Historical Society of North Dakota, among others, later provided plans for many of the Indian village sites in and near the park. Some of these villages are now destroyed or obscured by construction or cultivation.

A number of studies have been completed that are directly related to this aspect of the ethnohistory subprogram, in addition to Wood's original *Historical Cartography of the Upper Knife-Heart Region*. Published studies deal with both general and specialized aspects of the region's historical cartography. Many of the relevant early manuscript maps of the area were recently republished (Wood, comp. 1983; see also Moulton 1983), so they are now readily accessible to researchers. The principal specialized study is of the John Evans map of the Missouri River of 1796-1797, which appeared in the first issue of the *Great Plains Quarterly* (Wood 1981). This landmark map of the river is the first useful eyewitness map of the river in the vicinity of the park. The only extant copy of the map was carried on the Lewis and Clark expedition, and was annotated by William Clark as he passed various geographical features noted on the chart. It was therefore necessary to determine (from handwriting analysis) which of the captions were the original ones and which were in Clark's hand, since the latter reflected information added to the map seven years after it was first drawn.

A second major contribution was an article in the *Western Historical Quarterly* describing copies of now-lost maps made by Clark during the Lewis and Clark expedition. Gary E. Moulton, the editor of the new edition of the journals of Lewis and Clark, collaborated with Wood in the analysis of these maps, now in the Joslyn Art Museum (Wood and Moulton 1981). These new maps provide tribal and, especially, village locations which were previously matters only for informed speculation.

The preceding two articles were summarized in a single source that appeared in the publication of the Lewis and Clark Trail Heritage Foundation (Wood 1983).

Native American cartography has not been ignored. In 1907, Sitting Rabbit, a Mandan, produced a map of native features along the Missouri River identified by legends written in Hidatsa. The map was the subject of a detailed study by Thiessen and two colleagues, one of them a linguist (Thiessen et al. 1979).

The final article relevant to historical cartography began as a talk delivered at a 1983 symposium on mapping the Great Plains, sponsored by the Center for Great Plains Studies at the University of Nebraska-Lincoln. Now published, the article provides an overview of the mapping of the Missouri River from its discovery in 1673 to 1895, when it was finally mapped in modern detail by the Missouri River Commission (Wood 1984, 1987).

NEW TRANSCRIPTIONS OF FUR TRADE DOCUMENTS

Researchers investigating any historical problem must either have original primary documents available for consultation, or they must have access to reliable copies of them (e.g., photocopies or transcriptions). During their ethnohistorical research Wood and Thiessen found that many of the existing transcriptions of the primary documents for their history of the fur trade, as it was conducted from posts in southern Canada, were grievously insufficient. In one instance, L. R. Masson, the original editor of François-Antoine Larocque's "Missouri Journal," had excised about sixty percent of the text in the document as he published it. Although the rationale for this exclusion was never made explicit, it was probably because he felt that the material removed was repetitious and unnecessary.

In other instances it was found that the published transcriptions were inaccurate, often to the point of misleading the reader. For these reasons, photocopies or microfilms were obtained of the most important of the documents on which Wood and Thiessen depended for their study. Careful transcriptions were made of several of these and then checked against the original documents in Canadian archives, resulting in four separate reports.

One of these reports was compiled by Wood (1979). It consisted of verbatim transcriptions of four fur trade documents by North West Company employees: John Macdonell's diary of his trading experiences at Fort Espérance, on the Qu'Appelle River, from 1793 to 1795; David Thompson's journal of his expedition to and from the Mandan and Hidatsa villages in the winter of 1797-1798; and two journals kept by François-Antoine Larocque: his "Missouri Journal" and his "Yellowstone Journal," composed in 1804 and 1805. The first of these transcriptions was published in 1984 (Wood, ed. 1984) and the last three were published the following year (Wood and Thiessen 1985; see also Wood 1977b for Thompson's journal).

Three additional reports were compiled by Thiessen. One of them consists of a verbatim transcription of the narratives of Charles McKenzie, a North West Company employee closely associated with François-Antoine Larocque's activities on the Missouri River (Thiessen 1980a). The journals of Larocque and the narratives of Charles McKenzie supplement the journals of Lewis and Clark, for they were all on the Missouri River together during the winter of 1804-1805. The second report consists of a transcription of that portion of the journal of Alexander Henry the Younger, detailing his visit to the Mandan and Hidatsa villages in 1806 (Thiessen 1980b). Barry M. Gough, of Wilfrid Laurier University, has edited Henry's entire journal for republication in two volumes by the Champlain Society. Volume one covers Henry's 1806 journey to the Mandan villages (Gough 1988). His literal transcription of this important document will replace Coues' (1897) earlier edition, which suffers from extensive editorial rewriting, as well as from frequent omission of the details of Henry's travels.

Thiessen's third report is a transcription of relevant portions of the journals kept between 1793 and 1830 at Brandon House, a Hudson's Bay Company post on the Assiniboine River (Thiessen 1981). Brandon House employees were frequent visitors at the Mandan and Hidatsa villages. The Brandon House masters kept a remarkably complete record of the trips made to the Mandan-Hidatsa villages by employees of the Honorable Company and its competitors. This information has been used at length by two recent authors who have independently described the pattern of the Canadian trade at these villages (Alwin 1979; Jackson 1982).

A related study was prepared by Diane Corbin. She translated, from the French, the introductory matter from L. R. Masson's *Les Bourgeois de la Compagnie Nord-Ouest* (Corbin 1980). This material provided important background data for the ethnohistorical overview of the Canadian traders at the Mandan and Hidatsa villages, as did another paper by Daniel J. Provo. His study of Fort Espérance documented its role as a provisioning post for the North West Company on the Qu'Appelle River in Canada (Provo 1984); it contained, as an appendix, a transcription of the journal of John Macdonell at Fort Espérance, on the Qu'Appelle River, from October, 1793, to June, 1795 (Wood, ed. 1984).

Three important end products resulted from this research. First, Wood edited and published a manuscript written by G. Hubert Smith on the explorations of the La Vérendryes in the Northern Plains (Smith 1980). This book provides a new translation of the journals of the elder La Vérendrye and of his son in the mid-1700s. Smith spent many years deliberating on various problems relating to the La Vérendryes, and the book makes his conclusions accessible to regional ethnohistorians.

Second, Wood and Thiessen prepared a summary of the Canadian traders' visits to the Missouri River. This material is summarized by Thiessen in Chapter 13. Finally, they compiled a master calendar encapsulating the known visits by Canadian traders to the Missouri River. This chart identifies the dates, personnel, trading accomplishments, and sources for more than seventy round trips between the Missouri River and the Canadian posts. This material is of sufficient historical importance that the fur trade summary and most of the transcriptions were incorporated into a book published by the University of Oklahoma Press in their "American Exploration and Travel Series" (Wood and Thiessen 1985).

In short, a good start has been made toward a comprehensive study of Hidatsa ethnohistory. A number of working papers have been prepared that substantially upgrade our knowledge of their history, and new, more reliable editions of many of the basic documents dealing with that history are now available in manuscript, some of which are now in press.

REFERENCES CITED

Note: References in which an asterisk precedes the date were supported in whole or part by the Midwest Archeological Center's archeological and ethnohistorical research program for the Knife River Indian Villages National Historic Site.

Alwin, J. A.
1979 Pelts, Provisions, & Perceptions: The Hudson's Bay Company Mandan Indian Trade, 1795-1812. *Montana, the Magazine of Western History* 29(3):16-27.

Chomko, S. A.
1986 The Ethnohistorical Setting of the Upper Knife-Heart Region. In *Papers in Northern Plains Prehistory and Ethnohistory*, edited by W. R. Wood, pp. 59-96. South Dakota Archaeological Society, Special Publication No. 10. Sioux Falls.

Corbin, D. H.
*1980 *Translation of the Introduction, Chapter Summaries, and Historical Sketch in "Les Bourgeois de la Compagnie Nord-Ouest," by L. R. Masson.* Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Coues, E. (editor)
1897 *New Light on the Early History of the Greater Northwest: The Manuscript Journals of Alexander Henry and of David Thompson, 1799-1814.* 3 vols. Francis P. Harper, New York.

Fox, G. L.
*1988 *A Late Nineteenth Century Village of a Band of Dissident Hidatsa: The Garden Coulee Site (32WI18).* J & L Reprint Company, Lincoln.

Gilman, C., and M. J. Schneider
1987 *The Way to Independence: Memories of a Hidatsa Indian Family, 1840-1920.* Publications of the Minnesota Historical Society, Museum Exhibit Series No. 3. Minnesota Historical Society Press, St. Paul.

Goetzmann, W. H., D. C. Hunt, M. V. Gallagher, and W. J. Orr
1984 *Karl Bodmer's America.* Joslyn Art Museum, Omaha, Nebraska, and University of Nebraska Press, Lincoln.

Gough, B. M. (editor)
1988 *The Journal of Alexander Henry the Younger 1799-1814*, vol. 1. Champlain Society Publication LVI. Toronto.

Hanson, J. R.
1979 Ethnohistorical Problems in the Crow-Hidatsa Separation. *Archaeology in Montana* 20(3):73-86.

1986 Kinship, Marriage, and Residence Patterns in Hidatsa Village Composition. In *The Origins of the Hidatsa Indians: A Review of Ethnohistorical and Traditional Data*, by W. R. Wood, pp. 43-63. J & L Reprint Company, Lincoln.

*1987 *Hidatsa Culture Change, 1780-1845: A Cultural Ecological Approach.* J & L Reprint Company, Lincoln.

Jackson, J. C.
1982 Brandon House and the Mandan Connection. *North Dakota History* 49(1):11-19.

Maximilian, Prince of Wied
n.d. *The American Journals, 1832-1834, of Maximilian, Prince of Wied.* Forthcoming. University of Nebraska Press, Lincoln.

Moulton, G. E.
1983 Atlas of the Lewis and Clark Expedition. *Journals of the Lewis and Clark Expedition*, vol. 1. University of Nebraska Press, Lincoln.

Provo, D. J.
1984 *Fort Espérance in 1793-1795: A North West Company Provisioning Post.* J & L Reprint Company, Lincoln.

Smith, G. H.
1980 *The Explorations of the La Vérendryes in the Northern Plains, 1738-43*, edited by W. R. Wood. University of Nebraska Press, Lincoln.

Thiessen, T. D. (compiler)
*1981 Excerpts from the Brandon House Post Journals Relating to Trade with the Mandan and Hidatsa Indians, 1793-1830. Manuscript in possession of compiler.

Thiessen, T. D. (editor)
*1980a Charles McKenzie's Narrative of the "Mississourie Indians:" A New Transcription. Manuscript on file, National Park Service, Midwest Archeological Center, Lincoln.

*1980b A New Transcription of Alexander Henry's Account of a Visit to the Mandan and Hidatsa Indians in 1806. Manuscript on file, National Park Service, Midwest Archeological Center, Lincoln.

Thiessen, T. D., W. R. Wood, and A. W. Jones
1979 The Sitting Rabbit 1907 Map of the Missouri River in North Dakota. *Plains Anthropologist* 24(84):145-167.

Thomas, D., and K. Ronnefeldt
1976 *People of the First Man.* E. P. Dutton, New York.

Trimble, M. K.
*1985 *Epidemiology on the Northern Plains: A Cultural Perspective.* Ph.D. dissertation, Department of Anthropology, University of Missouri, Columbia.

*1986 *An Ethnohistorical Interpretation of the Spread of Smallpox in the Northern Plains Utilizing Concepts of Disease Ecology.* J & L Reprint Company, Lincoln.

Weitzner, B.
1979 Notes on the Hidatsa Indians Based on Data Recorded by the Late Gilbert L. Wilson. *Anthropological Papers of the American Museum of Natural History* 56(2). New York.

Wilson, G. L.
1977 Mandan and Hidatsa Pottery Making, edited by W. R. Wood and D. J. Lehmer. *Plains Anthropologist* 22(76, part 1):97-105.

Wood, W. R.
*1977a *Historical Resources of the Knife River Indian Villages National Historic Site*. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

1977b David Thompson at the Mandan-Hidatsa Villages, 1797-1798: The Original Journals. *Ethnohistory* 24(4):329-342.

*1981 The John Evans 1796-97 Map of the Missouri River. *Great Plains Quarterly* 1(1):39-53.

1983 John Thomas Evans and William Clark: Two Early Western Explorers' Maps Re-Examined. In *We Proceeded On* 9(1):10-16.

1984 Mapping the Missouri River Through the Great Plains, 1673-1895. *Great Plains Quarterly* 4(1):29-42.

*1986a Historical Cartography of the Upper Knife-Heart Region. In *Papers in Northern Plains Prehistory and Ethnohistory*, edited by W. R. Wood, pp. 25-58. South Dakota Archaeological Society, Special Publication No. 10. Sioux Falls.

*1986b *The Origins of the Hidatsa Indians: A Review of Ethnohistorical and Traditional Data*. J & L Reprint Company, Lincoln.

1987 Mapping the Missouri River Through the Great Plains, 1673-1895. In *Mapping the North American Plains: Essays in Historical Cartography*, edited by F. C. Luebke, F. W. Kaye, and G. E. Moulton, pp. 27-40. University of Oklahoma Press, Norman.

Wood, W. R. (compiler)
1983 *An Atlas of Early Maps of the American Midwest*. Scientific Papers 18. Illinois State Museum, Springfield.

Wood, W. R. (editor)
*1979 *Fur Trade Documents Bearing on the Mandan-Hidatsa Trade with North West Company Posts in Central Canada: Four New Transcriptions*. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

*1984 Journal of John Macdonell, 1793-1795. Appendix in *Fort Espérance in 1793-1795: A North West Company Provisioning Post*, by D. J. Provo, pp. 81-139. J & L Reprint Company, Lincoln.

Wood, W. R., and A. S. Downer
1977 Notes on the Hidatsa-Crow Schism. *Plains Anthropologist, Memoir 13* 22(78, Part 2):83-100.

Wood, W. R., and G. E. Moulton
*1981 Prince Maximilian and New Maps of the Missouri and Yellowstone Rivers by William Clark. *Western Historical Quarterly* 12(4):373-386.

Wood, W. R., and T. D. Thiessen (editors)
*1985 *Early Fur Trade on the Northern Plains: Canadian Traders Among the Mandan and Hidatsa Indians, 1738-1818*. University of Oklahoma Press, Norman.

CHAPTER 12

HIDATSA ORIGINS AND RELATIONSHIPS

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INTRODUCTION

Although they never attained the popular fame of the Mandan Indians, the Hidatsas were equally important co-residents of the Missouri River valley in what is now west-central North Dakota. The history of these semisedentary, gardening Indians, whose lifeway so closely resembled that of their neighbors, the Mandans, is not as yet well known. Furthermore, traditional and archeological data on their history and prehistory—while growing—are still sparse and difficult to interpret. It is the purpose of this paper to systematize what is known to date of the traditional data, and to place that information in a consistent and testable frame of reference.

The historic Hidatsas were divided into three closely related subgroups, each of which occupied individual villages near the mouth of the Knife River from early historic times to about 1845. Following Bowers (1965:2), we allude to these groups as the Hidatsas-proper, the Awatixas, and the Awaxawis. Although the relationships between these subgroups are not as yet clear, they are collectively referred to as a tribe, inasmuch as they shared a common language (albeit having slightly differing dialects), common traditions, and were integrated by means of associations or sodalities (Bowers 1965:77; Service 1962:113). In language and culture they were a loose but relatively cohesive unit, and they perceived of themselves as distinct from other sociocultural units in the Northern Plains. Prior to the arrival of Euroamericans, however, they had no common name for all three subgroups (Bowers 1965:2).

LANGUAGE AND VILLAGE COMPOSITION

The Hidatsa subgroups, like the Mandans, spoke Siouan languages, but the Mandan and Hidatsa languages were mutually unintelligible. The three Hidatsa subgroups spoke a single language, but each of them had a distinctive dialect. Although one early ethnographer said that the groups spoke "totally distinct languages," elsewhere he says the Awaxawis spoke a dialect "differing but slightly" from that of the Hidatsas-proper and the Awatixas (Matthews 1877:15, 17). Other authorities concur that the Awaxawis understood "only in part" the dialects of the other two subgroups (Bowers 1965:14; Coues 1965, 1:200). Buffalo Bird Woman, an Hidatsa, said that the dialects of the three subgroups "differed somewhat, and there is a story that quarrels sometimes arose through misunderstanding of one another's language" (Wilson field notes for 1913:194). The Crow Indians, who broke away from the Awatixas and the Hidatsas-proper in late prehistoric times, spoke closely related languages (Lowie 1935:3).

The archeological record to date has not yet revealed any distinctive feature in community patterning, and only rare elements of material culture can be used to differentiate between the three Hidatsa subgroups. In late prehistoric and early historic times, in fact, the Mandans and Hidatsas were so intimately involved with one another that it is difficult to differentiate—on the basis of field archeological evidence alone—between Mandan and Hidatsa villages in the absence of documentation (subtle distinctions between the Mandan and Hidatsa ceramic industries have recently been recognized—see Chapter 17). George Catlin perhaps phrased the relationship between the two groups as well as anyone else when he said that there had been a "long familiarity in which they have lived with the Mandans, and the complete adoption of most of their customs" (Catlin 1973, 1:186). Although there was mutual exchange between the tribes, Bowers (1965:489) says the Mandans dominated the process.

Estimates of pre-epidemic Hidatsa population are a matter for speculation, although some scholars estimate that there were once as many as 4,000 to 5,500 of them (Bowers 1965:486; Lehmer 1977:107). After the great smallpox epidemic in 1781, the three subgroups occupied three separate villages. How many villages there may have been before this tragedy is unknown. In any event, when historic documentation begins, the Hidatsas-proper lived at the Big Hidatsa site; the Awatixas lived at the Sakakawea site; and the Awaxawis lived at

the Amahami site, near the mouth of Knife River. Two Mandan villages were close by: Deapolis and Black Cat. Collectively, these communities were known to the Indians as the "five villages" (Wilson field notes for 1909:70).

It is difficult to say just when the three Hidatsa villages were founded. The first eyewitness to leave an account of his visit and a description of the locale, in 1787, was James Mackay (Nasatir 1952, 2:492-493). His original journal has not been preserved, but parts of it were translated from the French in 1803 by John Hay for Lewis and Clark's use. Whether his description of the area as it is preserved reflects his observations in 1787, or incorporates later data, is uncertain. His account tells us that the Mandans and Hidatsas lived "in five Villages, which are almost in sight of one another, three of these Villages are on the South of the Missouri and two on the North Side." This description is, of course, not exact enough to identify the five villages with specific modern archeological sites. It is not until 1796-1797 that we have such precision. John Evans' visit to the Knife River at that date resulted in a map showing the village locations (Moulton 1983:Map 12; Wood, comp. 1983:Plate 3, d). By that time, four of the villages were on the Missouri's south bank, and one was on the north bank. This change from Mackay's description intimates that his journal describes an earlier situation.

Following the smallpox epidemic of 1781, both the Mandans and Hidatsas suffered terrible losses in population. Many villages were so depopulated that it was necessary for them to amalgamate to provide the numbers of people necessary for their mutual protection against enemies. One reason for the fact that Mandan villages usually cannot be distinguished from those of the Hidatsas without historic documentation may be that some of the post-epidemic villages were of mixed composition. David Thompson, for example, tells us that three of the five Mandan and Hidatsa villages at the mouth of Knife River he visited in 1797-1798 were composite ones: Sakakawea village consisted of 71 percent Mandans and 29 percent Hidatsas; Black Cat contained "mostly all" Mandans; and Deapolis consisted of two-thirds Mandans, the rest being Hidatsas (Wood 1977:338). The distribution of Mandans and Hidatsas within the five Knife River villages, at least at that time, is therefore quite different from what we had been led to suspect from other sources. This does not, however, appear to be the preferred village arrangement save for the times when chaotic conditions followed depopulation by disease or warfare.

The fact that some of the villages were mixed in the years following the 1781 epidemic, however, does not carry with it the implication that intertribal intermarriage was common: Bowers' (1965:6) genealogies, in fact, show that "intervillage marriage and marriage with the Mandan or other tribes was virtually nonexistent" before 1845, when the two tribes moved into a common community, Like-a-Fishhook Village (Smith 1972:4-5). Until that time, villages were endogamous. Matrilocal residence "kept the women tied to the households of their mothers. Males were reluctant to move from their mothers' villages where they had all of their closest social and ceremonial ties" (Bowers 1965:77). After the epidemic of 1837, when the Mandans were all but exterminated and the Hidatsa subgroups severely reduced, intermarriage became a virtual necessity because of the reduced number of potential spouses available to persons of marriageable age.

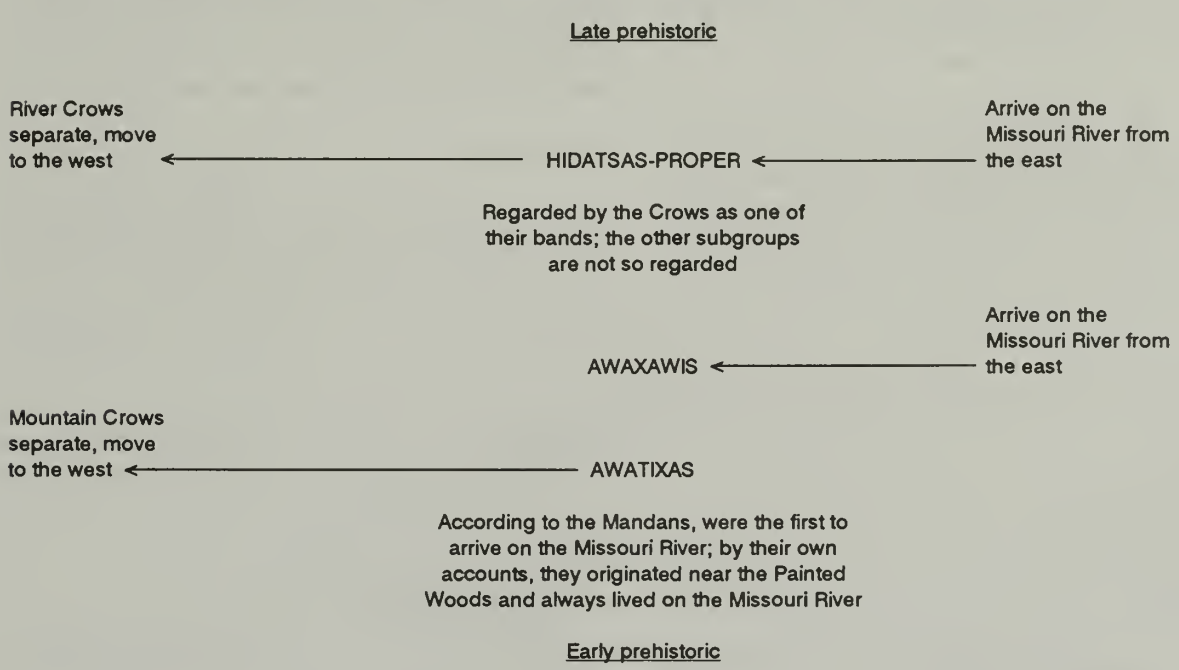
ORIGIN AND MIGRATION TRADITIONS

In the nearly 200 years since the Mandans and Hidatsas were first distinguished as separate socio-cultural units, a large number of Hidatsa origin and migration traditions has been collected from native informants by a number of explorers and scientists. There are, of course, differences in the length and quality of these accounts, but at the outset it should be noted that these native traditions are rather consistent in content. In spite of the diverse sources from which the statements were collected, for the most part we are dealing with a single cultural continuity, carefully preserved by oral tradition (Bowers 1948:1).

Although these accounts vary in detail, the "apparent contradictions tend to disappear if one examines each village group as an independent social unit" (Bowers 1965:476). Reconciling these traditions with Hidatsa prehistory as it is now known poses some problems we cannot as yet resolve. A schematic illustration of what is presently suspected of Hidatsa and Crow culture history is given in Table 12.1. The problems relating to the separation that took place between the Hidatsas and the Crows are not reviewed here: see Wood and Downer (1977) and Hanson (1979) for a summary of this matter; see also Conner (1979) for other papers on the topic.

In a recent review of Hidatsa origin traditions as given in the documents of the Lewis and Clark expedition, one author was led to disagree with the identifica-

Table 12.1.Schematic representation of the sequence of arrivals and departures of Hidatsa-Crow groups on the Missouri River.



tions made by Bowers of two of the Hidatsa subgroup names. Bowers (1965:14, 15, 303), in quoting Biddle's version of their journals, twice glosses the "Minetarees proper" as the Awatixas and the "Minetarees of the Willows" (or Metaharta village) as the Hidatsas-proper, and Stewart (1976:89) correctly argues that the two identifications are reversed. Bowers is, however, not as confused as Stewart believes him to be: he was simply acknowledging that Biddle—together with Lewis and Clark—was confused as to which tradition belonged to which group, and he glossed Biddle's paraphrase of the explorers' accounts to correct their garbled misconceptions. Stewart, that is, interpreted Bowers' glosses as *identifications*, not as the *corrections* they were meant to be.

More important here is the fact that Stewart (1976:91) concludes that "unless some new documents turn up, we cannot use [one] section of Biddle's text, or the *Statistical View*, or the *Ethnological Table*, as evidence about Hidatsa sub-tribal origin traditions: as things stand the contradictions between these sources are simply irresolvable." Although these documents are obviously important parts of the historical record and cannot be dismissed out of hand, it is necessary to ignore this part of their content.

Most of the known resources on traditional Hidatsa origins are available in print, but one major source remains partially unpublished: the field notes of Gilbert L. Wilson. This missionary-anthropologist compiled massive notes on the Mandans and Hidatsas on the Fort Berthold Indian Reservation between 1908 and 1918. The following narrative draws heavily on the unpublished accounts of four of his informants, three of them Hidatsas and one Mandan. The two accounts provided by Wolf Chief are much the same in detail, and in large part parallel the one given by Butterfly. Buffalo Bird Woman's narrative and the one by the Mandan, Wounded Face, are more abbreviated but deviate little from the overall picture. See Table 12.2 for a synopsis of these accounts and for references; verbatim transcriptions of these stories are included in Wood (1986:93-115). Only Butterfly's account specifies which of the Hidatsa subgroups (Awatixa and Hidatsa-proper) are involved in the story. While it might be possible to trace the genealogy of the other narrators to determine their

subgroup affiliation, this would not in itself guarantee that the story was particular to that group. One of Bowers' principal informants was also Wilson's former informant, Wolf Chief, so there is little variation between these two ethnographers' data.

The earliest origin narrative to be collected, more than a century before Wilson began his work, was obtained by David Thompson. His informant was a French-Canadian named Menard who lived at Sakakawea village, and whose wife was a native woman. "The inhabitants of these Villages," he said, "have not been many years on the banks of the Missisourie River." He went on to add that they had formerly lived as horticulturists on the Red River, but had been displaced west to the Missouri by the Chippewas after they obtained firearms (Tyrrell 1968:225-226, 230-231). The comment concerning the Chippewas is contained in no other account.

The Awaxawis

The wholly traditional era of Awaxawi history places their origin beneath the earth, and that they came to the surface on a vine which broke under the weight of

Table 12.2. Concordance of Wilson's Mandan-Hidatsa origin traditions.

Wolf Chief (Wilson 1909:14-20)	Wolf Chief (Wilson 1913:195-201)
Gros Ventres live near Devil's Lake	Came out of Devil's Lake by climbing a vine which broke; lived for a time near Devil's Lake
They meet the Mandans on the Missouri River	Visit the Mandans on the Missouri River
They arrive on the Missouri River	They arrive on the Missouri River four years later
They live on the Missouri River five miles below the Heart River	They build a village on Heart River
They move to the present site of the town of Washburn	They move to the mouth of the Heart River [sic]
They move 20 miles up the Missouri River	They move 15 miles up the Missouri River
	They move another 15 miles up the Missouri
They move to the mouth of the Knife River	They arrive at Knife River; meet Itsikamahidish there
The Crows leave from the mouth of Knife River	

Table 12.2. Concluded.

Butterfly (Wilson 1910:72-88)	Wounded Face (Wilson 1910:190-195)	Buffalo Bird Woman (Wilson 1913: 188-194)
Awaxawis came from the shore of a sea; move north to a point southeast of Fargo; Hidatsas-proper came from beneath Devil's Lake		Lived under Devil's Lake; climbed a vine which broke, and lived in villages near Devil's Lake
They meet the Mandans on the Missouri River	They meet the Mandans on the Missouri River	Visit the Missouri River twice
Both groups move to the Missouri River; Hidatsas-proper arrive there first	Hidatsas arrive on the Missouri River	
	They camp on the Missouri below On-a-Slant Village	
Both groups build a village with the Mandans	Mandans ask them to move to the Knife River	While at Devil's Lake, Itsikamahidish leads them to the Knife River
Both groups move to the Knife River		

Note: The above references are to Gilbert L. Wilson's manuscript field notes at the Minnesota Historical Society.

a pregnant woman. The earth's surface had already been created by two culture heroes, First Creator and Lone Man. The combined Awaxawis, Hidatsas-proper, and River Crows then moved north to Devil's Lake. Following a celestial fire, the Hidatsas-proper and the River Crows separated from the Awaxawis and moved farther north, where they lived near a large lake. The Awaxawis continued to live near Devil's Lake, where they grew corn. Some of the Awaxawis later escaped an approaching great flood and fled to the Missouri River, arriving near the Square Buttes. Still living as corn-growing gardeners at the time of their arrival, they found the Awatixas already on the Missouri River, but they arrived before the Hidatsas-proper made their way to the river (Bowers 1965:298-301; and the accounts in Wilson's field notes).

After a time the Awaxawis moved upstream from the Painted Woods area to the Knife River, but by this time the Hidatsas- proper had settled there, and a war broke out between them that lasted for three years. Eventually they were driven away by the Hidatsas-proper (Henry in Gough 1988:234). The Hidatsas-proper have always resisted efforts by other village Indians to occupy the Missouri River upstream from them, as this was their hunting territory. The Awaxawis had apparently tried to build in this sensitive area (Bowers 1965:21, 214, 486). For a time after their displacement, the Awaxawis are said to have lived near the Cheyenne Indians near present-day Fort Yates, on the Missouri River in south-central North Dakota. They soon returned, however, to the Knife River (Bowers 1965:20-21). The Mandans have a slightly different version: that the Awaxawis once lived south of them on the Missouri River. They say they later moved north to join the Mandans, but then moved further upriver to the Knife River (Jackson 1962:524). Much the same story is told in the two accounts Wolf Chief provided Gilbert L. Wilson (Wilson field notes for 1909:14-20, 70-72; and 1913:195-201).

William Clark's *Ethnological Table* (Thwaites 1969, 6:91) asserts that the Awaxawis "came from the S.W.," as well as that "they have resided on the Missouri as long as their tradition will enable them to inform." Neither statement squares with Bowers's reconstruction of their traditions or with any other account. Lewis and Clark's *Statistical View* (Lowrie and Clarke 1832:710) adds that "they claim to have once been a part of the Crow Indians", another assertion that is not borne out by other accounts.

At this point in Awaxawi history the story begins to emerge from mythology. Some years prior to the time of Lewis and Clark, the Awaxawis are documented as living in a village near Square Buttes, some thirty miles below the mouth of the Knife River. The correlation of this village with the modern Molander archeological site is relatively secure.

Sheet 18 of Maximilian's copy of William Clark's route map for this area (Wood and Moulton 1981:384-385, Figure 2; Moulton 1983:Map 29) provides the most precise locational data for the village. On this map, a village symbol—designated as "Old Village or [of] Ahnahawas band"—is shown on the west, or right, bank of the Missouri River in a position closely corresponding to that of the Molander site. Because dated expedition camping places are shown on the map, it is clear that Lewis and Clark passed this village near mid-day on October 23, 1804. They camped that evening on Pretty Point, a prominent terrace spur which projects into the Missouri River floodplain two and a half miles upriver from Molander.

William Clark's original field notes, however, do not mention this village until the following day, October 24. These notes agree with the map that the village was on the west bank (Osgood 1964:164). The Thwaites (1969, 1:203) edition of the journals, however, does not mention the village in Clark's entry for October 23, but there is an entry attributed to Biddle that the village was on the "S.S." (that is, on the starboard or left bank). This error is perpetuated in Biddle's version of the journals (Coues 1965, 1:176), where the village is said to be on the north (or left) bank of the river.

The following spring, in his journal for March 10, 1805, Clark recorded a tradition given him by an Awaxawi chief which appears to refer to the same village (Thwaites 1969, 1:271). This chief, appointed to his position by Lewis and Clark, is identified as Tetuckopinreha (or White Buffalo Robe Unfolded) by Biddle (Coues 1965, 1:243). The chief told Clark that "this little nation formerly lived about 30 miles below this..." "This" point was Fort Mandan, as the Awaxawi chief was visiting Lewis and Clark at their winter headquarters when he gave them this information. This distance agrees with Clark's map in placing the village near the Molander site.

Although Clark's field notes say the village was occupied "40 year ago" (about 1764), he is silent on the

date of its abandonment. Molander may, however, be the Hidatsa community near Square Buttes of which Bowers' informants "knew little," but which Bowers (1965:5, 24) believed to have been abandoned after the smallpox epidemic "of 1782."

Preliminary archeological investigations at Molander identify it as a component of the Knife River phase (Lehmer et al. 1978:434-435). The internal evidence, and the fact that no other such component is known for the area traversed by the Lewis and Clark expedition for either October 23 or 24, 1804, is consistent with the identification of Molander as this Awaxawi village. Tetuckopinreha was also Clark's source for the information that the village near Square Buttes was so oppressed by the Assiniboins and Sioux that they were "Compelled to move near (5 miles) the Menetarees" (Thwaites 1969, 1:271), a phraseology that suggests their new position was about five miles below the Knife River. But the Assiniboins killed most of them there, forcing the survivors to move on to the mouth of Knife River, where they "intermixed with the Mandans & Menatarries."

This entry in the Lewis and Clark journals prompted Will and Hecker (1944:111) to name a prominent village site about ten miles below the Knife River as the Mahhaha (or Amahami) village, in the belief that it was this village. Mahhaha has deep prehistoric middens, mantled by a thin veneer of Euroamerican trade goods and by Knife River phase materials. The identification is consistent with its archeological content, although its distance below the Knife River is twice the five mile distance that Clark recorded.

The Biddle account for the entry for March 10, 1805, makes no mention of the Awaxawi village near Square Buttes and its movement toward the Knife—but it does do so for the entry for November 21, 1804 (Coues 1965, 1:197). Here, Biddle has the text read that the Awaxawis moved from that village "to a point five miles higher" up the Missouri. No site of the appropriate age is known in this locality. For this reason, the Mahhaha site is the best present candidate for the village occupied by the Awaxawis between Square Buttes and the Knife River. The date at which they moved on to the mouth of Knife River from this site or locale is uncertain. Bowers (1965:21) believes they were living near the Painted Woods at the time of the smallpox epidemic in the early 1780s, but they were living at the mouth of Knife River in 1796-1797 when John Evans visited the area. They may have settled the Amahami site on their arrival, or soon after.

The Awaxawi village at the mouth of Knife River is known today as Amahami. It is well documented, although it (and the group living there) is known by a variety of other names, among them Ahaharway or Ahnahaway (their own name for themselves); Wattasoon (their Mandan name); the Soulier Noir (a French name), or the Black Shoe Indians; and as the Maharha village (Jackson 1962:524-525; Coues 1965, 1:196-197).

Amahami village was destroyed and abandoned in the spring of 1834, according to a passage in Maximilian's 1841 German edition of his travels (Maximilian 1841:686). This entry does not appear in English editions. After his return to Germany, the fur trader Kenneth McKenzie visited the prince and told him that

> Soon after [Maximilian's] departure from Fort Clark the Dacotas attacked the Monitarri villages, reducing the two lower ones to ashes. Men died on both sides. At that time the burnt out Moennitarries were living in the Mandan villages. [Maximilian 1841:686; quoted from Stewart 1974:296]

The other village destroyed, probably between April 18 and May 18, 1834, was the Sakakawea site (Stewart 1974:296). Where the Awaxawis lived until their removal to Like-a-Fishhook Village has not yet been determined.

The Awatixas and Hidatsas-Proper

Lewis and Clark, among others, collectively referred to these two groups as the "Minetarees"—a fact which has led to occasional misunderstandings. Lewis and Clark's "Minnetarees Metaharta" were the Awatixas, and the "Minetarees proper" were the Hidatsas-proper. The two captains, as we have seen, were confused concerning the origins of these groups. Clark's *Ethnological Table* (Thwaites 1969, 6:91) states that both groups came from the southeast, and goes on to say that "they have always resided at their present villages"; the *Statistical View* (Lowrie and Clarke 1832:710) repeats the latter

statement. A southeastern origin can be reconciled only with Butterfly's account for the Awaxawis—the wrong group!

According to the Biddle version of the journals, the Mandans claim that the "Minetarees" came from beneath the water to the east, and moved to near the former Mandan villages near Heart River. After the Crows split away, the rest of them moved to Knife River. The Hidatsas-proper, on the other hand, said that they had always lived near the mouth of Knife River, but that the Awatixas had come from the plains (Coues 1965, 1:196-197). This information is based on Biddle's interview with William Clark in Virginia in 1810 (Jackson 1962:524-525), and it is closely paralleled by the account the Mandan chief, Sheheka, gave Clark in August of 1806 on the expedition's return voyage (Thwaites 1969, 5:348). Like Henry's comment that the Hidatsas-proper had "been settled upon this Spot [Big Hidatsa village] time out of mind" (Gough 1988:237), Biddle's interpretation conflicts with traditional data collected by other observers. Henry's next statement, that they "appear to be more of a Roving and restless disposition" than their neighbors is, however, echoed by Bowers (1965:287).

Table 12.2 provides a concordance of Wilson's five origin narratives. Broadly interpreted, they intimate an origin for the Awaxawis and Hidatsas-proper beneath or near Devil's Lake and residence in its vicinity for some time; their discovery of the Mandans on the Missouri River; a subsequent move to live with or near the Mandans at the mouth of Heart River; and end with their movement up the Missouri River to the mouth of the Knife River.

These five accounts are in near agreement with Bowers' interpretation of the same events. Other published statements which draw on the same oral tradition include accounts by Washington Matthews (1877:36-37), an early surgeon-ethnographer among the Hidatsas; and Prince Maximilian's rendition of the story given him in 1833 by the Mandan, Dipauche (Thwaites 1966, 23:315-317).

Awatixas

According to Bowers' (1965:19-20) reconstruction of Hidatsa origin traditions, the Awatixas were once "the most northerly agriculturalists on the Missouri River." They claim to have always lived on the Missouri River, principally near and upstream somewhat from Painted Woods Lake, a prominent cut-off meander of the Missouri River about thirty miles below the mouth of Knife River. Awatixa traditions place them firmly in the area well before the arrival of the other two Hidatsa subgroups.

The mythological charter for the Awatixas states that they came from the sky under the leadership of the culture hero, Charred Body. They landed at Turtle Creek, north of Painted Woods Lake about two miles below the present town of Washburn. For this reason the stream is also known as Charred Body Creek or Burnt Creek. The thirteen initial households that settled there increased in number until they occupied thirteen villages. They are said to have later become Hidatsa clans. By that time, "in native theory, all of the Hidatsa village groups had...taken their relative positions on the Missouri" (Bowers 1965:293). The Awatixas are said to have once moved to the Heart River before the Mountain Crows left them and moved off to the west (Bowers 1965:17-21).

An archeological site on the south bank of Turtle Creek was named the Flaming Arrow site by Will and Hecker (1944:83) after the fact that, in Awatixa mythology, the culture hero Charred Body descended to the earth near there in the form of a flaming arrow. They do not explain why they then identified the site as a Mandan village occupied following their abandonment of the Heart River area, yet named it after this Awatixa hero. The Turtle Creek area is an important one in Awatixa traditions for another reason. More than a century ago, Matthews reported that there were "vestiges" of some large circular lodges near the mouth of "Burnt Creek." They were said to be the homes of the culture heroes Long Tail and Spotted Body, and of their adversary Big Mouth. Their legendary exploits took place (and they left the locality) "before the Indians" came to the area (Matthews 1877:63-70). Bowers also claims there were "thirteen lodge outlines at [Flaming Arrow] which are said to represent traditional residences of thirteen distinct lineages which comprised the older clan system of the Awatixa prior to the smallpox epidemics." The "Hide Beating" or "Sun Dance" and other important ceremonies are said to have originated at this site or in villages nearby (Bowers 1948:115-116).

The earliest Awatixa village near the mouth of the Knife River appears to be the Lower Hidatsa site. Leaning on native informants, Bowers (1965:294) identifies it as a village occupied until about 1781, when its

occupants moved to Rock Village. They later moved back downriver and founded the Sakakawea village, which they continued to occupy until its destruction in 1834 (Bowers 1965:17-18).

The archeological content, dating, and location of Rock Village is consistent with this interpretation. The village was on the south, or right, bank of the Missouri River almost fifty river miles upstream from the mouth of the Knife River (Hartle 1960; Lehmer et al. 1978:11-63). Pottery and other elements of material culture identify the village as a component of the Knife River phase dating to the late 1700s.

Several of Bowers' Hidatsa informants identified Rock Village as an Awatixa community (Bowers 1965:5, 17-18, 21). In addition, seven lozenge-shaped sandstone hammers found there are similar to those attached to wands which were the insignia of the Stone Hammer age society. This society was a part of Awatixa and Hidatsa-proper culture, but it was not shared with the Awaxawis and the Mandans (Bowers 1965:176; Densmore 1923:108, 115-116, Plate 19, b-c; and Lowie 1913:Figure 3).

Sakakawea village was probably settled by the Awatixas sometime between between 1787 and 1796, and was abandoned following its destruction in 1834. Although it is a traditional Hidatsa village, David Thompson's original field journal documents that the village contained more Mandan than Hidatsa households in 1797-1798. No prehistoric village component is known to exist at the site; historic Euroamerican trade materials occur from top to bottom in its middens. Archeological data indicate the presence of two distinct villages on this location. The first was destroyed by fire after an apparently brief occupation. The second appears to have been used much longer (Ahler et al. 1980:196), and corresponds to the surface features visible there today. The earlier village is perhaps identifiable as the mixed Mandan/Hidatsa village documented by Thompson in 1797-1798, and the latter corresponds to the Awaxawi use of the site from about 1804 to 1834.

This village was burned to the ground by the Dakotas in 1834 (Stewart 1974:296; see above) at the same time the Dakotas destroyed the Amahami village. Between the time their village was destroyed and 1845, when they moved to Like-a-Fishhook Village, at least some of the Awatixas probably lived at the Taylor Bluff Village, close to the Big Hidatsa Village of the Hidatsas-proper (Ahler 1988:309-311).

Bowers (1965:31) felt that "the Awatixa culturally occupied a position intermediate to the other two Hidatsa groups" and the Mandans. This is consistent with their traditional long residence on the Missouri—that is, near the Mandans—and with the fact that the Sakakawea site, their principal village in 1797-1798, was dominated by Mandan households.

If the Awatixas are indeed the oldest settlers in the area, the chances are good that a substantial number of the Heart River phase villages between Square Buttes and the mouth of Knife River represent their late prehistoric communities.

Hidatsas-Proper

The early traditional history of this subgroup is much the same as that of the Awaxawis: emergence from beneath the earth near Devil's Lake; a separation from the Awaxawis; the loss of corn as a crop; a migration to the north, where they lived near some great lakes—a land of moose and polar climate. This move enabled them to escape a great flood which the Awaxawis eluded by their flight to the Missouri River. They later retured to the vicinity of Devil's Lake. A short time later they discovered the Mandans living on the Missouri River, after which they moved to that stream, together with the River Crows, probably in late prehistoric times. They arrived on the river after the Awatixas and the Awaxawis were already settled there. Their point of arrival on the Missouri was near the mouth of the Heart River, or a little upstream.

The River Crows are said to have separated from them at this time, or a little later. The recency of this schism is reflected in the fact that the Hidatsas-proper "are still considered to be a Crow band, although the two other Hidatsa village groups...were not so considered" (Bowers 1965:13).

When Gilbert Wilson obtained Butterfly's origin tradition in 1910, another Hidatsa, Goodbird, drew for them a map of the vicinity of the Heart River, under Butterfly's direction. It was in this locale, Butterfly said, the Hidatsas-proper and Awaxawis once lived in a single large village with the Mandans. On this map (Wilson

field notes for 1910:74; Wood 1986:Figure 4) the village is shown on the south bank of the Heart River near its mouth, south of the modern town of Mandan. The detail on the map is not precise enough to place this locale on a modern map with any precision.

Will and Hecker (1944:101-102) nevertheless identify the Scattered Village (or Crying Hill site) within the modern town of Mandan (and on the north bank of the Heart River) as the village occupied by the Hidatsas at the time of the Hidatsa-Crow separation, before the Hidatsas moved to the Knife River area. They allude to unspecified traditions for this identification. Bowers is inconsistent in his commentary on this village. At one point he says that Hidatsa residence at Scattered Village was not borne out by his genealogies, but he later says his informants claimed the village (Bowers 1965:5, 478).

The Mandans are said to have reintroduced the Hidatsas-proper to corn horticulture. Crows Heart, an Hidatsa, told Bowers that the Mandans advised them to move upstream and to build their own village out of sight of the smoke from the Mandan lodges. According to the Mandans, the term "Minnetaree" referred only to them. Bowers says that it was after they moved to the mouth of Knife River (to unite with the rest of the Hidatsas), that the River Crows separated from them and moved westward (1965:15, 213, 290-293). Other details of their traditional history are discussed above under the heading "The Awaxawis."

Bowers insists that the Hidatsas-proper were more nomadic than the other two Hidatsa subgroups. Before about 1781, they "comprised a loose association of closely related bands that ranged northward along the Missouri and Lower Yellowstone, the Little Missouri, Mouse River, Turtle Mountains, and even the Devil's Lake region" (Bowers 1965:26). Even in historic times, he went on to say, they frequently abandoned their gardens

> for a few seasons at a time to go out onto the Plains as true nomads. They were away on one of these periodic migrations in 1837, thus partially avoiding the devastating smallpox losses suffered by the other village groups and the Mandan. [Bowers 1965:287]

They are believed to have been less influenced by the Mandans than the other two Hidatsa subgroups (Bowers 1965:26). This would be consistent with their traditional late arrival on the Missouri River, after the Awaxawis and Awatixas.

The large, fortified Big Hidatsa village was the home of the Hidatsas-proper when historical documentation begins. In 1845, its last occupants moved to Like-a-Fishhook Village, some fifty miles up the Missouri River. The chances are good that the village is the oldest of the three historically occupied Hidatsa communities at the mouth of Knife River. The major occupation there seems to be post-contact, or postdating about 1700, although Ahler and Swenson (1985:264, 275; see also Chapter 25, this volume) believe the Hidatsas-proper lived there since about 1600 and the site was briefly occupied by the Awatixas in the first half of the fifteenth century.

The Hidatsas-proper laid strong claim to the Missouri valley north of their village at the mouth of Knife River, Big Hidatsa village. At least once, it is said, they warred with the Awaxawis for trying to build a village on the Missouri River above them. Alexander Henry the Younger says the Mandans were likewise prevented from building on the Little Missouri River by the "Big Bellies" (Gough 1988:226). Two major villages of probable Hidatsa-proper affiliation are on the Missouri River above Big Hidatsa, and apparently date about the time of the 1781 epidemic: Rock Village and Nightwalker's Butte.

The Awatixas appear to have successfully settled Rock Village (see above) sometime after 1781 because some Hidatsas- proper also lived there with them (Bowers 1965:17-18, 27), but conflicting rivalries and bundle rights soon led to its disintegration. The other Hidatsas-proper appear to have remained during this time in their main settlement, Big Hidatsa village.

If the Hidatsa-proper claim to the Missouri valley above the Knife River was as strong as Bowers believes it to have been, the hypothesis should be investigated that Nightwalker's Butte was also occupied (in full or in part) by the Hidatsas-proper. This protohistoric site occupies the top of a high butte several miles upstream from Like-a-Fishhook Village. Its identification as Hidatsa is based principally on oral tradition, bolstered by the fact that its archaeological content, dating, and location are consis-

tent with that interpretation (Lehmer et al. 1978:64-133).

The level crest of the butte was enclosed by a post palisade surrounding numerous earth lodges closely resembling those described in ethnographic accounts (Wilson 1934). Its artifact content identifies the site as a component of the Knife River phase dating to the late 1700s. Nothing at the site itself permits us to suggest a specific subgroup affiliation for it.

During the 1950 excavations at Nightwalker's Butte, a Mandan-Hidatsa visitor volunteered the information that the site was a former village of the Hidatsa Water Buster Clan. Traditionally, he said, this clan was a troublesome one, with a reputation for breaking away from the main body of the tribe (Lehmer et al. 1978:66-67).

There are two other butte-top sites on the Fort Berthold Reservation. Both of them were attributed by local Indian informants to a group of Hidatsas under a chief called "Night Walker."

> This leader was said to have seceded from the main group at an unspecified date and to have been warned by his "Medicine" that he must always build his village on the easily defended butte tops. [Nightwalker's Butte] is said to have been his first village; the second [Midipadi Butte] was on a butte across the Missouri River from Elbowoods and the third [the Jacobsen site] was in the badlands on the left side of the LittleMissouri River...[Lehmer et al. 1978:66].

Some time shortly after 1800, a small group of Hidatsas- proper quarreled and, under the leadership of Strong Jaw, moved away to build a village near the mouth of Cherry Creek on the Little Missouri River (Bowers 1965:17, 392). This is probably the Jacobsen (or Little Swallow) site, a butte-top village on the north bank of the Little Missouri River. According to local informants, its earth lodges were surrounded by a post palisade. Local collectors are said to have found Euroamerican trade goods there (Leaf 1976:7-12; Will and Hecker 1944:116). The village is shown on Sitting Rabbit's native map of the Missouri River (Thiessen et al. 1979:161-162, Figure 9).

Midipadi Butte is one of the eminences on the bluffline south of the Missouri River nearly opposite the old town of Elbowoods, at the mouth of the Little Missouri River. Recent investigations there have confirmed much of the content of the oral traditions that survive regarding the site. The late component there is a Knife River phase occupation (Kuehn et al. 1982).

Two final sites dating to the late 1800s are better documented. Sometime about 1872, Crow Flies High, an Hidatsa leader of the Hidatsa-proper subgroup, left Like-a-Fishhook Village and moved up the Missouri River with a group of his followers. They lived in two different villages at different times. One of them, called Crow Flies High Village, was on the Missouri River bluffs nearly opposite the mouth of the Little Knife River, near the modern town of New Town (Bowers 1965:43-45, 77; Malouf 1963:152-158). The other village, the Garden Coulee site, was just east of the former site of Fort Union, near the confluence of the Yellowstone and Missouri rivers (Fox 1988; Wilson 1928:109, 117, Figure 2). Both of Crow Flies High's villages are shown on Sitting Rabbit's native map of the Missouri River (Thiessen et al. 1979:162-164, Figures 10, 13).

Other

The least satisfactory documentation and location data concerns a village site that Will and Hecker (1944:111) say was near the town of Beulah, on the Knife River some twenty miles west of its mouth. These authors claim the Beulah site was "often spoken of as a possible site used by the Hidatsa during the smallpox epidemic of 1838-1840 when the Hidatsa left the old Knife River villages to escape the disease." No documentation supporting this assertion has yet been located. There is no native site at the legal description given by Will and Hecker, a locale about two miles south of the town and the Knife River.

It is impossible to say whether they relied on now-lost native tradition for their statement on this site's affiliation, or some other source of information. Because they reported finding small numbers of sherds and stone work at the site, it appears that they are describing a late

pottery-bearing locale somewhere in the vicinity of Beulah, but the legal description for it has become garbled.

PROTOHISTORIC VILLAGE CULTURES OF EASTERN NORTH DAKOTA

Both the Awaxawis and the Hidatsas-proper claim to have come to the Missouri valley from what is now eastern North Dakota, with specific traditions of having emerged from beneath the ground near Devil's Lake, and of having lived near that lake before moving to the Missouri River. For this reason we briefly review the protohistory of eastern North Dakota for clues we may relate to the historic Hidatsas. The prehistory of eastern North Dakota is, unfortunately, decidedly embryonic. We now know of only two village cultures in the area that are believed to be closely related to those of the Missouri valley.

One of these cultures, represented by the Biesterfeldt site, appears to be a Cheyenne village occupied in the late 1700s. This fortified earth lodge village is on the lower Sheyenne River near the modern town of Lisbon (Strong 1940:370-376; Wood 1971). Its material culture is not at all similar to that in communities of the Heart River or Knife River phases. Consequently, we may safely exclude it from any direct relationship with the Hidatsas.

Bowers has repeatedly commented that the Schultz site, also on the lower Sheyenne River in eastern North Dakota, is related to "the oldest traditional Awaxawi sites on the Missouri." He says the pottery from this site closely resembles that from archeological sites along the Missouri River which he identifies as early Hidatsa settlements (Bowers 1965:213, 480, 483).

This relationship is strengthened by other village sites in eastern North Dakota, particularly by those of the Stutsman focus, defined on the basis of components along the James River. The most thoroughly investigated site, Hintz village, dates to about 1750 to 1800. There are close similarities between Hintz pottery and that from Schultz. Wheeler goes on to conclude that the Stutsman focus is intimately related to the culture of unspecified protohistoric Hidatsas (Wheeler 1963:212, 229). In brief, the Stutsman focus strongly strengthens the traditional relationship between eastern North Dakota and the historic Awaxawis and Hidatsas-proper, and supports the native Hidatsa accounts reviewed above.

SUMMARY

Nineteen documented or traditional Hidatsa village sites are illustrated in Figure 12.1. This listing excludes winter villages. Although several such villages are known, or can be approximately located on maps, most of them are now beneath the waters of Lake Sakakawea, and are thus either destroyed or inaccessible.

1. Crow Flies High's Garden Coulee site, 32WI18
2. Crow Flies High's Village, 32MZ1
3. Jacobsen (or Little Swallow) site, 32DU1
4. Midipadi Butte, 32DU2
5. Nightwalker's Butte, 32ML39
6. Like-a-Fishhook Village, 32ML2
7. Rock Village, 32ME15
8. Big Hidatsa, 32ME12
9. Beulah site, 32OL23
10. Sakakawea site, 32ME11
11. Lower Hidatsa, 32ME10
12. Amahami site, 32ME8
13. Black Cat, 32ML5
14. Deapolis, 32ME5
15. Mahhaha site, 32OL22
16. Flaming Arrow site, 32ML4
17. Molander site, 32OL7
18. Scattered (or Crying Hill) site, 32MO31
19. Heart River village

Black Cat and Deapolis were essentially Mandan villages, but Thompson's data imply that varying numbers of Hidatsas lived in them at the time of his visit. Scattered site and Heart River village are exceptionally problematical; they are listed here solely because of the consistency with which they appear in Hidatsa origin traditions.

In addition to these sites, Bowers says that "a number of traditional Hidatsa and Awaxawi sites south of the Knife River were identified by both Mandan and Hidatsa informants" during his early fieldwork, although time did not allow them "to make more than a preliminary survey" of the sites (Bowers 1948:38). The Eidelbrock site (32OL5) he identifies as being unspecified Hidatsa (1948:121); the Bagnell site (32OL16) as Awaxawi (1948:118); and the Upper Sanger site (32OL12) as an

Awaxawi/Hidatsa-proper village occupied about the same time as Lower Hidatsa (1948:39, 116-117). Except for the Awatixa villages, he says, the pre-horse Hidatsa settlements consisted of "widely separated lodges and small clusters of lodges" before forces postdating Euroamerican contact concentrated them in compact towns (Bowers 1965:216).

Table 12.3 provides a synopsis of those sites for which the evidence seems reasonably secure; it does not include the sites in the preceding paragraph.

The striking similarities between the Mandans and the Hidatsa subgroups at all time levels, from prehistoric times to the full historic period, argue for very close relationships between them for centuries. They appear, in fact, to have developed in nearly parallel fashion for over 700 years—from the very first occupation of the region by village horticulturists. Intimate interaction did not begin until after the Mandans moved to join the Hidatsas at the Knife River.

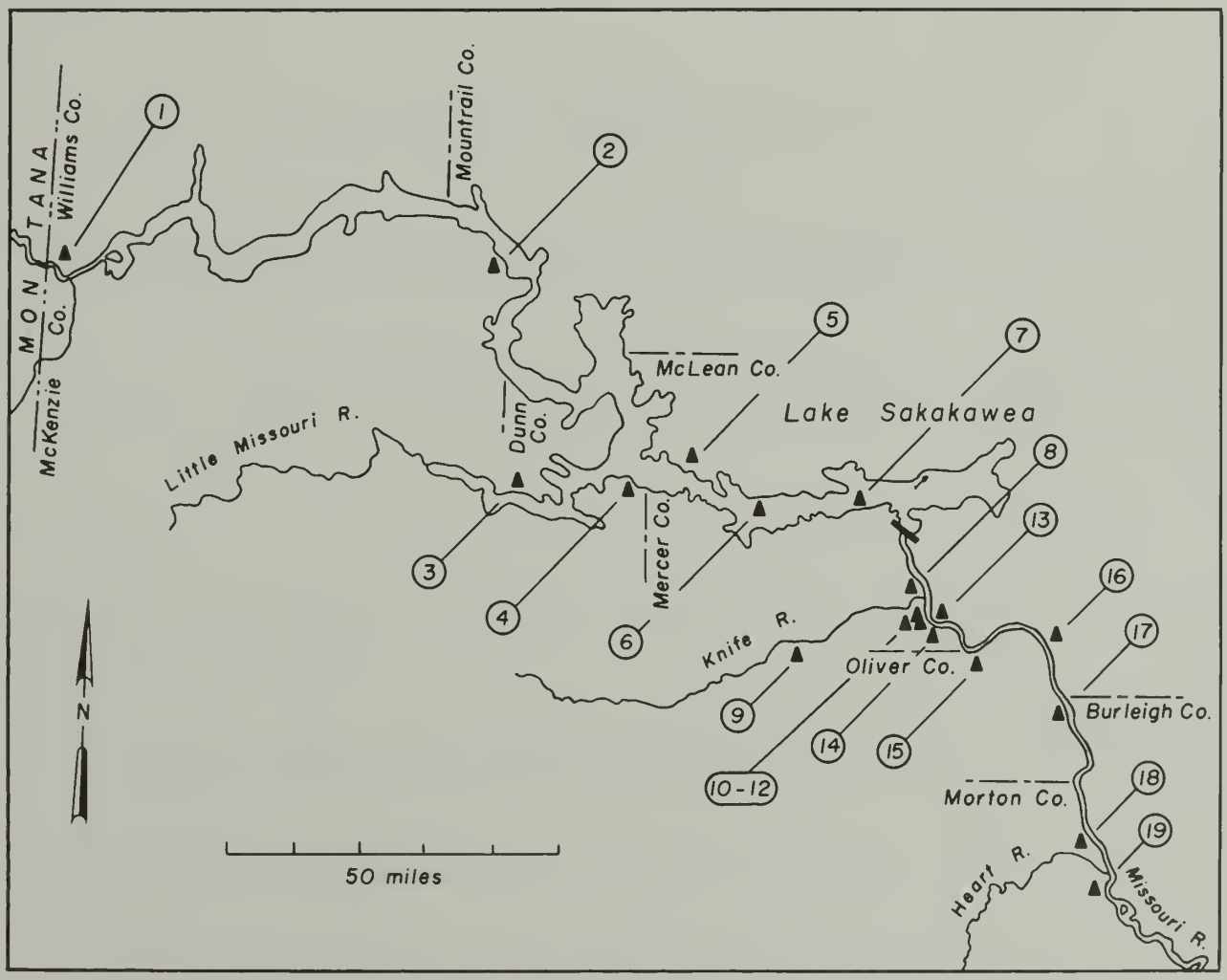


Figure 12.1. Documented or traditional Hidatsa villages in the Knife-Heart region, North Dakota. 1, Crow Flies High's Garden Coulee site, 32WI18; 2, Crow Flies High's Village, 32MZ1; 3, Jacobsen (or Little Swallow) site, 32DU1; 4, Midipadi Butte, 32DU2; 5, Nightwalker's Butte, 32ML39; 6, Like-a-Fishhook Village, 32ML2; 7, Rock Village, 32ME15; 8, Big Hidatsa, 32ME12; 9, Beulah site, 32OL23; 10, Sakakawea site, 32ME11; 11, Lower Hidatsa, 32ME10; 12, Amahami site, 32ME8; 13, Black Cat, 32ML5; 14, Deapolis, 32ME5; 15, Mahhaha site, 32OL22; 16, Flaming Arrow site, 32ML4; 17, Molander site, 32OL7; 18, Scattered (or Crying Hill) site, 32MO31; 19, Heart River village.

Table 12.3. Hypothetical sequence of documented and inferred Hidatsa sites.

Hidatsa-proper	Awatixa	Awaxawi
	Historic	
Crow Flies High (two sites)		
	Like-a-Fishhook Village	
Big Hidatsa	Sakakawea	Amahami
Rock Village	Rock Village	Mahhaha
Jacobsen Village*		
Midipadi Butte*		
Nightwalker's Butte	Lower Hidatsa	Molander
	Flaming Arrow	
	Protohistoric	

* Chronological position is arbitrary.

REFERENCES CITED

Unpublished Documents

Minnesota Historical Society, St. Paul

Field notes of Gilbert L. Wilson's ethnographical research on the Fort Berthold Reservation, North Dakota, 1908-1918. Also on file at the American Museum of Natural History, New York.

Publications and Reports

Note: References in which an asterisk precedes the date were supported in whole or part by the Midwest Archeological Center's archeological and ethnohistorical research program for the Knife River Indian Villages National Historic Site.

Ahler, S. A. (editor)
*1988 *Archeological Mitigation at Taylor Bluff Village (32ME366), Knife River Indian Villages National Historic Site.* University of North Dakota. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Ahler, S. A., and A. A. Swenson
*1985 *Test Excavations at Big Hidatsa Village (32ME12), Knife River Indian Villages National Historic Site.* University of North Dakota. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Ahler, S. A., T. Weston, and K. D. McMiller
*1980 *Cutbank Profiling and Test Excavations at Sakakawea Village (32ME11), Knife River Indian Villages National Historic Site.* University of North Dakota. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Bowers, A. W.
1948 *A History of the Mandan and Hidatsa.* Ph.D. dissertation, Department of Anthropology, University of Chicago.

1965 *Hidatsa Social and Ceremonial Organization.* Bureau of American Ethnology, Bulletin 194. Smithsonian Institution, Washington, D.C.

Catlin, G.
1973 *Letters and Notes on the Manners, Customs, and Conditions of North American Indians.* 2 vols. Reprint of 4th ed., 1844. Dover, New York. First ed. originally published 1841, London.

Conner, S. W. (editor)
1979 Symposium on the Hidatsa-Crow Separation. *Archaeology in Montana* 20(3).

Coues, E. (editor)
1965 *The History of the Lewis and Clark Expedition.* 3 vols. Reprinted. Dover, New York. Originally published 1893 in four vols., Francis P. Harper, New York.

Densmore, F.
1923 *Mandan and Hidatsa Music.* Bureau of American Ethnology, Bulletin 80. Smithsonian Institution, Washington, D.C.

Fox, G. L.
*1988 *A Late Nineteenth Century Village of a Band of Dissident Hidatsa: The Garden Coulee Site (32WI18)*. J & L Reprint Company, Lincoln.

Gough, B. M. (editor)
1988 *The Journal of Alexander Henry the Younger 1799-1814*, vol. 1. Champlain Society Publication LVI. Toronto.

Hanson, J. R.
1979 Ethnohistorical Problems in the Crow-Hidatsa Separation. *Archaeology in Montana* 20(3):73-86.

Hartle, D. D.
1960 *Rock Village: An Ethnohistorical Approach to Hidatsa Archaeology*. Ph.D. dissertation, Department of Anthropology, Columbia University, New York.

Jackson, D.
1962 *Letters of the Lewis and Clark Expedition, with Related Documents, 1783-1854*. University of Illinois Press, Urbana.

Kuehn, D. D., C. R. Falk, and A. Drybred
1982 *Archeological Data Recovery at Midipadi Butte, 32DU2, Dunn County, North Dakota*. University of North Dakota. Submitted to the U.S. Army Corps of Engineers, Omaha District.

Leaf, G. R.
1976 *Shoreline Survey of Lake Sakakawea: The Badlands in Southern Dunn County, North Dakota*. University of North Dakota. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Lehmer, D. J.
1977 Epidemics Among the Indians of the Upper Missouri. In *Selected Writings of Donald J. Lehmer*, pp. 105-111. J & L Reprint Company, Lincoln.

Lehmer, D. J., W. R. Wood, and C. L. Dill
1978 *The Knife River Phase*. Dana College and the University of Missouri. Submitted to the National Park Service, Rocky Mountain Region.

Lowie, R. H.
1913 Societies of the Hidatsa and Mandan Indians. *Anthropological Papers of the American Museum of Natural History* 11(3):219-358. New York.

1935 *The Crow Indians*. J. J. Little & Ives, New York.

Lowrie, W., and M. St. Clair Clarke (editors)
1832 Lewis and Clarke's Expedition, Communicated to Congress, February 19, 1806. In *American State Papers*, Class II, Indian Affairs, vol. 1. Documents, Legislative and Executive, of the Congress of the United States, from the First Session to the Third Session of the Thirteenth Congress, Inclusive: Commencing March 3, 1789, and Ending March 3, 1815, pp. 705-743. Gales and Seaton, Washington, D.C.

Malouf, C.
1963 *Crow-Flies-High (32MZ1), a Historic Hidatsa Village in the Garrison Reservoir Area, North Dakota.* River Basin Surveys Papers, No. 29. Bureau of American Ethnology, Bulletin 185:133- 166. Smithsonian Institution, Washington, D.C.

Matthews, W.
1877 *Ethnography and Philology of the Hidatsa Indians.* Miscellaneous Publications No. 7. United States Geological and Geographical Survey, Washington, D.C.

Maximilian, Prince of Wied
1841 *Reise in das Innere Nord-America in den Jahren 1832 bis 1834*, vol. 2. J. Hoelscher, Coblenz.

Moulton, G. E.
1983 Atlas of the Lewis and Clark Expedition. *Journals of the Lewis and Clark Expedition*, vol. 1. University of Nebraska Press, Lincoln.

Nasatir, A. P.
1952 *Before Lewis and Clark: Documents Illustrating the History of the Missouri, 1785-1804.* 2 vols. St. Louis Historical Documents Foundation.

Osgood, E. S. (editor)
1964 *The Field Notes of Captain William Clark, 1803-1805.* Yale University Press, New Haven.

Service, E. R.
1962 *Primitive Social Organization.* Random House, New York.

Smith, G. H.
1972 *Like-a-Fishhook Village and Fort Berthold, Garrison Reservoir, North Dakota.* Anthropological Papers 2. National Park Service, Washington, D.C.

Stewart, F. H.
1974 Mandan and Hidatsa Villages in the 18th and 19th Centuries. *Plains Anthropologist* 19(66):287-302.

1976 Hidatsa Origin Traditions Reported by Lewis and Clark. *Plains Anthropologist* 21(72):89-92.

Strong, W. D.
1940 From History to Prehistory in the Northern Great Plains. In *Essays in Historical Anthropology in North America*, pp. 353- 394. Smithsonian Miscellaneous Collections 100. Washington, D.C.

Thiessen, T. D., W. R. Wood, and A. W. Jones
1979 The Sitting Rabbit 1907 Map of the Missouri River in North Dakota. *Plains Anthropologist* 24(84):145-167.

Thwaites, R. G. (editor)
1966 Travels in the Interior of North America, by Maximilian, Prince of Wied. Translated by H. E. Lloyd. *Early Western Travels*, vols. 22-24. Reprinted. AMS Press, New York. Originally published 1906, Arthur P. Clark, Cleveland.

1969 *Original Journals of the Lewis and Clark Expedition 1804- 06.* 8 vols. Reprinted. Arno Press, New York. Originally published 1904-1905, Dodd, Mead and Company, New York.

Tyrrell, J. B. (editor)
1916 *David Thompson's Narrative of his Explorations in Western America, 1784-1812*. Champlain Society Publication XII. Toronto.

Wheeler, R. P.
1963 *The Stutsman Focus: An Aboriginal Culture Complex in the Jamestown Reservoir Area, North Dakota*. River Basin Survey Papers, No. 30. Bureau of American Ethnology, Bulletin 185:167-233. Smithsonian Institution, Washington, D.C.

Will, G. F., and T. C. Hecker
1944 The Upper Missouri River Valley Aboriginal Culture in North Dakota. *North Dakota Historical Quarterly* 11(1 and 2).

Wilson, G. L.
1934 The Hidatsa Earth Lodge. Edited by B. Weitzner. *Anthropological Papers of the American Museum of Natural History* 33(5). New York.

Wood, W. R.
1971 *Biesterfeldt: A Post-Contact Coalescent Site on the Northeastern Plains*. Smithsonian Contributions to Anthropology 15. Washington, D.C.

1977 David Thompson's at the Mandan-Hidatsa Villages, 1797-1798: The Original Journals. *Ethnohistory* 24(4):329-342.

*1986 *The Origins of the Hidatsa Indians: A Review of Ethnohistorical and Traditional Data*. J & L Reprint Company, Lincoln.

Wood, W. R. (compiler)
1983 *An Atlas of Early Maps of the American Midwest*. Scientific Papers 18. Illinois State Museum, Springfield.

Wood, W. R., and A. S. Downer
1977 Notes on the Hidatsa-Crow Schism. *Plains Anthropologist, Memoir 13* 22(78, Part 2):83-100.

Wood, W. R., and G. E. Moulton
*1981 Prince Maximilian and New Maps of the Missouri and Yellowstone Rivers by William Clark. *Western Historical Quarterly* 12(4):373-386.

CHAPTER 13

EARLY EXPLORATIONS AND THE FUR TRADE AT KNIFE RIVER

Thomas D. Thiessen

INTRODUCTION

The Missouri River has long been important in the historical exploration and development of the mid-continent region of North America. It has attracted men to it both as an objective of exploration in itself, and as an artery for further travel and economic exploitation of the region. The earliest of these visitors—men from colonial New France—sought it as the fabled "River of the West" which would give them easy access across the continent to the "Sea of the West"—the Pacific Ocean—and thereby to the wealth of the Indies. The Frenchmen were disappointed because the Missouri failed to prove a pathway to the western coast of North America, but their successors saw the opportunity to reap a fortune in furs from the various Indian groups who lived along the Missouri and its tributaries. These men were not only traders and trappers of furs, but also harbingers of an alien culture that was destined to change forever the lifeways of the native inhabitants of the Missouri basin.

Such men were early drawn to the Mandan and Hidatsa villages clustered along the Missouri River in what is now central North Dakota. The Siouan-speaking Mandans and Hidatas had resided in semipermanent villages along the upper reaches of the Missouri for several hundred years prior to the arrival of Euroamericans in the early eighteenth century. Prehistorically, they had engaged in a centuries-old pattern of intertribal trade with other native peoples from throughout much of the Plains area (Wood 1972, 1980; Blakeslee 1975). As Ewers (1954:430-431) has pointed out, the Mandan-Hidatsa villages constituted a major trading center which was visited by Crows, Crees, Assiniboins, Cheyennes, Arapahoes, Commanches, Kiowas, and Kiowa-Apaches interested in trading products of the chase for the horticultural produce of the villagers. This ancient intertribal trade persisted long after the advent of Euroamerican traders on the scene, although the Euroamericans introduced two commodities in particular—horses and firearms—that resulted in swift and drastic changes in Plains Indian lifeways and economics.

By the middle of the eighteenth century, the Mandans, and presumably the Hidatsas as well, had begun to receive horses from Indian groups living to the southwest, who had ultimately obtained them from the stock of Spanish colonists. By that time also, the Upper Missouri villagers had begun to obtain firearms from Indian groups who had contact with Euroamericans in central Canada. Most notable of these Indian intermediaries were the Assiniboins and Crees. The intersection of these expanding trade "frontiers" at the Missouri River placed the Mandans and Hidatsas in a strategic position to capitalize on trade with both Euroamerican and Indian alike. As one scholar has observed:

> At the horticultural villages on the Upper Missouri the expanding frontier of the horse met the expanding frontier of the gun. This placed the Mandan, Hidatsa, and Arikara in an admirable trading position in the protohistoric as well as in the aboriginal trade. It strengthened the importance of their villages as trading centers. [Ewers 1954:436-437]

It was the role of these villages as trading centers, as well as their location along a major watercourse, which brought Euroamericans to them in substantial numbers. The native economic and military changes resulting from increasingly frequent contacts with Euroamerican culture over the course of 120 years, together with the devastating effects of introduced epidemic diseases for which the Indians had no acquired immunity, led to drastic consequences for the Mandans and Hidatsas. Wood has succinctly summarized the results of this interaction:

> The very wealth and importance of these villagers was fatal, since the first European explorers were attracted to the horticultural villages precisely because of their renown as trading cen-

> ters. White traders quickly insinuated themselves into the native trading networks, establishing forts and lines of communication far in advance of other white movements into the West. It is therefore not surprising that the sedentary villagers were decimated very early by epidemic diseases carried by Indians moving along native trade routes—diseases unwittingly transmitted to them by Europeans who, anxious to intercept profits from exchanges at aboriginal trading centers, had attached themselves to a native North American exchange network. [Wood 1980:107]

The fur trade at the Mandan-Hidatsa villages can be viewed as commencing with the visit of the French colonial officer, the Sieur de la Vérendrye, in 1738-1739. For more than fifty years following La Vérendrye's visit, the only Euroamericans trading directly with the villagers were Frenchmen from New France and Canadians and Britons from Canada. There were two primary directions from which Canadian goods flowed to the Mandans and Hidatsas: south from trading posts at the mouths of rivers emptying into Hudson and James Bays, and westward along the lacustrine and riverine travel routes that connected central Canada with Montreal (Wood and Thiessen 1985:Map 1). The former route was predominantly used by the Hudson's Bay Company, while the latter route was employed by the French and, later, by traders of the great North West Company and lesser concerns based in Montreal. Beginning in the 1790s, traders and explorers ascended the Missouri River from St. Louis, first the Spanish and later, the Americans. For a brief time, a trading connection with American traders in present-day western Minnesota was maintained through overland travel in carts, but St. Louis was the ultimate base of these traders as well. Because of international politics, the St. Louis-based trade outlasted the Canadian trade at the Knife River villages by more than forty years, and ended only when the last native groups had left the region.

At first, the pelts which attracted traders to the villages were those of beaver and other small mammals whose furs commanded high prices on European markets. Later, when the trade in smaller, high value pelts declined because of diminution of the beaver population in the West and the growing popularity of silk for hats and clothing, buffalo robes became the prime commodity of the trade, particularly after the steamboat, an efficient mode of water travel, became a regular form of travel on the Missouri. Buffalo robes seem to have been of some commercial importance to the North West Company as early as the 1790s, but they clearly did not figure largely in the Mandan-Hidatsa returns of the Hudson's Bay Company. They were, however, a prime commodity of the later American trade on the Upper Missouri.

What follows is an outline of the development of contacts between the Mandans and Hidatsas and Euroamericans from La Vérendrye's first visit to the Mandan villages in 1738-1739 through 1861, when the last native group to reside near the mouth of the Knife River, the Arikaras, moved to a new location further up the Missouri River, on what today is the Fort Berthold Indian Reservation. The history of the fur trade at Knife River is presented in terms of chronological periods which differ from one another in the nature or frequency of the trade that was conducted. Some attempt will be made to relate these periods to Ray's (1978) spatial model of the fur trade, although correlations must be made only on a very general level because of the simultaneous persistence of several of Ray's trade patterns (which he terms "zones") through time.

Using data relating to the Hudson's Bay Company's protohistoric and historic trade in central Canada, Ray has postulated that several trade "zones" generally existed with respect to Euroamerican trading posts. The nature of the trade conducted in each zone is theoretically different, depending on proximity or access to Euroamerican sources of supply for trade goods, and, Ray argues, each has different implications for the degree to which trade goods are represented in archeological deposits left by native groups participating in the fur trade.

Key to Ray's model are the concepts of indirect, middleman, and local trade zones, which he views as concentrically surrounding any trading post or Euroamerican source of industrially-manufactured goods (Ray 1978:Figure 1). Native groups who live the farthest from trading posts received relatively small amounts of trade goods from "middleman" groups in exchange for local products. Because these trade goods were obtained

in small quantities and were frequently subjected to modification or use other than that for which they were manufactured, trade goods are not abundant in the archeological record of these peoples, and in fact may be underrepresented in relation to the degree of technological change actually experienced by native groups who received trade goods in this way. "Middleman" groups lived close enough to trading posts to have had infrequent but regular contacts with Euroamericans, which permitted them to regularly obtain trade goods (Ray believes that such trading contacts typically occurred on an annual basis). Because these same goods were in turn traded to more remote peoples who did not have regular contact with Euroamerican traders, trade goods are not abundant in archeological deposits left by middleman groups despite the fact that, through time, large quantities of trade goods passed through their hands. Native groups who lived closest to trading posts participated in what Ray calls "local trade," in which nearby groups functioned chiefly as provisioners for Euroamerican traders. Archeological deposits left by groups who participated in local trade contain abundant quantities of trade goods because such goods were easy to obtain from a source of supply that was constantly available.

Ray's model may be an oversimplification of reality in that it does not explicitly take into account the simultaneous participation of any native group in two or more of these kinds of trade patterns, such as seems to be the case at Knife River. Nevertheless, his concepts of indirect, middleman, and local trade are useful in viewing the predominant nature of Mandan-Hidatsa participation in the fur trade at various points in time.

Toom (1979) has applied Ray's concepts of trade zones to archeological data from South Dakota, and has demonstrated that Euroamerican trade goods are found only in very small quantities at protohistoric (AD 1675 to 1740) and early historic (AD 1740 to 1807) Arikara sites, and are much more abundant at late historic Arikara sites coeval with trading posts that operated along the Missouri River (AD 1807 to 1886). He has convincingly argued that the frequency of Euroamerican trade goods in deposits dating to the protohistoric and early historic periods (i.e., during the indirect and middleman trading patterns, in Ray's terms) cannot be used as an index for estimating the degree to which the native groups that created these deposits experienced the processes of acculturation resulting from exposure to Euroamerican material culture. In effect, he maintains, Euroamerican trade goods are "underrepresented" in archeological deposits dating to what he calls the Indirect Trade and Middleman Trade phases along the Missouri River in the Dakotas.

Prior to Ray's and Toom's research, Lehmer (1971, 1977) described three "stages" of trade among the upper Missouri River village tribes that closely approximate the chronological divisions proposed by Toom, which, as pointed out above, are based on Ray's concepts. Lehmer described an indirect trade pattern in which the villagers received Euroamerican trade goods from other native groups acting as middleman traders, beginning shortly after the Hudson's Bay Company established trading posts along the shores of Hudson and James bays, or about AD 1675. Beginning at about the time of the 1738-1742 visits of the La Vérendryes to the Mandans, he believed that a "tenant trader" stage occurred, during which Euroamerican traders resided in villages along the Missouri River and introduced manufactured trade goods to the villagers on a regular, if infrequent, basis. Lehmer believed that "local trade" (in Ray's terminology) began when a succession of trading posts was established along the Missouri River after the first decade of the nineteenth century. Despite the fact that Lehmer identified approximate beginning dates for each of these trade phases, he cautioned against rigid chronological segmentation of the protohistoric through historic periods and stressed that these different types of trade co-existed with one another during the latter portion of this time continuum:

> These stages represent different expressions of the fur trade complex, and they tended to have their maximum importance at different times. It must be emphasized, however, that it is not possible to make any strict chronological division between the three stages. There was a continuing overlap of Indian middlemen into the time of the tenant traders, and even into the period of the major trading posts. Tenant traders continued to operate long after the big trading posts were established. [Lehmer 1977:93]

Although Lehmer and Toom each characterized several kinds of trading patterns along the Missouri River in the Dakotas and outlined periods of time (or

beginning points in time) for each of these patterns, both investigators combined data pertaining to all three of the historic village tribes of the Upper Missouri and failed to distinguish the largely separate histories of the Arikaras and the Mandan-Hidatsas in the fur trade. During protohistoric and early historic times, the Mandan-Hidatsas and the Arikaras received trade goods from different ultimate sources, at somewhat different times, and through (to some extent) different Indian middleman groups. Only in the later portions of their respective histories (i.e., shortly after the beginning of the nineteenth century) do the patterns of their participation in the fur trade coincide to any substantial degree. A review of the extensive historical documentation for the Mandans and Hidatsas allows the following description to be made of the nature of early Euroamerican explorations and the fur trade among those groups. The concepts of indirect and local trade have been adapted from Ray, and little discussion is made of the Arikaras until the last period to be considered (the reader is referred to Berry 1978 for a more in-depth analysis of the role of the Arikaras in the fur trade, and to Chomko 1986 for a calendar of the Arikaras' intermittent residency in the upper Knife-Heart region). First, however, a few comments concerning sources of information are in order.

Relatively few authors have produced studies of the role of the Mandans and Hidatsas in the growth and development of the fur trade in the American West, despite the existence of a veritable wealth of historical documentation, some of it still unpublished. Meyer's (1977) history of the Three Affiliated Tribes (as the Mandans, Hidatsas, and Arikaras came to be known after their amalgamation at Like-a-Fishhook Village on the present-day Fort Berthold Reservation) paints a very broad picture of these groups from the time of first Euroamerican contact through the mid-twentieth century. His study of the fur trade period is based principally on published materials and serves well to relate the largely disconnected sources to each other. In a recent study, Milloy (1988:47-66) describes the Mandan-Hidatsa trade and the role that the Plains Crees played in it. Burpee (1927) and Smith (1980) have produced excellent studies of the first French contacts. The later Canadian trade has been the subject of essays by Alwin (1979), focusing on the Hudson's Bay Company's trade, and Jackson (1982) and Wood and Thiessen (1985), which summarize the French and Canadian contacts in general. Several of the North West Company participants in this trade have left accounts of actual visits to the villages (Masson 1960; Burpee 1910; Tyrrell 1968; and Gough 1988 are the most important; see also Wood 1977 and Wood and Thiessen 1985 for new transcriptions of several of these), while an invaluable record of Hudson's Bay Company expeditions to the villages has been left by the successive masters of Brandon House in the form of annual journals now preserved in the Hudson's Bay Company Archives (Thiessen 1981). The Spanish presence in the villages has been treated by Nasatir (1952 and 1976, among others). Studies of American trade in the Upper Missouri have not focused specifically on the Mandans and Hidatsas, but have been concerned with the broad development of the fur trade in the region or with the history of individual companies (cf. Chittenden 1954; Morgan 1964; Sunder 1965; Oglesby 1963; Lavender 1979; Wood 1990). Information about the trading posts that existed near the mouth of the Knife River is summarized in Chapter 14 of this volume. The effects of the fur trade and other factors of Euroamerican contact have been studied by Bruner (1961), Trimble (1985, 1986), and Hanson (1987). The archeological material culture of the Mandans and Hidatsas during the fur trade era has been described by Lehmer et al. (1978). Other works by two archeologists, Lehmer and Toom, have already been mentioned. For further sources of lesser scope, the reader is referred to the references cited in the aforementioned studies.

INDIRECT TRADE, CIRCA AD 1600? TO CIRCA 1740

This period coincides with Ray's "indirect trade zone" categorization and Toom's Indirect Trade phase. It is characterized by the Mandans and Hidatsas receiving small amounts of Euroamerican trade goods from other Indians who had some form of periodic access to Euroamerican sources of supply, ultimately the trading posts of the Hudson's Bay Company along the shores of Hudson and James bays as suggested by Lehmer (1977:91-92) or the early French settlements along the St. Lawrence River. Some trade goods must also have found their way into the Mandan-Hidatsa villages by passing through the hands of native intermediaries such as the Assiniboins, Crees, Chippewas, and Sioux. Commodities given in exchange for these trade goods were locally produced, such as garden products, hides, feathers, and items of apparel.

This period is protohistoric in nature, meaning that small amounts of trade goods are evident in archeological deposits dating from this time but historical records do not exist to document this trade. Consequently, the beginning date for this period will be conjectural until it can be more precisely determined through archeological techniques. Lehmer (1971; 1977) believed that it began shortly after the establishment of trading posts along the shores of Hudson Bay and James Bay, and he proposed a date of AD 1675 for commencement of this form of trade. On the basis of archeological evidence from the Lower Hidatsa and Big Hidatsa village sites, Lovick and Ahler (1982:75-76) have postulated that the protohistoric period began at Knife River slightly later, at circa AD 1710, while Ahler and Drybred (Chapter 21, this volume) suggest that the Hidatsas possessed at least some metal tools and glass beads as early as circa AD 1600.

The earliest historical documentation of this form of trade among the Mandans is the information resulting from the 1738-1739 visit of Pierre Gaultier de Varennes, the Sieur de la Vérendrye, commandant of the French Posts of the North (Burpee 1927; Smith 1980). La Vérendrye, who traveled overland from the Assiniboine River to the Mandan villages in the vicinity of the Heart River near modern Bismarck, was not successful in his quest for a riverine passage to the Pacific Ocean. However, he and his party spent ten days among the Mandans, and a surviving synopsis of his now-lost travel journal provides us with the earliest first-hand observations of Mandan society. La Vérendrye twice described the trading relationship that existed between the Mandans and the Assiniboins who accompanied the French party, by observing that the former exchanged corn, tobacco, decorated deer and antelope hides, dressed and painted buffalo robes, feathers, and articles of personal adornment for Euroamerican items possessed by the latter, such as axes, guns, kettles, knives, awls, gunpowder, and bullets (Burpee 1927:323-324, 332; Smith 1980:53, 56). Conspicuously omitted from the list of items offered by the Mandans are any Euroamerican manufactured wares or horses, suggesting that the Mandans had not yet assumed their role as middleman traders in such commodities. La Vérendrye did comment, however, that the Mandans were "crafty" traders who cheated the Assiniboins and cleaned the latter out of goods. Lehmer has suggested that this form of trade between the Mandans and the Assiniboins had been going on for some time prior to La Vérendrye's arrival:

> The Assiniboin who accompanied La Vérendrye on the latter part of his journey were familiar travelers of the route; they must have been carrying metal and glass to the northern Middle Missouri villages for a considerable time before La Vérendrye made his journey. [Lehmer 1977:96]

The Crees also functioned as native middlemen who carried Euroamerican goods to the Mandans from the posts on Hudson and James bays (Ray 1974; Lehmer 1977; Milloy 1988).

Two authors, Arthur S. Morton (1973:134-135) and Arthur J. Ray (1974:55-57), have suggested that the Mandans engaged in direct trade with the Hudson's Bay Company by sending trading parties to the Company's York Fort on Hudson Bay by 1715 and possibly earlier. As evidence, they cite entries in the York Fort journals which mention that large parties of strange Indians known as Mountain Indians or Mai-tain-ai-thi-nish arrived by canoe to trade. These Indians are described as being from a mountainous terrain that abounds in moose, buffalo, red deer, and smaller fur-bearing animals, but not beaver; growing corn and possibly plums and hazel nuts; and possessing white and yellow metals. This interpretation—that the Mountain Indians were actually the Mandans or the Hidatsas—has recently been questioned by Wood and Thiessen (1985:18-21), who point out that neither group is historically known to have been familiar with canoes or to have traveled in large numbers to Euroamerican trading posts along the Assiniboine River in southern Manitoba, much closer to their homes than York Fort, which lies at a linear distance of approximately 750 miles from central North Dakota (the Mandans and Hidatsas did, however, apparently travel to the Assiniboine valley in small parties for trading or raiding purposes). The identity of the Mountain Indians or Mai-tain-ai-thi-nish who visited York Fort early in the eighteenth century remains problematical and warrants further investigation.

The date herein proposed for the end of the indirect trade period is AD 1740, which is the approximate year that the trade frontiers of the gun, expanding from French and British sources of supply to the north and east, and the horse, acquired from other native tribes to the south and west, intersected at the Mandan-Hidatsa

villages (Ewers 1954:436-437; Toom 1979:77). This event placed these villagers in a position to commence their role as middleman traders in these commodities, passing guns to other native peoples south and west of them in exchange for horses which in turn were supplied to Indians in areas north and east of the Mandan-Hidatsa villages. This is not to say, however, either that intertribal trade was a new phenomenon to the Mandans and Hidatsas, whose ancestors were important participants in a wide-ranging network of trade relationships for several hundred years prior, or that after 1740 these villagers ceased to receive a variety of goods of Euroamerican manufacture from their Indian neighbors. As Lehmer (1977:93) has stated, trade with other native middlemen groups persisted until very late historic times. An example of this is documented in the 1804-1805 journal for Brandon House, a center of Hudson's Bay Company trade in the Assiniboine River valley, wherein the post master recorded in his entry for February 27, 1805, that

> I saw a Letter from Mr [François-Antoine] la Rocque at the big Bellies [i.e. the Hidatsa villages], wherein he says, the Mandals and Big Bellies has 132 new Guns, all from Red River, no wonder these Indians [a reference to the Assiniboins] is always in want of that article, as fast as they take them in Debt [i.e., as quickly as they obtain them from Euroamerican traders] they give them away to the Mandals or Big Bellies, they get nothing in return but Indian Corn and Buffalo Robes... [Thiessen 1981:97]

It appears from this that after more than 65 years of documented trading with the Mandans, the Assiniboins had not become more astute intertribal traders in the eyes of Euroamerican merchants!

Ray (1978:32) has pointed out implications regarding the frequency and nature of Euroamerican trade goods to be found in the archeological record of native peoples living in the indirect trade zone. Relatively few trade goods will be found in such deposits because they are regularly diffused by their middleman owners to other groups in a wide-ranging trading network when they become broken or worn out. Consequently, most such goods found in indirect trade contexts will be few in number and will often be broken, worn out, or modified for uses other than those for which they were originally designed. At the Knife River Indian Villages, these statements may be expected to characterize much of the archeological deposits attributed to Ahler's Willows and Minnetaree phases, tentatively dated at between AD 1600 and 1785 (see Chapter 25).

INTERMITTENT TRADE CONTACTS, CIRCA AD 1740 TO CIRCA 1790

This period is characterized by an increased flow of Euroamerican trade goods into the Mandan and Hidatsa villages through occasional visits of white traders, and the development of a middleman role for the Mandans and Hidatsas in bartering such trade goods as part of their intertribal trade with other Plains Indians. The villagers received industrially manufactured trade commodities, both from Euroamerican sources and other native middlemen groups, which items then entered into their trading transactions with still other native groups. A vigorous trade in garden produce and other local products still persisted, of course, as it would into very late historic times, and such items were exchanged with both whites and Indians.

The approximate date of 1740 is taken as the beginning of this period because the Mandans and Hidatsas should have been receiving quantities of both horses and Euroamerican manufactured wares by that time from other native middleman groups, and they should have shortly afterward commenced their own middleman trade in such commodities. The date is suggested by Toom (1979:77), and is in substantial agreement with the opinions of other investigators (Secoy 1953; Ewers 1954) regarding the approximate date of intersection at the Missouri River of the converging frontiers of the horse and the gun, two elements of European culture that were to have far-reaching consequences for Plains Indian culture in general.

An ending date of approximately 1790 is suggested for this period because the North West Company had firmly established operations in the Assiniboine River valley by the middle of the 1780s, at Pine Fort near La Vérendrye's former Fort La Reine, and at Fort Espérance on the Qu'Apelle tributary of the Assiniboine (Voorhis 1930; Hamilton 1986:4, 7). Shortly after this, certainly by

1793, the North West Company seems to have established a recurring trade with the Mandan and Hidatsa villagers by sending trading parties from these posts to the Missouri on a regular basis (Wood and Thiessen 1985; Hamilton 1986:8).

Although the documentary record of contacts between the Mandan-Hidatsas and Euroamericans during this period is extremely fragmentary and incomplete, it appears that such contacts were infrequent and did not occur on a regular, periodic basis (Wood and Thiessen 1985). Following La Vérendrye's initial visit in 1738-1739, two of his sons returned to the Missouri River in 1741 and again in 1742-1743 (Burpee 1927; Smith 1980). These trips were made for the purpose of exploration and could scarcely have resulted in the introduction of any appreciable quantity of trade goods into the Mandan-Hidatsa villages.

Records concerning the presence of Frenchmen in the Missouri villages in the decades following the travels of the La Vérendrye family are vague. Louis-Antoine de Bougainville, a French officer, wrote in 1757 that Fort La Reine, established by La Vérendrye in 1738, "is the route to take for the upper Missouri" (Thwaites 1908:186), although the statement is based on second-hand information and is of little value.

The only certain indication of the presence of French traders in the Mandan villages is the story related by the American-born trader, Peter Pond, that a French deserter called "Old Pinneshon" had made his way from the Illinois country to the Mandan villages, where he encountered some French traders whom he accompanied back to their "facterey" at Fort La Reine (Gates 1965:38-39). This probably occurred prior to 1763, when France ceded its North American colonial possessions to Great Britain.

Unfortunately, descriptions of later visits by white traders to the villages are no more informative than Pond's information, which at least has the merit of having been obtained by Pond directly from "Pinneshon," albeit years after the events in question took place. Henry Schoolcraft (1851-1857, 3:253) published an 1852 letter from D. D. Mitchell, then Superintendent of Indian Affairs, in which the latter relates that a trader named Mackintosh had arrived at the Mandan villages on Christmas day in 1773. Mitchell provided little further information about this individual, whose identity remains unknown, beyond the fact that he had traveled from Montreal and was "in some way connected with the French Trading Company."

Another instance of Euroamerican traders in the Missouri River villages during this period is the North West Company trader, Donald Mackay, who reached the Hidatsa villages with a small party of *voyageurs* in the spring of 1781 (Jackson 1982:12-14; Duckworth 1988:26). Unfortunately, further details are not presently available. Mackay later founded Brandon House for the Hudson's Bay Company, a post that became the center of that concern's very active trade with the Mandans and Hidatsas during the next period to be described.

The last recorded visit to the Mandans during this period occurred in 1787, when a trader named James Mackay traveled there from the Qu'Apelle River. The surviving account of this visit is from a generalized description produced by or for Mackay years later, and it contains little detail (Quaife 1916). Nevertheless, it serves to document one of the earliest trips to the Missouri from the Assiniboine River, possibly at a time when such travel was becoming a regular occurrence.

Also during this period, the earliest "tenant trader" (Lehmer's term) is known to have settled among the Mandans. This man was a French-Canadian named Menard, of whom relatively little is known despite the fact that he seems to have been well known to his contemporaries (Wood and Thiessen 1985:43-45; Saindon 1987). The date of his arrival on the Missouri is not clear but appears to have been sometime between 1778 and 1783. He resided there until his death in 1804. During his residence, he occasionally served as an interpreter for the Hudson's Bay and, probably, North West Company parties that visited the villages with increasing frequency after 1790.

During this period of only occasional contacts with Euroamerican culture, the Mandans and Hidatsas accelerated their role as middleman traders, exchanging Euroamerican wares and horses as well as local products with nomadic peoples who traveled great distances to reach the Missouri River villages for this purpose. This trade was ultimately to lead to tremendous material affluence and prosperity on the part of the Mandan- Hidatsas. However, at the time during which contacts with

Euroamericans occurred on an intermittent, irregular basis, from about 1740 through approximately 1790, it is unlikely that many Euroamerican wares, even if occasionally introduced into the villages in large quantities, found their way into archeological deposits dating to this period. Ray (1978:32) believes that trade goods obtained by middleman groups would be disposed of, when worn out or broken, through trade to native groups even more removed from sources of supply, and that consequently such wares "would be underrepresented archeologically leading culture historians to collapse their chronologies and underestimate the extent to which regional Indian cultures had been transformed prior to the beginning of the historic or local trade phase." What this means at Knife River is that trade goods can be expected to be found in low numbers throughout approximately the last half of Ahler's Minnetaree phase (1740 to 1785) and the first few years of the succeeding Roadmaker phase (1785 to circa 1790) (see Chapter 25). However, by 1790, or shortly thereafter, trade goods can be expected to occur in substantially greater numbers in the village deposits, as explained below.

FREQUENT TRADE CONTACTS, CIRCA AD 1790 TO 1822

By the early 1790s, the North West Company had established a regular, recurring trade with the Mandans and Hidatsas by sending expeditions to their villages from forts along the Assiniboine River, most notably Fort Espérance and Pine Fort. Precisely when regular travel to the Missouri River was initiated is difficult to determine, but probably did not take place prior to the establishment of the two above-mentioned posts in the mid-1780s. John Macdonell, writing about the year 1797, observed that "From the River La Sourie [i.e., the vicinity of the mouth of the Souris River] the trade with the Mandans and gros Ventres inhabitting both sides of the Missouri has been carried on since the pine Fort was thrown up" (Wood and Thiessen 1985:84), which was 1784-1785 according to Voorhis (1930:138; see also Hamilton 1986:4, 7).

That the North West Company's commerce with the Mandans was established on a regular basis by the early 1790s is also suggested by a remark recorded by John Goodwin in the Brandon House Post Journal entry for May 17, 1795, to the effect that "it [i.e., the Mandan villages] is the very place the North West Company is supplied with all their Horses" (Hudson's Bay Company Archives, B.22/a/2, folios 20d-21; cited in Wood and Thiessen 1985:63). Later that same year, on November 9, Goodwin recorded that he was planning to send some of his men to the Mandan villages in the company of some hired Canadian guides, who only reluctantly agreed to the engagement because "the N.W.C. [i.e., North West Company] engross the whole of that Trade..." (Hudson's Bay Company Archives, B.22/a/3, folio 8; cited in Thiessen 1981:25-26). Goodwin's party set out from Brandon House on November 12 and returned from the Mandans on December 26 with furs equaling the value of 142 prime beaver skins (expressed as "made-beaver," a standard of value in the trade) and three horses purchased at the villages (Alwin 1979; Wood and Thiessen 1985). For more than the next two decades, the North West and Hudson's Bay companies competed fiercely for the Mandan-Hidatsa trade by each sending one and sometimes two expeditions annually to the Missouri villages. Forty-six roundtrips to the Missouri River from trading posts near the mouth of the Souris River have been recorded from the fall of 1795 through December of 1818 (Wood and Thiessen 1985:Table 1), of which 23 each were conducted by the North West and Hudson's Bay companies. In addition to this, records exist of two expeditions being made jointly by the two concerns, and there is a suggestion in the historical records that more joint trips were made, for which documentation has not survived. These cooperative efforts were made occasionally between about 1807 and 1818, when the journey between the Missouri and Assiniboine rivers seems to have been considered particularly hazardous because of intertribal warfare (Thiessen 1981).

In addition to this regular intercourse with the Mandans and Hidatsas on the part of the two great trading companies, there are indications in the historical records that free traders—men trading on their own account—and men representing smaller commercial concerns were also trading frequently in the villages during this period. In writing of his third trip to the Missouri, during the fall of 1805, the North West Company clerk, Charles McKenzie, recalled that "no less than five other Traders forming as many different Interests had taken the lead of us for the same quarter" (i.e., the Mandan-Hidatsa villages; Wood and Thiessen 1985:262). Wood and Thiessen (1985:Table 1) have compiled information on 16 roundtrips between the villages and the Assiniboine River forts by parties of free traders during this period. Little documentation

exists for trading visits made by representatives of small, independent companies or partnerships, and only one such party is known to have reached the Mandan and Hidatsa villages during this period. A group of men under the leadership of a man named Cardin traded in the villages in the spring of 1795 on behalf of Peter Grant's small Montreal-based company (Hudson's Bay Company Archives, B.22/a/2, folios 20d-22; see also Wood and Thiessen 1985:16, 60).

There is also evidence for a dramatic increase in the number of "tenant traders" (called "residenters" in the Brandon House Post Journals) known to be living in the villages during this period. These were men who resided among the Mandans and Hidatsas for periods of time ranging from several months to many years, and who often took Indian wives and raised families in the villages. As mentioned earlier, Menard was the earliest tenant trader of which we have record, but at least two others probably joined him on the Missouri during the 1790s: René Jusseaume (Tyrrell 1968:209; Gough 1988:224-225) and Toussaint Charbonneau (Stewart 1975:83-84). These men were joined by others during the first decade of the nineteenth century, so that, at times, it must almost have appeared as if a small colony of expatriate Canadians and Americans was flourishing on the Missouri. The livelihood of these men was also probably based predominantly on the fur trade. They appear to have frequently traded furs, obtained from the Indians, at the Assiniboine River posts, and they occasionally took debt at the posts, i.e., they took goods on credit to trade at the villages and turned over the fur proceeds to the Assiniboine-based traders in payment of those debts. They also appear to have taken occasional employment with the fur companies as guides, interpreters, or traders, and they occasionally traded on their own account in other commodities such as horses and slave girls. Perhaps the most famous of these men was Charbonneau (Hafen 1972; Ottoson 1976), who achieved fame when he and his even more renowned wife, Sacagawea, were hired by Lewis and Clark as interpreters for the expedition's journey to the Pacific. Other men known to have resided in the villages include Hugh McCrachan, Jean Baptiste La France, François La Grave, Joseph Gareau, and John Colter, a discharged member of the Lewis and Clark expedition.

Other Euroamericans arrived at the Mandan-Hidatsa villages during this period also. These men were first the Spaniards and, after the cession of Louisiana to France and its purchase by the United States, Americans, who ascended the Missouri River from St. Louis. Only two Spanish parties are definitely known to have reached the villages. The first of these was the expedition of the independent trader, Jacques D'Eglise, who reached the Mandans in 1792 and brought word to the Spanish authorities in St. Louis of British trading activities on Spanish soil in the Upper Missouri. Alarmed by this and similar reports, the Spanish authorities in 1794 sanctioned the formation of a monopolistic partnership—called the Company of Discoverers and Explorers of the Missouri, or more simply the Missouri Company—for the purpose of countering British commercial activities and extending Spanish sovereignty throughout the Upper Missouri (Nasatir 1930; 1976). Of the three expeditions launched up the Missouri by the company, only one, led by the former Canadian trader, James Mackay, ultimately reached the Mandan villages (Quaife 1916; Nasatir 1952). Mackay did not himself make it to the Mandans on that occasion, but his lieutenant, John T. Evans, and a few men arrived at the villages in September, 1796, where he shortly afterward took possession of a vacant North West Company fort. He later forced several Canadian traders to leave the villages and return to their posts along the Assiniboine with a proclamation forbidding them from returning to the Missouri for the purpose of trade. Evans' presence in the villages did not suppress the British trade there for long. Within seven months of Evans' departure from the villages in May, 1797 (or possibly earlier), both the Hudson's Bay and North West companies again had agents trading in the villages. As Wood and Thiessen have concluded:

> The Spanish presence in the Mandan and Hidatsa villages was never significant, as only two Spanish expeditions are known to have reached them: those of D'Eglise in 1792 and of Evans in 1796. Since both of these visits were the result more of exploration than of trading, it is unlikely that very much in the way of goods was introduced to the villages through them. [Wood and Thiessen 1985:29]

The formal advent of American interests on the Missouri occurred with the Lewis and Clark expedition, which set out in 1804 to explore the newly-acquired territory of Louisiana. The expedition arrived at the

Mandan-Hidatsa villages on October 26, 1804, and spent the next five months at a winter encampment, Fort Mandan, which they built a few miles downstream from the villages (Thwaites 1969, 1; Moulton 1987). The Americans encountered several parties of British traders among the Mandans and Hidatsas, from whom they obtained information about the posts on the Assiniboine River. The "Captains" and their men left a voluminous record of the expedition, among which is a considerable amount of information on their Indian neighbors near Fort Mandan. The party continued its epic voyage to the Pacific in April, 1805, and passed the villages again on its return journey in August of the following year. The publicity attending the expedition, and the information resulting from it, stimulated American curiosity and interest in the region, and eventually led to the curtailment of British trade at the Mandan-Hidatsa villages.

The next American expedition known to have reached the villages was the St. Louis Missouri Fur Company party led by Manuel Lisa and his associates, which built a fort several miles north of the Big Hidatsa village in 1809 (see Chapter 14). The party was a large one, composed of both company employees and men outfitted to trap beaver in the Rocky Mountains. Since the ultimate destination of many of these men was the uppermost reaches of the Missouri and its tributaries, this post may have been built as much to serve the purpose of a staging area for further upriver operations as for trade with the local Indians. Lisa's post appears to have remained in operation into August of 1812, when Lisa removed its peltries, goods, and complement to his post near the Arikara villages a short distance below the present North Dakota-South Dakota state line (Drumm 1964:69; see Chapter 14, this volume). The presence of Americans at this post interfered somewhat with the British trade with the Mandans and Hidatsas, which was still going on at this time. Two of the masters at Brandon House had occasion to complain of the deleterious effects of Lisa's men on their trade. John McKay, master for the 1809-1810 trading season, sent a party to the villages on October 9, 1809. The men returned to Brandon House on December 6

> with better than 700 Wolves of the worst quality for which he [i.e., William Yorston, the leader of the party] gave the best of Goods. the Goods were intended for the free Americans [i.e., the men outfitted to trap beaver, as opposed to the traders employed by Lisa] but instead of finding Americans he found a Compound of Mallatoes, Negroes Creoles and Canadians from the Illinois under a Mr. Choteau who after selling his for [i.e., furs] at the Mandanes returned to the Illinois Wm. Yorstone and Men when finding how things went on, were for coming back immediately but they were stoped by the Canadians [lined out in original] Natives who told them that if they would not Trade their Goods for such furrs as they had to give they would plunder them our Men were obliged to Comply. [Wood and Thiessen 1985:32-33]

Three years later, Alexander Kennedy, master for the 1811- 1812 season at Brandon House, sent four men to the Mandan-Hidatsa villages in January, 1812. On March 14, the men returned to Brandon House, where they

> arrived with very poor returns they say that the Natives at the Missesourie were prevented from trading with them by the Americans, who held out to them better encouragement than we could afford to give...They had some difficulty to get away from the Missesourie with the remains of the Goods they took there to trade. [Wood and Thiessen 1985:34]

The American trade on the Upper Missouri was apparently discontinued during the War of 1812, as Lisa confined his activities to the lower reaches of the river in 1813 and afterward. However, the Canadian traders evidently continued to visit the Mandans and Hidatsas during the war and for several years thereafter, despite rising concern by the American government about British commercial encroachment on American territory. In an 1818 entry in the Brandon House Post Journals, Peter Fidler mentioned having been at the villages in February of 1813, but details of this trip have not survived (Hudson's Bay Company Archives, B.22/a/20, folio 36d; see also Wood and Thiessen 1985:35). The last recorded Cana-

dian expedition to the villages occurred in December, 1818, when Archibald McDonald and two Hudson's Bay Company employees visited the villages in search of horses for the colonists at Red River, near present-day Winnipeg (Cole 1979:85-86; Hudson's Bay Company Archives, B.22/a/21, folios 38-38d and 40; National Archives of Canada, Selkirk Papers, Manuscript Group 19, E1, vol. 53, pp. 20502 and 20527; see also Wood and Thiessen 1985:37-38). However, it is clear from the Brandon House Post Journals (Hudson's Bay Company Archives, B.22/a/21, folios 48d-49; Wood and Thiessen 1985:38-39) that another Hudson's Bay Company expedition to the villages was planned for the spring of 1819 but was not carried out because of the temerity of an Indian messenger. It is not possible to determine if additional Canadian expeditions to the Mandan and Hidatsa villages were mounted after 1818 because the Brandon House Post Journals for the 1819-1820 and immediately subsequent seasons are lost. By 1822, the first of a nearly continuous succession of American trading posts was established near the villages, however, and it is relatively certain that Canadian trade at the Mandan-Hidatsa villages did not take place after that year. Thus, the period of frequent but intermittent trading contacts drew to a close, and a period of constant contact with American traders opened, thus inaugurating what Ray and Toom have described as "local trade."

LOCAL TRADE, AD 1822 TO 1860

Beginning in the fall of 1822 and continuing to 1860, a nearly continuous succession of trading posts existed in the vicinity of the mouth of the Knife River. Traders at these posts conducted trade with the local Indians—Mandans, Hidatsas, and Arikaras—as well as with groups from other tribes that continued to visit the villagers. The presence of permanent American traders seems to have discouraged the Hudson's Bay Company from sending men to the Missouri River; at least, no record exists of Canadian trading expeditions traveling to the Knife River villages during this period.

These posts were built by a variety of companies, many of which were more interested in the lucrative beaver skins to be harvested in the Rocky Mountains than in trade with Indians living along the Missouri east of the Rockies. The beaver trade flourished during the 1820s and early 1830s, but fell off sharply by the late 1830s because of the depletion of the beaver population and an increasing European and American preference for silk. As the trade in beaver pelts declined, buffalo robes became the prime commodity of the trade. Because of their great weight and bulk, buffalo robes had played a largely secondary role in the trade until an efficient means of shipping them to eastern markets could be developed. Steamboats provided not only an ideal way of transporting heavy robe shipments down the Missouri to St. Louis, but they were also used to supply the upriver posts with provisions, goods, and personnel. The American Fur Company was responsible for pioneering the use of steamboats on the Upper Missouri. The company's first Upper Missouri steamboat, the *Yellow Stone*, was able to travel only as far as Fort Tecumseh (in present-day central South Dakota) on its initial voyage in 1831. The following year's trip was more successful, and the *Yellow Stone* was able to reach Fort Union at the mouth of the Yellowstone River. Thereafter, steamboats proliferated on the Missouri and became the dominant form of transportation for fur traders and others who desired to penetrate the Missouri basin or travel even further westward. Special shallow-draught steamboats were built for the Missouri and by 1860, the head of navigation had been extended to Fort Benton in present-day western Montana (Lass 1962; Sunder 1965). Prior to steamboats, keelboats and other wind and manually propelled craft were used on the Missouri, but such vessels were relatively small and most useful only for descending the river. With the advent of steamboat transportation, the Upper Missouri country was made immeasurably more accessible not only to fur traders and trappers but also to a variety of other individuals who could purchase fares on vessels bound for upriver destinations. In this way began a veritable flood of visitors to the Upper Missouri, including soldiers, Indian agents, naturalists, artists, missionaries, and thrill-seekers. All of these developments took a swift and drastic toll on the village peoples living on the banks of this great artery of travel, the Missouri River.

The trading posts that proliferated near the mouth of the Knife River are discussed in detail in Chapter 14 of this volume. However, their succession will be briefly reviewed here to provide the reader with an impression of their continuity and to contrast the nature of trade at that time with that conducted earlier in the region.

The first post established during this period was Fort Vanderburgh, which was built by Joshua Pilcher of the Missouri Fur Company in the fall of 1822. Because of misfortunes suffered by the company in its affairs in the Blackfeet country and near the Arikara villages, Fort Vanderburgh was abandoned during the summer of 1823. This post evidently stood a short distance north of the Big Hidatsa village.

A successor soon followed in the form of Tilton's Fort, which was built a short distance downstream from the Mandan village near later Fort Clark in the fall of 1823 by James Kipp of the Columbia Fur Company. Like the Missouri Fur Company, the Columbia Fur Company was based in St. Louis but unlike its competitors, it supplied its Missouri River outpost by means of overland travel from a company depot on Lake Traverse near the present-day South Dakota-Minnesota border, as well as by travel along the Missouri. Because of harrassment from the nearby Arikaras, the post was abandoned within a year. Operations on the Missouri were not forsaken as a consequence, however, because the company's trader, Kipp, took up residence in the village of the Mandans and later built another trading house close to the village. This post probably remained in operation among the Mandans until the Columbia Fur Company was absorbed by the American Fur Company in 1827. The Columbia personnel and posts were redesignated the Upper Missouri Outfit of the American Fur Company, and a period of intensive fort-building activity by the reorganized concern soon commenced throughout the Upper Missouri.

Between 1829 and 1832, the Upper Missouri Outfit built a large number of posts along the Upper Missouri from present-day central South Dakota to nearly the Rocky Mountains in Montana. Three of these—Forts Union, Clark, and Pierre—were particularly substantial, since they functioned as supply depots and headquarters for operations at smaller satellite posts along the Missouri and its tributaries. Kipp's unnamed trading house at the Mandan village was replaced by Fort Clark, probably sometime between 1829 and 1831. This post continued in operation until 1860, when it was consolidated with the company's operation near the combined Mandan-Hidatsa town at Like-a-Fishhook Village about 70 miles above Fort Clark. At first, the village adjacent to Fort Clark was occupied by Mandans, and this was their home when they suffered the devastating effects of the 1837-1838 smallpox epidemic so vividly described in the journal of Francis Chardon, then manager of Fort Clark (Abel 1932). The Mandans temporarily left their village and dispersed as a result of the epidemic. When they returned to Fort Clark in 1838, they found their former village occupied by the Arikaras, who had taken up residence in their absence and who continued to reside there until 1861. In 1860, Fort Clark was abandoned and by 1862 the Arikaras had joined the Mandans and Hidatsas at Like-a-Fishhook Village.

Fort Clark was not without immediate competitors, however. The short-lived firm of Sublette and Campbell had traders living among the Hidatsas in 1834, but this operation, too, was apparently absorbed by the American Fur Company early the following year. By 1858, another "opposition" company—Clark, Primeau and Company—was operating a small trading post, called Fort Primeau, alongside Fort Clark. The two posts competed for the trade of the Arikaras for a brief time, then merged in 1860 when the American Fur Company bought out the smaller concern.

The traders at these several posts near the Mandan-Hidatsa and, later, Arikara villages witnessed the decline and removal of these native groups from the Knife River area, due largely to economic, biological, and technological factors which they and their predecessors in the fur trade had introduced to the Indians. The effects of these changes were most pronounced during this last, "local trade" period, when contacts with whites and other aspects of Euroamerican culture were essentially continuous. This should be reflected in the archeological record of these peoples by a dramatic increase in the quantities of industrially-manufactured goods to be found in archeological deposits dating to this period and concomitant decreases in the representation of native technological products. Certainly, this is true at Like-a-Fishhook Village, where very small quantities of native-made products, particularly pottery and chipped stone objects, contrast strikingly with the number and diversity of industrially-made wares in the archeological record (Smith 1972). Similar contrasts, though perhaps to a lesser degree, should also characterize the latest deposits at the Sakakawea and Big Hidatsa sites at Knife River Indian Villages.

Ray (1978) has suggested that in a "local trade" situation, native groups living close to Euroamerican trading posts function chiefly as provisioners for those

posts. There is certainly some indication in the historical record that Sublette and Campbell's men and the personnel at Fort Clark were obtaining substantial quantities of corn from the Mandans and Hidatsas (Brooks 1963-1964:10, 11, 18; Abel 1932). At Knife River, the degree to which the Mandan-Hidatsa trade had transformed from traffic in predominantly pelts and robes to commerce in garden products, and possibly meat, is not clear. Detailed investigation of historical records, focusing on the native commodities exchanged by the Mandans and Hidatsas in trade with the whites at Fort Clark and with their Plains Indian neighbors who still continued to travel to the Knife River villages for purposes of trade, may prove illuminating.

SUMMARY

To summarize briefly, the 120 years in which the villagers at Knife River experienced various forms of contact with Euroamerican fur traders have been divided into four periods which are distinguished by the nature and/or frequency of trading contacts between the two cultures. Labels applied to two of these periods are borrowed from Ray's spatial model of the fur trade, although it is recognized that the situation at Knife River is more complex than examples presented by Ray, because of the simultaneous participation of the villagers in several forms of trade and the fact that the villages served as a trading center for Indians and whites alike. The first of these periods (circa 1600 to circa 1740) essentially preceded direct contact between the villagers and Euroamericans, and should be archeologically represented by very small quantities of trade goods which were originally obtained from other Indian groups acting as middlemen between the Missouri villagers and Euroamericans in Canada. The second period (circa 1740 to circa 1790) is characterized by only occasional, intermittent direct trade contacts between the Mandan-Hidatsas and Canadian traders. These contacts were few and are poorly documented in the historical record; they probably did not result in any substantial increase in trade goods deposited in the archeological record of the villagers. During this period, the Mandans and Hidatsas continued to receive industrially manufactured goods from other Indian groups, and they began to exchange such goods and horses with Plains Indian neighbors to the north and east, and the west and south. The third period (circa 1790 to 1822) is characterized by frequent visits of Euroamerican traders from two directions: the Assiniboine River valley to the northeast and St. Louis on the lower Missouri to the southeast. During this period, two trading posts were established near the Mandan-Hidatsa villages (see Chapter 14), but both were relatively short-lived; Euroamerican traffic to the villages was clearly the predominant nature of the trade conducted during this period, but the Mandans and Hidatsas continued their middleman role in intertribal trade as well. Archeological deposits dating to this period should contain larger quantities of Euroamerican trade goods in comparison to the previous two periods. The greatest frequency of industrial wares in the villagers' archeological record, however, should be found in deposits dating to the last period (1822 to 1860), when a succession of trading posts near the Knife River assured the Mandans and Hidatsas, and later, the Arikaras, of a virtually continual supply of Euroamerican trade goods.

REFERENCES CITED

Unpublished Documents

Hudson's Bay Company Archives, in the Manitoba Department of Cultural Affairs and Historical Resources, Provincial Archives, Winnipeg

B.22/a/2 Brandon House Post Journal, 1794-1795.

B.22/a/3 Brandon House Post Journal, 1795-1796.

B.22/a/20 Brandon House Post Journal, 1817-1818.

B.22/a/21 Brandon House Post Journal, 1818-1819.

National Archives of Canada, Ottawa

Selkirk Papers, Manuscript Group 19, E1, vol. 53, pp. 20,502 and 20,527.

Publications and Reports

Note: References in which an asterisk precedes the date were supported in whole or part by the Midwest Archeological Center's archeological and ethnohistorical research program for the Knife River Indian Villages National Historic Site.

Abel, A. H. (editor)
1932 *Chardon's Journal at Fort Clark, 1834-1839*. State of South Dakota, Department of History, Pierre.

Alwin, J. A.
1979 Pelts, Provisions, & Perceptions: The Hudson's Bay Company Mandan Indian Trade, 1795-1812. *Montana, the Magazine of Western History* 29(3):16-27.

Berry, J. J.
1978 *Arikara Middlemen: The Effects of Trade on an Upper Missouri Society*. Ph.D. dissertation, Department of Anthropology, Indiana University, Bloomington.

Blakeslee, D. J.
1975 *The Plains Interband Trade System: An Ethnohistoric and Archeological Investigation*. Ph.D. dissertation, Department of Anthropology, University of Wisconsin, Milwaukee.

Brooks, G. R. (editor)
1963-1964 The Private Journal of Robert Campbell. *Bulletin of the Missouri Historical Society* 20(1):3-24 and 20(2):107-118.

Bruner, E. M.
1961 Mandan. In *Perspectives in American Indian Culture Change*, edited by E. H. Spicer, pp. 187-277. University of Chicago Press.

Burpee, L. J. (editor)
1910 *Journal of Larocque from the Assiniboine to the Yellowstone, 1805*. Publications of the Canadian Archives No. 3. Ottawa.

1927 *Journals and Letters of Pierre Gaultier de Varennes de la Vérendrye and His Sons*. Champlain Society Publication XVI. Toronto.

Chittenden, H. M.
1954 *The American Fur Trade of the Far West*. 2 vols. Reprinted. Academic Reprints, Stanford. Originally published 1902 in three vols., Francis P. Harper, New York.

Chomko, S. A.
1986 The Ethnohistorical Setting of the Upper Knife-Heart Region. In *Papers in Northern Plains Prehistory and Ethnohistory*, edited by W. R. Wood, pp. 59-96. South Dakota Archaeological Society, Special Publication No. 10. Sioux Falls.

Cole, J. M.
1979 *Exile in the Wilderness: The Biography of Chief Factor Archibald McDonald, 1790-1853*. University of Washington Press, Seattle.

Drumm, S. M. (editor)
1964 *Journal of a Fur-Trading Expedition on the Upper Missouri, 1812-1813*, by J. C. Luttig. Reprinted with preface and notes by A. P.Nasatir. Argosy-Antiquarian, New York. Originally published 1920 by the Missouri Historical Society, St. Louis.

Duckworth, H. W.
1988 The Madness of Donald Mackay. *The Beaver* 68(3):25-42.

Ewers, J. C.
1954 The Indian Trade of the Upper Missouri Before Lewis and Clark: An Interpretation. *Bulletin of the Missouri Historical Society* 10(4, Part 1):429-446. [Also published in slightly revised form as "The Indian Trade of the Upper Missouri Before Lewis and Clark," in *Indian Life on the Upper Missouri*, by J. C. Ewers, pp. 14-33. University of Oklahoma Press, Norman, 1968.]

Gates, C. M. (editor)
1965 *Five Fur Traders of the Northwest*. With an introduction by G. L. Nute. Reissued with a foreword by T. C. Blegen. Minnesota Historical Society, St. Paul. Originally published 1933.

Gough, B. M. (editor)
1988 *The Journal of Alexander Henry the Younger 1799-1814*, vol. 1. Champlain Society Publication LVI. Toronto.

Hafen, LeRoy R.
1972 Toussaint Charbonneau. In *The Mountain Men and the Fur Trade of the Far West*, edited by LeRoy R. Hafen, vol. 9, pp. 53- 62. Arthur H. Clark, Glendale, California.

Hamilton, S.
1986 Pine Fort: A Socio-economic Analysis on the Basis of the Spatial Distribution of Activity-Specific Artifacts. *Manitoba Archaeological Quarterly* 10(2-3).

Hanson, J. R.
*1987 *Hidatsa Culture Change, 1780-1845: A Cultural Ecological Approach.* J & L Reprint Company, Lincoln.

Jackson, J. C.
1982 Brandon House and the Mandan Connection. *North Dakota History* 49(1):11-19.

Lass, W. E.
1962 *A History of Steamboating on the Upper Missouri River.* University of Nebraska Press, Lincoln.

Lavender, D.
1979 *The Fist in the Wilderness.* University of New Mexico Press, Albuquerque.

Lehmer, D. J.
1971 *Introduction to Middle Missouri Archeology.* Anthropological Papers 1. National Park Service, Washington, D.C.

1977 The Other Side of the Fur Trade. In *Selected Writings of Donald J. Lehmer*, edited by W. R. Wood, pp. 91-104. J & L Reprint Company, Lincoln.

Lehmer, D. J., W. R. Wood, and C. L. Dill
1978 *The Knife River Phase.* Dana College and the University of Missouri. Submitted to the National Park Service, Rocky Mountain Region.

Lovick, S. K., and S. A. Ahler
*1982 *Cultural Resource Reconnaissance in the Knife River Indian Villages National Historic Site.* University of North Dakota. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Masson, L. R. (editor)
1960 *Les Bourgeois de la Compagnie du Nord-Ouest: Recits de Voyages, Lettres et Rapports Inedits Relatifs au Nord-Ouest Canadien.* 2 vols. Reprinted. Antiquarian Press, New York. Originally published 1889-1890 by de L'Imprimerie Generale A. Cote et Cie, Quebec.

Meyer, R. W.
1977 *The Village Indians of the Upper Missouri: The Mandans, Hidatsas, and Arikaras.* University of Nebraska Press, Lincoln.

Milloy, J. S.
1988 *The Plains Cree: Trade, Diplomacy and War, 1790 to 1870.* University of Manitoba Press, Winnipeg.

Morgan, D. L. (editor)
1964 *The West of William H. Ashley.* Old West Publishing Company, Denver.

Morton, A. S.
1973 *A History of the Canadian West to 1870-1871*, edited by L. G. Thomas. 2nd ed. University of Toronto Press.

Moulton, G. E. (editor)
1987 *The Journals of the Lewis & Clark Expedition*, vol. 3. University of Nebraska Press, Lincoln.

Nasatir, A. P.
1930 The Formation of the Missouri Company. *The Missouri Historical Review* 25(1):10-22.

1952 *Before Lewis and Clark: Documents Illustrating the History of the Missouri, 1785-1804.* 2 vols. St. Louis Historical Documents Foundation.

1976 *Borderland in Retreat: From Spanish Louisiana to the Far Southwest.* University of New Mexico Press, Albuquerque.

Oglesby, R. E.
1963 *Manuel Lisa and the Opening of the Missouri River Fur Trade.* University of Oklahoma Press, Norman.

Ottoson, D. R.
1976 Toussaint Charbonneau, a Most Durable Man. *South Dakota History* 6(2):152-185.

Quaife, M. M. (editor)
1916 Extracts from Capt. McKay's Journal—and Others. *Proceedings of the State Historical Society of Wisconsin,* 63rd Annual Meeting. Madison.

Ray, A. J.
1974 *Indians in the Fur Trade: Their Role as Hunters, Trappers and Middlemen in the Lands Southwest of Hudson Bay, 1660-1870.* University of Toronto Press.

1978 History and Archaeology of the Northern Fur Trade. *American Antiquity* 43(1):26-34.

Saindon, B.
1987 Old Menard. *We Proceeded On* 13(2):4-10.

Schoolcraft, H. R.
1851-1857 *Information Respecting the History, Condition and Prospects of the Indian Tribes of the United States.* 6 vols. Lippincott, Grambo & Company, Philadelphia.

Secoy, F. R.
1953 *Changing Military Patterns on the Great Plains.* Monographs of the American Ethnological Society No. 21. University of Washington Press, Seattle

Smith, G. H.
1972 *Like-a-Fishhook Village and Fort Berthold, Garrison Reservoir, North Dakota.* Anthropological Papers 2. National Park Service, Washington, D.C.

1980 *The Explorations of the La Vérendryes in the Northern Plains, 1738-43,* edited by W. R. Wood. University of Nebraska Press, Lincoln.

Stewart, F. H.
1975 Village Movements of the Northern Horticulturalists (Mandan and Hidatsa), 1675 to 1860. Manuscript deposited in the library of the National Park Service, Midwest Archeological Center, Lincoln.

Sunder, J. E.
1965 *The Fur Trade on the Upper Missouri, 1840-1865.* University of Oklahoma Press, Norman.

Thiessen, T. D. (compiler)
*1981 Excerpts from the Brandon House Post Journals Relating to Trade with the Mandan and Hidatsa Indians, 1793-1830. Manuscript in possession of compiler.

Thwaites, R. G. (editor)
1908 1757: Memoir of Bougainville. *Collections of the State Historical Society of Wisconsin* 18:167-195.

1969 *Original Journals of the Lewis and Clark Expedition 1804-06*. 8 vols. Reprinted. Arno Press, New York. Originally published 1904-1905, Dodd, Mead and Company, New York.

Toom, D. L.
1979 *The Middle Missouri Villages and the Early Fur Trade: Implications for Archeological Interpretation*. Master's thesis, Department of Anthropology, University of Nebraska, Lincoln.

Trimble, M. K.
*1985 *Epidemiology on the Northern Plains: A Cultural Perspective*. Ph.D. dissertation, Department of Anthropology, University of Missouri, Columbia.

*1986 *An Ethnohistorical Interpretation of the Spread of Smallpox in the Northern Plains Utilizing Concepts of Disease Ecology*. J & L Reprint Company, Lincoln.

Tyrrell, J. B. (editor)
1968 *David Thompson's Narrative of His Explorations in Western America, 1784-1812*. Reprinted. Greenwood Press, New York. Originally published 1916, Champlain Society, Toronto.

Voorhis, E.
1930 *Historic Forts and Trading Posts of the French Regime and of the English Fur Trading Companies*. Natural Resources Intelligence Service, Department of the Interior, Ottawa.

Wood, W. R.
1972 Contrastive Features of Native North American Trade Systems. *Anthropological Papers No. 4*:153-169. University of Oregon, Eugene.

1977 David Thompson at the Mandan-Hidatsa Villages, 1797-1798: The Original Journals. *Ethnohistory* 24(4):329-342.

1980 Plains Trade in Prehistoric and Protohistoric Intertribal Relations. In *Anthropology on the Great Plains*, edited by W. R. Wood and M. Liberty, pp. 98-109. University of Nebraska Press, Lincoln.

1990 Early Fur Trade on the Northern Plains. In *The Fur Trade in North Dakota*, edited by V. L. Heidenreich, pp. 3-16. State Historical Society of North Dakota, Bismarck.

Wood, W. R., and T. D. Thiessen (editors)
*1985 *Early Fur Trade on the Northern Plains: Canadian Traders Among the Mandan and Hidatsa Indians, 1738-1818*. University of Oklahoma Press, Norman.

CHAPTER 14

HISTORIC TRADING POSTS NEAR THE MOUTH OF THE KNIFE RIVER, 1794-1860

Thomas D. Thiessen

INTRODUCTION

Between AD 1794 and 1860, Euroamericans established and occupied a series of settlements among or near the villages of the Mandan and Hidatsa Indians clustered about the mouth of the Knife River. These establishments, usually termed "forts" or "trading houses" in contemporary documents, at various times provided fur traders with a base of operations for conducting local trade with the Mandans and Hidatsas as well as with other groups of Indians who visited the villagers, and for launching trading and trapping efforts at other locations in the Missouri River basin.

The two earliest of these posts—the North West Company fort built by René Jusseaume and the Missouri Fur Company post of Manuel Lisa—existed at a time when traders were regularly traversing the plains between the Assiniboine River valley and the Missouri, or were ascending the Missouri from St. Louis with increasing frequency. In a sense, they provided only a brief, temporary residence for traders who still traveled to the villages as part of a pattern of regular traffic between the Mandan-Hidatsas and traders whose ultimate bases lay far distant in Canada and the United States (see Chapter 13 for a summary of the frequency of trade contacts between circa 1790 and 1822). By the latter part of the 1820s, trading posts at Knife River had become stable, permanently staffed outposts of civilization which provided the neighboring Indians with a constant source of supply for industrially manufactured goods, especially after the introduction of steamboat transportation to this portion of the Upper Missouri in 1832. More importantly, the posts presented the natives with continuous exposure to elements of an advancing culture which was foreign to the Mandans and Hidatsas but which was destined to change forever their traditional lifeways and values.

Despite the relative abundance of trading posts near the Knife River—eight are known (Figure 14.1)—there are large gaps in our knowledge of them. The physical remains of only two have been found, and these have received scant attention from archeologists. Information about all of these posts lies in extremely scattered sources, and much (perhaps most) of it remains unpublished and relatively inaccessible to this day. Two historians, Hiram M. Chittenden (1954) and Ray H. Mattison (1955), have attempted to summarize the state of knowledge about these posts, but their work was hampered by the very limited information available at the time of their research. No catalog of American fur trade forts exists that is comparable in detail or comprehensiveness to the monumental list of Canadian posts compiled by Ernest Voorhis (1930).

Following are brief summaries of both primary and secondary sources of information about each of the eight trading posts known to have existed near the mouth of the Knife River prior to 1860. This information is the result of a systematic effort to assemble, compare, and evaluate diverse (and often contradictory and inconsistent) sources of information on these posts in preparation for an attempt during the summer of 1982 to locate their physical remains in the ground. Unfortunately, the week-long reconnaissance by Stanley A. Ahler, Carl R. Falk, and the author did not reveal the precise locations of any hitherto unlocated trading posts. Nevertheless, the information is presented here to eliminate redundant efforts to compile these data in the future and, hopefully, to stimulate others to conduct further historical and archeological research in quest of these elusive features of the Knife River historical landscape. Discussion focuses exclusively on fur trade establishments. Specifically omitted from consideration are two military camps: Fort Mandan, occupied by Lewis and Clark during the winter of 1804-1805; and "Camp Mandan," the temporary bivouac of the Atkinson-O'Fallon treaty expedition in July and August of 1825. The location of the former is generally believed to have washed into the Missouri River, and the site of the latter probably will never be definitely located because of the very brief duration of its occupation and the likelihood that substantial structures were not part of the encampment.

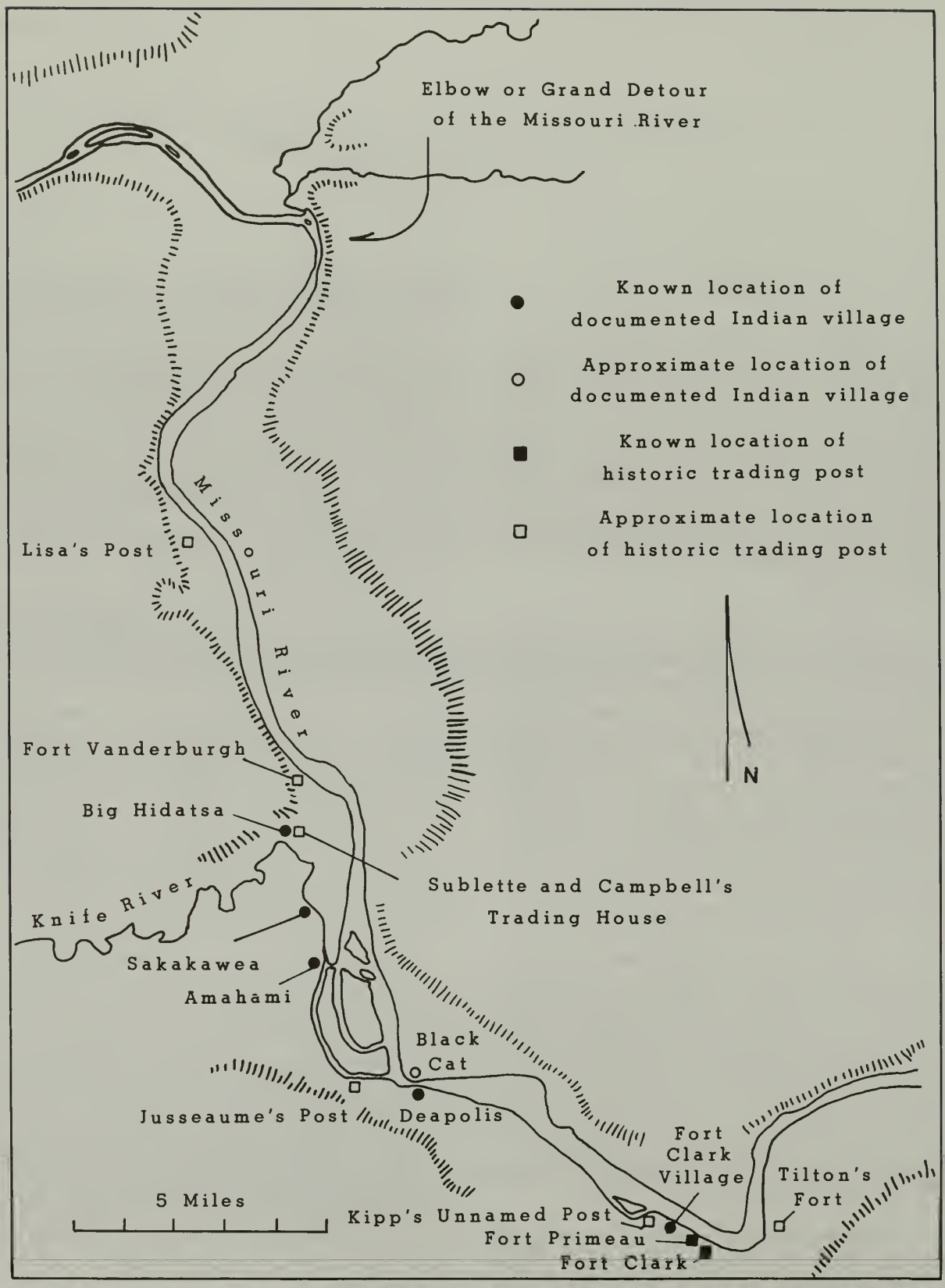


Figure 14.1. Locations of historic trading posts and native villages near the mouth of the Knife River, North Dakota (adapted from Wood and Thiessen 1985:Map 2).

JUSSEAUME'S POST (FORT MAKAY)

This trading post, the earliest one documented among the Mandan and Hidatsa Indians, was constructed in the summer or fall of 1794 by a party of North West Company men under the direction of René Jusseaume. According to the recorded testimony of "Juan Fotman" (or Jean Tremont; Nasatir 1952, 1:330-333), after arriving at the Missouri River villages on October 27 of that year, Jusseaume divided his merchandise with the resident free trader, Menard. Menard remained among the Mandans (who are specifically mentioned as living on the right bank of the Missouri) to trade, and Jusseaume took his share of the goods to trade among the Hidatsas, who were then living "a league and a half away" from the Mandans. While the trading was being conducted, Jusseaume's "five assistants [including Fotman] were occupied in building a small fort and a hut between the Mandan and the Gros Ventre villages." The following April, Jusseaume returned to the Assiniboine River with the season's fur returns, leaving Fotman "and three others to continue the work on the fort and the house." Shortly after this, Fotman deserted the service of the North West Company by descending the Missouri River on foot and in a buffalo-hide boat, eventually reaching the Arikaras, where he found Jean Baptiste Truteau and Jacques D'Eglise, traders from Spanish St. Louis. He arrived in St. Louis with the latter on July 4, 1795, where the Spanish Commandant, Zenon Trudeau, promptly interviewed him and recorded his testimony about British activities on the Upper Missouri.

On July 15, 1795, Trudeau forwarded Fotman's declaration to the Baron de Carondelet, governor of Spanish Louisiana in New Orleans (Nasatir 1952, 1:341-343), who in turn transmitted the information to the Spanish Secretary of State, Manuel de Godoy (also called the Duque de Alcudia and the Prince of Peace), as part of a January 8, 1796, report on the measures that were being taken to counteract British trading activity in the Upper Missouri country. De Carondelet's report specifically states, presumably on the basis of Fotman's information, that the North West Company post was situated "a half league distant from the village of the Mandans" (Nasatir 1952, 2:389; a summary of De Carondelet's report, dated May, 1796, repeats the information that the fort was "half a league from the *pueblo* of the Mandans"—see Nasatir 1952, 2:399). Fotman's declaration itself simply states that the fort was built between the Mandan and the Hidatsa villages, and does not state that it was a half league distant from the Mandans; consequently, the source for the distance statement in De Carondelet's report is not certain.

Apparently, word of the North West Company fort on the Missouri River reached the Spanish authorities in St. Louis long before it reached the ears of the Nor'westers' Hudson's Bay Company competitors on the Assiniboine River. On November 9, 1795, more than a full year after the establishment of Jusseaume's post, Robert Goodwin, the master at Brandon House, the Honorable Company's center for the Assiniboine River trade, recorded in his journal that the North West Company had constructed a fort among the Mandans during the preceding summer (Hudson's Bay Company Archives, B.22/a/3, folio 8; cited in Thiessen 1981:25-26). As no Hudson's Bay Company expeditions had yet been dispatched to the Mandan-Hidatsa villages, Goodwin's information must have been based on hearsay evidence. Goodwin's very general date for the establishment of Jusseaume's Post (the "summer" of 1794) is corroborated by a more specific date which appears on the Spanish version of the Antoine Soulard 1795 map. A notation on that map, which also shows the symbol for a fort near the Mandan villages, reads (in translation): "The English fort located near the Mandan nation on the upper Missouri was built by the English Company of the North in July of 1794" (W. R. Wood, letters to the author, March 8 and April 4, 1984; the Soulard map is poorly reproduced in Wheat 1957-1963, 1:44). The July, 1794, date given on the Soulard map and Goodwin's reference to the "summer" of that same year are in general agreement, and together they cast doubt on the October, 1794, date given in Fotman's testimony.

The Spanish authorities lost little time in investigating the reports of a Canadian fort at the Mandan villages. In the summer of 1795, the Company of Discoverers and Explorers of the Missouri (also called the Missouri Company)—a coalition of St. Louis merchants sanctioned by the Spanish authorities to extend Spanish influence to the Upper Missouri (see Nasatir 1976 for a brief synopsis of the history of this organization)—dispatched an expedition from St. Louis under the command of James Mackay, a former Canadian trader. One of Mackay's objectives was to reach the Mandan villages, but he personally made it no further up the Missouri than the Omaha village in northeastern

Nebraska near the modern town of Homer, where he built a wintering post. On September 23, 1796, a party of Mackay's men under the leadership of his lieutenant, John T. Evans, arrived at the Mandan villages on the south (right) bank of the Missouri. Five days later, on September 28, Evans took possession of the "English forts belonging to the Canada traders" (Nasatir 1952, 2:496), apparently unoccupied at the time (Quaife's original 1916 transcription of the extracts from Evans' journal specifies "fort" in the singular). Evans' journal does not provide any information on the location of the fort in relation to the villages, but does state that the villages of the "Munitarees" (either the Hidatsas-proper or the Awatixas) and "Wattassoons" (the Awaxawis) were "only a league above those of the Mandaines" (Nasatir 1952, 2:496). On October 8, several Canadian traders arrived at the villages, and Evans "some days later absolutely forced them to leave the Mandane Territory" (Nasatir 1952, 2:496). In March, 1797, Jusseaume and several men arrived from the Assiniboine River, but returned north a few days later after a scuffle with the Indians over an attempt on Evans' life by the Nor'westers (Nasatir 1952, 2:496-497). Evans left the Mandan villages on May 9, 1797, or possibly earlier, and returned to St. Louis on July 15 (Williams 1949:524, note 77).

Nasatir presents a few documents dated after the Evans 1796-1797 expedition which mention the Canadian fort among the Mandans, but none provide any useful information on the location of the post, its physical characteristics, or its continued use after Evans' departure from the area. Two other documents, however, preserve contemporary or near-contemporary information about the possible location and physical nature of the post.

One is a contemporary but anonymous French map which depicts a rectilinear symbol, probably representing a fort, on the right bank of the Missouri between two native village symbols to the west and two to the east. Since the map is evidently based on information resulting from the travels of Mackay and Evans, it is likely that the symbol depicts Jusseaume's post (Wood 1986:34-35, Figure 12).

The other document consists of hearsay information presented in Edwin James' report of the results of Major Stephen Long's exploring expedition of 1819 and 1820 (James 1966, 1:273-274). The expedition ascended the Missouri River no further than present-day east-central Nebraska. In his report, James (1966, 1:273-274) relates a story about a boulder sacred to the Hidatsas, to which is attributed oracular power. He cites an instance when an Indian returned to his village from a visit to the boulder, bearing a "hieroglyphical chart" depicting a strange building near the village. Four months later, James tells us, Jusseaume erected "a stockade trading house" near the village. James's source for this information is not stated, although John Dougherty is a possibility (James 1966, 1:200), as well as Toussaint Charbonneau, who was employed by the U. S. Government as an interpreter in 1819 and had frequent contact with members of the Long expedition (Ottoson 1976:175).

No clear evidence exists as to the date that Jusseaume's post was abandoned, although it appears, on the basis of lack of mention in the Brandon House Post Journals, not to have been used much past the date of Evans' presence in the villages. More than a decade passed before new arrivals—this time from the south—built another establishment near the Knife River villages.

LISA'S "FORT MANDANNE" NEAR THE HIDATSA VILLAGES

Manuel Lisa was one of the most energetic and capable fur traders to ascend the Missouri River in the wake of Lewis and Clark. His ambition and personal leadership qualities resulted in the first large-scale American attempt to systematically tap the rich beaver resources of the Upper Missouri (Wishart 1979:42-47). Lisa's first expedition to the Upper Missouri, in 1807, resulted in the establishment of Fort Raymond at the confluence of the Yellowstone and Bighorn rivers. In 1809, his second expedition was launched from St. Louis under the aegis of the newly-formed St. Louis Missouri Fur Company. The party, comprised of company *engages* and a large number of Americans whom Lisa intended to outfit and send to the Blackfoot country to trap beaver, reached the Hidatsa villages at the Knife River and built a fort nearby, which has been variously called by historians Lisa's Post (Wishart 1979), the Mandan Post (Truax 1928), Fort Mandan (Douglas 1964; Oglesby 1963), Lisa's Fort (Chittenden 1954), Fort Manuel Lisa (Truax 1928), and Fort Lisa (Truax 1928; Mattison 1955). A visitor to the fort, John Bradbury, referred to Lisa's post among the Mandans and Hidatsas as Fort Mandan (Thwaites 1966a,

5:121-122, 180), a name which also appears in a contemporary newspaper article cited by Nasatir in his notes to Walter B. Douglas' biography of Manuel Lisa (Douglas 1964:144, note 4). Lisa himself, in a September 8, 1812, letter, referred to "my Fort Mandanne" being in existence in 1811 (Drumm 1964:142-143; Gowans 1989:122-123), probably a reference to this post. This fort remained in operation for four years as a center of trade with the Hidatsas and Mandans and as a base for Lisa's upriver operations. The precise date of its abandonment is not well documented.

Two eyewitness accounts of the 1809 expedition have survived, but neither provide much useful information about the location or appearance of the fort. One of these is by Thomas James (Quaife 1966), who was one of the American trappers that accompanied the expedition up the Missouri and so was present at the establishment of the fort. In his memoir, written late in life, James simply states that "We built a fort near the Gros Ventre village" (Quaife 1966:27). Despite the fact that James states that the Hidatsas had five villages (Quaife 1966:96; he is probably including nearby Mandan villages in this count), he consistently refers to the "Gros Ventre village" in the singular (Quaife 1966:26, 27, 29, 96), making it impossible to determine the specific Hidatsa village to which his statement refers.

The second account of the 1809 expedition is by a person identified only as "Dr. Thomas," the company's physician (Jackson 1964). It states that "A few miles above the upper villages the principal trading house was built..." (Jackson 1964:191), which generally agrees with later eyewitness descriptions of the fort.

Later descriptions of the fort have been left by two men who traveled in the company of separate parties of fur traders ascending the Missouri River. John Bradbury traveled upriver with Wilson P. Hunt's party of Astorians in the spring and summer of 1811 (Thwaites 1966a, 5), which reached the Arikara villages near the Grand River on June 12. An expedition led by Manuel Lisa departed St. Louis about three weeks later than Hunt but managed to catch up to the Astorians below the Arikara villages, and both parties then proceded together to the Arikara towns. At the Arikaras, Hunt's party prepared to depart overland to Oregon and purchased some horses from Lisa in partial exchange for boats and other supplies. A party of Astorians under the leadership of Ramsey Crooks was dispatched on June 19 to bring back the horses which were at Lisa's post near the Hidatsa villages; Bradbury joined this party, which traveled overland. Late in the afternoon of June 22, the group arrived at a Mandan village on the right bank of the Missouri (the Deapolis site), where the men dined in the lodge of Big White. Pushing on to reach the fort that night, the party arrived before dark at the Knife River opposite the "third village of the Minetaree" (Big Hidatsa). After being ferried across the river by native women, they passed through the village, "Having seven miles still to travel in order to reach the Fort" (Thwaites 1966a, 5:152-153). After a journey of 18 hours that day, the group reached the fort at about 11 o'clock. The following morning, Bradbury described the country around the fort in his journal:

> The bluffs here have a very romantic appearance...I found the country about the Fort, and especially the bluffs, extremely interesting. It chiefly consists of argillaceous schistus, and a very tenacious and indurated clay, exhibiting in many places the appearance of coal. The land floods from the country behind the bluffs had cut through them, and left large bodies of clay standing up, with the sides perpendicular, and resembling in appearance towers, or large square buildings, which it was impossible to ascend. The incumbent soil appears to be of excellent quality, and was at this time covered with fine grass and a number of beautiful plants. [Thwaites 1966a, 5:154-155]

He also provided a fairly detailed description of the fort itself:

> The fort consisted of a square blockhouse, the lower part of which was a room for furs: the upper part was inhabited by Mr. [Reuben] Lewis and some of the hunters belonging to the establishment. There were some small outhouses, and the whole was surrounded by a pallisado, or piquet, about fifteen feet high. I found attached to it a very pretty garden, in which were peas, beans, sallad, radishes, and other

> vegetables, under the care of a gardener, an Irishman, who shewed it to me with much self-importance. [Thwaites 1966a, 5:156-157]

Bradbury's journal contains two additional bits of information bearing on the location of the fort. On June 28, he recorded again that the fort was seven miles from the uppermost Hidatsa village, and on June 29 or 30, he observed a "vein of fine coal, about eighteen inches thick, in the perpendicular bluff below the fort" (Thwaites 1966a, 5:165). On July 6, Bradbury left the fort to return downriver on Lisa's boat.

Henry M. Brackenridge was a member of Lisa's expedition that ascended the Missouri during the spring and summer of 1811 (Thwaites 1966b, 6). When Crooks' party (including Bradbury) departed the Arikara village on June 19 to bring the horses back from Lisa's fort, Lisa and Brackenridge continued their river voyage to the fort, and reached it late on June 26:

> It was late at night before we reached the fort of the Missouri Company, which is situated above all the villages, and sixteen hundred and forty miles from the mouth of the Missouri, and in latitude 47°.13'.N. [Thwaites 1966b, 6:137-138]

This latitude description is obviously inaccurate, since it would place the fort below the later site of Fort Clark, several miles below the Mandan and Hidatsa villages.

Brackenridge also described the fort and its location and surroundings:

> In the morning [of June 27], we walked to the fort of the company, about two hundred yards from the bank of the river. It is a small triangular enclosure with bastions...For some distance from the fort, the upland is washed into ravines, and is stripped of its soil, presenting nothing but bare heaps of earth or clay. Many of these clay hills are completely detached from the upland, and washed by heavy rains into a variety of curious and fantastic shapes, generally of whitish color, though intermixed with strata of various hues. The ledge of limestone, upon which the earth or clay reposes, shews itself in many places, but mouldering and crumbling, from the action of the frosts and rain...Some of these clay hills, at the first glance, look like towers or circular buildings, with domes and cupolas; and what contributes to this, the top of some of them are covered with a beautiful creeping vine, or evergreen...A short distance below the fort, the primitive ground, or upland, is washed into a steep precipice by the river; here we examined a strata of coal, of a good quality, and about eighteen inches in thickness. Lisa informed me that on his first voyage up the Missouri, he observed smoke issuing from a fissure of this bluff, and that on putting down a stick, fire was communicated. On the most attentive examination we could discover nothing of this. Amongst other objects which attracted our attention, we observed quantities of petrified wood lying about on the surface of the clay hills. I traced a whole tree, the stump still remaining about three feet high, and not less than four in diameter. The bark was in general decayed, but we could easily find the position of the trunk, and of its branches, as it had fallen. [Thwaites 1966b, 6:138-139]

It is interesting to note that sheet 106 of the 1892 Missouri River Survey maps published by the Corps of Engineers (Wood 1986:47-49) shows a "Burning Coal Vein" near the bluff in the W 1/2 of the NW 1/4 of section 30, T. 146 N., R. 84 W.

In a later passage, Brackenridge adds that the nearest of the "villages below" (which would be the Big Hidatsa site) was "about six miles off" from the fort (Thwaites 1966b, 6:141). Brackenridge's "A Table of Distances" (Thwaites 1966b, 6:166) shows Lisa's post being 20 river miles above a Mandan village, but does not include the Hidatsa villages, which would have been closer to the fort. On July 6, Lisa's party, including

Brackenridge, left the fort to return downriver by boat to the Arikara village near the Grand River.

These four sources constitute the only available eyewitness descriptions of Lisa's fort and its environs, although a search of archival materials might reveal further information. The sources described below must all be considered secondary. On November 7, 1833, Prince Maximilian visited the reputed site of Lisa's fort during his downriver trip between Fort Union and Fort Clark:

> About twelve o'clock we came to the spot where some stakes indicated the former site of a Mandan village. Manoel Lisa, the Spanish fur dealer, had formerly a trading post at this place. Rather further on, after we had turned a point of land, we saw a white horse on the bank, and soon after a group of Indians...In the wood, close by them, was a winter village of the Manitaries, or Gros Ventres, to which they had removed only two days previous. [Thwaites 1966c, 23:217]

After this passage, Maximilian speaks of proceeding on downriver, and passing another point of land where he encountered Toussaint Charbonneau in the company of Joseph L. Dougherty, who was trading at the Hidatsa winter village for the firm of Sublette and Campbell. Maximilian and his party spent the night with Charbonneau and Dougherty in some "huts hastily erected on the bank of the river, while a better and more substantial house was building in the Indian village" (Thwaites 1966c, 23:218). The following morning, the eighth of November, the party proceeded on and landed about four miles below the place where they spent the night, looking for a petrified tree trunk, which they found not far from a natural feature called "Fountaine Rouge." After resuming their journey, they reached Fort Clark in the late afternoon of the same day.

W. Raymond Wood (personal communication to the author, July 1, 1982; see also Wood 1983:Plate 22 and 1986:47) has pointed out that Lt. G. K. Warren's 1856 manuscript map shows a dot labeled "Red Spring" within approximately one-half mile of an isolated prominence known as High Butte. A later steamboat traveler, Ferdinand A. Van Ostrand, camped at a place called "Red Spring" in this vicinity in 1872 (Reid 1943:110 and 123, note 148).

Prince Maximilian is also responsible for having produced the only cartographic evidence that may bear on the location of Lisa's Fort Mandan, although its interpretation at present is difficult. A manuscript map carried by Maximilian during his travels has recently been published (Moulton 1983:7-8, Maps 13-29; see also Wood and Moulton 1981). The map is a copy of one made by William Clark years earlier, but it also bears notations in Maximilian's handwriting. The notation "M. Lisa," together with a small open circle symbol, appears on sheet 18 immediately above the depiction of the right bank Mandan village (Moulton 1983:Map 29; Wood and Moulton 1981:376), which is probably the Deapolis site. At present, there is no explanation for this notation, which does not seem to agree with descriptions of the location of Lisa's Post that appear in any of the primary accounts.

One of the earliest historians to discuss this fort was Hiram Chittenden, who provided the following summary of information about the fort in his classic 1902 study of the American fur trade:

> *Lisa's Fort* was the next one built in this locality. It was situated on the right or south bank of the river some ten or twelve miles above the mouth of the Big Knife near where the names Emanuel Rock and Emanuel Creek now are. The post was abandoned upon the breaking out of the War of 1812, but was reoccupied by Pilcher in 1822 or 1823 under the name of *Fort Vanderburgh*. [Chittenden 1954, 2:957]

Unfortunately, Chittenden's statement incorporates several errors that have been accepted and perpetuated by most subsequent historians of the Missouri fur trade. As Truax (1928) and Mattison (1955) have pointed out, there is an inconsistency between the assertions that 1) the fort site was 10 or 12 miles above the mouth of the Knife and that 2) it was located near Emanuel Rock and Emanuel Creek, because the rock and the creek named after Lisa are considerably farther up the Missouri than 10 or 12 miles. Also, Chittenden provides

no explicit reason for linking the site of Lisa's fort with the natural features that bear his name. However, Chittenden's information appears to have been uncritically accepted by both contemporary and later investigators (cf. De Land 1902:318-319; Thwaites 1966a, 5:137; 1966c, 23:217; Phillips 1961, 2:394; Jackson 1964:191; Robinson 1966:50). Lisa's most recent biographer, Richard E. Oglesby, states that Lisa's post was built about "ten or twelve miles above the Gros Ventres" (Oglesby 1963:84) and cites an October 7, 1809, letter from Pierre Menard to Adrien Langlois, although it is not certain whether the locational information derives from this letter or from Chittenden's earlier statement. Another error in Chittenden's statement that has been accepted and perpetuated by at least one later historian, Ray Mattison (1955), is the assertion that the site of Lisa's post was later reoccupied and renamed Fort Vanderburgh. Although of a secondary nature, information recorded by Maximilian and another notation on sheet 18 of the manuscript map he carried seem to place the later Fort Vanderburgh much closer to the Hidatsa villages than six or seven miles.

Another unexplained conclusion that is embedded in the literature should be pointed out here. In connection with Lisa's 1811 race upriver with Hunt's party of Astorians, Oglesby refers to one of Lisa's posts as Fort Mandan, but states that "This is not, apparently, the Fort Mandan built in 1809 above the Gros Ventre, but another stockade called by the same name at the Mandan villages" (1963:114). Oglesby cites no supporting evidence for this statement. If Lisa had another, smaller establishment at the Mandan villages, Bradbury and Brackenridge make no mention of it but clearly speak only of the post above the Hidatsa and Mandan villages.

In the summer of 1927, Allen Truax and Orin Libby attempted to locate the archeological remains of Lisa's fort in the area between the Hidatsa village sites clustered above the mouth of the Knife River and the former town of Mannhaven. In his report, Truax (1928:244-245) stated that the only "evidence of a fort site was found in a small alluvial plain in parts of sections 13 and 24 in T. 146 N., R. 85 W., and sections 19 and 12 (the latter section number is clearly in error; he probably meant section 18 or 30) of T. 146 N., R. 84 W. This area, which formerly contained the grain elevator operated by Bohrer and Seiler of Mannhaven, was searched by them with particular care, because the "small plain is accessible both from the river and the interior," the surrounding countryside matches Bradbury's historic description of the fort's environs, and the plain is about seven miles north of the Big Hidatsa site "by the old river trail." He described the results of their search:

> We searched this small plain thoroughly, and were rewarded by finding, about thirty or forty rods south of the elevator building, a shallow ridge forming three sides of a rectangle facing the river. The ridges forming the north and south side of the rectangle were well defined, but that on the west had been worn down and partly obliterated by wagons and stock passing over it. There is every reason to believe that these ridges constitute the remainder of the walls of Fort Manuel Lisa. A short distance west and south of these rectangular ridges, and on the edges of a shallow ravine, is a heavy growth of buckbrush, indicating that on that spot had once stood stables or outhouses of some kind; but most remarkable of all, we found between the rectangular ridges and the river, and a little to the south, an old garden patch which could easily have been the "Irishman's very pretty garden" which Bradbury described. William Kruckenburg, who at one time lived across the ravine to the south, plowed up and planted this garden patch, and is said to have remarked that it plowed up just like old land, as though it had been used for the same purpose in years gone by. [Truax 1928:245]

In his inventory of historical sites in the Garrison Reservoir area, Ray Mattison (1955) reiterated much of Truax's information and added that he and G. Hubert Smith made an unsuccessful attempt in 1951 to find the feature discovered by Truax and Libby, which could not be relocated because of heavy grass cover. However, he did state that the elevator site was in section 13, T. 146 N., R. 85 W., and about one mile south of the former town of Mannhaven, which existed in section 7 of the same township and range. Mannhaven was occupied from

about 1897 to 1928, when the post office was discontinued (Mattison 1955:25-26).

Nineteen fifty-one was also the year during which both the Mannhaven townsite and the purported site of Lisa's post were assigned archeological site numbers by the River Basin Surveys. According to the River Basin Surveys site records, formerly at the Midwest Archeological Center but since transferred to the custody of the South Dakota State Archaeologist, George Metcalf assigned the trinomial designation, 32ME68, to the purported site of Lisa's fort, which was recorded as being in the NE 1/4 of the NE 1/4 of section 13, T. 146 N., R. 84 W. (This range designation is clearly in error, as the records of the State Historical Society of North Dakota show the range to be 85 N.; John E. Peterson, personal communication to the author, January 13, 1983.) Metcalf and G. Hubert Smith assigned the number 32ME67 to Mannhaven, for which they recorded a location in the W 1/2 of the NW 1/4 of section 7, T. 146 N., R. 84 W. In his field notebook entry for September 23, 1951, also on file at the Midwest Archeological Center, Metcalf recorded doubts about the fort site having escaped destruction by erosion from the river channel, although he did not personally visit the recorded location:

> About a mile below Mannhaven, 32ME67, on a bluff at the mouth of a ravine are the pits of two grain elevators. Ray Mattison, quoting the North Dakota Historical Society places the site of Ft. Lisa, a very early trading post near these elevators. Due to the fact that it would require a walk of a mile over very rugged terrain, and that the afternoon was already well advanced, the site was not visited. Smith (G. Hubert) has visited the site and says he could see no signs of a former post.
>
> There is little timber about the reputed site and the terrain, while protecting a site from the weather is not of a character to make the defense of a post easy. The river appears to have been cutting to the west at this point over a long period of time and on the east side the bank is low and there is a wide, low bottom covered with a heavy stand of cottonwood. There is a strong suggestion here that 150 years ago there may have been a low bottom on the west, which would have furnished timber for building a post and that it has since been washed away, and with it perhaps some of the higher ground. Lisa's post may well have gone in the river.
>
> Although this is below the reservoir it may well be damaged by the spillway. All available references to this post should be hunted out and a determined effort made to locate this historically important post.

Lisa returned to St. Louis in the fall of 1811, where he and his associates proceeded to dissolve the St. Louis Missouri Fur Company and form the new Missouri Fur Company in early 1812 (Oglesby 1963:116-124). That Lisa did not close down his post when he returned downriver in the fall of 1811 is suggested by the March 14, 1812, entry in the Brandon House Post Journal (Hudson's Bay Company Archives, B.22/a/18b, folio 12; cited in Thiessen 1981:130), which records that a party of Hudson's Bay Company men, recently returned from the villages on the Missouri, had been prevented from trading with the Indians by Americans "who held out to them [i.e., the Indians] better encouragement than we could afford to give..." (see also Wood and Thiessen 1985:34; and Lisa's September 8, 1812, letter, cited above, which refers to "Fort Mandanne" being in operation in 1811 [Drumm 1964:142-143; Gowans 1989:122-123]).

The first expedition of the new Missouri Fur Company was conducted in the summer of 1812, and resulted in the construction of a new post, Fort Manuel, on the Missouri a few miles above the Arikaras, near the present North Dakota-South Dakota state line (Drumm 1964; Smith and Ludwickson n.d.). There was evidently at least a "caretaker" staff still at Lisa's post farther upriver, above the Hidatsa villages, for one of the first things that Lisa did upon arriving at the location of his new fort above the Arikaras was to send a large party of men to the Hidatsa villages to "bring down the peltries" (Luttig's journal, entry of August 13, 1812; in Drumm 1964:69). Lisa had received a report that the Hidatsas had killed two hunters, stolen 26 horses, and "detained the Trader they had with them" (Drumm 1964:69).

Luttig's journal entry for August 26, 1812, recorded the return of Lisa and his men, and stated that "Mr Manuel cleared the trading [post] of Peltrie and Goods and took off the whites," strongly implying that Lisa closed down his operation at the Hidatsa villages. This impression is reinforced by subsequent entries in Luttig's journal, which document the dispatch of traders to the Mandans and Hidatsas in response to requests from those groups (Drumm 1964:93, 99, 103-104, 109). However, it is clear from the journal that these men were sent to the Mandan and Hidatsa villages *en derouine*, i.e., to trade in the villages only temporarily. Consequently, it is reasonable to conclude that Lisa's trading post above the Hidatsa villages remained in operation into August of 1812 (Wood and Thiessen 1985:34, note 55). This conclusion also appears to be corroborated in a letter published in the *Missouri Gazette* newspaper on September 14, 1816, in which Ezekiel Williams, one of Lisa's trappers operating among the Arapahoes in the Arkansas River country during 1811 and 1812, reports hearing from the Indians sometime between June and October of 1812 that Lisa's fort on the Missouri had been closed (Gowans 1989:126-129; Williams' dates must be cautiously interpreted and the reader is advised to also consult Drumm 1964:16-19 and Lisa's September 8, 1812, letter, cited above, in so doing).

FORT VANDERBURGH

In 1822, the Missouri Fur Company, under the leadership of Joshua Pilcher after the death of Manuel Lisa, again attempted to expand its operations into the upper reaches of the Missouri River. In the fall of that year, Pilcher erected a trading post near the Mandan and Hidatsa villages, which was abandoned the following year after the company suffered misfortunes in its Upper Missouri theater of operations.

This post was apparently named Fort Vanderburgh after William Henry Vanderburgh, who had direct charge of it during most of its period of operation. Although a contemporary newspaper article referred to it as "Fort Mandan" (*Missouri Republican*, July 16, 1823, in Morgan 1964:46-47), the name "Fort Vanderburgh" appears in a June 15, 1823, letter written by William Gordon, an employee of the Missouri Fur Company (Morgan 1964:48-49), and may represent another contemporary name for the post.

The dates of founding and abandonment of the post are not well documented. Construction was initiated no earlier that September, 1822, as suggested in Pilcher's 1824 testimony before the Senate Committee on Indian Affairs:

> In September, 1822, I visited the Ricara villages myself, for the first time. *I was going to the Mandans and Minnetarees, for the purpose of establishing trading houses for these Indians.* [Lowrie and Franklin 1834:454; also reproduced in Morgan 1964:24; emphasis added]

The post was clearly in operation in January, 1823, as also documented by Pilcher's testimony:

> Another party of those Indians [i.e., Assiniboins] came to our fort at the Mandan villages, in the month of January last [i.e., 1823], and, I think I understood from Mr. Vanderburgh, fired on the Fort; after which they stole one or two mules and retired. This was done in the night. [Lowrie and Franklin 1834:455; quoted in Morgan 1964:41]

There are several contradictory statements about the date of abandonment of Fort Vanderburgh, but available opinions are in general agreement that this took place in 1823. Unfortunately, little of the evidence bearing on the matter is of a primary nature, i.e., written by contemporary eyewitnesses or others who would have had firsthand knowledge. In May, 1823, the company suffered a devastating setback when a large party of its men was ambushed by Blackfeet Indians, resulting in the deaths of the expedition's leaders, Jones and Immel. Because of this disaster and the turmoil associated with the subsequent Arikara troubles of that year, the Missouri Fur Company again withdrew from the upper reaches of the Missouri to retrench its operations lower down the river. Fort Vanderburgh was abandoned as part of this withdrawal. The actual abandonment apparently happened sometime between June 15, 1823, when one of the survivors of the Jones-Immel party wrote a letter at Fort Vanderburgh (Morgan 1964:48- 49), and early August, when Pilcher assisted Colonel Henry Leavenworth's punitive expedition against the Arikara villages near the Grand River.

Aside from the June 15, 1823, letter mentioned above, existing statements on the abandonment of the fort are all from secondary sources. Maximilian states that Pilcher's fort was abandoned in the spring of 1822 (which corrects to 1823 because of an apparently consistent error in Maximilian's dates) and that no fort existed in the Knife River area when James Kipp arrived in 1823 to erect Tilton's Fort (Thwaites 1966c, 23:223). Maximilian's statement, in the same source, that Kipp arrived in the area in May of 1823 is called into question by the date of William Gordon's June 15, 1823, letter written from Fort Vanderburgh which, according to Maximilian's statement, should not have been in existence at the time. Morgan (1964:53) states that company employee Charles Keemle joined Leavenworth's military force during the night of August 9, after "having abandoned Fort Vanderburgh on Pilcher's orders." Unfortunately, Morgan cites no authority for this information, nor does Pilcher's biographer, John E. Sunder (1968:54), cite any specific source for his statement that the fort was abandoned in the summer of 1823.

Very little information exists concerning the location of Fort Vanderburgh. The statements found in relevant literature (Thwaites 1966c, 22:354, note 335; Phillips 1961, 2:394; Sunder 1968:39; Lottinville 1973:362, note 1 and 372, note 13; Meyer 1977:55) typically assert that the post was about 10 to 12 miles north of the Knife River, but these are probably based on uncritical acceptance of Chittenden's (1954, 2:957) statement that Fort Vanderburgh was situated on the location of Lisa's earlier fort north of the Hidatsa villages. However, Chittenden presents no supporting evidence for either the statement that Fort Vanderburgh was on the site of Lisa's earlier post, or the assertion that either post was 10 or 12 miles north of the Knife River.

Although based on hearsay information and not eyewitness testimony, the best evidence relating to the location of Fort Vanderburgh is provided by Maximilian. In speaking of his upriver voyage on the steamboat *Assiniboin*, which had left Fort Clark on the morning of June 19, 1833, Maximilian wrote:

> A violent storm, accompanied by heavy rain, compelled us to lay to, for ten minutes, on the left bank, where the river is bounded by steep high hills. At this spot Major Pilcher had formerly established a trading post for the Crows and Assiniboins. There were, at that time, no such posts further up the Missouri, but it has since been abandoned, and no trace of it is now to be seen. [Thwaites 1966c, 22:364]

Just prior to this passage, Maximilian relates that the steamboat had passed the Hidatsa villages clustered about the mouth of the Knife. Following this passage, Maximilian speaks of "badlands" topography, an Hidatsa winter village, the Serpent's Lodge, Snake Creek (now unnamed according to Thwaites), and Miry Creek (now called Snake Creek according to Thwaites). Elsewhere, Maximilian adds:

> Major Pilcher, the same gentleman who came with us up the Lower Missouri, in order to take the management of the trading post of Mr. Cabanne, among the Omahas, was, at that time [i.e., 1822 or 1823], a proprietor of the Missouri Fur Company, and directed a trading post a little above the Manitari villages, on the southern coast. In the spring of 1822 [this corrects to 1823], this fort was abandoned, the above-mentioned Fur Company having been dissolved. [Thwaites 1966c, 22:223]

The most specific information on the location of Fort Vanderburgh comes from a manuscript map carried by Maximilian, which was a copy of an earlier map drawn by Clark. Sheet 18 of this map (Moulton 1983:Map 29; Wood and Moulton 1981:376) clearly depicts a symbol labeled in Maximilian's hand, "Pilcher's Fort," approximately two miles north of the northernmost Hidatsa village, which we know to have been the Big Hidatsa Village. This places Fort Vanderburgh much closer to the Hidatsa villages than previously believed.

Shortly after the Missouri Fur Company withdrew from the area, another St. Louis-based competitor, the Columbia Fur Company, set up shop near the Mandans and Hidatsas.

TILTON'S FORT

With the merger of the North West and Hudson's Bay companies in 1821, a number of Canadian fur traders found themselves out of work. Some of these traders allied with American partners to form the Columbia Fur Company in 1821, which conducted operations in both the upper Mississippi and upper Missouri basins from its field headquarters on Lake Traverse. James Kipp built a post for this company near the Mandan villages in 1823. Because of Arikara hostility and harassment, the post was in operation for less than a year. In a contemporary newspaper article (*St. Louis Enquirer*, June 14, 1824, in Morgan 1964:81), it is referred to as "Tilton's Fort," after William P. Tilton, one of the company's figureheads. The fortunes of the company fared better than its outpost at the Mandans, however, and it was absorbed into the American Fur Company in 1827 to become the Upper Missouri Outfit which vigorously dominated the Upper Missouri fur trade for more than the next three decades.

Most of the available information on Tilton's Fort comes from Maximilian:

> In May, the same year [i.e., 1823], Mr. Kipp commenced building a fort in the prairie, which lay *between the present Fort Clark, and the forest, in which the inhabitants of Mih-Tutta-Hang-Kush* [i.e., the Mandan village adjacent to Fort Clark] *live in the winter.* This fort was completed in the month of November. [Maximilian here relates the history of the Leavenworth punitive expedition against the Arikaras, which took place in the summer of 1823]...After Colonel Leavenworth's retreat, the Arikaras removed to a station higher up the river, and settled in the forest which the Mandans have now selected for their winter quarters. The garrison of the fort, built by Mr. Kipp, consisted of only five men, besides Mr. Tilton, the director. It was, therefore, in constant danger, because of the near vicinity of the Arikaras...Neither Messrs. Tilton and Kipp, nor any of their people, durst venture out of the fort, where they were obliged to remain in durance the whole of the autumn. Subsequently, the latter resided in a Mandan village till the fort was completed...At the beginning of December, Mr. Laidlow, now on the Little Missouri, came from Lake Travers with six wagons laden with goods on which a sort of peace was concluded with the Arikaras. They came first to the fort, because they could nowhere else obtain goods from the Whites, and the precaution was always taken of admitting only a few of them at a time. The peace with these Indians was not, as might have been expected, of any long duration. They always behaved extremely treacherously, and it was at length dangerous even to go out for water, wood, or other necessaries, and the people were frequently threatened and intimidated; for which reason, Mr. Tilton left the fort, and went to the next Mandan village, where he resided in the hut of a distinguished chief...He afterwards went down to St. Louis. [Thwaites 1966c, 23:223-226; emphasis added]

Maximilian's information is secondhand, but his sources for the information were James Kipp and other men of the American Fur Company who participated in the events he describes.

Supply of the Columbia Fur Company's operations at the Mandan villages by overland travel from Lake Traverse is confirmed in the journal of James E. Colhoun, a member of Stephen H. Long's 1823 exploring expedition. On July 23, 1823, Colhoun wrote in his journal that "Mr. Jeffries, going to the Mandan villages on the Missouri not long since, found no difficulty in crossing it [i.e., the Coteau des Prairies] with his cart" (Kane et al. 1978:307). The "Mr. Jeffries" of the entry was Joseph Jeffryes, a clerk of the company (Kane et al. 1978:173, note 36; see also mention of "Jeffers" below).

In a letter published in the *St. Louis Enquirer* on July 19, 1824, Kenneth McKenzie, another leading figure in the Columbia Fur Company, attributed the construction of the post at the Mandans to Tilton and made no mention of Kipp (Abel 1932:333). In a footnote, Abel

(1932:201, note 7) cites Lawrence Taliaferro as the source for identifying "Mr. Tilton" as J.P. Tilton—an identification which disagrees with Morgan's statement (1964:59 and note 173; presumably based upon examination of the July 17, 1822, trading license issued to the firm) that this man was William P. Tilton.

That the Mandan winter village referred to by Maximilian was located below the Mandan village and the site of Fort Clark, is strongly suggested by the following passage:

> About a league below Fort Clarke the Missouri makes a bend to the east or north-east, and on this part of the bank is a rather extensive forest, in which the inhabitants of Mih-Tutta-Hang-Kush have built their winter village of sixty or seventy huts. [Thwaites 1966c, 23:234]

Maximilian goes on to relate that on the afternoon of December 3, 1833, he traveled, presumably on foot, from Fort Clark to the Mandan winter village in the forest below Fort Clark, which he reached after traveling for one and a half hours (Thwaites 1966c, 24:39). He returned the following morning in time to take breakfast at Fort Clark (Thwaites 1966c, 24:43).

That Tilton's Fort was located downriver from the Mandan village is strongly reinforced by a contemporary document presented in Morgan (1964:82-83). In a July 9, 1824, letter to William Clark, Benjamin O'Fallon, Indian agent for the Upper Missouri, relates information that he obtained from William Gordon, a Missouri Fur Company employee who had recently returned by boat from the Upper Missouri and passed the former site of Tilton's Fort:

> Mr. Gordon goes on to state that on passing the Mandan villages, having but one man with him and being himself Crippled, he was afraid to stop, but when *about a mile below opposite* Mr. *Tilton's Establishment* he Stoped and Sent his man to ascertain if it was inhabited, who soon returned and informed him that it was not, and that the gates, doors &c. were Cut down, flours torn up—and in fact Every thing turned topse turve, which induced him to Conclude that Mr. Tilton and party were Either killed by the A'rickaras or had taken refuge in the Mandan village—[Morgan 1964:82; emphasis added]

There is one additional bit of evidence attesting to a downriver location for Tilton's Fort. Maximilian (Thwaites 1966c, 23:226) relates that Kipp resided in the Mandan village for a time after Tilton's Fort was abandoned, but eventually salvaged timber from the old fort to use for his post at the village. Recently Roy Meyer (1977:276, note 64) has pointed out that a passage in the English language translation of Maximilian's account, to the effect that timbers were floated from the fort to the village, has been mistranslated. Instead of reading that the palisade timbers were floated "*down* the river" (which would place Tilton's Fort above the Mandan village), the passage should correctly have been translated that the timbers were floated "*upriver*" (emphasis in original; see below).

A letter quoted by Morgan (1964:72-73) indicates that Tilton's Fort was still in operation at the end of 1823, but abandonment followed sometime between December, 1823, and June of 1824. A contemporary newspaper article dated June 14, 1824 (*St. Louis Enquirer*, in Morgan 1964:81-82), states that the Arikaras "manifested such hostility as to make it prudent for Tilton to abandon his Fort." Maximilian (Thwaites 1966c, 23:226) refers to the fort's abandonment but is not specific with regard to the date; he merely states that it was abandoned in the spring of the year following its construction, when Tilton returned to St. Louis and Kipp took up residence in the Mandan village.

KIPP'S UNNAMED POST NEAR THE MANDANS

The abandonment of Tilton's Fort in the spring of 1824 evidently did not deter the Columbia Fur Company from continuing some form of trade with the Mandans. Although Tilton returned to St. Louis, where he arrived by late July (Richard Graham to William Clark, July 28, 1824, in Morgan 1964:86-87), Kipp remained among the Mandans, apparently residing in the dwelling

of a chief. Sometime later that year, he built "a house near the village," which undoubtedly refers to the Mandan village near the site of later Fort Clark. Since Maximilian is virtually our sole source of information on Kipp's activities among the Mandans from 1824 through the founding of Fort Clark about 1830, it is necessary to quote extensively from his account:

> In the spring of that year [i.e., 1824] the Arikkaras returned to their former villages [near the Grand River], declaring that they would, in future, live in peace with the white men. Mr. Kipp alone remained behind, and, throughout the summer, did not see a white man; the skins and goods of the Company were in his keeping in the hut of the chief, but he afterwards built a house near the village, where he dwelt, till 1824 [i.e., 1825], with one Jeffers, who, with seven men, and wagons laden with goods, had come from Lake Travers. [Thwaites 1966c, 23:226]

The "Jeffers" of this passage was Joseph Jeffryes, a clerk of the Columbia Fur Company in the Minnesota River valley (Kane et al. 1978:173, note 36). He also served as an interpreter with Major Long's 1823 exploring expedition. As pointed out in the earlier discussion of Tilton's Fort, Jeffryes had traveled between the company's post at Lake Traverse and the Missouri River by July, 1823.

Kipp used the timbers from the abandoned Tilton's Fort to enlarge and fortify his "house" near the Mandan village:

> The Mandans had hitherto protected the abandoned fort [i.e., Tilton's Fort], and kept it in order, that the Arikkaras might not burn it. During the summer [i.e., probably 1825] Mr. Kipp caused the palisades of the fort to be cut down close to the ground, and the Mandans conveyed the wood to their village, carrying some of the beams on their shoulders, and floated the remainder down the river. The buildings were likewise destroyed. Several apartments were added to Mr. Kipp's house, and the palisades were placed round it. [Thwaites 1966c, 23:226]

Roy Meyer has recently pointed out a significant error in the published English language translation of this passage:

> Maximilian states that Kipp's first fort [i.e., Tilton's Fort] was located between the later site of Fort Clark and where the Mitutanka Mandans had their winter village, a site that he elsewhere locates about a league downstream from Fort Clark. Yet he is made to say by Lloyd [i.e., the translator] that when the palisades from Kipp's first fort were cut down, some of them were floated *down* the river to the new site. Actually, what Maximilian wrote was that the palisades were "*auf dem Flusse hinauf geflosst*"—floated *upriver*." [Meyer 1977:276, note 64; emphasis in original]

After this new post was built, Kipp sent Charbonneau overland to the company depot on Lake Traverse for trading goods, but Charbonneau's party was plundered by Assiniboins during the return journey. Consequently, Kipp himself undertook the journey, returning to the Mandan village to find that General Henry Atkinson's Yellowstone Expedition of 1825 had stopped at the village in his absence (Thwaites 1966c, 23:226-227).

A journal written by a participant in this expedition records that the military force remained at the Mandan village from July 26 through August 6, 1825, on its upriver trip, and again passed the village on August 31 in returning downriver, but makes no mention of either Kipp or his trading establishment (Reid and Gannon 1929). Another expedition member, Captain and Brevet-Major Stephen Watts Kearny, left a diary of the time that the expedition was bivouacked near the Mandan village. The entry for July 27, 1825 (pages 41-42 of the typescript of the original diary in the Stephen Watts Kearny Papers at the Missouri Historical Society, St. Louis), states that "An American Trading House is located here, of which a Mr. McKenzie has the charge—who

gets his goods from *Saint Louis*, via *Saint Peters & Traun*" [i.e., the Minnesota River valley and Lake Traverse], but does not provide further details. Maximilian states that the expedition left several employees of the "French Fur Company" (Bernard Pratte and Company) and Peter Wilson, a sub-agent for the Mandans, at the Mandan village where they resided with Kipp and Tilton (the latter of which had returned upriver from St. Louis) through the fall and winter (Thwaites 1966c, 23:227-228).

Precisely when Kipp's unnamed trading house near the Mandan village ceased operation is not clear from Maximilian's account:

> In April, 1825 [i.e., 1826], Messrs. Wilson and Tilton returned to St. Louis, and Kipp alone remained in the fort, with five men. In November, Mr. Tilton returned with a supply of goods, and Mr. Kipp went to the White Earth River, carrying with him a fine selection [of goods]. Here he built a fort...This year [i.e., 1827], the Columbia Fur Company united with the American Fur Company, and commenced its operations here on the Missouri. In the winter of 1830[?] Mr. Kipp caused the wood to be prepared for the present Fort Clark, and the palisades were erected in the spring of 1831[?]. [Thwaites 1966c, 23:228]

The bracketed question marks in the above passage follow dates which have been accepted by most historians despite the apparent consistent error in earlier dates given by Maximilian. There is some evidence of an earlier construction date for Fort Clark, which is discussed later in this chapter.

FORT CLARK

Fort Clark was the longest-lived trading establishment in the vicinity of the Mandan and Hidatsa villages near the mouth of the Knife River. In existence for three decades during both the heyday and the decline of the fur trade on the Missouri River, it was visited by nearly every fur trader and traveler who ascended or descended the Missouri from about 1830 to 1861.

Following the absorption of the Columbia Fur Company by the American Fur Company in 1827 and the redesignation of the former as the Upper Missouri Outfit, a spate of fort-building activity ensued along the upper Missouri River. Between the years 1829 and 1832, Forts Union, Tecumseh/Pierre, Clark, Piegan, and McKenzie were built, thus securing for the American Fur Company and its successor, Pierre Chouteau, Jr. and Company, firm control of the Upper Missouri fur trade. Forts Pierre, Clark, and Union were particularly important as depots for provisions and merchandise needed at the other posts and their satellite operations.

Fort Clark was known by that name to virtually all who visited it or passed by during its thirty-year existence. Curiously, the Jesuit missionary, Father Pierre-Jean De Smet, is alone in referring to it by not one, but two other names. In descending the Missouri River in late October of 1846, De Smet camped overnight at the mouth of the Knife River and the following morning he took breakfast at Fort Clark: "Next day we breakfasted at Fort Madison or Mandan, with the amiable Mr. Des Autels" (Chittenden and Richardson 1969, 2:606). Elsewhere in his writings, however, De Smet calls the post by its common name, Fort Clark.

The location of Fort Clark is precisely known and was the locus of limited archeological excavations conducted in 1973 under the direction of C. L. Dill of the State Historical Society of North Dakota (Dill 1990:29-32).

The historic appearance of the fort was recorded by Prince Maximilian, who wintered there in 1833-1834:

> Fort Clarke itself is built on the same plan as the other trading posts of the Company. The front and back of the square are forty-four paces in length, the sides, forty-nine paces. The northern and southern corners have blockhouses; the buildings are of one story, and they were just erecting a new one, with a couple of rooms, having good glass windows, which, however, was

> not yet completed. In front of the postern gate was the machine in which the skins are made up into bundles, each bundle consisting of ten buffalo hides, and weighing 100 pounds. A small piece of garden-ground is laid out behind the fort... [Thwaites 1966c, 23:234-235]

Maximilian's reference to "the same plan as the other trading posts of the Company" meant that Fort Clark was surrounded by a palisade and possessed two defensive bastions at opposite corners of the fort. The Prince has left two diagrams of the post, showing its relationship to the Mandan village (Thwaites 1966c, 23:363) and its internal plan view (unpublished diagram in the third volume, parts 15-29, of Maximilian's original journals at the Joslyn Art Museum, Omaha, Nebraska). Several visitors have commented that Fort Clark was substantially smaller in size than its contemporaries, Forts Union and Pierre (Audubon 1960, 2:13-14; Manitoba Provincial Archives, Journal of Peter Garrioch, Red River Settlement, 1843-1847).

Despite the fact that mention of Fort Clark abounds in historical journals and correspondence, there is some uncertainty regarding the date of the post's founding. The most often-cited authority for the date of Fort Clark's establishment is Maximilian, who stated that

> In the winter of 1830 Mr. Kipp caused the wood to be prepared for the present Fort Clarke, and the palisades were erected in the spring of 1831. [Thwaites 1966c, 23:228]

Unfortunately, many of the dates cited by Maximilian in his history of the fur trade in the Upper Missouri appear to be incorrect—usually stated as a year earlier than actuality (see Thwaites 1966c, 23:228, note 184; and Meyer 1977:276, note 64). Many subsequent scholars have uncritically accepted Maximilian's 1831 date (Abel 1932:197, note 1; Chittenden 1954, 2:957; De Land 1902:318, note 6; Mattison 1955:17; Quaife 1959:27, note 19; Sunder 1965:46; Wishart 1979:60; Dill 1990:23; and others). However, evidence exists to the effect that a post named Fort Clark was in operation among the Mandans prior to that year.

The journal kept by Jacob Halsey at Fort Tecumseh in 1830 clearly refers to the existence of a "fort at the Mandans" under the charge of John McKnight, and later identifies this fort as "F. Clark" (Robinson 1918:127-128, entry for July 2, 1830; and 140, entry for October 23, 1830). In a brief autobiographical sketch included in his journal, Halsey (Robinson 1918:101-103) recorded that he wintered at the Mandans in 1828-1829, suggesting the existence of a post there at that time. Also supporting the existence of an American fur trading post at the Mandan villages in the general 1829-1830 period is an April 19, 1830, letter, now lost, from Pierre Chouteau, Jr., to William Astor, the son of the fur trading magnate, John Jacob Astor (Chittenden 1954, 2:959; translated in Thompson 1986:10):

> On my arrival here (St. Louis) on the 16th [of April, 1830], I found a letter from Mr. McKenzie of 28 December, 1829, and ones dated 2 and 20 January [1830], 200 miles above the Yellow Stone. The mountain hunters were not as successful in the fall hunt as he had hoped, but he hopes for more success in the spring. It is his opinion that there will be many more robes this year than is the usual case; that is to say in the three upper posts, *at the Mandans*, at the mouth of the Yellow Stone, and Fort Union 200 miles above, and he says that the upper country is very rich in beaver and robes. [Emphasis added.]

Francis Heron, Chief Trader at the Hudson's Bay Company's Brandon House on the Assiniboine River, recorded in his report on the Brandon House trading district for 1828-1829 (Hudson's Bay Company Archives, B.22/e/3, folios 5d-6) that

> Having so often alluded to our American Opponents, it may be proper to state more explicitly what we know— or learned concerning them— Though not so near, as to enable us to ascertain their actual numbers, we are clear as to their being in Considerable force, very active, and divided into three establishments— the principal of which is at

> the Mandan Villages; the next in magnitude is Situated about two hundred & fifty Miles higher up the Missouri, from which they make frequent excursions to the Indians in the direction of [the] Qu'appelle [River], and the third, the nearest to us, is Situated about fifty miles beyond the Turtle Mountain...Mr. Keneth [sic] McKenzie, formerly of the Northwest Company's Service, is Said to be their leader— A Steam boat laden with goods is reported to have remained all winter a short distance above the Mandan Villages, and that McKenzie with a strong party is to proceed with the Same, this spring to re-establish a Fort on the Yellow Stone River—

Although evidently based on hearsay information, Heron's statement, written on May 6, 1829, appears to depict an aggressive attempt of the Upper Missouri Outfit to establish itself throughout the Upper Missouri region during 1828-1829. Fort Clark, or a predecessor post of the Outfit's, appears to have been operating at the Mandan villages during that time, although Heron is silent as to the precise date when such a post was founded.

Two men who traveled through the Upper Missouri during the last years of Fort Clark or shortly after its abandonment, and who were thus in a position to obtain information about the post from men who had actually worked there, have left statements that the post was founded in 1829. F. V. Hayden, a geologist who visited Fort Clark in 1856 and who met James Kipp and other Upper Missouri Outfit employees, wrote in 1862 that Fort Clark had been built in 1829 (Hayden 1862:60; see also Hayden 1863:427-428). In 1862, another traveler, the ethnologist Lewis Henry Morgan, made an overnight stop at the former Arikara village near the abandoned Fort Clark and elsewhere met Upper Missouri Outfit employees from whom he may have garnered first-hand knowledge of Fort Clark. Morgan (1871:26) also stated that the fort was constructed in 1829. G. Hubert Smith (1972:176), an authority on the history of the Upper Missouri region, believed Fort Clark to have been founded in 1830. At least one inventory of goods on hand at Fort Clark dated 1829 exists in the Chouteau Collection at the Missouri Historical Society (Toom 1979:99).

A major problem in interpreting the information supporting a pre-1831 establishment date for Fort Clark is knowing whether or not the original sources referred to the earlier trading "house" built by James Kipp near the Mandan village in 1824. This post apparently was unnamed but may have been called Fort Clark by contemporaries even if it did not officially receive that name. The matter is not at all clear, and deserves systematic research in the primary documents archived at the Missouri Historical Society and elsewhere. The preponderance of evidence, however, suggests that Fort Clark—though possibly not under that name—was operating at the Mandans by 1828 or 1829.

The information pertaining to the abandonment of Fort Clark is more consistent. Lewis Henry Morgan is again our source for some of this information. During his ascent of the Missouri on a steamboat in 1862, Morgan stopped at the ruins of the former Mandan-Arikara village near Fort Clark on June 4 and recorded in his journal on that date that

> Last year [i.e., 1861] Fort Clark was burned, whether by accident or design I know not, and the Fur Co. abandoned the post. The Arickarees then decided to abandon their village and move up the river near Fort Berthold... [White 1959:161]

An abandonment date of 1860 is suggested by the following passage from a June 18, 1860, letter written at Fort Berthold by the trader, Henry A. Boller. Boller's letter may represent more directly first-hand information than was available to Morgan two years later:

> The two companies [i.e., the Clark, Primeau and Company and the Upper Missouri Outfit] have this year consolidated...The Ree Posts [i.e., Forts Clark and Primeau] are broken up and merged into the Gros Ventres Post [i.e., Fort Berthold]. [Mattison 1966:114]

Clearly, by the middle of 1860 the American Fur Company had plans to abandon Fort Clark. August V. Kautz, an Army officer who travelled up the Missouri in that year, recorded in his diary entry for June 10 that "Fort Clarke is to be broken up, and moved up to Fort Berthold"

(Schmitt 1946:206). That those plans were actually implemented that same year is suggested by the testimony of several contemporary travellers.

Lieutenant H. E. Maynadier, a member of the Raynolds Yellowstone River expedition, recorded in his "journal" that he reached Fort Clark on August 25, 1860, where he found the fort to be abandoned but the Arikara village to be still occupied (Maynadier in Raynolds 1867:151; see also Ellis 1927:49). However, later in his account he mentioned that at Fort Clark he took "some articles" on board the expedition's vessel for transportation to Fort Pierre, which may suggest that he actually found operations at Fort Clark in the process of being discontinued (Maynadier in Raynolds 1867:151; Ellis 1927:50).

Maynadier's statement finds corroboration in a contemporary newspaper article published in the *Tri-Weekly Missouri Republican* on July 12, 1860 (cited in Taft 1953:287, footnote 23). The article, which reports a trip up the Missouri by the steamboat *Spread Eagle*, relates in part that

> From Mr. Jacob Linder, mate, and Mr. Joseph Mayhood, carpenter, of the Spread Eagle, we gather some news in regard to the upper country, and the up-trip of the fleet. Forts Clark and Kip [sic] on the Missouri and Fort Sarpy on the Yellow Stone have been abandoned by the [American] Fur Company.

A later steamboat traveller, John Mason Brown, who stopped briefly at the Arikara village near old Fort Clark on June 12, 1861, noted in his journal entry that Fort Clark had been abandoned the previous year (Brown 1950:124).

The preponderance of evidence points to 1860 as the year in which Fort Clark was abandoned, although the daily journal of a trader further up the Missouri River at Fort Buford, Charles Larpenteur (1956), contains two curious allusions to Indians or traders at Fort Clark, or in its vicinity, as late as 1871:

> February 18, 1871
>
> The much expected Mail arrived Also a party of Gros ventres Indians [i.e., Hidatsa Indians] from Ft Clark reporting that Farewells train had been robbed by the Sioux one man Killed and himself Shot through the arm.
>
> April 6, 1871
>
> Farwell Thos Campbell & Mason Arrived from Fort Peck last night and also Ed Lambert from Fort Clark in a Yall.

Lambert is frequently mentioned in Larpenteur's journal as a trader in the Fort Union/Buford area. It may be, however, that by this time the location of abandoned Fort Clark might have become a common place name and landmark along the Missouri, and Larpenteur's statements may not at all refer to an active trading operation there.

At different times during Fort Clark's history, opposition companies competed briefly but intensely for the trade of the Mandans and Hidatsas.

SUBLETTE AND CAMPBELL'S TRADING HOUSE AMONG THE HIDATSAS

In December, 1832, William Sublette and Robert Campbell entered into a partnership for the purpose of competing with the American Fur Company for the trade of the Upper Missouri country (Sunder 1959). The two partners began construction of a major post, Fort William, in August and September, 1833, at the confluence of the Yellowstone and Missouri rivers to compete with the American Fur Company's nearby depot, Fort Union. After a "spirited though brief" opposition, the Sublette and Campbell operations along the Missouri were absorbed by the American Fur Company in a formal agreement consummated about February of 1834 in exchange for the latter concern's retirement from the "mountain trade" for one year (Sunder 1959:134-135; Thwaites 1966c, 23:218, note 167).

During its brief existence, the Sublette and Campbell firm maintained traders at the Hidatsa villages (and possibly at the nearby Mandan villages as well), although so little is known of them as to make their presence seem almost ephemeral. Robert Campbell's journal for the period from September 21 to December 31, 1833 (Brooks 1963-1964), written while he was in resi-

dence at Fort William, contains a few brief references to the company's activities among the Hidatsas and Mandans (see particularly part 1, pp. 10, 11, 12, 13, 15, 16, 18, 19, 23, and 24). Unfortunately, it gives no information pertaining to the location or description of trading houses there. The journal does, however, clearly indicate that a "Mr Dougherty" was in charge of the trade at the Hidatsa villages. The journal editor, George R. Brooks, identifies this man as John Dougherty and cites in support of this a September 25-27, 1833, letter from Sublette to Campbell in the privately-owned Risvold-Semsrott Collection in Minneapolis, Minnesota (Brooks 1963-1964 [1]:10, note 27). It is clear from Campbell's journal that on at least one occasion Dougherty was called upon to provision Fort William with corn obtained from the Hidatsas (Brooks 1963-1964 [1]:10, 11, 18).

More information on the Sublette and Campbell activities among the Hidatsas may be found in this same unpublished letter dated September 25, 1833, written by Sublette during a three-day stopover at the Hidatsa villages during his return downriver from Fort William. This letter, which has been cited by Sunder (1959:130, note 28) as well as by Brooks, is currently in the possession of Mr. Floyd E. Risvold of Edina, Minnesota (letter from Risvold to the author, July 23, 1982); a transcript of the letter is held by the Missouri Historical Society. In addition to discussing the types of trade goods that are in short supply among the Sublette and Campbell men at Knife River, the letter provides hints that the company's post—evidently then under construction in one of the Hidatsa summer villages—was intended to have a stockade:

> Mr Daugherty has got out all his pickets for the fort and the Indians are determined to have a fort here or they will be much dissatisfied I think you had better send two more good working hands (who) understand Rafting down here that they may be geting out timber this winter & have all ready for the Spring...the Indians apear in fine Spirits & have furnished the men with meat for nothing whilst they was geting out the pickets and say as soon as the timbers are ready they will help down with them [Missouri Historical Society transcript, page 1]

Like Brooks, Sunder (1959:130) believes the "Daugherty" mentioned in this passage to have been John Dougherty, which is in contradiction to Maximilian's statement that the Hidatsa operation was managed by John's brother (Thwaites 1966c, 23:218). In two footnotes to his reprint edition of Maximilian's narrative, Thwaites (1966c, 23:218, note 167 and 24:24, note 15) further identifies this man as Joseph L. Dougherty, brother to John. However, the identity of this person probably cannot be established with certainty without further investigation of archived primary sources.

The procurement of lumber by the Sublette and Campbell men for a fort near the Knife River is also attested by Nathaniel J. Wyeth, who travelled down the Missouri River in the late summer of 1833. In his journal entry for September 1, 1833, he recorded meeting "some of Sublettes men cutting timber for a fort and learned from them that the upper Mandan [village] was 9 miles ahead" (Young 1899:214). The village referred to in this entry may actually be the Big Hidatsa Village.

Campbell recorded in his journal that Sublette's September 25 letter arrived at Fort William on October 12 (Brooks 1963-1964 [1]:12). On October 16, he sent two canoes and five men to Dougherty (Brooks 1963-1964 [1]:13).

The following month, Maximilian, who had been provided by Campbell with a letter of introduction to Dougherty (Brooks 1963-1964 [1]:16), encountered the Sublette and Campbell traders from Knife River at least twice. On November 7, 1833, while returning downriver from Fort Union to Fort Clark, Maximilian's party spent the night with some of Sublette and Campbell's employees who were building a trading house in an Hidatsa winter village:

> We had just doubled a point of land, and were looking for a sheltered spot for landing, when we observed some huts in a lofty wood of poplars, and were immediately called to by some Whites and Indians. We recognized old Charbonneau, and landed at once. It appears that Messrs. Soublette and Campbell had founded a trading post in the Manitari villages, and that their people, together with these Indians,

> had arrived but yesterday at the winter village, situated at no great distance. The clerk, who has the management of the business here, was Mr. Dougherty, brother to the Indian agent, who had likewise accompanied Major Long in his expedition to the Rocky Mountains, and who had, at present, old Charbonneau as interpreter...The Indians, under their principal chief, Lachpitzi-Sirish (the yellow bear), had arrived, as I have said, but yesterday, in the winter village; and Dougherty, with Charbonneau and several *engages*, lived in some huts hastily erected on the bank of the river, while a better and more substantial house was building in the Indian village...The night was stormy and very dark: some of us slept in the boat; Dreidoppel and our *engages* in the huts on shore. [Thwaites 1966c, 23:217-218]

The following morning, Maximilian and Charbonneau continued the journey to Fort Clark, stopping enroute on the south bank to look for a petrified tree near the "Fountaine Rouge." They reached Fort Clark in the late afternoon. At Fort Clark, Maximilian wrote:

> This year (1833), on account of the competition with Messrs. Soublette and Campbell, twelve dollars were paid for a large beaver skin, though it was, in reality, worth no more than four dollars in the United States...Messrs. Soublette and Campbell had, at present, one of their people in each of the neighboring Indian villages. I have already mentioned their clerk, Mr. Dougherty, who lived among the Manitaries, and stated that they had taken Charbonneau into their pay. Mr. Kipp, who had likewise stationed a trader among the Manitaries, who, in the winter, visited the villages in a sled. [Thwaites 1966c, 23:229]

Maximilian goes on to describe Dougherty's residence in an Hidatsa winter village which he visited on November 26, 1833:

> At the farther end of the village was the residence of Mr. Dougherty a long, low, log-house, divided into three apartments, of which that in the centre was used for a storehouse, the northern apartment being assigned to the family, and the southern to the *engages*. [Thwaites 1966c, 24:24]

Maximilian estimated that this winter village was at least nine leagues from Fort Clark (Thwaites 1966c, 24:27). Dougherty's house was apparently a single structure, without palisade, as Maximilian also remarks that Dougherty "did not yet possess a fort" and consequently had to bear the importunity and rudeness of the Indians among whom he resided (Thwaites 1966c, 24:35). This suggests either that the "pickets" mentioned in Sublette's September 25 letter had not yet been erected, or that the "fort" referred to by Sublette was not located in this winter village, but rather elsewhere. The latter possibility suggests that the three-room structure described by Maximilian may have been a temporary construction to serve the purpose of winter trading.

The last reference to an active Sublette and Campbell operation at Knife River is provided in a January 31, 1834, letter written by Kenneth McKenzie at Fort Union:

> My opponents cannot by any means get peltries sufficient to pay the wages of their men. At the Gros Ventres and Mandans they have not even robes to sleep on. At the Mandans my last account states that Picotte [i.e., the Upper Missouri Outfit trader] has eighty packs of robes and five hundred beaver, and I hope things are equally promising lower down [the river]. [Phillips 1961, 2:425]

Finally, there may be an allusion to the former Sublette and Campbell operation at Knife River in the Fort Clark journal maintained by Alexander Kennedy from May 18 through June 18, 1834. The entry for June 12 records the arrival of men from Fort Pierre with news of the agreement between the American Fur Company and Sublette and Campbell (Abel 1932:328-330). Two days later, on June 14, Kennedy recorded that "Mr. Kipp

accompanied by Mr. May took a ride to the Gros Ventre Village on business relative to the recent changes that have taken place.—" (Abel 1932:330).

This poorly-known operation has been given little attention by historians. Chittenden (1954, 2:957), probably based on Maximilian's information, merely states that "Sublette and Campbell had a post a little below this point [i.e., below the site of Lisa's fort]." Charles De Land, in his "Editorial Notes on Old Fort Pierre and Its Neighbors" (1902:362), states that the Sublette and Campbell firm in 1833 had a post "a little below" the site of Lisa's fort, and suggests that the post may have been called Fort Campbell. However, he gives no source for his information, part of which, at least, probably was taken from Chittenden.

FORT PRIMEAU

One of the characteristics of the Upper Missouri fur trade was the establishment of competing posts near the trading posts of Pierre Chouteau, Jr. and Company, the monopolistic concern which dominated the Missouri River trade for over three decades in the mid-nineteenth century. These "opposition" posts sprang up quite literally alongside the posts of the "Company," but they usually had relatively short lives as the so-called American Fur Company bought out its competitors or forced them out of business.

One such post was Fort Primeau, which was built a short distance north of Fort Clark, between the latter post and the Arikara village. This post was operated by the Clark, Primeau and Company "subsidiary" of Frost, Todd and Company, a coalition of Sioux City and St. Louis businessmen who in 1857 took control of "opposition" activities in the Upper Missouri after the failure of an earlier competitor, Picotte and Company (Sunder 1965:182-183). When Frost, Todd and Company was dissolved in November of 1859, Malcolm Clark and Charles Primeau—both former employees of the American Fur Company—continued the upriver opposition to the American Fur Company for a time, but eventually were absorbed by the Chouteau concern (Sunder 1965:208-209, 213-214).

Very little is known of this post, which was called Fort Primeau by Boller when he visited it in June of 1858:

> Both the trading posts [i.e., Fort Clark and the opposition post] presented rather a dilapidated appearance, owing to the great scarcity of timber and the danger of sending their men to secure a supply from a distance. Fort Clark (so named after the renowned explorer of the Missouri), the post of the American Fur Company, was built on the lower side of the village, and about three hundred yards from it Fort Primeau, the post of the Opposition Company. This fort took its name from Mr. Charles Primeau, one of the oldest and best of the mountain traders. [Quaife 1959:27-28]

The date of the establishment of Fort Primeau is unknown. Coues (1962:227, footnote 2) merely states that the post existed "in the fifties or later," and De Land (1902), Chittenden (1954), and Mattison (1955) do not mention it at all in their historical summaries. It surely was in existence and functioning by mid-1858, when Boller visited it.

The New York artist, William Jacob Hays, sketched the exterior of Fort Primeau on July 14, 1860, during the downriver voyage of the steamboat *Spread Eagle* (Taft 1953:44 and illustration 19).

Fort Primeau and Fort Clark apparently were closed at about the same time, according to the following statement in a June 18, 1860, letter by Boller:

> The two companies have this year consolidated and it was high time, for so hot & reckless has been the competition for the last 4 years, that money has been lost annually. But one set of Forts will now be kept up, no outposts and no going into winter quarters...The Ree Posts are broken up and merged into the Gros Ventres Post. [Mattison 1966:114]

The last statement is a reference to Forts Clark and Primeau near the Arikaras, and to Fort Berthold near Like-a-Fishhook Village.

Boller's statement is corroborated by the journal of another visitor to Forts Clark and Primeau that summer. August V. Kautz, an Army officer who arrived on a steamboat, remarked in his diary entry for June 10, 1860, that the American Fur Company and Clark, Primeau and Company "are united, and settled a long injurious hostility" (Schmitt 1946:206).

In contrast to most of the other trading posts that once existed near the mouth of the Knife River and whose archeological remains have not yet been discovered, the location of Fort Primeau is outlined by subtle depressions and ridges on the ground at Fort Clark State Historic Site. It also was the scene of limited archeological excavations in 1973 (Dill 1990:31-32).

There is an intriguing reference to a trading post existing circa 1837 near the Fort Clark Mandan village in Orin Libby's (1906:435) interpretation of a drawing of the village made by a Mandan man, Sitting Rabbit, on the Fort Berthold Reservation in 1905:

> The log house at the left and down the river was an American trading post, built at the same time the village was founded. The trader was called by the Mandans Long Hair, and his son was known as Stone; he was later interpreter at Fort Berthold. From this trader they purchased a few guns, all of them old fashioned flint locks.

The "log house" referred to in this passage is not visible in the reproduced drawing of the village, presumably having been cropped by the printer. The fact that it is described as being downriver from Fort Clark Village could be a reference to either Tilton's Fort or Fort Clark, as both of these were located a short distance downriver from the village, or it could possibly refer to Kipp's unnamed post, the location of which is not known. The trader named "long Hair" is evidently Pierre Garreau, a French- Indian mixed blood who served as a hunter for Fort Clark in the 1830s, was later an interpreter at Fort Berthold, and who called himself by the name, "Long Hair" (Collins 1925:39-48; Coues 1962:125-126; Quaife 1959:187-188). Garreau lived apart from the Mandan village, in a solitary earthlodge adjacent to Fort Clark itself (Dill 1990:22 and Figure 3).

With the closing of Forts Clark and Primeau and the subsequent movement of the Arikaras to join the remnants of the Mandans and Hidatsas near Fort Berthold, the last Plains Village Indians forever left their villages near the mouth of the Knife River, a locale that had been home to the Mandans and Hidatsas and their ancestors for centuries.

REFERENCES CITED

Unpublished Documents

Hudson's Bay Company Archives, in the Manitoba Department of Cultural Affairs and Historical Resources, Provincial Archives, Winnipeg

B.22/a/3 Brandon House Post Journal, 1795-1796.

B.22/a/18b Brandon House Post Journal, 1811-1812.

B.22/e/3 Brandon House District Report, 1828-1829.

Joslyn Art Museum, Omaha, Nebraska

Journal of Maximilian, Prince of Wied, third volume, parts 15-29, page 65, plan of Fort Clark.

Manitoba Department of Cultural Affairs and Historical Resources, Provincial Archives, Winnipeg

Journal of Peter Garrioch, Red River Settlement, 1843-1847.

Missouri Historical Society, St. Louis

Diary of Stephen Watts Kearny, Stephen Watts Kearny Papers.

Letter from W. Sublette to R. Campbell, September 25-27, 1833. Typescript copy of original in possession of Floyd E. Risvold of Edina, Minnesota.

Newspapers

Missouri Gazette, September 14, 1816.

Missouri Republican, July 16, 1823.

St. Louis Enquirer, June 14, 1824.

St. Louis Enquirer, July 19, 1824.

Tri-Weekly Missouri Republican, July 12, 1860.

Other Publications and Reports

Note: References in which an asterisk precedes the date were supported in whole or part by the Midwest Archeological Center's archeological and ethnohistorical research program for the Knife River Indian Villages National Historic Site.

Abel, A. H. (editor)
1932 *Chardon's Journal at Fort Clark, 1834-1839*. State of South Dakota, Department of History, Pierre.

Audubon, M. R.
1960 *Audubon and His Journals*. With zoological and other notes by E. Coues. 2 vols. Reprinted. Dover, New York. Originally published 1897, Charles Scribner's Sons, New York.

Brooks, G. R. (editor)
1963-1964 The Private Journal of Robert Campbell. *Bulletin of the Missouri Historical Society* 20(1):3-24 and 20(2):107-118.

Brown, J. M.
1950 A Trip to the Northwest in 1861. *The Filson Club History Quarterly* 24(2):103-136 and 24(3):246-275.

Chittenden, H. M.
1954 *The American Fur Trade of the Far West.* 2 vols. Reprinted. Academic Reprints, Stanford. Originally published 1902 in three vols., Francis P. Harper, New York.

Collins, E. A.
1925 Pioneer Experiences of Horatio H. Larned. *Collections of the State Historical Society of North Dakota* 7:1-58. Grand Forks.

Coues, E. (editor)
1962 *Forty Years a Fur Trader on the Upper Missouri: The Personal Narrative of Charles Larpenteur, 1833-1872.* Reprinted. Ross and Haines, Minneapolis. Originally published 1898 in two vols., Francis P. Harper, New York.

De Land, C. E. (editor)
1902 Old Fort Pierre and Its Neighbors, by Frederick T. Wilson. *South Dakota Historical Collections* 1:257-440. News Printing Company, Aberdeen.

Dill, C. L.
1990 Fort Clark on the Missouri: Prairie Post and Field Lab, 1831-1990. In *The Fur Trade in North Dakota*, edited by V. L. Heidenreich, pp. 17-32. State Historical Society of North Dakota, Bismarck.

Douglas, W. B.
1964 *Manuel Lisa.* Reprinted with introduction and notes by A. P. Nasatir. Argosy-Antiquarian, New York. Originally published 1911 in the *Missouri Historical Collections* 3(3-4).

Drumm, S. M. (editor)
1964 *Journal of a Fur-Trading Expedition on the Upper Missouri, 1812-1813*, by J. C. Luttig. Reprinted with preface and notes by A. P. Nasatir. Argosy-Antiquarian, New York. Originally published 1920 by the Missouri Historical Society, St. Louis.

Ellis, E.
1927 The Journal of H. E. Maynadier. *North Dakota Historical Quarterly* 1(2):41-51.

Gowans, Fred R. (compiler)
1989 *A Fur Trade History of Yellowstone National Park.* Mountain Grizzly Publications, Oren, Utah.

Hayden, F. V.
1862 A Sketch of the Mandan Indians, with Some Observations Illustrating the Grammatical Structure of Their Language. *American Journal of Science and Arts*, second series, 34:57-66.

1863 Contributions to the Ethnology and Philology of the Indian Tribes of the Missouri Valley. *Transactions of the American Philosophical Society*, new series, 12:231-462. C. Sherman & Son, Philadelphia.

Jackson, D.
1964 Journey to the Mandans, 1809: The Lost Narrative of Dr. Thomas. *Bulletin of the Missouri Historical Society* 20(3):179-192.

James, E.
1966 *Account of an Expedition from Pittsburgh to the Rocky Mountains*. 2 vols. Reprinted. Readex Microprint, New York. Originally published 1823 in two vols. with an atlas, H. C. Carey and I. Lea, Philadelphia.

Kane, L., J. D. Holmquist, and C. Gilman (editors)
1978 *The Northern Expeditions of Stephen H. Long*. Minnesota Historical Society Press, St. Paul.

Larpenteur, C.
1956 *Journals of Charles Larpenteur*. Microfilm edition with editorial notes by E. Coues. Minnesota Historical Society, St. Paul.

Libby, O. G.
1906 The Mandans and Grosventres. *Collections of the State Historical Society of North Dakota* 2:498-502. Bismarck.

Lottinville, S. (editor)
1973 *Travels in North America, 1822-1824*, by P. Wilhelm, Duke of Wurttemburg. University of Oklahoma Press, Norman.

Lowrie, W., and W. S. Franklin (editors)
1834 *American State Papers*, Class II, Indian Affairs, vol. 2. Documents, Legislative and Executive, of the Congress of the United States, from the First Session of the Fourteenth to the Second Session of the Nineteenth Congress, Inclusive: Commencing December 4, 1815, and Ending March 3, 1827. Gales and Seaton, Washington, D.C.

Mattison, R. H.
1955 Report on Historic Sites in the Garrison Reservoir Area, Missouri River. *North Dakota History* 11(1-2):4-73.

Mattison, R. H. (editor)
1966 The Letters of Henry A. Boller, Upper Missouri Fur Trader. *North Dakota History* 33(2):106-219.

Meyer, R. W.
1977 *The Village Indians of the Upper Missouri: The Mandans, Hidatsas, and Arikaras*. University of Nebraska Press, Lincoln.

Morgan, D. L. (editor)
1964 *The West of William H. Ashley*. Old West Publishing Company, Denver.

Morgan, L. H.
1871 The Stone and Bone Implements of the Arickarees. *Twenty-First Annual Report of the Regents of the University of the State of New York*, pp. 25-46. Van Benthuysen Printing House, Albany.

Moulton, G. E.
1983 Atlas of the Lewis and Clark Expedition. *Journals of the Lewis and Clark Expedition*, vol. 1. University of Nebraska Press, Lincoln

Nasatir, A. P.
1952 *Before Lewis and Clark: Documents Illustrating the History of the Missouri, 1785-1804*. 2 vols. St. Louis Historical Documents Foundation.

1976 *Borderland in Retreat: From Spanish Louisiana to the Far Southwest*. University of New Mexico Press, Albuquerque.

Oglesby, R. E.
1963 *Manuel Lisa and the Opening of the Missouri River Fur Trade*. University of Oklahoma Press, Norman.

Ottoson, D. R.
1976 Toussaint Charbonneau, a Most Durable Man. *South Dakota History* 6(2):152-185.

Phillips, P. C.
1961 *The Fur Trade*. 2 vols. University of Oklahoma Press, Norman.

Quaife, M. M. (editor)
1916 Extracts from Capt. McKay's Journal—and Others. *Proceedings of the State Historical Society of Wisconsin*, 63rd Annual Meeting. Madison.

1959 *Among the Indians: Eight Years in the Far West, 1858-1866*, by Henry A. Boller. Lakeside Classics edition. Reprinted. R.R. Donnelley & Sons, Chicago. Originally published 1868, T. Elwood Zell, Philadelphia.

1966 *Three Years Among the Indians and Mexicans*, by T. James. Reprinted. Citadel Press, New York. Originally published 1846 at the office of the "War Eagle," Waterloo, Illinois.

Raynolds, W. F.
1867 Report of Brevet Colonel W. F. Raynolds, U.S.A., Corps of Engineers, on the Exploration of the Yellowstone and Missouri River, in 1859-'60. In "Report of the Secretary of War, communicating . . . the report of Brevet Brigadier General W. F. Raynolds, on the exploration of the Yellowstone and the country drained by that river." 40th Congress, 1st Session, *Senate Executive Document* 77, Serial 1317. Washington, D.C.

Reid, R. (editor)
1943 Diary of Ferdinand A. Van Ostrand. *North Dakota Historical Quarterly* 10(2):83-124.

Reid, R., and C. G. Gannon (editors.)
1929 Journal of the Atkinson-O'Fallon Expedition. *North Dakota Historical Quarterly* 4(1):5-56.

Robinson, D. (editor)
1918 Fort Tecumseh and Fort Pierre Journal and Letter Books. *South Dakota Historical Collections* 9:69-239. Hipple Printing Company, Pierre.

Robinson, E. B.
1966 *History of North Dakota*. University of Nebraska Press, Lincoln.

Schmitt, M. F. (editor)
1946 From Missouri to Oregon in 1860: The Diary of August V. Kautz. *The Pacific Northwest Quarterly* 37(3):193-230.

Smith, G. H.
1972 *Like-a-Fishhook Village and Fort Berthold, Garrison Reservoir, North Dakota.* Anthropological Papers 2. National Park Service, Washington, D.C.

Smith, G. H., and J. Ludwickson
n.d. *Fort Manuel: The Archeology of an Upper Missouri Trading Post of 1812-1813.* South Dakota Archaeological Society, Special Publication No. 7. Vermillion.

Sunder, J. E.
1959 *Bill Sublette, Mountain Man.* University of Oklahoma Press, Norman.

1965 *The Fur Trade on the Upper Missouri, 1840-1865.* University of Oklahoma Press, Norman.

1968 *Joshua Pilcher, Fur Trader and Indian Agent.* University of Oklahoma Press, Norman.

Taft, R.
1953 *Artists and Illustrators of the Old West: 1850-1900.* Charles Scribner's Sons, New York.

Thiessen, T. D. (compiler)
*1981 Excerpts from the Brandon House Post Journals Relating to Trade with the Mandan and Hidatsa Indians, 1793-1830. Manuscript in possession of compiler.

Thompson, E. N.
1986 *Fort Union Trading Post: Fur Trade Empire on the Upper Missouri.* Theodore Roosevelt Nature and History Association, Medora, North Dakota.

Thwaites, R. G. (editor)
1966a Travels in the Interior of America, in the Years 1809, 1810, and 1811, by John Bradbury. *Early Western Travels*, vol. 5. Reprinted. AMS Press, New York. Originally published 1904, Arthur P. Clark, Cleveland.

1966b Journal of a Voyage up the River Missouri, by H. M. Brackenridge. *Early Western Travels*, vol. 6:21-166. Reprinted. AMS Press, New York. Originally published 1904, Arthur P. Clark, Cleveland.

1966c Travels in the Interior of North America, by Maximilian, Prince of Wied. Translated by H. E. Lloyd. *Early Western Travels*, vols. 22-24. Reprinted. AMS Press, New York. Originally published 1906, Arthur P. Clark, Cleveland.

Toom, D. L.
1979 *The Middle Missouri Villages and the Early Fur Trade: Implications for Archeological Interpretation.* Master's thesis, Department of Anthropology, University of Nebraska, Lincoln.

Truax, A. L.
1928 Manuel Lisa and His North Dakota Trading Post. *North Dakota Historical Quarterly* 2(4):239-246.

Voorhis, E.
1930 *Historic Forts and Trading Posts of the French Regime and of the English Fur Trading Companies.* Natural Resources Intelligence Service, Department of the Interior, Ottawa.

Wheat, C. I.
1957-1963 *Mapping the Transmississippi West: 1540-1861.* 5 vols. Institute of Historical Cartography, San Francisco.

White, L. A. (editor)
1959 *Lewis Henry Morgan: The Indian Journals, 1859-62.* University of Michigan Press, Ann Arbor.

Williams, D.
1949 John Evans' Strange Journey. *American Historical Review* 54(2):277-295 and (3):508-529.

Wishart, D. J.
1979 *The Fur Trade of the American West, 1807-1840.* University of Nebraska Press, Lincoln.

Wood, W. R.
*1986 Historical Cartography of the Upper Knife-Heart Region. In *Papers in Northern Plains Prehistory and Ethnohistory*, edited by W. R. Wood, pp. 25-58. South Dakota Archaeological Society, Special Publication No. 10. Sioux Falls.

Wood, W. R. (compiler)
1983 *An Atlas of Early Maps of the American Midwest.* Scientific Papers 18. Illinois State Museum, Springfield.

Wood, W. R., and G. E. Moulton
*1981 Prince Maximilian and New Maps of the Missouri and Yellowstone Rivers by William Clark. *Western Historical Quarterly* 12(4):373-386.

Wood, W. R., and T. D. Thiessen (editors)
*1985 *Early Fur Trade on the Northern Plains: Canadian Traders Among the Mandan and Hidatsa Indians, 1738-1818.* University of Oklahoma Press, Norman.

Young, F. G. (editor)
1899 The Correspondence and Journals of Captain Nathaniel J. Wyeth, 1831-6. *Sources of the History of Oregon*, vol. 1, parts 3-6. University Press, Eugene.

CHAPTER 15

INFECTIOUS DISEASE AND THE NORTHERN PLAINS HORTICULTURISTS: A HUMAN-BEHAVIOR MODEL

Michael K. Trimble

INTRODUCTION

Several researchers have argued that at the time of their discovery by Euroamericans in the eighteenth century, horticulturists of the upper Missouri River (the Mandans, Hidatsas, and Arikaras) were pristine societies—untouched and unaffected by infectious diseases of Euroamerican origin (Bowers 1950, 1965; Bruner 1961; Lehmer 1971; Lowie 1917). This argument is based largely on recorded oral tradition and/or untested propositions. In the few cases where the role of infectious disease has been addressed, the Mandans, Hidatsas, and Arikaras are described as the unfortunate victims of introduced epidemics that occurred primarily during the late eighteenth and early nineteenth centuries (Holder 1970; Lehmer 1977a; Meyer 1977; Wood 1974). Although these studies acknowledge the role of disease as one of the many causal agents in early historical-period sociocultural change, they argue that it only became a *primary cause* after 1780.

Our knowledge respecting the lifeways and cultural changes that occurred among the horticulturists of the Upper Missouri is fairly detailed given the journals, diaries, and official records made by the first Euroamericans to venture onto the Northern Plains. Because the lifeways of the village tribes were documented so thoroughly relative to those of other Native Americans, over such a long time period (1734-present), they offer a unique opportunity to assess and model the role that epidemics played in Plains Village societies.

As noted above, evidence now suggests that epidemics represent one of the major factors responsible for altering traditional societies on the Northern Plains, beginning perhaps as early as the seventeenth century and certainly occurring during the eighteenth century. The works of Ramenofsky (1982) and Dobyns (1983) in particular present data to support the conclusion that major continental impact by introduced disease occurred as early as 1520.

Dobyns and Ramenofsky have gathered an impressive array of historical data documenting major epidemic episodes in North America during the sixteenth, seventeenth, eighteenth, and nineteenth centuries. While most of the documents address the southwest, southeast, and northeastern regions of North America, there is every reason to believe that many of the epidemic episodes spread to the Midwest and Great Plains. Five major epidemics are identified for the sixteenth century, 15 for the seventeenth century, 11 for the eighteenth century, and 10 for the first 40 years of the nineteenth century (Dobyns 1983; Ramenofsky 1982). Given this new body of literature and the traditional Plains studies that have addressed disease, it is clear that the role acute-crowd infections played in shaping the social history of Plains horticulturists is poorly understood and deserves reevaluation.

To view the culture history of the Northern Plains horticulturists from a disease-oriented perspective, a model is needed to integrate disparate information on epidemics and to provide a means for evaluating the effects of disease on all aspects of Plains Village society. The proposed model is based on a paradigm that encompasses both ethnohistorically derived data from the period under study and the corpus of principles and concepts underlying general epidemiological theory. Primary historical documents provide the most informative data set. These sources include letters and reports from Indian agents who reported on the lifeways of the affected populations. Personal diaries and journals kept by explorers, fur traders, naturalists, and artists who lived among or visited the native populations constitute the remainder of primary resources. By subjecting these documents to critical historical and epidemiological analysis, statements pertaining to disease events can be accepted or rejected and a reliable data base established.

The epidemiological paradigm encompasses the basic theories and principles of disease process and is invaluable for generating plausible explanations regard-

ing the introduction, transmission, and biological consequences of a specific contagious-disease outbreak within a susceptible population. More specifically, the epidemiological paradigm is concerned with identifying mutual relations among the variables of disease, culture, biology, and environment, and the component core factors associated with these variables.

For our purposes, disease variables include the traditional notion of organic pathogens as well as the notion of insult. Insults are physical, chemical, psychological, social, and infectious stimuli that adversely affect an individual's or a population's adjustment to the environment. Insults may originate externally or internally. Cultural variables are those concepts and techniques used by individuals or populations to control their immediate environment. Central to this definition is the notion that not every concept or technique is survival-worthy. Through time, cultural traits that once were survival- worthy can become detrimental to a population. Biological variables are changes in the genetic composition of individuals that allow a species to adjust to successive environmental changes. If an adjustment does not occur, the species may not survive. Environmental variables include geographic location and climate.

These sets of variables are composed of a number of core factors that describe or affect the individual variables and that represent the minimal units of observation employed when evaluating the spread of an epidemic. Some core factors can be discussed or grouped under more than one variable. This notion supports a major point of this presentation: the spread of disease and its explication is inextricably intertwined with an articulated network of cultural, biological, and environmental variables. Table 15.1 provides a listing of the general variables and core factors to be considered when evaluating the spread of disease within a population.

Epidemiology and ethnohistory can be used as complementary research orientations. An epidemiological paradigm provides a body of theory centering around a number of general variables and core factors that influence disease process. Ethnohistory provides the diachronic and synchronic data that are examined within the framework of the disease model.

DISEASE ON THE PLAINS: LITERATURE AND CHRONOLOGY

If epidemics were significant forces in structuring Plains village lifeways from the seventeenth through late nineteenth centuries, evidence of this will be reflected in the literature produced by the first Euroamericans to visit the Upper Missouri. In the following section a review of the extant primary and secondary sources will be presented. Data derived from the historical sources will enable us to construct a plausible epidemic *chronology* as well as a *model* which evaluates the impact of introduced acute-crowd infections on the Mandan, Hidatsa, and Arikara populations.

The format of this review section will include: a) description of the source; b) evaluation of the source; and c) construction of a disease chronology for the village horticulturists.

In 1945 Stearn and Stearn published *The Effect of Smallpox on the Destiny of the Amerindian*. Although the Stearns were not professionally trained anthropologists or historians, their study is primarily a historical narrative that draws heavily on unpublished manuscripts to demonstrate the magnitude of destruction wrought by smallpox on the American Indian. While many epidemic episodes are identified from primary source materials, the work lacks a systematic discussion or synthesis of the patterns and processes of sociocultural disintegration accompanying these events.

Mandan Social and Ceremonial Organization (Bowers 1950) is the first major work to address the issue of epidemics and their role in modifying Plains Village societies. The study is an ethnography, though Bowers presents a brief historical background of the Mandans and incorporates a generalized chronology of the epidemics experienced by them. More importantly, Bowers recognizes that both historical-period and prehistoric epidemic episodes had the potential to cause severe intratribal reorganization. Although he did not analyze this point in depth, it is clear that he recognized the sociocultural ramifications of epidemics—if not their potential magnitude. *Hidatsa Social and Ceremonial Organization* (Bowers 1965) includes a generalized chronology of post-1780

Table 15.1. General variables and core factors used to evaluate the spread of disease.

Disease Variables[a]	Cultural Variables	Biological Variables	Environmental Variables
Pathogenicity/ virulence[b]	Nutrition	Adaptation and genetic resistance	Climatic factors
Infectivity/ transmission	Sanitation	Age	Mode of transmission
Invasiveness	New technology	Sex	Seasonal prevalence
Stability of virus	Overcrowding	Resistance	
	Acculturation		
	Cognitive system as it relates to disease		
	The medical practitioner		

[a]General variables.

[b]Core factors.

epidemics and a brief synthesis of the cultural ramifications of those epidemics for the Hidatsa nation.

The Dynamics of Stylistic Change in Arikara Ceramics (Deetz 1965) is a significant publication in Plains research because Deetz suggests there was a relation between cultural disruption as seen in the archeological record and social change. He identifies the primary causes of culture change among the Arikaras during the seventeenth century as warfare, disease, and economic pressure. Deetz's major contribution is the suggestion that changes in Arikara ceramics were due to the disruption of manufacturing practices as a result of various social perturbations, including disease, that occurred during the eighteenth century.

Dobyns (1966) published the first synthetic analysis of epidemiological episodes and their resultant sociocultural consequences among New World populations. The major thrust of this landmark article—"Estimating Aboriginal American Population: An Appraisal of Techniques with a New Hemispheric Estimate"—was to demonstrate that prior characterizations of Native American populations as small-scale societies are incorrect. Original population levels throughout the Americas were far larger than previously thought. Dobyns stresses that new disease agents were responsible for the precipitous decline of aboriginal populations. This highly controversial article forced anthropologists to reevaluate their assumptions regarding pre-contact population levels as well as the models that had been constructed to account for population decline and culture change. Although Dobyns discusses the Plains culture area only in general terms, the article stimulated Lehmer to reevaluate many of his ideas concerning pre-nineteenth-century Plains culture history.

Drawing on the work of Steam and Steam (1945) and Dobyns (1966), Lehmer concluded that epidemics were a major factor in the history of Plains cultures and

that archeological explanations of culture change necessarily must consider epidemiological data. While Lehmer initiated research to this end, a series of personal tragedies culminating with his death in 1975 precluded publication of his ideas in their completed form. By 1968, however, Lehmer had finished enough preliminary research on Plains epidemics to enable him to write two papers for public presentation. These papers—"Epidemics Among the Indians of the Upper Missouri" and "The Other Side of the Fur Trade"—were published posthumously (Lehmer 1977a, 1977b). Although the studies are far from polished pieces, they represent a shift in Lehmer's research orientation and have withstood critical scrutiny. It is fair to say that these articles identify many basic theoretical issues that have served as points of departure for epidemiologically focused studies on Plains Indians. Often overlooked, the articles establish a chronology of epidemics for the Plains during the late eighteenth and nineteenth centuries. More importantly, Lehmer used the articles to analyze the sociocultural effects of epidemics on populations at a regional level by incorporating a temporal and spatial perspective. To date, there are no regionally synthetic studies that substantially alter Lehmer's research on the topic.

Taylor (1977) also has addressed the effect of epidemics on Plains Indian populations. He presents a general chronology of epidemics among Plains groups, followed by an analysis of the major social changes wrought by the epidemics. Ambitious in its intent, Taylor's chronology is open to question, given his interpretation of sources. His sociocultural analysis is useful, but it repeats much of Lehmer's original work.

The smallpox epidemic of 1837-1838 has been studied intensively by several authors, including Dollar (1977), Ferch (1983-1984), and Trimble (1985, 1986). Dollar (1977) offers an excellent overview of the epidemic—one of the most destructive experienced by Plains populations. The main contribution of Dollar's work is the well-reasoned analysis of cultural factors influencing the introduction and spread of the epidemic among the village tribes of the upper Missouri River. In a master's thesis completed in 1979, Trimble (1986) examined from a biocultural standpoint the introduction and spread of the epidemic and the general sociocultural changes it produced among the village tribes. Although limited in scope, the study analyzes the history of the epidemic among several tribes and emphasizes the dynamics of infectious disease in virgin-soil populations. Subsequent research by Trimble (1985) applied epidemiological theory to the interpretation of epidemic diseases among Northern Plains tribes. Cultural and biological properties particular to a group are emphasized as causative agents that influence how severely an epidemic may affect a population.

Ferch (1983-1984) discusses the response of Euroamerican fur traders to the 1837-1838 smallpox epidemic. He documents little-known vaccination programs undertaken by the fur-trading companies to combat the epidemics that swept through the Indian populations living on the upper Missouri River. Ferch demonstrates that most of the efforts had purely economic motives—i.e., the loss of Indians meant fewer skins and furs to be sold on the European market.

Most studies of particular tribes fail to treat adequately the topic of disease as it affected various aspects of group organization. Although not specifically oriented toward a discussion of epidemiological events, the work of Hanson (1987) acknowledges the major role played by epidemics in shaping Hidatsa culture history. He recognizes and discusses the sociocultural effects of late eighteenth- and nineteenth-century epidemics on the Hidatsas and the resultant adjustments made by the tribe. He also presents a mathematical model of depopulation among the Hidatsas—much of which he attributes to introduced infectious diseases.

Perhaps the most important source outlining major epidemic trends in the Great Plains is *Their Number Become Thinned* (Dobyns 1983), which is a basic reference for anyone interested in North American Indian demography. Dobyns presents the most detailed regional chronologies yet published for historically documented epidemics in the New World. Although he emphasizes eastern North America between 1520 and 1890, many other regional chronologies are presented, including one for the Great Plains. He argues convincingly that the major depopulation of North America occurred as a result of introduced acute-crowd infections to which North American Indians had no immunity. By 1620, major pandemics occurring in the Americas reduced pre-Columbian populations by 75 percent. A detailed master chronology of the New World epidemics is presented, along with a case study on the Timucan Indians of Florida. Dobyns' chronology is valuable to Plains scholars because

it documents a continuing series of major epidemics on the Plains and in adjacent areas over a period of 400 years.

Ramenofsky's (1982) ambitious *Archaeology of Population Collapse: Native American Response to the Introduction of Infectious Disease* is a significant study that tests many of Dobyns' propositions about Native American depopulation. By using archeological and historical data from the Middle Missouri subarea, the lower Mississippi valley, and central New York, and meshing it with epidemiological paradigms, Ramenofsky is able to infer decline in regional populations through time. Formulas based on settlement counts, settlement area, and roofed areas of settlements are constructed to identify the timing and magnitude of decline in each region. Her analysis of the archeological record suggests that in the Middle Missouri subarea, collapse dates to the early seventeenth century. The greatest value of her research lies in the demonstration that the regional populations sampled experienced a catastrophic decline that preceded written documentation. While theoretically innovative in scope, the study suffers from a lack of familiarity with current archeological and ethnohistorical sources for the Middle Missouri subarea. Major revisions in her interpretations will be made when these data are incorporated into the analytical framework employed.

Ethnohistorically Based Chronology of Epidemics

Any attempt to assess the cultural and biological effects of acute-crowd infections on the village horticulturists of the upper Missouri River must begin by establishing an accurate chronology or documentation of known epidemics. Here we are constrained by recorded history and its subjective bias (Baerreis 1961:49-77; Charlton 1981:129-76; Euler 1972:201-07; Fenton 1962:1-23; Lurie 1961:78-92; Spores 1980:575-603; Thurman 1982:173-75; Wedel and Demallie 1980:110-28) and the fact that the first plausible description of Upper Missouri village Indians begins with the 1738 description furnished by explorer and trader Pierre Gaultier de Varennes, Sieur de la Vérendrye (Burpee 1927; Smith 1980). The net effect of these constraints is twofold: (a) existing detailed accounts only date back to 1738, leaving 218 years of probable epidemic history unrecorded—if the Cortez smallpox epidemic of 1520 is used as a benchmark—and (b) the accounts that do exist come primarily from explorers, trappers, traders, and federal Indian agents—a group whose main concern was commerce and who only occasionally provided cultural descriptions. The result is that little survives in the historical record to document epidemic episodes, and what does exist must be examined cautiously to establish its reliability.

The research strategy traditionally employed by the few scholars who have studied epidemic history on the Upper Missouri relies primarily on secondary source materials. The sources are examined and all references to epidemic episodes and population estimates (e.g., lodge counts) are recorded. Next, the few historically known epidemics are used as causal factors to explain an undeniable population decrease and a trend toward cultural disintegration through time (Hanson 1987; Lehmer 1971, 1977a; Meyer 1977; Stearn and Stearn 1945; Taylor 1977; Trimble 1985, 1986).

Although a more rigorous research orientation is preferable, this course is one of the few available to the Upper Missouri scholar confronted with an enormously complex set of ethnohistorical and archeological materials. To date, this orientation has provided less than satisfactory results.

The chronology of epidemics presented here is an attempt to increase methodological rigor, and to provide a data base capable of withstanding independent scrutiny. The style of presentation follows that used by Ramenofsky (1982) and Chomko (1986). While Ramenofsky's study focuses on the archeological correlates to population collapse, and Chomko's work concentrates on the ethnohistorical demography of the Mandans, Hidatsas, and Arikaras during the eighteenth and nineteenth centuries, both authors employ methods applicable to examining epidemic processes among the Upper Missouri villagers.

The chronology is presented with three goals in mind: a) to establish the epidemics that affected the village tribes, b) to examine the published literature in order to illuminate existing discrepancies regarding epidemic episodes, and c) to identify those epidemics that may have affected the village tribes but for which no recorded data survive. Primary and secondary sources are examined and subjected to critical analysis. The types of data considered as indicative of population decline due to epidemic disease have been expanded greatly.

To maximize the identification and prediction of epidemic episodes, the chronology employs traditional types of data along with the following data sets: a) warrior/men estimates, b) total-population estimates, c) village-count estimates, d) village-location data, e) lodge counts, and f) reported epidemic outbreaks and vaccination data. By collating this information, it is possible to resolve inconsistencies and gaps that occur when one examines individual data sets. Importantly, this process may reveal trends in social behavior similar to those reported for historical and recent epidemic episodes. If trends can be identified, one is in a better position to postulate that disease is indeed a major cause influencing social change, a factor rarely considered by anthropologists who have examined the village tribes of the upper Missouri River.

To compensate for the meager record of the Upper Missouri village tribes, epidemic chronologies from adjacent culture areas are evaluated and presented. While these data cannot in all instances be projected to Plains village populations, the enormity and rapid succession of epidemics is impressive and merits attention. At the very least it is clear that a careful presentation of these data will be useful for model building in future Plains research.

1738-1743

The first reliable account of the village tribes of the Upper Missouri is that of Pierre de la Vérendrye (Burpee 1927; Smith 1980:69-94). La Vérendrye and his son found the Mandans living in the Heart River area of North Dakota in 1738. The descriptions of the Mandans and their villages reveal a culture far different from that described by nineteenth-century Euroamericans. Although it has been established that the document recounting the travels of La Vérendrye is not a field journal but a later version, Smith (1980:71) observes that it "is convincing and gives every evidence of general truthfulness and reliability."

La Vérendrye's search for the Mandans was fueled by stories he heard from the Crees and Assiniboins about Indians living in white men's houses. When he found them, the Mandans apparently were gracious and eager to acquire the European trade goods that heretofore were doled out as their Assiniboin neighbors saw fit (Smith 1980:1-10). It is clear that the Mandans wanted to establish direct trade with the whites from the north and to eliminate the middleman role formerly played by the Assiniboins. What is significant for our study is that the La Vérendrye manuscript—flawed though it may be in some respects—provides a base population and geographic setting from which we can monitor the village tribes through time. La Vérendyre established that in 1738 the Mandans lived in six contiguous villages in the vicinity of the Heart River. La Vérendrye lost his interpreter after a few days among the Mandans and was unable to obtain the details of population size for each village. However, he was able to establish that the village he visited was one of the smaller villages in the region and contained approximately 130 lodges (Smith 1980:59). Although he was limited to conversing in sign language, La Vérendrye concluded that

> there were five forts belonging to their nation (nations), on the two sides of the river, much larger than that in which we then were. At a day's journey from the last of their forts are the Panaux, who have several forts; then come the Pananis. These two tribes hold a large region, but are at war with the Mantannes and have been for the last four years. [Smith 1980:57]

Wood (1977:329) points out that the Hidatsas, a closely related village group, were living nearby—yet La Vérendrye makes no mention of them. It is suggested that the Panaux and Pananis represent the Pawnees and Arikaras who were occupying earthlodge villages at the Grand River. Later descriptions (e.g., Nasatir 1952, 1) support this view.

1757

Wood and Thiessen (1985:22-25) and Jackson (1982:12-14) cite additional evidence for sporadic interaction between French and English explorer/traders (Louis-Antoine de Bouganville, "Old Pinneshon," and Donald McKay) and the villagers of the Upper Missouri between 1757 and 1781. The reports are sketchy, and Thiessen (personal communication to the author) believes that until further evidence is obtained, it is best to view them only as indicating a trend toward direct Euroamerican-Indian contact. No epidemiologically quantifiable data are produced by these descriptions, but the magnitude of interaction they suggest helps to establish the fact that regular avenues for introduction of

pathogens from the north existed throughout the eighteenth century.

1773

Another claim of Euroamerican contact with the villagers of the Upper Missouri is contained in a vague report published by Schoolcraft (1851-1857, 3:253). Although the reliability of the claim is questionable, it nonetheless deserves attention. A trader/explorer named Mackintosh appears to have journeyed to the Mandan villages, claiming to have reached one of nine contiguous villages on Christmas Day, 1773. Meyer (1977:26-27) notes that his report:

> ...survives only in the form of a brief reference to it in a letter written in 1852 by D. D. Mitchell, then superintendent of Indian affairs at St. Louis (and) seems to have consisted of a long, and somewhat romantic description of the manner in which he was received...

Mackintosh claimed that the Mandan villages he contacted were capable of raising 15,000 warriors. The most that can be said of this report is that the Mandans still were living in the Heart River villages and enjoyed the relative wealth attributed to them earlier by La Vérendrye.

1780-1784

Our next glimpse of the Upper Missouri cultures contains the first discussion of epidemic outbreak among the villagers. Summaries of the extant historical data used to develop the remainder of the chronology are presented in Table 15.2.

The years 1780-1784 witnessed one of the most severe North American pandemics for Native Americans (Ashburn 1947; Dobyns 1966, 1983; Duffy 1953; Lehmer 1971, 1977a; Meyer 1977; Osgood 1964; Simmons 1966; Stearn and Stearn 1945; Thwaites 1969, 5:347- 48). Stearn and Stearn (1945) record the spread of the epidemic to every major cultural area over a four-year period. Lehmer (1971:172-79, 1977a:106) follows the Stearns'

Table 15.2. Reported epidemic outbreaks and vaccinations among the Upper Missouri Hidatsa.

Year	Disease	Mandan	Hidatsa	Arikara	Other Tribes
1780-84[a]	small pox	x	x	x	all other Great Plains tribes
pre-1795[b]	smallpox			3 epidemics before 1795	
1801-02[c]	smallpox/ cholera				Omaha, Ponca, Oto, Iowa; certainly other Northern Plains tribes
1806[d]	whooping cough	x	x		
1818-19[e]	smallpox				Assiniboin, Dakota
1830[f]	smallpox				unnamed tribes near Fort Leavenworth
1831-32[g]	smallpox			x (?)	major epidemic, Pawnee; minor epidemic, Omaha, Ponca, Sioux, Kanza, Missouri, Oto, Osage, Delaware, Shawnee

Table 15.2. Continued.

Year	Disease	Mandan	Hidatsa	Arikara	Other Tribes
1831[h]	vaccination				checks epidemic among Oto, Omaha, Ponca
fall 1832[i]	vaccination				Delaware, Oto, Omaha Shawnee, Osage, Iowa, Yankton, Winnebago, Pawnee, Teton, Potawatomi, Sioux
1833[j]	cholera				6 Euroamericans die at Bellevue; Oto, Omaha flee
winter 1833-34[k]	whooping cough	x			
1834[l]	cholera (?)		x (?)	x (?)	
April 1835[m]	minor epidemic among children, etiology unknown	x	possible		
August 1835[n]	minor epidemic, some form of dysentery	x	possible		
July 14, 1837-June 1838[o]	smallpox	x	x	x	most Northern Plains tribes

[a]Lehmer 1971:165-78, 1977a:105-6, 1977b: Mooney 1928; Stearn and Stearn 1945.

[b]Nasatir 1952, 1:299.

[c]Stearn and Stearn 1945:72-92; Thwaites 1969, 1:109-10, 5:90, 96, 1966d, 22:271-74.

[d]Gough 1988:233; Wood and Thiessen 1985:270-271.

[e]Mallery 1886, 4:103-10; Stearn and Stearn 1945:78; Thwaites 1966c, 14:275.

[f]Letter, Dougherty to Clark, August 9, 1831 (NARS); Letter, Bryant to Cass, August 26, 1831 (NARS); Report, Eakin to Cass, November 25, 1834, U.S. Serial Set 248, Vol. 5, Doc 512.

[g]Ewers 1961:57-58; Report, Dougherty to Clark, October 29, 1831, U.S. Serial Set 245, Vol. 2, Doc. 512; Letter, Dougherty to Clark, October 31, 1831, U.S. Serial Set 245, Vol. 2, Doc. 512; Report, McCoy to Cass, March 6, 1832, U.S. Serial Set 246, Vol. 3, Doc. 512; Report, McCoy to Cass, March 23, 1832, U.S. Serial Set 220, Vol. 5, Doc. 190.

[h]Report, McCoy to Cass, March 23, 1832, U.S. Serial Set 220, Vol 5, Doc. 190; Letter, T. Papin to P.M. Papin, July 28, 1832 (MHS).

Table 15.2. Concluded.

[i]Letter, Dougherty to Cass, June 6, 1832 (NARS); Letter, Daugherty to Cass, August 12, 1832 (NARS); Letter, Davis to Cass, October 21, 1832 (NARS); Letter, Davis to Cass, November 16, 1832 (NARS); Letter, Dougherty to Clark, November 20, 1832 (NARS); Report, Herring to Cass, November 22, 1832, U.S. Serial Set 233, Vol. 1, Doc. 2; Letter, Martin to Cass, November 28, 1832 (NARS); Report, Herring to Cass, December 1, 1832, U. S. Serial Set 233, Vol. 1, Doc. 2, No. 10; Letter, Dougherty to Cass, December 6, 1832 (Nars); Report, Herring to Cass, January 31, 1833, U.S. Serial Set 234, Vol. 2, Doc. 82; Report, Herring to Cass, February 1, 1833, U.S. Serial Set 234, Vol. 2, Doc. 82.

[j] Letter, Pilcher to Chouteau, August 21, 1833 (MHS); Letter, Clark to Kurts, September 3, 1833 (NARS); Letter, Pilcher to Chouteau, September 11, 1833 (MHS).

[k]Thwaites 1966d, 23:236-37.

[l]Hewitt 1937:76-77.

[m]Abel 1932:29.

[n]Abel 1932:45.

[o]Abel 1932:115-45; Dollar 1977:15-38; Meyer 1977:83-110; Trimble 1986; Letter, Pilcher to Halsey, May 30, 1837 (MHS): Letter, Pilcher to Clark, June 10, 1837 (NARS); Letter, Pilcher to Clark, July 1, 837 (NARS); Letter, Chardon to Papin, November 28, 1837 (MHS); Letter, Mitchell to Papin, December 1, 1837 (MHS); Letter, Alcrow to Papin, January 17, 1838 (MHS); Letter, Pilcher to Clark, February 5, 1838 (NARS); Letter, Pilcher to Clark, February 27, 1838 (NARS).

lead by suggesting that the pandemic spread to the Upper Missouri tribes along the horse-trade route that originated in the Southwest (Ewers 1955). In addition, he cites the Stearns' (1945:46-48) contention (cf. Warren 1885) that the northward spread of the epidemic to Canadian populations was a result of the Objibwas contracting smallpox when they raided an Hidatsa village during the epidemic.

Although there is no primary document on the Upper Missouri groups during this period, there is little doubt that the epidemic drastically reduced the populations of the region. As discussed below, testimony provided by Truteau, Lewis and Clark, and Maximilian after 1780 confirms that residents of the Upper Missouri regarded the epidemic as catastrophic to their way of life. To fully appreciate the magnitude of the destruction wrought by the 1780-1781 epidemic, it is instructive to consider the following description (Stearn and Stearn 1945:45-48; cf. Warren's *History of the Ojibway*):

> The disease raged over the upper Missouri, the Saskatchewan and Columbia River and Great Slave Lake region paralyzing the fur trade for two years...Starting on the Missouri River the previous year, this epidemic is said to have destroyed from a third to a half of the Indians in the area which it devastated. Among the tribes particularly hard hit at this time was the Gros Ventres. In 1781 a war party of Kenistenos, Assiniboin and Ojibways proceeded from the great Kenisteno village on the "Dead" River near its outlet into the Red River of the north, and moved westward to the Missouri River until they came to the village of the Gros Ventres, which they attacked. Resistance made to their attack was very feeble, so that they soon rushed forward to secure their scalps. They found the lodges of the village filled with dead, and the stench so terrible that they quickly retreated, carrying the scalps of those they had killed. One exceptionally large scalp they fixed to a stick, and, on their journey homeward,

> this stick was planted erect in the ground at night while they camped. On five successive mornings they found the scalp leaning to the west, and this phenomenon aroused their superstitious fear, so that, after one of their party became sick and died, they fled precipitatedly homeward. However, every day some sickened and died, so that, out of the considerable number of warriors who had started on the journey, only four survived to return to their village on Dead River. Smallpox soon depopulated the village.

The Mandans, Hidatsas, and Arikaras suffered terribly during the epidemic. Although no firsthand description exists from this crucial period in the history of the village tribes, the archeological record is of considerable help, as it shows a sudden abandonment and rapid movement north by all three village groups (Lehmer 1971:172-79). Although this movement should not be equated uncritically with an epidemic episode, the pattern of epidemic outbreak, depopulation, movement, and coalescence is common in substantive documentation detailing Native American response to epidemic disease (Dobyns 1983; Hanson 1987; Ramenofsky 1982).

1787

There is no substantial account of the Mandans, Hidatsas, and Arikaras between 1784 and 1787. In the latter year James Mackay, a trader based on the Qu'Appelle River in present-day Saskatchewan, apparently visited five villages near the mouth of the Knife River (Quaife 1916). The account was produced either by Mackay or perhaps for him many years after the journey. Mackay does not mention the Knife River by name, but his description of the region is similar to those found in accounts provided by Truteau in 1795 and Evans in 1796 (Abel 1921:172-73; Nasatir 1952, 2:495). Mackay relates that:

> The Mandains, jointly with the Manitouris (Minitaree) and Wattasoons live in five Villages, which are almost in sight of one another, three of those Villages are on the South of the Missouri and Two on the North Side. The Situation of those five Villages is charming they are build on an Elevated plaine, even the fertile which extends on either Side to a considerable distance... [Nasatir 1952, II:492-93]

Chomko (1986), in his description of the ethnohistory of the upper Knife-Heart region, points out that Mackay's account can be interpreted essentially two ways, by assuming that a) when he wrote the description years later he incorporated material from John Evans' expedition of 1796 or b) the villages described were present in 1787. The second assumption is accepted tentatively by this author, for it conforms closely to village descriptions provided by Truteau in 1795.

1790-1803

A dramatic increase in the number of Euroamerican visitors to the upper Missouri River occurred between 1790 and 1803, primarily as a result of growing competition among various fur-trade concerns. Descriptions of epidemics during this period are scarce, but there is enough evidence to suggest probable trends in epidemics and their spread.

Individual explorer/traders greatly expanded their contact with the village tribes beginning in the 1790s; however, we should not ignore two groups of Euroamericans who also increased their presence on the Upper Missouri during that time period. Wood and Thiessen (1985:42-47) point out that "free traders," men working for themselves or for small companies, and "tenant traders" (Lehmer 1971:170-71), those individuals who traded and lived among the villagers for varying periods of time, increased in number and volume of activity during the period. A French-Canadian named Menard is known to have settled among the Mandans sometime between 1778 and 1783 and is regarded as one of the earliest tenant traders, yet little is known of him. He was joined in the 1790s by at least two men: René Jusseaume (Tyrrell 1968:209; Gough 1988:224-225), and Toussaint Charbonneau (Stewart 1975:83-84). While these men left no records of their experiences, their role as perhaps the earliest brokers between Euroamerican trading posts and aboriginal villages qualifies them as potential means for introducing infectious diseases.

An even more intriguing set of host vectors for the village tribes during this period recently has been documented. In a study focusing on the history of the Canadian fur traders and the village tribes, Wood and Thiessen (1985) demonstrate that beginning about 1790 there were regular, annual trade expeditions to the Mandans and Hidatsas by the Hudson's Bay and North West companies. While none of the documents examined by Wood and Thiessen records instances of epidemic episodes, the existence and magnitude of contact revealed by their study suggests that a regularized mechanism existed for the diffusion of epidemic diseases to the villages.

Between 1790 and 1792 Jacques D'Eglise, a fur trader licensed by the Spanish out of St. Louis, made several trips to the Missouri River. His limited observations were reported by Zenon Trudeau to Governor-General Hector Carondelet. D'Eglise claimed to have reached the Mandans on the Upper Missouri and to have found them established in eight fortified villages (Nasatir 1952, 1:160-61). Meyer (1977:30) and Chomko (1986:70), however, suggest that the eight-village count may refer to both summer and winter villages of the Mandans and Hidatsas. D'Eglise provided Trudeau with no locational data, so it is impossible to estimate where the tribes were living at the time. D'Eglise estimated the population of the villages at four to five thousand individuals.

Descriptions of the Arikaras during the period are rare. Chomko (1986) interpreted the Biddle (Jackson 1962:537) and Bradbury/Brackenridge (Thwaites 1966a, 5; 1966b, 6) notes and determined that the most that can be said about the Arikaras in the early 1790s is that they were living near the Cheyenne River. Population and village estimates do not exist.

In 1794 fur trader and explorer Jean Baptiste Truteau led an expedition up the Missouri River. Truteau's journal is of especial importance, as he describes tribal locations and is the first Euroamerican to address the consequences of epidemics on the Upper Missouri. Truteau found the Arikaras living below the Cheyenne River in October, 1794 (Abel 1921:164-65). He did not see the Mandans but was provided with information (Abel 1921:171) placing them in the Painted Woods area, or near the Knife River. Returning to the Arikaras in 1795 he again found them living in two villages a few miles below the Cheyenne River. During the visit Truteau questioned the Arikaras about their lifeways and recorded the first epidemiological review of the effect of infectious diseases upon the Arikara nation:

> In ancient times the Ricara nation was very large; it counted thirty-two populous villages, now depopulated and almost entirely destroyed by the smallpox which broke out among them at three different times. A few families only, from each of the villages, escaped; these united and formed the two villages now here, which are situated about half a mile apart upon the same land occupied by their ancestors. The differences of opinion and the wrangles for authority which arise among the Chiefs, although the Indians live independently and without subordination, cause discord and misunderstandings among them and give to the young men occasion to make trouble and attack nations, which otherwise would wish for peace and union. This nation formerly so numerous, and which, according to their reports, could turn out four thousand warriors, is now reduced to about five hundred fighting men, as I have said, and what is more the lack of harmony which exists among the Chiefs has caused the nations to be divided into four parts. Two of the Chiefs, jealous no doubt of the kind of superiority and consideration acquired by the Chiefs who now dominate in these villages, as well with us as with the other nations, seceded last spring with their bands; one is gone to make his residence with the Pani-Mahas, the other with the Mandans. [Nasatir 1952, 1:299]

The importance of Truteau's statement cannot be overemphasized. Even allowing for potential exaggeration on the part of his informants regarding former village numbers (an estimate I agree with and which is

supported by archeological remains [Lehmer 1971:131-172]), nine major cultural and biological processes relevant to epidemics among the sedentary village tribes are described:

1. The pre-1795 Arikaras were a large and growing population, perhaps sixteen times larger than any Arikara nation ever seen by Euroamericans.

2. The Arikaras observed by Euroamericans in the late eighteenth century were at best a remnant population.

3. The Arikaras by their own admission were the remains of a once larger population whose numbers had been diminished principally through infectious disease (smallpox).

4. At least three major epidemics occurred among the Arikaras during the eighteenth century, all before 1795.

5. Mortality from the epidemics was high, as only a few families from each village escaped.

6. The response to the epidemics appears to have been dispersion followed by a later coalescence.

7. The major cultural ramifications beyond massive mortality appear to have been constant internal feuding among various chiefs and their followers for control of the remaining two composite villages.

8. The constant feuding many times resulted in a fissioning of offended groups from the two remaining villages.

9. The feuding and fissioning produced frequent long-distance movements of the Arikaras, which probably explains the nomadic and hostile character attributed to them in the late eighteenth and early nineteenth centuries.

As we proceed, it will be shown that the general trends first recorded by Truteau are a recurring theme for the village tribes of the Upper Missouri.

Truteau spent the winter of 1795-1796 among the Arikaras, and the additional information he gathered bears repeating.

In early 1795 the Arikaras lived in two villages below the Cheyenne River; the Mandans and Hidatsas lived in five villages near the Knife River (Abel 1921:172-73). By spring of 1795 a group of Arikaras moved upriver, settling near or with the Mandans, and in July, 1795, appear to have established an independent village in the Painted Woods area. The Mandans and Hidatsas were living near the Knife River in 1795. In late 1795 or early 1796 the Arikaras who had remained in the Cheyenne River settlements abandoned them, moving near the Mandans (Chomko 1986:71-77).

The next significant account in our chronology is a firsthand description and map showing the location of the Mandans, Hidatsas, and Arikaras. John Evans, representing the Missouri Company, a Spanish fur trading concern, visited the Upper Missouri villages in the fall of 1796 (Chomko 1986:75-77; Meyer 1977:33; Nasatir 1952, 2; Wood 1981). Chomko believes that (based on Evans' account) the Arikaras were living in at least one village in the Painted Woods area, while the Mandan and Hidatsa villages were located near the Knife River. He notes that the number and distribution of Mandan and Hidatsa villages are open to question and cautions that there were at least three villages but perhaps as many as five. His caution calls attention to the fact that Evans visited in the fall and may have recorded winter villages, thus inflating the count (Chomko 1986:75-77). Wood (1981) is less cautious than Chomko and identifies five villages from Evans' map, four on the right bank and one on the left bank. According to his interpretation, the Mandans occupied three villages—the Deapolis site (right bank), the Black Cat site (left bank), and the Sakakawea site (right bank of the Knife River), a village they shared with the Hidatsas. The Hidatsas occupied two villages—the Amahami site, located below the mouth of the Knife River, and the Big Hidatsa site, on the north bank of the Knife River (Wood 1981:48). Wood's confidence in the village locations and descriptions appears justified, as the information presented by Evans is supported by independent information obtained by explorer David Thompson when he visited the same villages in December, 1797, and January, 1798.

Thompson, employed by the North West Company, a Canadian concern, arrived at the villages on December 30, 1797, and departed on January 10, 1798, producing a first-class "narrative" and a map of the Knife River villages (Tyrrell 1968:209-37; Wood 1977:329-342). His descriptions are significant here, as they provide information on number, size, and composition of the Manadan and Hidatsa villages. His work is of such quality

that Wood (1977:330) regards Thompson as "...the only explorer before Lewis and Clark whose work is truly useful in locating the Mandan and Hidatsa villages with precision."

Wood's (1977) discussion of Thompson's previously unpublished field notes in conjunction with his published map (Wheat 1957-1963, 1:Map 246) and "narrative" (Tyrrell 1968) is crucial for our chronology, for it shows the Mandan and Hidatsa villages to be such more heterogeneous than believed previously.

The core of Wood's study highlights significant ambiguity in Thompson's statements about village size and composition when one compares previously published accounts of Thompson, his maps, and the new information Wood unearthed. The three data sets enable us to present the detailed demographic information collected by Thompson, which is listed in Table 15.3.

Thompson's map shows, and his notes describe, six villages occupied by the Hidatsas, Mandans, and Arikaras. Two villages were occupied solely by the Hidatsas: an unnamed upper Hidatsa winter village and Big Hidatsa. Three other communities are composite villages, ranging from predominantly Mandan (Black Cat) to 71 percent Mandan (Sakakawea) to 66 percent Mandan (Deapolis) (Wood 1977:340). The easternmost village can be characterized as Arikara, but its composition is unknown, as Thompson did not visit it. Thus, by 1797-1798 there were reliable data which suggest that tribal autonomy and homogeneity were perhaps nothing more than Euroamerican constructions of reality.

Chomko (1986:77-80), citing Biddle (Jackson 1962:357), suggested that between 1798 and 1803 the Arikaras alluded to by Thompson left the Painted Woods area and moved southward, establishing themselves in the vicinity of the Grand River. In 1804 Lewis and Clark

Table 15.3. Mandan, Hidatsa, and Arikara village size and composition as recorded by David Thompson in 1797-1798.

Village	Narrative[a]	Notes (Sets I/II)[b]	1798 Map[c]
Upper Hidatsa	31 houses, 7 tents	31 houses, 7 tents	31 houses, 7 tents
Big Hidatsa	82 houses	82 houses	82 houses
Sakakawea	Mandan/Hidatsa 52 houses; "mostly all" Mandan	Mandan/Hidatsa 37 houses/15 houses	Mandan/ Hidatsa 52 houses
Black Cat	Mandan 40 houses	"mostly all" Mandan	Mandan 40 houses
Deapolis	Mandan	Mandan/Hidatsa 2/3 houses Mandan; remainder Hidatsa	Mandan/ Hidatsa "113 houses"
unnamed Arikara	Arikara	Arikara	Arikara

[a]Tyrrell 1968.

[b]Wood 1977.

[c]Wheat 1957-1963.

found them living in two mainland and one island village above the Grand River (Abel 1939:124; Chomko 1986:81; Thwaites 1969, 1:183-184, 186, 188). The island community (Ashley Island) has been washed away by the Missouri, but the mainland villages can be identified as the Leavenworth site (Krause 1972:15).

In 1801-1802 an epidemic of smallpox swept the Great Plains (Lehmer 1977a; Stearn and Stearn 1945; Taylor 1977). Many sources suggest that the villagers experienced massive mortality from this epidemic. Stearn and Stearn (1945:75), citing Thwaites (1969, 7:90-91) and McGee (1897:196), argue that the epidemic "devastated" the village tribes. Lehmer (1977a) and Taylor (1977) follow this interpretation. While there is evidence that tribes along the lower Missouri (the river below present-day Sioux City, Iowa)—such as the Omahas, Poncas, Otoes, and Iowas—were "devastated" (McGee 1897:192; Thwaites 1969, 1:109-110; 5:90, 967; Thwaites 1966d, 22:271-174), the evidence cited does not begin to support the Stearns' contention for the Mandans, Hidatsas, and Arikaras. Their evidence consists of references a) to McGee (1897), who makes no mention of an 1801-1802 epidemic, b) to Lewis and Clark, who refer only to the Omahas, Poncas, and other lower Missouri tribes, and c) to several other authors who either mention smallpox in general or infer that the epidemic affected the village tribes (Brittain 1903:388; Morse 1822; Thwaites 1969, 5:80; 1966e, 28:146). In short, the Stearns' references to this epidemic as a "devastator" of the village tribes appear to be without substance, and other authors have been careless in perpetuating this myth. Had the village tribes been affected seriously by smallpox, we would expect to see some reference to this in Lewis and Clark's journals of 1804-1805. The expedition spent the winter of 1804-1805 among the Mandans and Hidatsas, and it is unlikely that they would have failed to note or learn of a "devastating" epidemic that took place only two years before their visit—especially in light of the fact that they documented the epidemic among tribes of the lower Missouri (Thwaites 1969, 1:110).

1804-1806

Lewis and Clark's arrival on the Upper Missouri in 1804-1805 signaled the beginning of a flood of visitors to the region. Their activities there merit special attention as the documents relating to the excursion provide chronological data for the period 1804-1805 as well as for earlier periods.

On its trip up the Missouri in 1804, the party encountered the Arikaras living in three villages above the Grand River. A fourth Arikara village (located on the left bank) is illustrated on Clark's map (Moulton 1983:Map 25). The accompanying caption reads "This village is composed of nine different tribes of Panais reduced by the Sioux and obliged to assemble in one village for fortification. The other two villages are Ricarais proper — also a tribe of the Pania nation." This village is mentioned by no other authority, as the site later was destroyed by the Missouri River. Regardless, the site location is important information, for it demonstrates both the coalescent nature of a stressed society and that the Arikaras once were a much larger group.

The expedition arrived in the Knife-Heart region in October, 1804. The Mandans occupied two villages just below the Knife River (Thwaites 1969, 1:108-12). Most scholars agree that these are essentially the same villages (Deapolis and Black Cat) visited by Thompson in 1797-1798 (Chomko 1986:81). The Hidatsas were living in three villages (Big Hidatsa, Sakakawea, and Amahami), all within sight of the Mandan villages. Lewis and Clark constructed their winter camp approximately three and a half miles below the two Mandan villages.

While journeying to and living among the Mandans, Hidatsas, and Arikaras, Lewis and Clark made a number of significant observations on the villagers. One of these concerned the recent history of the tribes and their substantial decline in numbers from epidemic disease during the late eighteenth century. The history of the Mandan villages prior to the 1780-1781 epidemic varies according to the editor involved in the various Lewis and Clark transcriptions. However, the trend of depopulation through epidemics, followed by coalescence and eventual abandonment of the Heart River villages is constant. For example:

> ...About 25 years since they [the Mandans] lived in six villages, about forty miles below their present villages, [in the Heart River area], on both sides of the Missouri. Repeated visitations of

the small pox, aided by frequent attacks by the Sioux, has reduced them to their present number. [Thwaites 1969, 6:90]

the Mandans formerly lived in 6 [nine] large Villages at and above the mouth of *Chischeter* or Heart River four [Six] Villages on the West Side [*of the Missouri*] & two [*three*] on the East one of those Villages on the East Side of the Missouri & the larges[t] was entirely cut off by the Seaux & the greater part of the other and the Small Pox reduced the others. [Thwaites 1969, 1:271]

The history of the Mandans, as we received it from our interpreters and from the chiefs themselves, and as it is attested by existing monuments, illustrates more than that of any other nation the unsteady movements and the tottering fortunes of the American Indians. Within the recollection of living witnesses, the Mandans were settled forty years ago in nine villages, the ruins of which we passed about eighty miles below, seven on the west and two on the east side of the Missouri. These two, finding themselves wasting away before the smallpox and the Sioux, united into one village, and moved up the river opposite the Ricaras. The same causes reduced the remaining seven to five villages, till at length they emigrated in a body to the Ricara nation, where they formed themselves into two villages, and joined those of their countrymen who had gone before them. In their new residence they were still insecure, and at length the three villages ascended the Missouri to their present position. [Coues 1965, 1:196-97]

Lewis and Clark's information on the Mandans is clear—massive depopulation by epidemic episodes weakened the Mandans in the latter part of the eighteenth century. Mortality among the villagers was so acute that at least four villages collapsed as functioning social units. The response was coalescence of villages for protection against the Sioux and the eventual abandonment of territory to the Sioux, followed by a movement northward to live near the Hidatsas on the Knife River in the late eighteenth century.

The Hidatsa summer villages are not described in Lewis and Clark's account, but they can be located on Clark's maps (Moulton 1983:Maps 29, 33, 46). Three summer villages are depicted: Big Hidatsa, Sakakawea, and Amahami. Chomko (1986:81-85) has demonstrated that Biddle's notes are perhaps the most informative in discussing the Hidatsas; however, no data exist even in these notes that imply any then-recent epidemic among the Hidatsas. Given Lewis and Clark's sketchy discussion of the Hidatsas, the lack of data suggesting epidemics among the tribes may be more apparent than real.

The final set of information gathered by Lewis and Clark addresses population levels, and though not exact (given their methods) serves as a general scale. The two Mandan villages were credited with 350 warriors and a total population of 1,250. The Hidatsas were estimated at being able to raise 500-600 warriors and had a reported population of 2,500-2,700 (Thwaites 1969, 1:220; 6:89-91).

In summary, the Lewis and Clark information is invaluable because it establishes that a) in 1804-1806 the Mandans and Hidatsas were living in five villages clustered on or near the Knife River; b) the Mandans occupied two villages and the Hidatsas three; c) the Mandans and surely the Hidatsas suffered major population loss from epidemics in the latter part of the eighteenth century; d) the epidemic episode(s) reduced the Mandan villages by at least two thirds; and e) population loss was massive and the Mandans, no longer able to defend themselves, coalesced and moved northward for protection with the Hidatsas.

Alexander Henry the Younger, another fur trader, visited the Knife River Mandan-Hidatsa villages in 1806 and recorded the number of lodges in several of the villages. The Hidatsas were living in three villages: Big Hidatsa ("about 130 Huts"), Sakakawea ("about Sixty Huts") and Amahami ("about forty huts") (Gough 1988:234-235). While it cannot be presumed that every lodge was occupied, the information reveals a general

level of population. More importantly, Henry commented on the effects of epidemics of the late eighteenth century and offered an estimate of the reduction suffered by the Hidatsas:

> Formerly this Village [Big Hidatsa] consisted of nine hundred Huts. But the Small Pox and other diseases have reduced them to their present number. They have been settled upon this Spot time out of mind. [Gough 1988:237]

The source of Henry's figure of 900 lodges is unknown and clearly wrong, but the magnitude of loss is clear. The Hidatsas once had been a much larger group—certainly three to four times the population first observed and recorded by Euroamericans. Henry is less precise on his observation for the Mandans. It appears he visited Black Cat's village for he refers to the "people of the opposite Village" (Gough 1988:221). Chomko (1986:85) believes this reference is to the Deapolis site—an interpretation supported by observations made by Lewis and Clark.

Henry's observations are useful for locating the villages and providing general lodge counts for the Hidatsas, but his main contribution is the documentation of an epidemic of whooping cough in the Mandan villages during his visit in 1806. Although the following observation was made from the Mandan Deapolis village, it is possible that the epidemic affected all the Knife River villagers:

> The natives here at present are mostly affected with a bad cough which takes some of them off. Aged and infirm persons and young Children are the common victims to this disease. It is a kind of Hooping Cough which has made its appearance all through the Red and Assineboine Rivers and even to Fort des Prairies and several other parts in the Northwest and has carried off numbers of people. [Gough 1988:233]

Additional information on the 1806 whooping cough epidemic comes from Charles McKenzie, another fur trader who was visiting the Mandan-Hidatsa villages at the same time as Henry. His observations suggest strongly that both the Mandans and Hidatsas were suffering from whooping cough:

> There was at this time a violent Cough, or a Chincough among the Missurie Indians which carried away, by their own calculation, 130 souls old & young in less than a months time— The old men & women whose constitution was worn out, fell an easy prey unregrated to this disease & the Children had not strength enough to resist its violence Indeed many a person of a middle age were carried away in the carnage— It was not a strange thing to see two or three dead in the same Lodge at once; & I was apprehensive that myself & Mr. Caldwell might caught it which luckily we did not— It was no less than a touching scene to see the poor old women groaning away their *last*, in some corner without the least notice being taken of them— If they recovered they got to ate when they prepared it, & if they died they were removed when their survivors were at leisure— But their *simple* attention to their Children was great— their lamentation, drumming singing & jugglay [?] were insupportable to hear... [Wood and Thiessen 1985:270-71]

In sum, Henry and McKenzie provide significant information for the general epidemic chronology of the Upper Missouri. Henry provides lodge and village counts, and both document what appears to have been an epidemic of whooping cough among the villagers in 1806.

The period after Lewis and Clark and Alexander Henry was one of rapid expansion of the American fur trade into the Mandan- Hidatsa area. The impact on the Native Americans living on the Missouri River was significant and overwhelming. A number of publications document and synthesize the tremendous complexity of this economic and demographic shift that came to be called "The Fur Trade of the American West" (Chomko 1986; Devoto 1947; Ewers 1954, 1955; Hanson 1987; Lehmer 1971; Meyer 1977; Ray 1974; Wishart 1979; Wood and Thiessen 1985; see also Chapters 13 and 14 of

this volume). The complexities tied to tribal movements from 1807 to 1837 are addressed adequately by these studies, and the reader is referred to them for a detailed analysis of the fur trade. Only those studies that significantly enhance our epidemic chronology for the Plains Village populations are addressed in this exercise.

1811-1816

In 1811 John Bradbury, a British naturalist, and Henry M. Brackenridge, an adventure-seeking writer and jurist, accompanied separate expeditions up the Missouri River as far as the Knife River villages (Thwaites 1966a, 1966b). The journals they kept reveal a continuing movement and contraction of the village tribes. The Arikaras occupied the two river bank villages near the Grand River, but by 1811 had abandoned their island village. Bradbury estimated that the southern village contained 150-160 lodges (Thwaites 1966a:131). There is no population estimate for the northern village. The five Mandan and Hidatsa villages continued to be centered around the Knife River, a situation apparently unchanged since 1806 (Thwaites 1966a:151-153, 162-163; 1966b:137-38).

As noted earlier, the abandonment and movement of villages probably represented a cultural adjustment to stress created by the increased raiding of the Sioux, epidemic episodes, or both.

The next significant body of data that sheds light on demographic trends during the early nineteenth century is in a document prepared in 1816 by the Office of the Governor of the Missouri Territory. The report, dated November, 1816, and signed by Governor and Superintendent of Indian Affairs William Clark, summarizes agent and civilian observations of the populations of the Upper Missouri (Missouri Historical Society, census prepared by W. Clark, November 4, 1816). The names of tribes, total population estimates, locations and number of villages occupied, and probable number of men for each tribe are recorded. The sources for the collated data are not identified, but the report clearly is based on firsthand observations and represents a careful estimate of demographic conditions.

The Arikaras are reported to have had three villages on the west side of the Missouri "above the Cheyennes," with a population of 3,000 and a "warrior" force of 750 men. The Mandans are listed as living in two villages "1600 miles up by water." This appears to refer to the Knife River area. A total population of 1,600 is given, including 350 men (warriors). The Hidatsas are recorded as living in three villages "Near the Mandans." Their population is estimated at 2,800 individuals, with 650 warriors.

1818-1819

The next recorded epidemic on the Missouri River occurred in 1818-1819. Steam and Steam (1945:78) document what they call a rather severe smallpox epidemic that affected portions of the Assiniboins and Dakotas living along the White River in present- day South Dakota. The outbreak apparently was localized, as there is no suggestion that it spread to the Mandans, Hidatsas, or Arikaras. However, lack of historical reference does not preclude an impact on individual bands that may have come in contact with the disease.

1822-1830

Sometime before 1822 at least one Mandan village near the Knife River was abandoned. Chomko (1986:86-87) cites Thwaites (1969, 1:216; 7:69; 1966d, 22:349; 23:233) as evidence that a village relocation occurred, with the southernmost village becoming the Fort Clark site. The second Mandan village lay several miles north but is not identifiable.

The years 1823-1824 were a time of great upheaval for the Arikaras. General William H. Ashley's fur-trading expedition was attacked by the two west-bank Arikara villages that were located six miles above the Grand River (Robinson 1902:181). Colonel Henry Leavenworth, sent by the U.S. Army to punish the Arikaras, found them "...in two villages: the lower one containing seventy-one dirt lodges, and the upper village seventy dirt lodges..." (Robinson 1902:199).

After the skirmish the Arikaras abandoned their villages, which then were burned by the Americans (Dale 1941:81; Robinson 1902:199). The Arikaras retreated northward toward the Mandan villages, and Chomko (1986:87-88) argues convincingly that they spent the winter approximately one mile below the future Fort Clark, returning to the Grand River villages in the spring of 1824. The journal of the expedition of Atkinson and

O'Fallon in 1825 refers to one Arikara village two miles above the Grand River as well as to a series of temporary camps—some of which no doubt were winter camps (Reid and Gannon 1929:30, 32). The journal places the Mandans and Hidatsas in their Knife River setting: "The Mandan village...is situated on the right bank...the river bearing northwest...situated above this 4 miles is another Mandan village...Three Grovont dirt villages stand at intervals three miles above..." (Reid and Gannon 1929:34).

Another set of supporting demographic data detailing village and lodge counts for the Plains horticulturists in 1830 comes from a journal kept at the Ft. Pierre trading post. Jacob Halsey, a clerk for the "Upper Missouri Outfit" most likely is the author of the journal, which spans the period 1827-1830. Writing from Fort Pierre in 1830, Halsey remarked that the Mandans lived in

> 2 villages, one of thirty and the other of about sixty wigwams...The Minitarees...live but a short distance above the Mandans...They have three villages...The Arriccairas Indians lived in dirt wigwams on the banks of the Missouri River, about sixty leagues below the Mandan villages. They have two villages and can muster about 550 warriors. [Robinson 1918:104, 106-7]

In the summer of 1830 a smallpox epidemic occurred on the lower Missouri River in and around the Indian Agency at Fort Leavenworth. The tribes involved are unknown, though they could have included groups of Osages, Kansas, Delawares, Kickapoos, or Shawnees—all of whom lived near the agency or were assigned to it. Two letters establish that an apparently localized epidemic took place: a) a letter from a doctor asking for payment for his services in vaccinating the affected populations, and b) a letter from John Dougherty, agent of the Upper Missouri Agency, supporting the doctor's claim and stating that the vaccinations were needed to prevent the spread of smallpox (Dougherty to Clark, August 9, 1831, NARS; Bryant to Cass, August 26, 1831, NARS). The tribes affected, the morbidity and mortality rates, and the number of individuals vaccinated remain unknown.

1831-1834

The year 1831 was a crucial one for all Missouri River tribes. In that year a smallpox epidemic ravaged most tribes living on the lower part of the river (the Missouri River below present-day Sioux City, Iowa). George Catlin, an artist, and John Dougherty, Indian agent for the Upper Missouri Agency, are the principal informants for the epidemic. Catlin, in 1832, saw the results of the outbreak, and Dougherty witnessed the epidemic. The disease apparently was introduced among the Pawnees (living on the Platte River) by fur traders. Catlin (1973, 2:24) stated that 10,000 Pawnees perished (a gross exaggeration) and claimed that the Omahas, Otoes, and Missouris were so reduced that they coalesced and for a time even merged with the remaining Pawnees. Catlin (1973, 2:25) reported that the Sioux, Osages, Kansas, and Poncas also suffered from the epidemic.

The impact of the 1831 smallpox epidemic on the lower Missouri tribes can be assessed by examining the correspondence between Dougherty and his superior in St. Louis, William Clark. Dougherty visited the Pawnees and Omahas in September and October of 1831 while the epidemic was in progress and recorded a scene of terror among the Pawnees that was repeated many times when smallpox struck virgin-soil populations:

> I have returned from a visit to the four Pawnee villages, all of whom I found in a most deplorable condition. Indeed their misery defies all description. Judging from what I saw during the four days I spent with them, and the information I received from the chiefs and two Frenchmen who reside with them and speak their language well, I am fully persuaded that one half the whole number of souls of each village have and will be carried off by this cruel and frightful distemper. They told me that not one under thirty-three years of age escaped the monstrous disease, it having been that length of time since it visited them before. They were dying so fast, and taken down at once in such large num-

> ber, that they had ceased to bury their dead, whose bodies were to be seen in every direction, laying about in the river, lodged on the sand-bars, in the hog- weeds around their villages, and in their old corn cashes [sic]: others again were dragged off by the hungry dogs into the prairies, where they were torn to pieces by the more hungry wolves and buzzards. Their misery was so great and so general, that they seemed to be unconscious of it, and to look upon the dead and dying as they would upon so many dead horses... [23rd Cong., 1st sess.l, *S. Doc. 512*, Serial 245, pp. 718-719]

A gross estimate of other tribes affected and levels of mortality suffered by the groups can be assessed from two letters written by Isaac McCoy, a surveyor who reported to Secretary of War Lewis Cass on what he learned while surveying in the territory during the time of the epidemic. McCoy reported that the Shawnee, Delaware, Ponca, Omaha, Oto, and Pawnee tribes contracted smallpox and that nine Shawnees and 15 Delawares died before the disease was arrested by vaccination efforts. Approximately 160 individuals died among the Otoes, Omahas, and Poncas before they were vaccinated (22nd Cong., 1st sess., *H. Ex. Doc. 190*, Serial 220, p. 3; 23rd Cong., 1st sess., *S. Doc. 512*, Serial 246, pp. 230-241). The Pawnees apparently were not vaccinated, and between three and four thousand died—approximately half their population. It is clear that the 1831 epidemic was arrested by vaccination among most lower Missouri populations except for the Pawnees, who from the descriptions appear to have had a number of susceptibles in their population, no doubt the result of 33 years of isolation from smallpox.

Despite the virulence of the epidemic, no evidence suggests that the Mandans and Hidatsas became infected. The Arikaras, however, are quoted as having contracted the disease. Edwin T. Denig (chief factor at Fort Union) stated that "...while on the Platt, they caught the smallpox of which disease about three hundred of them died" (Ewers 1961:57-58). Additional indirect support placing a portion of the Arikaras outside the Missouri trench (and perhaps near the Platte River) is in a letter that J. F. A. Sanford, Indian agent for the Mandans, wrote to William Clark in 1832. Sanford claimed that the Arikara villages were burned by the Sioux in the fall of 1831, at which time a portion of the Arikaras "went into the plains" (Sanford to Clark, July 17, 1832, NARS). These statements suggest that a portion of the Arikaras contracted smallpox in 1831 (perhaps while visiting their relatives, the Pawnees) and that the remainder of the population was unaffected.

Beginning in 1832 and continuing through the end of the decade, our knowledge of the village tribes' epidemic history is fairly complete, primarily a result of increasing and prolonged Euroamerican contact. Thiessen (see Chapter 14) points out that between 1829 and 1832 three major posts were constructed on the Missouri River—Fort Clark, Fort Union, and Fort Pierre—that served as regional supply depots for smaller "satellite posts." Fort Clark, constructed sometime between 1829 and 1831, serviced the Knife River Indian villages. Most of what we know concerning the size, composition, and public-health history of the Mandans, Hidatsas, and Arikaras from 1831 to 1838 (the end point of our chronology) comes from Euroamericans who visited or lived at Fort Clark. Three men stand out for the rich historical and ethnographic information they provide: George Catlin, an artist who visited the villages in 1832; Alexander Phillip Maximilian, Prince of Wied-Neuwied, an "avocational ethnologist" and explorer who visited and lived at the fort during the winter of 1833-1834; and Francis A. Chardon, chief clerk for Fort Clark from 1834 through 1839.

Catlin visited the Knife River villages in the summer of 1832 and observed that the Mandans lived in two villages approximately two miles apart on the west bank of the Missouri River. He remarked that the lower village (the Fort Clark site) was the "principal" village. No lodge counts were given. The upper village was said to contain "sixty or eighty" lodges (Catlin 1973, 1:80, 203).

Catlin was more specific in his identification of the three Hidatsa villages:

> The principal village of the Minatarees which is built upon the bank of the Knife river, contains forty or fifty earth covered wigwams, from forty to fifty feet in diameter, and being elevated, overlooks the other two [villages] which

> are on lower ground and almost lost amidst their numerous corn fields and other profuse vegetation... [Catlin 1973, 1:186]

Chomko (1986:88) believes these are the same villages the Hidatsas occupied in 1804.

Catlin also described the Arikaras, but his observations are a bit suspect. He "quietly passed" their village, which apparently was on the Grand River. The reference may be to only one village and the distance given would place it near the Cheyenne River (Chomko 1986:88-89). Sources cited earlier place at least one part of the Arikaras on or near the Platte River in 1831-1832, so Catlin's (1973, 1:204) estimate of 150 Arikara lodges must be considered cautiously.

Prince Alexander Phillip Maximilian and his companion and personal artist, Karl Bodmer, provide our next glimpse of the Mandans, Hidatsas, and Arikaras, in 1833-1834. In June of 1833, while ascending the Missouri River, Maximilian noted that the Grand River village(s) of the Arikaras had been abandoned for one year (Thwaites 1966d, 22:335-336). This suggests that the Arikaras left their village(s) on the Grand River shortly after Catlin saw them in 1832. Wood (1955) has documented the movements of the Arikaras for the five years following—a time in which they abandoned the Missouri River trench.

Maximilian's description of the Mandans and Hidatsas is much more detailed than is Catlin's. When Maximilian and Bodmer passed through the villages in 1833, the principal village of the Mandans (the Fort Clark site) lay on the west bank of the Missouri, approximately 300 paces north of Fort Clark. In two separate entries Maximilian described this village as having 60 lodges and 65 lodges (Thwaites 1966d, 22:349; 23:255). The smaller west-bank Mandan village was judged to be about three miles above the principal village and to contain approximately 38 lodges (Thwaites 1966d, 22:350; 23:255). Maximilian's summary of the then-recent history of the Mandans confirms earlier explorers' observations:

> They formerly dwelt near the Heart River: when Charbonneau arrived here at the end of the last century, the two Mandan villages, which are still standing, were about six or eight miles further down the Missouri. The small-pox and the assaults of their enemies have so reduced this people, that the whole number now reside in two villages, in the vicinity of Fort Clarke. These two villages are Mih-Tutta-Hang-Kush (the southern village), about 300 paces above Fort Clarke, and on the same side of the river, the Ruhptare, about three miles higher up, likewise on the same bank. The first had, at the time of our visit, sixty-five huts, and contained about 150 warriors; the other, thirty-eight huts and eighty-three warriors. According to this, the tribe had not more than 230 or 240 warriors; and, on the whole, scarcely 900 or 1000 souls. [Thwaites 1966d, 23:254-255]

Maximilian found the Hidatsas a few miles above the Mandans, occupying the three Knife River villages in which they had resided since 1804 (Stewart 1974:295). The southernmost village (the Amahami site) contained "some eighteen lodges," the middle village (the Sakakawea site) had approximately 40 lodges, and the upper village (the Big Hidatsa site) was reported as having over 80 lodges. Maximilian also estimated the population of the Hidatsas, suggesting that they numbered between 2,100 and 2,200, with a warrior force of 350 men (Stewart 1974:295).

During his stay among the villagers in the winter of 1833-1834, Maximilian witnessed an epidemic of whooping cough. His description suggests that the major mortality occurred among the children of the two villages:

> The climate in the country about Fort Clarke is, in general, healthy; yet, in the spring and autumn, and even in winter, there are always some disorders which carry off many of the inhabitants, especially the Indians, who are entirely destitute of medical assistance. In the winter which we passed here, several such epidemics prevailed, which affected very many of the people; and some of the Whites, too, were severe sufferers. A great many children were

> carried off by the hooping-cough, and some Indians by diarrhoea and colic; and the cholera having prevailed on the Lower Missouri, it was at first feared that it had penetrated thus far, though these apprehensions after-wards proved to be groundless. In consequence of the frequent and sudden changes of temperature, catarrh is very common among the half-naked Indians; agues are quite unknown here. [Thwaites 1966d, 23:236-237]

A cholera epidemic apparently followed the whooping cough outbreak. Rudolph F. Kurz, a Swiss artist and part-time clerk for the American Fur Company in the 1840s and early 1850s, wrote in his journal in 1851 that the Mandans and Hidatsas "...suffered an affliction equally disastrous from Cholera immediately after Bodmer's visit here with the Prince Von Neu Wied..." (Hewitt 1937:76-77). Kurz's observation is to be considered cautiously, as he was not an eyewitness to the epidemic, did not identify his source of the information, and was commenting on events that took place 17 years prior to his arrival in the Knife River villages.

1834-1837

Following Maximilian's visit in 1834, a series of significant events occurred among the Knife River villagers, culminating with the devastating smallpox epidemic in 1837-1838. While epidemics continued to break out among various tribes of the Upper Missouri for the remainder of the nineteenth century, the 1837-1838 epidemic effectively eliminated the village tribes as major players in the history of the Upper Missouri. It is for this reason that our chronology ends at that point.

Three major events occurred among the village tribes from 1834 to 1837 and can be summarized as follows: a) two Hidatsa villages were destroyed; b) the Arikaras returned to the Missouri trench after an absence of five years; and c) two minor epidemics took place among the villagers in 1835. Several authors have documented these events, and they warrant discussion here.

Stewart (1974:296), in examining the German version of "Maximilian's Travels," demonstrated that important information was omitted from the English version. An appended passage to Maximilian's work reveals that the two lower Hidatsa villages (Amahami and Sakakawea) were attacked and destroyed by the Sioux sometime between April 18 and May 18, 1834. Survivors were taken in by the Mandan villagers, though to date there is no further information on how long they remained among the Mandans. The Fort Clark journal entries that are a major source of our information on the period from June, 1834, to May, 1839, never mention more than one Hidatsa village—the site known today as Big Hidatsa. It is clear that the Sioux were tightening their grip on the villagers, the destruction of two major villages being a graphic display of their increasing power.

The pressure upon the villagers during this period was unremitting. Individual work parties were ambushed and the villages were even attacked by various Sioux tribes. The result was an increased coalescence among the village groups for protection. An example of this pattern occurred in July of 1836, when all the Mandans from the northern or "little village" (Deapolis site) and some of the Hidatsas, fearing an attack by the Sioux, moved to the main Mandan village at Fort Clark (Abel 1932:72).

While the Mandans and Hidatsas continued to bear losses in manpower and territory, the Arikaras began to return to the Missouri trench between September and November, 1836, first by way of the Black Hills and then to the forks of the "Little Missouri" River. During that period, at least two bands of Arikaras visited the Mandan and Hidatsa villages and were received favorably (Abel 1932:80-88). Chomko (1986:90) asserts that the Arikaras were living in the "vicinity of Fort Clark" by November, 1836. However, only two bands of the Arikaras had visited the villages by November, and there is no evidence to place the Arikaras near Fort Clark until the following spring. Given the evidence, the best interpretation is that by November, 1836, the Arikaras were living on "one of the Forks of the Little Missouri" (Abel 1932:88). This would place them on either the Bad River (to the south) or, more likely, on a branch of the present-day Little Missouri north of the Knife River villages (Abel 1932:204, note 26; 290, note 319; Harmon 1988:19-20; Thurman 1988:442-443). In the latter part of March, 1837, 250 lodges of the Arikaras arrived at Fort Clark and were invited to move in with the Mandans (Abel 1932:105, 109).

Small, isolated endemic and epidemic disease outbreaks occurred among the villagers from 1835 to 1837, yet they have been largely unreported. This information is important to our chronology. Chardon, beginning in 1835, recorded in his journal a series of disease outbreaks that are our only picture of the general public-health situation of the villagers prior to the introduction of smallpox in June, 1837. Limited though they are, the records describe the afflictions endured by the three-village community, and as such, they provide us with a general picture of the typical epidemic and endemic diseases that plagued the inhabitants. It must be cautioned, however, that this brief list surely underreports endemic afflictions.

In April, 1835, Chardon recorded an epidemic involving an unidentifiable childhood disorder. From its brief description a communicable disease may be inferred: "...for several days past – the children of the Village die off 2 and 3 every day – it is my opinion that they are killed by the Indian Doctors –..." (Abel 1932:29). In August, 1835, another localized outbreak was recorded that afflicted the Mandans as well as members of the trading-post community. The description is too general to even speculate on the type of disease. It does not appear to have been confined to children: "My Squaw and the blacksmith's little son both have the Diarrhoea this morning, it is among the Mandans, some have died in 12 hours after its first appearance, gave my Squaw a fieu drops of Lodanum and Camphor..." (Abel 1932:45). In September, 1836, Chardon described a case of what appears to have been some sort of endemic respiratory disease: "Mr. Charbonneau was taken sick yesterday, with something like the Cholic –..." (Abel 1932:49-50). Chardon provided a description of another endemic disease in April, 1837. This report of an isolated case of venereal disease is unremarkable, for numerous references to the same disorder exist in most literature that describes the Knife River horticulturists (Catlin 1973; Ewers 1961; Thwaites 1966d, 22; 23): "Jos. Desnoye arrived from Beaver hunting, Not being able to continue, haveing caught the Venerial, left Newman on Chery creek eight days ago –" (Abel 1932:106). It is important only in documenting that venereal disease was a common disorder which occasionally achieved epidemic status. The final epidemic outbreak described by Chardon was the catastrophic 1837-1838 smallpox epidemic. This outbreak was one of the most devastating to ever occur on the Upper Missouri.

By way of summary the following can be said of the period 1834-1837:

1. The Sioux continued to attack and harrass the Knife River villages with increased success.

2. In 1834 the Sioux successfully attacked and eliminated the Hidatsa villages of Sakakawea and Amahami. The result was a coalescence and contraction of the Hidatsa villages into one village—Big Hidatsa—with the resulting loss of control over "traditional territory."

3. The Arikaras who had left the Missouri River trench in 1832 began to return in the fall of 1836. By March, 1837, they were living somewhere on the Knife River, and in April, 1837, they moved into the main Mandan village next to Fort Clark.

4. Finally, in the realm of documented disease outbreaks, Chardon recorded two minor epidemics between 1835 and 1847. The first occurred in April, 1835, and appears to have been a childhood disorder, as deaths of only children were recorded. The second epidemic (of an unknown disease) occurred in August, 1835. However, adults and children appear to have been equally affected. Both epidemics were serious and produced an undetermined number of deaths, but they cannot be classified as major outbreaks.

The public health of the villagers can be characterized by the presence of endemic bacterial diseases (possibly dysentery) and an assortment of small, recurring, localized respiratory epidemics. Given the various communities' composition, frequency of contact with outside populations, and unknown immunological histories, the only question that can be raised against this interpretation of endemic disease profile is magnitude of loss. Modern data addressing similar circumstances suggest that the horticulturists exhibit a typical profile for communities of their size and immunological history (Black 1975:515-18; Dunn 1968:221-28; McNeill 1977; Tyrrell 1967:216-20; 1977:137-53).

Even given the limitations of historical descriptions, the data clearly demonstrate that village tribes were not pristine populations. A pool of endemic diseases not associated traditionally with Native Americans existed, producing losses primarily among the very young and the very old, from year to year. Losses from epidemic disease

affected differential age classes and should not be included in this profile.

In summary, the overall significance of endemic and epidemic disease may be understood by examining the cultural and biological "priorities" of individual villages. The diseases and associated losses were significant in a cultural sense when they removed valuable elderly individuals from the communities. These individuals were the repositories of domestic and ritual knowledge, and their loss could alter a society significantly. The diseases attained a biological significance when they struck and killed large numbers of children within a community. In such an instance loss of labor occurred and replacement of individuals within the population was interrupted.

The most important concept that must be understood in this interpretation, then, is that the magnitude of biological and cultural loss varied greatly among villages through time. However, uncritical appraisals of endemic and epidemic disease as a process have advanced a model in which successive predictable outbreaks are seen as causative factors leading to the decline of population and erosion of cultural norms within Plains societies (Deetz 1965; Ramenofsky 1982). The limited data available suggest otherwise, and in fact imply that significant effects of endemic and epidemic disease directly influencing populations should only be modeled as random events.

Therefore, what appears to some as a continuous wave-line process producing cumulative degradation is misleading. The limited Plains data suggest that the effects produced by disease operated as a series of random peaks—the peaks representing an unusually acute outbreak that produced significant losses in a population's cultural and biological inventory.

Associated Epidemic Chronologies Relevant to the Upper Missouri Villagers

To compensate for the paucity of epidemically significant data that exists for the Upper Missouri villagers, epidemic chronologies from adjacent areas are discussed below and summarized in Table 15.4. The discussion is drawn primarily from Dobyns (1983:15-32); other sources include Cook (1937, 1973), Crosby (1972), Dobyns (1966), Duffy (1951), Ewers (1973), Lehmer (1971, 1977a, b), Mallery (1886), Mooney (1928), Ramenofsky (1982), Ray (1974), Stearn and Stearn (1945), and Taylor (1977).

Table 15.4 illustrates a select listing of major epidemics that affected various Native American groups in a significant fashion. Inclusion of epidemics in the table is based on three criteria: a) if an epidemic is historically recognized as a pandemic; b) if an epidemic occurred in an adjacent tribal population; or c) if an epidemic occurred in an area whose population is known to have had interaction with Plains populations. The overriding thesis governing the examination and inclusion of these other epidemics into the analysis of Upper Missouri epidemics is the demonstrated fact that acute-crowd infections, given the appropriate mechanism, diffuse rapidly through and between populations (Dixon 1962).

During the early historical period, many Plains groups did not live on the Upper Missouri (Cheyennes, Omahas, Pawnees, Sioux, Yanktons), yet had trade relations with villagers living there (Lehmer 1971; Ray 1974; Toom 1979). Still other non-Plains tribes (e.g., the Crees and Ojibwas) interacted indirectly with the villagers by maintaining trade relations with native middlemen such as the Assiniboins (Lehmer 1971, 1977b; Ray 1974, 1978). An extension of this pattern into prehistory is supported by substantial data (Wood 1974, 1980) that demonstrate the trading patterns described were formalized precontact institutions as well.

The potential for the rapid spread of an epidemic from one region to another through this well-known trading system cannot be underestimated. Acute-crowd infections such as smallpox, measles, and chicken pox constitute the majority of recorded major epidemics among native North Americans. These diseases have a mean incubation period of 13 days (Dixon 1962; Benenson 1981). Given the regional trading patterns, it is not unreasonable to assume that an infectious disease with a long incubation period could be transported several hundred miles and introduced into a new host population by trading parties who unknowingly were infected.

The medical literature is full of such examples, perhaps the most famous one being the 1951 introduction of measles into Greenland. One sailor visiting a single port introduced the disease, which eventually infected nearly the entire population (30,000) of Greenland. A virtual virgin-soil population similar in disease history to many Upper Missouri tribes, the epidemic had a morbidity rate of 99.9 percent. The mortality rate was eight individuals per 1,000—demonstrating that even a childhood

Table 15.4 A select listing of historically documented epidemics among Plains Indians and adjacent populations.

Date	Disease	Peoples Affected	Sources
1520-24	smallpox	total geographic extent unknown; across present United States, Central America, parts of South America; caused greatest mortality of any episode	Dobyns 1963, 1966, 1983
1531-33	measles	New Spain and probably far beyond the Colony northward, including Pueblos and more	Crosby 1972; Dobyns 1983; Ramenofsky 1982
1535	?	Northeast	Ramenofsky 1982
1541	?	lower Mississippi valley	Ramenofsky 1982
1545-48	bubonic plague	New Spain to Pueblos and perhaps beyond	Dobyns 1983
1613	?	Northeast	Ramenofsky 1982
1612-19	bubonic plague	Northeast, New Spain to Florida	Cook 1973; Dobyns 1983; Ramenofsky 1982
1633-34	measles	Northeast, New France, and Great Lakes groups	Dobyns 1983; Duffy 1951
1633-41	smallpox	Northeast	Ramenofsky 1982
1635-39	smallpox	Southwest, French and British northeastern North America	Dobyns 1983; Ramenofsky 1982
1647-49	smallpox	Northeast	Dobyns 1983; Ramenofsky 1982
1658-59	measles	Canadian tribes; Florida peoples to Mexico City	Dobyns 1983
1659	diptheria	Northeast and Canadian tribes	Dobyns 1983
1662-63	smallpox	Iroquois, Delaware, Canadian tribes, and central Mexico	Dobyns 1983; Ramenofsky 1982
1666	smallpox	Southwest, Northeast	Dobyns 1983; Ramenofsky 1982
1668-70	smallpox	French and British northeastern peoples	Dobyns 1983; Ramenofsky 1982
1671	anthrax (?)	Southwestern peoples	Ramenofsky 1982
1677-79	smallpox	Northeastern tribes in New France and British territory	Dobyns 1983; Ramenofsky 1982
1687-91	smallpox	Northeastern tribes on French and British frontiers; Texas tribes	Dobyns 1983; Mooney 1928; Ramenofsky 1982

Table 15.4 Continued.

Date	Disease	Peoples Affected	Sources
1697-99	smallpox	Southeast, Gulf Coast and Lower Mississippi Valley peoples	Dobyns 1983
1701-03	smallpox	Northeastern tribes to Illinois	Dobyns 1983
1713-15	measles	New England tribes to Illinois	Dobyns 198
1734-35	smallpox	Arikara, Sioux	Taylor 197
1738-39	smallpox	Southeastern tribes to Hudson Bay; Texas mission peoples	Dobyns 1983; Duffy 1951; Ewers 1973
1750-52	smallpox/ measles	Texas to Great Lakes tribes; Arikara	Dobyns 1983; Ewers 1973; Taylor 1977
1761	influenza	all native North Americans	Dobyns 1983
1762-66	smallpox/ measles	Central Mexico, through Texas and the Southeast to Iroquois, Potawatomi, Wea, Kickapoo, Miami, Shawnee, Arikara, and Northwest Coast	Dobyns 1983; Ewers 1973
1776-78	measles	Hudson Bay, Texas tribes, possibly in Plains	Dobyns 1983
1778-83	smallpox	from central Mexico across all of North America; Mandan, Hidatsa, Arikara	Dobyns 1983; Ewers 1973; Lehmer 1971, 1977a; Mallery 1886; Mooney 1928; Ramenofsky 1982; Ray 1974, 1976
1793-97	smallpox	New Spain	Dobyns 1983
1798-99	streptococcal infection	Sioux	Taylor 1977
1800-03	smallpox	Columbia River peoples; Great Plains to Gulf of Mexico, Assiniboin, Atsina, Chippewa, Crow, Sioux, Omaha, Ponca, Iowa, Oto	Doybns 1983; Lehmer 1971, 1977a; Mallery 1886; Mooney 1928; Stearn and Stearn 1945; Taylor 1977
1801-03	streptococcal infection	Assiniboin, Dree	Taylor 1977
1801-03	measles	Caddoan tribes	Dobyns 1983; Ewers 1973
1806-14	influenza, streptococcal infections	Blackfeet, Sioux, Mandan	Taylor 1977
1810-11	smallpox	Eastern Dakota to Lake Superior groups	Dobyns 1983; Mallery 1886

Table 15.4 Concluded.

Date	Disease	Peoples Affected	Sources
1815-16	smallpox	Rio Grande Pueblos and Plains tribes	Dobyns 1983; Ewers 1973
1818-20	measles/ whooping cough	western interior of Canada, Plains tribes; Assiniboin, Blackfeet, Cree, Sioux	Dobyns 1983; Mallery 1886; Ray 1974; Taylor 1977
1831-34	smallpox	Plains tribes, Great Lakes tribes; Arikara, Arapaho, Atsina, Crow, Pawnee	Dobyns 1983; Taylor 1977
1832-34	whooping cough/ cholera infantum	Northern Plains villagers; Mandan, Hidatsa; Mexican groups; Potawatomi, Winnebago, Menomini, Ojibwa, Panija	Dobyns 1983; Taylor 1977
1836-40	smallpox	Pueblos, Texas, Alaska, Columbia River, California, Plateau, Mackenzie-Yukon and Plains tribes; Mandan, Hidatsa, Arikara, Assiniboin, Atsina, Blackfeet, Cheyenne, Cree, Sioux, Blood, Sarasee, Piegan, Gros Ventre	Dobyns 1983; Ewers 1973; Lehmer 1971, 1977a; Mallery 1886; Mooney 1938; Ray 1976; Taylor 1977

disorder, when introduced into an immunologically defenseless population, can produce massive morbidity and severe mortality (Christensen et al. 1953).

Trade surely was not the sole mechanism for the transfer of epidemic disease. War parties and the horse industry, which originated in the Southwest, must be considered important vectors for the introduction of disease into the village populations.

The village tribes certainly did not experience all the recorded epidemics contained in Table 15.4. However, transport routes established through historical-period and prehistoric trade patterns, as well as cultural practices (raiding parties), argue for the proposition that several of the listed epidemics were responsible for reducing the Upper Missouri villagers.

Discussion

This discussion is based on the premise that in the larger picture of Upper Missouri ethnohistory, it is necessary to examine demographic trends suggesting depopulation from disease before moving on to assess other cultural-historical issues. Once an epidemic disease chronology is outlined and a general idea of rate of depopulation attributable to disease obtained, the questions of warfare, intertribal trade, decision-making processes, and responses to outside intrusions can be better understood.

The historic record is very incomplete in its discussion of demographic changes on the Upper Missouri until the 1830s. Although most major details are lacking, major trends cannot be ignored. Around AD 1670 the Mandan and Arikara tribes began moving upriver. Pressure from the south and east in the form of introduced epidemics may be partially responsible for this trend. By the early 1700s the Mandans, Arikaras, and possibly the Hidatsas were experiencing major epidemics. The Arikaras accelerated their move up the Missouri, and the Mandans were forced to coalesce and abandon their traditional Heart River villages by the latter part of the eighteenth century.

When Euroamericans first traded with the villagers in the late eighteenth century they were told that

at least three major epidemics had in the last 100 years reduced the horticulturists by as much as two-thirds. The end result was that the tribes Euroamericans encountered in the late eighteenth and early nineteenth centuries were merely remnant cultures. The great Mandan, Hidatsa, and Arikara societies described by Catlin and Maximilian were only shadows of cultures whose social peak occurred 100-150 years earlier.

ACUTE-CROWD INFECTIONS AND VIRGIN-SOIL EPIDEMICS

Infectious Disease Among Native Americans

Earlier we presented a highly generalized outline of the major units of analysis employed by epidemiologists to explain disease cause and process. The intent of that discussion was to briefly identify how epidemiologists perceive diseases as dynamic evolutionary processes and to suggest how they operationalize and structure research questions pertaining to infectious-disease outbreaks. It was suggested that these two levels of analysis should and could be selectively examined and modified by anthropologists to provide appropriate frameworks for modeling historical-period epidemic disease.

Before we model the disease experience of the Upper Missouri horticulturists it is necessary to discuss the basic principles of acute-crowd infections and virgin-soil epidemics. There are three reasons for this. First, a number of acute-crowd infections that have been implicated as major causes of Native American depopulation share certain epidemiological characteristics (Crosby 1972; Dobyns 1983; Milner 1980). A knowledge of these shared epidemiological characteristics may suggest why Native American populations continued to experience high morbidity and mortality rates from the same disease for over 300 years. Second, while many of the basic concepts in epidemiological theory are relevant to models of generalized disease, the rules governing rates of infectivity, morbidity, mortality, and immunity at the individual and population level change greatly when a population is exposed to diseases with which it has no previous immunological experience. Under these circumstances populations exhibit special cultural and biological responses to disease that run counter to the typical population response documented in most western medical literature. Third, the evidence suggests that all Native American populations experienced at least one virgin-soil epidemic for each acute-crowd infection to which they were exposed. In addition, there is reason to believe that primarily due to cultural isolation, the diseases that struck the village tribes of the Upper Missouri assumed a form and an enhanced virulence that functioned to make them recurring virgin-soil epidemics (Crosby 1972, 1976; Dobyns 1983; Joralemon 1982; Lehmer 1977a; Ramenofsky 1982).

An evaluation of the aforementioned principles requires the pairing of two separate methods. While generalized epidemiology has many important analytic frameworks that deserve our attention, most epidemiological principles are derived from studies of epidemic- or chronic-disease episodes of modern populations—populations that rarely were virgin-soil populations at the time they were studied. Thus the methodological stance that must be assumed (and one that rarely is pursued by scholars of historical-period disease episodes) is to use appropriate epidemiological paradigms to structure our analysis, while taking into account the severity of disease and cultural reaction associated with virgin-soil populations.

Few scholars of Native American history will dispute research of the last 20 years which has demonstrated that depopulation of native societies was one of the most striking effects of Euroamerican contact. It now is clear that epidemic disease played a major role in New World population trends. The accumulated results of historical-period epidemiology no longer allow us to dismiss early accounts that attribute tens of thousands of deaths to the ravages of a single epidemic. As Joralemon (1982), Crosby (1972), Dobyns (1966, 1983) and others have pointed out, the year 1492 initiated a biological interaction among European, New World, and later, African epidemiological biospheres. Ashburn's characterization of these interactions as a form of biological warfare is worthy of attention, specifically because a great deal of support can be found for it in historical records (Ashburn 1947:48).

The intention is not to argue that epidemic disease was a great leveler; sufficient evidence of this already exists (Ashburn 1947; Cook 1973; Crosby 1972, 1976; Dobyns 1963, 1966, 1983; McNeill 1977; Stearn and Stearn 1945). The intent is to describe the general characteristics of those several introduced diseases that appear to have been most prevalent among Indian popu-

lations and, second, to describe how they affected communities in the form of virgin-soil epidemics. From these descriptions we should be able to identify those specific cultural properties associated with Plains village populations that will enable us to model community response during epidemic episodes.

Chronic or endemic diseases are those that are common within a population and occur with predictable frequency. The village tribes had a number of chronic diseases that produced losses within their communities (e.g., various strains of pneumonia, dysentery, tuberculosis, gonorrhea, syphilis, rhinoviruses, etc.). However, these appear to have had little long-term impact on communities in terms of major population loss.

While chronic diseases existed among Native American populations, recent research confirms that the greatest killer was epidemic disease, especially as manifested in virgin-soil epidemics (Cook 1973; Crosby 1976; Dobyns 1963, 1966, 1983; Joralemon 1982). Crosby's (1976:289-90) definition of virgin-soil epidemics bears inspection:

> Virgin soil epidemics are those in which the populations at risk have had no previous contact with the diseases that strike them and are therefore immunologically almost defenseless. The importance of virgin soil epidemics in American history is strongly indicated by evidence that a number of dangerous maladies-smallpox, measles, malaria, yellow fever, and undoubtedly several more were unknown in the pre-Columbian New World. In theory, the initial appearance of these diseases is as certain to have set off deadly epidemics as dropping lighted matches into tinder is certain to cause fires.

We now examine in detail the characteristics of those diseases that made up many Native American epidemics.

Characteristics of Acute-Crowd Infections

In his survey of Native American epidemic episodes, Dobyns (1983:8-26) lists 93 major outbreaks known to have taken place between 1520 and 1900. Two of Dobyns' more important conclusions are that the list is incomplete and that of the diseases identified, acute-crowd infections were responsible for the majority of morbidity and mortality experienced by Native Americans since 1520 (Dobyns 1983:11-18). Smallpox, measles, chicken pox, and influenza are implicated as perhaps the most destructive acute-crowd infections New World peoples experienced (Crosby 1976; Dobyns 1963, 1966, 1983; McNeill 1977; Milner 1980). That acute-crowd infections share a number of disease and culturally specific characteristics surely structured their periodicity as well as virulence among Indian populations. Identifying these shared characteristics may indicate the key predisposing factors inherent in Native American lifeways that influenced epidemic episodes. In addition, examination of these characteristics will aid in constructing a model of key transmission spheres within a Plains village.

Acute-crowd infections require a large host population for disease maintenance (Black 1966, 1975; Burnet and White 1972; Cockburn 1963, 1971). Black (1966) has determined that a minimum host community is necessary to maintain most acute-crowd infections. His work with measles suggests that at least 200,000 individuals are needed to maintain the disease within a community. Indeed, the disease, along with most other acute-crowd infections, periodically disappears in populations of half a million or less (Black 1966, 1975; Neel 1977). One of the earliest studies revealing this pattern was carried out by Panum (1940), who examined the Faroe Islands measles eipidemic of 1846. Panum found that 95 percent of the 7,782 islanders were attacked. High mortality occurred, but in three months the disease was gone. The same pattern occurred in 1781 with similar results. Panum's conclusion was that acute-crowd infections cannot survive in small populations once the infections have killed or immunized a high proportion of the population. The pattern occurs even today, the 1951 measles epidemic in Greenland being a case in point.

Introduced into Greenland by a Danish sailor, almost the entire population of 30,000 eventually contracted the disease. Then the disease disappeared (Christensen et al. 1953). Again the data are clear: small populations suffer heavily from acute-crowd infections but cannot support them as endemic diseases. When introduced into isolated communities, acute-crowd infections will run their course and die out. Therefore, for disease to be maintained in small populations there must

be a constant addition of new susceptibles, either through birth or migration (Burnet and White 1972; Lilienfield 1976).

Another major characteristic of acute-crowd infections that makes them unique is that man appears to be the sole reservoir for these diseases. They do not form host-pathogen commensual states, and infection only can occur by human-to-human transmission (Wehrle and Top 1981:577-88).

The stability of infectious agents outside infected hosts is another important characteristic governing acute-crowd infections. The microbes associated with acute-crowd infections do not remain viable outside the host for any great period of time. Therefore, the transmission of disease is limited in many respects to that period of time in which a microbe can survive outside its host.

The immune status of a population also affects the development of acute-crowd infections. Those individuals who become infected and survive a disease episode in most cases develop an immunity to subsequent infection from the same pathogen (Fox et al. 1970; May 1961). The result is that this characteristic serves to define which members of a population will not be affected by subsequent epidemic episodes.

Isolating the primary case in an outbreak also influences the course and severity an acute-crowd infection will assume within a community (Fox et al. 1971; Frost 1976; Neel et al. 1970). In those instances where quarantine methods do not exist or have failed, the spread of disease is facilitated by intra- and intergroup contact (Black et al. 1974; Dobyns 1983:8-16; Milner 1980:41-43). Individuals entering a community for trade purposes, administering to or visiting sick kinsmen, or fleeing an infected community for refuge in an adjacent settlement produce patterns of contact that enhance the spread of acute-crowd infections. These patterns have been observed as major causal agents promoting the spread of measles among modern tribal populations living in South America (Black et al. 1974; Centerwall 1968; Neel et al. 1970).

The length and time of exposure to infectious individuals during the course of their disease may be as important as general patterns of contact for determining severity of acute-crowd infections. Recent studies have shown that the introduction and spread of acute infectious diseases within and among communities is most pronounced when the contact occurs during the initial or peak phases of an epidemic cycle (Burnet and White 1972; Dixon 1962; Milner 1980:43). This appears to be especially true for measles and smallpox (Benenson 1981:577-88; Black 1966; Dixon 1962; Frost 1976).

Incorporating the above notes, the disease pattern associated with most acute-crowd infections is one of low incidence punctuated by periodic episodes or epidemics of higher-than-usual morbidity and mortality among the susceptible segment(s) of the population (Milner 1980:41). What typically occurs after an epidemic involving an acute-crowd infection is a disease-free interval. During this period new susceptibles are added to a population, usually through birth or migration. The same disease can then be reintroduced into the population. The result is an epidemic cycle governed by the development of new susceptible cohorts within a population, including any individuals who may have escaped a previous epidemic.

In those communities where most inhabitants are potential susceptibles (virgin-soil populations) the introduction of an acute-crowd infection consistently is devastating. In this situation a disease can spread easily from just a few individuals to infect the majority of a population. Within a short time, morbidity and mortality can reach alarming levels (Black et al. 1974; Neel 1977:155-67; Tyrrell 1977:137-53).

Cultural Responses to Acute-Crowd Infections

The majority of characteristics discussed thus far have been disease-specific in their orientation. However, there are certain general cultural reactions to acute-crowd infections that appear to be shared by almost all New World populations. As mentioned earlier, most Native American groups had little or no understanding of the concept of contagion as it applies to infectious disease (Cook 1973; Crosby 1976). As a result, those individuals who contracted disease rarely were quarantined (Dobyns 1966; Fortuine 1971; Jacobs 1974; Neel et al. 1970). Family members continued to live among the sick. In fact, ethnohistorical evidence confirms that the pantribal custom of most Native Americans in which the relatives and friends visited and tended to an ill member of their

household, extended family, or clan continued during epidemics (Crosby 1972; Dobyns 1983; Duffy 1951). This behavior aided the spread of many infectious diseases within Native American Communities (Joralemon 1982; Stearn and Stearn 1945; Trimble 1985, 1986).

An incomplete knowledge of the variables influencing transmission of acute-crowd infections had far-reaching effects on Indian populations. Many infectious diseases are communicable before they become clinically apparent on the infecting host. Smallpox and measles are cases in point (Dixon 1962). The enhanced transmission rate that occurs during the preeruptive period, because carriers are unaware they are infected, has been responsible for many large-scale epidemics (Black 1966; Centerwall 1968; Cockburn 1971; Jarcho 1964). Black (1975) and Trimble (1986), among others, have suggested that this process was most destructive among New World populations. Therefore, infections passed from village to village surely were enhanced by Native Americans' incomplete knowledge of the variables influencing the transmission of acute-crowd infections.

Traditional medical treatments employed by Native Americans also influenced population response to introduced infectious disease. In many cases native curing practices were ill-suited to treat Old World diseases. More often than not the treatments employed were ineffective and often dangerous, contributing in many cases to heightened morbidity and mortality (Crosby 1972; Dobyns 1963, 1966, 1983:16; Taylor 1977). One such example is sweat baths. Sweat baths were a common treatment for many maladies (Crosby 1976; Duffy 1951; Stearn and Stearn 1945). Many times baths were followed by plunges in cold streams. Native Americans who engaged in these activities for relief from an acute-crowd infection often perished from either dehydration or hypothermia.

Finally, generalized community disintegration occurring during a severe epidemic appears to have contributed to excessive mortality rates. Black (1975), Dobyns (1983), Milner (1980), Neel (1977), and others have pointed out that among Native Americans high mortality rates cannot be attributed exclusively to the virulence of the infecting agents. Studies of modern populations combined with ethnohistorical reconstructions confirm that the significant mortality associated with newly introduced diseases can be equally attributed to the widespread social disintegration, despondency, and ineffectual health care that results from an epidemic outbreak (Black 1966; Brain et al. 1974; Centerwall 1968; Crosby 1972; Dobyns 1966; Duffy 1953).

In sum, modern medical textbooks on infectious disease are of little use in understanding the losses associated with New World epidemics. Most acute-crowd infections observed in the New World produced community-wide morbidity. The result was high mortality rates within the affected communities. Therefore, only through documenting the cultural patterns that produced heightened morbidity can we begin to understand the processes that led to such widespread mortality among Native American populations during epidemic episodes. This knowledge should in turn enable us to construct realistic models of epidemic transmission patterns among Plains village populations.

EPIDEMIOLOGY AND ETHNOHISTORY: A HUMAN-BEHAVIOR MODEL

In the preceding sections a generalized clinical course description for most acute-crowd infections among Native American populations was defined. Although components of acute-crowd infections were stressed, it also was argued that the cultural responses to these diseases were as important as the diseases themselves in producing heightened morbidity and mortality. Given the cultural and epidemiological knowledge we possess, we now offer a model of epidemic disease based on the analysis of human behavior. A human-behavior approach is most applicable to the study of historical-period disease phenomena among Plains villagers because it emphasizes the dynamics of disease systems as well as individual and community responses.

Epidemic Disease and the Historical Record

The main source of evidence supporting the theory that epidemics chiefly were responsible for the decline in Native American populations comes from the historical records left by several generations of explorers and settlers. The quality of evidence is variable, which probably has discouraged scholars from giving epidemic diseases the attention they deserve. As Crosby (1976:290) points out:

> The evidence provided by the documents of British and French America is not as definitely supportive of the [epidemic] thesis because the conquerors of those areas did not establish permanent settlements and begin to keep continuous records until the seventeenth century, by which time at least some of the worst epidemics of imported diseases had probably already taken place. [Epidemics associated with the Great Plains populations surely followed this form.] Furthermore, the British tended to drive the Indians away, rather than ensnaring them as slaves and peons, as the Spaniards did, with the result that many of the most important events of aboriginal history in British America occurred beyond the range of direct observation by literate witnesses.

The recognition by Crosby that the most important events of aboriginal epidemic history took place beyond the range of direct observation cannot be overemphasized. The failure of most anthropologists to consider this data-modifying process has precluded serious consideration of epidemics as cultural modifiers. The work of Crosby (1972), Dobyns (1966, 1983), Hanson (1987), Lehmer (1977a), Ramenofsky (1982), Taylor (1977), and Trimble (1985, 1986) represent some exceptions.

There are, as have been reviewed, numerous records that do chronicle the interactions of Euroamericans and Native Americans, and though they are of uneven quality, they contain direct and indirect references to epidemic episodes. An examination of the data presented earlier (Tables 15.2, 15.3) in light of Crosby's thesis suggests two conclusions. First, over 90 major epidemics swept the New World between 1520 and 1840 (the endpoint of this study). Second, the first written report documenting an epidemic cannot be considered the primary intrusion of disease into any given area.

Given what is now known of the extensive continental Native American trading networks, coupled with documented episodes of disease, there is every reason to believe that major epidemics affected all regions and most tribes in North America within the first 100 years of Euroamerican settlement. More importantly, it is not unreasonable to suggest that a significant number of epidemics were introduced into communities by native trading parties who had acquired infections either directly or indirectly from distant Euroamerican settlements or contacts. The disease history of native North Americans, then, must not be constrained by contact theory. Rather, the epidemic history of most aboriginal populations should be modeled as though we were studying a stone tossed in a pond. The splash of the stone represents those few surviving documents detailing epidemic episodes. However, the splash alone does not portray accurately the full disturbance created by the stone on the pond. The concentric waves of force ultimately disturbing much of the pond's surface precisely is what occurred among most virgin-soil populations of North America. The task is to recognize this phenomenon and to include it in any model of the disease history of Native Americans.

Limitations of Documentary Sources

Although various historical documents verify that epidemics were major biological forces that altered countless aboriginal populations, understanding the limitations of the documents is crucial to constructing a model of how the diseases spread. The first limitation to keep in mind is the bias of an author. Knowledge of an author's attitude toward, and reasons for, association with Native Americans is crucial to any realistic assessment of historical documents. Crosschecking additional sources when available improves one's confidence in the information. A more significant limitation of many early sources centers around reliability. The lack of medical knowledge of most observers, as well as their general inattention to symptom description, forces us to be very cautious in assigning etiology. In relatively few cases does an account produce sufficient information to warrant assigning a retrospective diagnosis. The exceptions primarily occur when descriptions of symptoms are highly characteristic of a single disease. Many researchers are far too liberal in their assignment of specific etiology of past epidemics (Stearn and Stearn 1945; Taylor 1977). This practice hinders historical epidemiology, and researchers would be well- advised to be more cautious and to adopt reasonable classification schemes. Ramenofsky (1982), for example, achieved a reliable and realistic assessment of epidemic etiology by creating classes of epidemics from diseases that shared generalized symptoms and transmis-

sion characteristics (e.g., measles, chicken pox, smallpox, influenza, and whooping cough). Although speculation always will be a part of historical epidemiology, judgements based on medically compatible symptom analysis should structure the assessment of disease etiology whenever possible.

Although the picture presented in historical documents may be flawed by personal bias, subjective description, or a host of other factors, documentary descriptions do represent first-hand observations. As such they are critical resources and starting points. Careful examination of historical sources can produce important insights regarding Native American transmission of and response to infectious disease.

Francis A. Chardon and the Fort Clark Journal

One source that is crucial to our understanding of the impact of infectious disease among the Northern Plains horticulturists is a journal kept by Francis A. Chardon (Abel 1932). Chardon was a fur trader on the Upper Missouri and was chief factor at Fort Clark from 1834 to 1839. Positioned on the upper reaches of the Missouri River in present-day North Dakota (Figure 15.1), Fort Clark was a major trading post for the American Fur Company. At Fort Clark Chardon was responsible for trading with the neighboring Mandans, Hidatsas, and Arikaras and, on occasion, with the Assiniboins as well as the Yanktons, Yanktonais, and other Sioux groups.

Chardon possessed an intimate knowledge of the Upper Missouri tribes, especially of the Mandans, Hidatsas, and the Arikaras (Meyer 1977:83-97). He had long been associated with various fur-trading concerns on the Missouri, and having married and lived with at least four Indian women, he was familiar with Native American lifeways (Abel 1932:xv-xlvi). Abel (1932:xxiv- xxv) argues that Chardon can be regarded as one of the most experienced Euroamerican observers of the Upper Missouri territory, having lived there most of his adult life.

When Chardon assumed the position at Fort Clark in 1834, he began keeping a diary (see Abel 1932 for a transcription of the journal). In it he recorded daily activities of the post, observations on the weather, and summaries of business transactions. What makes his diary valuable from a disease-history perspective is that he remained at Fort Clark from the beginning of the smallpox epidemic of 1837-1838 through its most virulent days. Being centrally located among the Mandans and Arikaras who lived no more than a quarter of a mile from the fort, and in close contact with the Hidatsas who lived within 10 miles of his post, Chardon was able to observe and record the major reactions of these Native Americans during the epidemic. Few descriptions can rival his observations on the progress of the epidemic as it spread from village to village. His keen eye for detail enables us to identify most of the major transmission vectors associated with the epidemic. In short, the diary gives a daily account of an epidemic that destroyed the Mandans as a culture and halved the populations of the Arikaras and Hidatsas.

Although Chardon occasionally held the village horticulturists in low regard, his reliability as an observer does not seem to have suffered much from his personal bias. In fact, his contempt for the villagers serves in most cases to document the rising mortality rates during the epidemic. It is not an exaggeration to suggest that his macabre fascination with mortality and morbidity rates is directly responsible for the clear picture we have of many of the key phases of the epidemic. However, the value of his observations comes not from documenting the introduction of smallpox into the communities, but rather from the recordings he made of the subtle changes that took place in native behavior during the course of the epidemic.

Only a man well-versed in traditional native lifeways would have been able to discern these changes. Chardon thus provides not only a rare glimpse of epidemic transmission among the village horticulturists but also a portrait of the changing cultural process occasioned by the event. His journal contains one of the most complete and vivid descriptions of Plains village reaction to infectious disease ever published and therefore provides the major data for our modeling of disease transmission among these communities.

The Human-Behavior Model

The approach used here is predicated on the notion that human behavior influences the transmission of most communicable diseases. The identification and classification of behavior patterns within a community, combined with a basic knowledge of epidemiological principles, should enable us to identify those cultural and

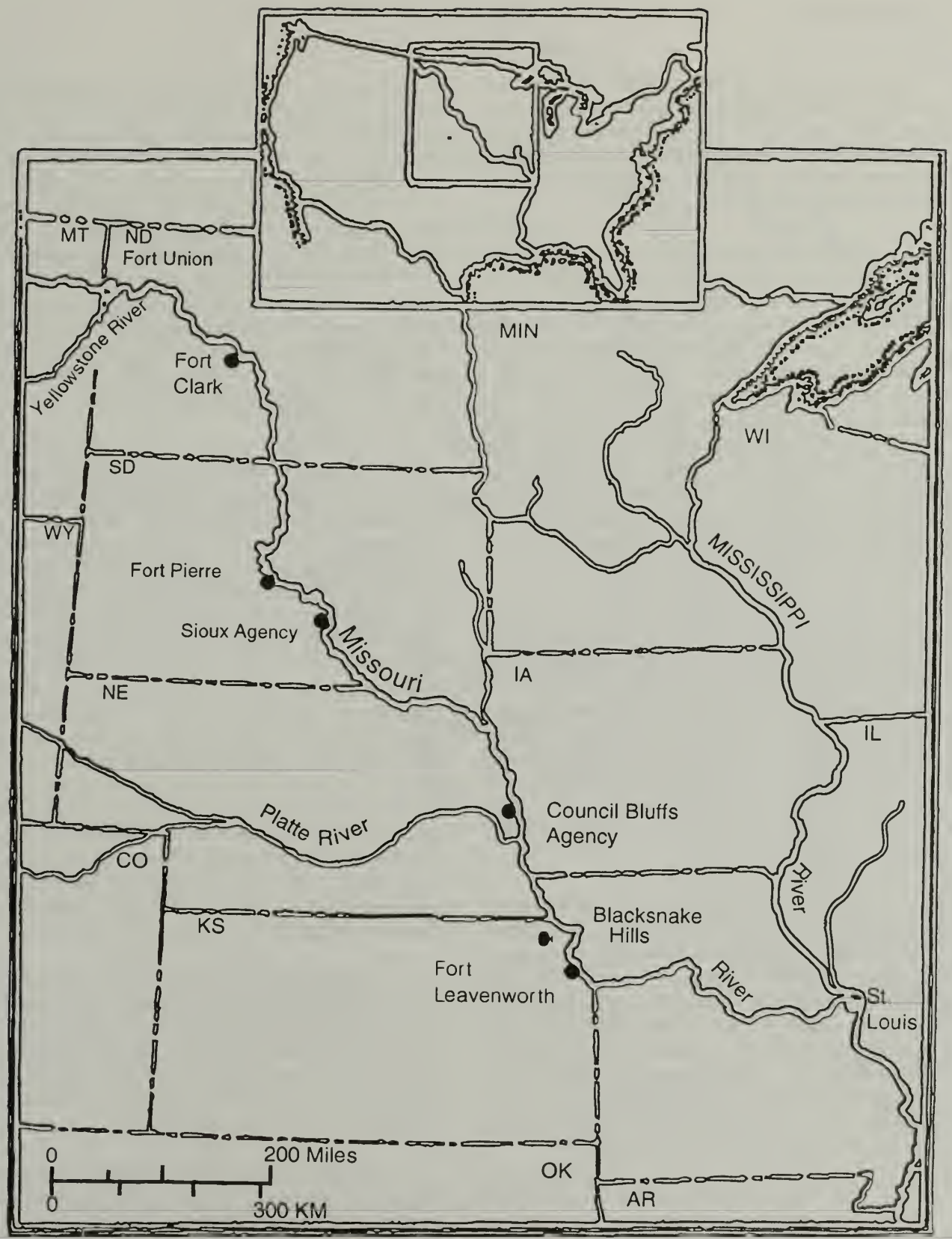


Figure 15.1. Fort Clark and associated fur trading posts on the Upper Missouri.

noncultural phenomena that structured epidemic outbreaks in Plains village communities. The major objective of this model is to construct a framework that will identify where the specific disease-related behaviors of exposure, shedding, transmission, and diffusion could have occurred within a Plains village.

To establish a model that accounts for the patterning of disease within such a setting, analytic units representative of the community's social-interaction sphere can be derived from descriptions of normative behavior among the nineteenth-century Mandans, Hidatsas, and Arikaras. The more prominent ethnohistorical descriptions include the journals of the Lewis and Clark expedition (Thwaites 1969, 1-7) the travel journal of Maximilian, Prince of Wied-Neuwied (Thwaites 1966d, 22-24), Catlin's letters and notes on North American Indians (1973), Chardon's journal (Abel 1932), Luttig's journal of a fur-trading expedition up the Missouri (Drumm 1964), and Denig's description of Indian tribes of the Upper Missouri (Ewers 1961).

Some of the secondary sources consulted include Bower's description of Mandan and Hidatsa social and ceremonial organization (1950, 1965), Deetz's study of Arikara ceramics (1965), Larpenteur's discussion of the fur trade on the Upper Missouri (Coues 1962), and Weitzner's (1979) and Wilson's (1917, 1924, 1934; and 1908-1918 field notes at the Minnesota Historical Society) information on the Hidatsas. Hanson's recent publication on the Hidatsas (1987) and Ronda's (1984) discussion of Lewis and Clark's encounters with Native Americans also are useful.

The sources cited above are in agreement regarding the basic features characterizing these groups. The Mandans, Hidatsas, and Arikaras were sedentary horticulturists who lived in earth-covered dwellings within fortified villages. By the eighteenth century, and probably much earlier, these tribes had established a lifeway that centered on intensive horticultural exploitation of bottomland along the banks of major streams and rivers. They also exploited the herds of bison that migrated along the margins of the Missouri River and the numerous rivers that flowed into the Missouri from the west.

From late spring through early fall, these tribes lived in large earthlodge villages located on terraces above the Missouri River. During this time they engaged in horticulture and occasionally went on extended hunting tours. During the summer and early fall, they organized communal bison hunts that took most of the population out to the High Plains. In the late fall these communities scattered into small winter villages located in the dense timber stands of the Missouri River flood plain and associated streams. This move appears to have been undertaken for the added shelter afforded by the forest and the construction material it provided for house building. Most importantly this movement appears to have been guided by an understanding of the need to preserve the finite resources of timber stands that were exploited by the large summer villages. In the late spring the people returned to the main villages.

Following intensive study of relevant ethnohistorical and secondary sources, spheres of comparable behavior were identified for the Plains Village horticulturists. Seven spheres were differentiated, each representing distinct variations in the relationships between the villagers and their social and physical environment. Specific recurring activities took place within these spheres that created patterns of formalized individual and community behavior. Since many infectious diseases are acquired through direct human interaction, the delineation of significant spheres of behavior within a Plains village serves to identify major locales of disease transmission. Further, given our knowledge of epidemiology, the identification and organization of transmission locales allows us to predict the varying courses acute-crowd infections assumed in these crowded towns. The spheres delineated in this study include: a) the individual; b) the household; c) the extended family/clan; d) the production area; e) area of further-ranging contact; f) the earthlodge village; and g) Euroamerican settlements. These behavior spheres are shown in Figure 15.2.

The *individual sphere* emphasizes personal hygiene, habits associated with food or beverage consumption, and daily social behavior. The *household sphere* is concerned with human interaction as it relates to behavior among family members within an earthlodge. It also included contact with domestic animals and the diseases deriving from and associated with them.

Within a village, each household was the basic unit of production and consumption. As Krause (1972) has pointed out for the Arikaras, and Bruner (1961:221-22), Bowers (1965:26-29), Hanson (1987:53-55), and

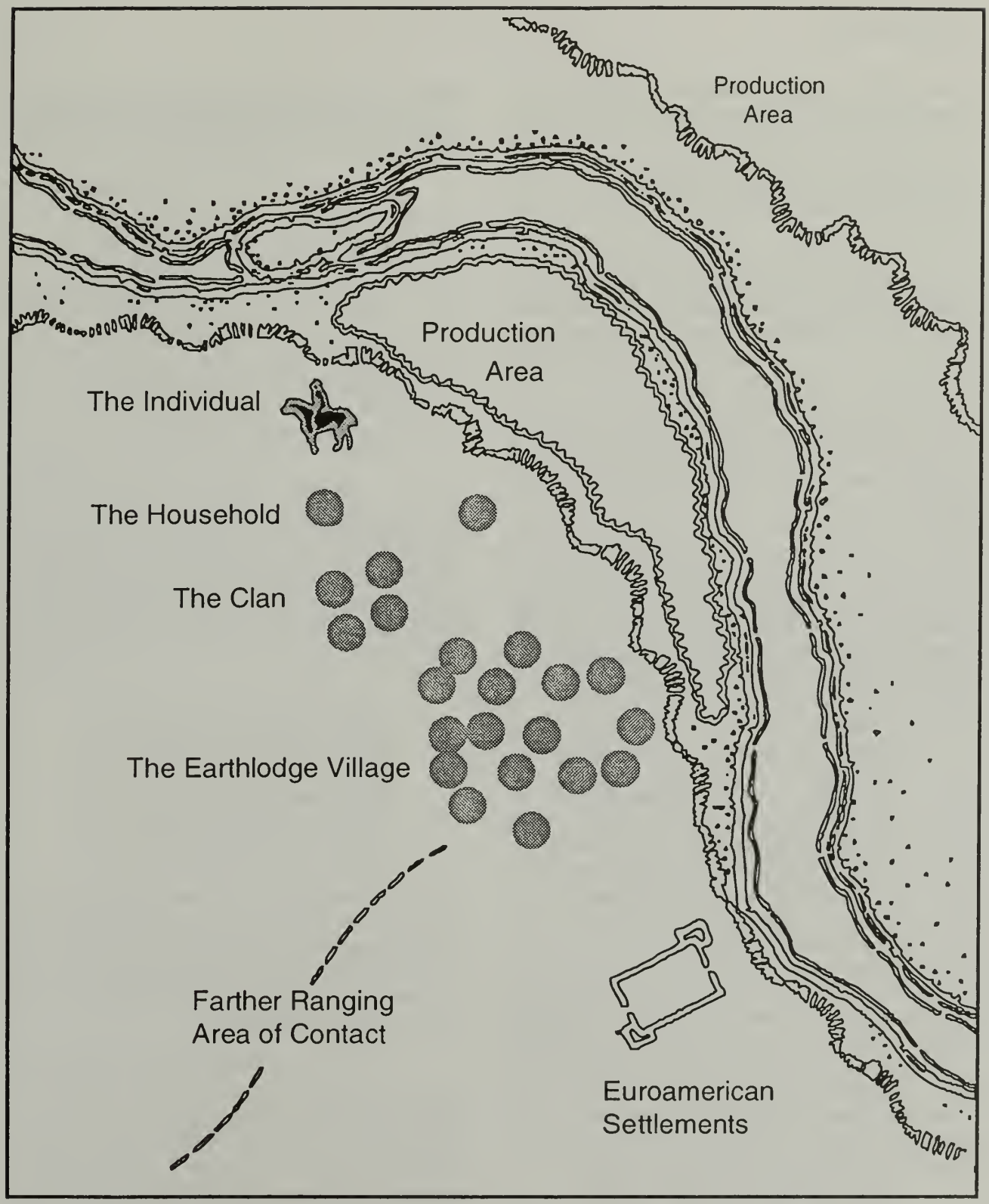


Figure 15.2. General behavior spheres associated with a Plains Village community.

Wood (1967:14-18) for the Mandans and Hidatsas, "...each household was responsible for clearing, planting, harvesting, storing and preparing its own food as well as for producing and maintaining the tools and implements necessary for day-to-day domestic tasks" (Krause 1972:107).

The primary household for village horticulturists was the summer earthlodge. Earthlodges were semisubterranean structures constructed with log frameworks and covered with willow mats overlaid with a thick coating of earth and sod (Bowers 1965:27; Wood 1967:161-17). The lodges were circular, varied in size from about 25 to more than 40 feet in diameter, and had a side entrance and a smoke hole in the center of the roof. Generally they were set very close together in the villages, sometimes with barely sufficient room for one person to pass between them.

In 1834 Maximilian established that the Fort Clark village of 65 lodges was clustered in an area the diameter of which did not exceed 150-200 paces (Thwaites 1966d, 23:255, 266, 363). Upon visiting the deserted Fort Clark village in 1862, Lewis Henry Morgan (1871:43) also commented on the crowded conditions:

> These houses were thickly studded together to economize the space within the stockade, so that in passing through the village you walk along semi-circular foot paths which turn at a few paces both to the right and left. There is not only no street, but it is impossible to see in any direction except short distances...The foot paths tread a labyrinth of circular houses.

Various sources (e.g., Lehmer 1971:136-40; Wilson 1934:358, 372, 386) suggest that the earthlodge as a structure had a use- life of seven to 12 years and could have housed from five to 16 individuals. Modern authors (Hanson 1987:152-159; Lehmer 1977a:107; Tyrrell 1968:228; Wood 1977:338) have suggested that 10 individuals to a lodge is a reasonable estimate for early nineteenth-century structures.

The earthlodge had earth floors, and the hearth and cooking facilities were located in the center of each structure. The entire household and visitors routinely congregated around the hearth, sharing food and eating utensils (Gough 1988:218). Maximilian's firsthand description of these activities is instructive:

> In the centre of the hut a circular place is dug for the fire...The inmates sit round it, on low seats, made of peeled osiers covered with buffalo or bear skin...The Mandans and Manitaries are seen in their huts, sitting round the fire, employed in all kinds of domestic labour. The man has, generally, no clothing except the nokka, and is often merely smoking, but the women are never idle. [Thwaites 1966d, 23:271-72]

Four to eight beds were spaced around the perimeter of each lodge. The bed or sleeping area was enclosed by a pole-and-hide framework. This construction produced what have been called "rectangular boxes of hide," with several individuals sleeping in each of these "boxes" (Meyer 1977:61; Wilson 1934:358, 372). Maximilian corroborates this form of sleeping arrangement:

> The beds stand against the wall of the hut; they consist of a large square case, made of parchment or skins, with a square entrance, and are large enough to hold several persons, who lie very conveniently and warm on skins and blankets. [Thwaites 1966d, 23:271]

Household composition and activities carried out therein as well as the sleeping arrangements would have enhanced opportunities for quickly spreading acute infectious disease. The Plains Village earthlodge, then, must be considered a major locus for disease introduction, incubation, and transmission.

The aforementioned descriptions apply primarily to summer households—structures in which the Indians spent the greater part of the year. However, two other types of dwellings were used by the village Indians. During the winter months the villagers lived in the timbered river bottoms in earthlodges that were smaller models of the summer lodges (Thwaites 1966d, 23:271-72). The villagers also lived in portable skin tents, used when they went on communal bison hunts in the summer and late fall.

The net result of these living arrangements was the same as that described above. Winter lodges and skin tents represented major focal points for the introduction and development of infectious disease within a Plains Village community.

The *extended-family/clan sphere* includes varied production and social activities that occurred on a constant basis among related individuals and households. All corporate activities are included in this sphere. These were highly dynamic within a Plains village, and the sphere encompasses a level of human cooperation that was rivaled only by that of the household. Because these corporate units were so integral in Plains Village life it is our contention that these groups acted indirectly as predisposing agents influencing the course of disease introduction and transmission.

Among the Mandans and Hidatsas, loyalty to one's village was superseded by a deep commitment to one's clan (Bowers 1950:29-33, 81, 83, 99-101; 1965:71-77; Hanson 1986:59-63; Holder 1970:57-58, 72-73). Clans were significant integrating forces in Mandan-Hidatsa society, ranking second to the household in importance. Early nineteenth-century Mandan villages consisted of:

> ...a number of matrilineal exogamous, non-totemic clans divided into nameless matri-moieties. These clans comprised one or more matrilineages closely identified with the household, a matrilineal, matrilocal unit composed of one to three independent polygynous families. The household was the smallest economic unit, and such a group could leave a village at will and move to another village, where it affiliated with its nearest relatives. Marriage was outside the clan and preferably with a member of the other moiety. [Wood 1967:13]

Hanson (1986:59, 61-62; 1987:58-60) has found a similar social organization among the nineteenth-century Hidatsas. The Hidatsas essentially were endogamous, matrilineal communities. Residence following marriage usually was matrilocal. The Hidatsas were divided into moieties—one of three clans and one of four. Each clan primarily was exogamous. The effect was that the clans crosscut and integrated extended families and villages of the Hidatsa subgroups. Hanson (1986:59) is most emphatic in pointing out that these clans were sodalities and not residential units.

The historic Arikaras had no recognizable clan structure (Holder 1970:722-73; Meyer 1977:72). However, the basic unit of production was the matrilocal extended household. Descent also was matrilineal. Arikara villages were divided into commoner and aristocratic families, with the aristocratic families holding power by virtue of hereditary positions (Holder 1970:36-38, 40-47, 59-61; Krause 1972:107).

Clans served a variety of important functions among the Mandans, Arikaras, and Hidatsas. First and foremost they were corporate bodies, and as such they organized and directed work forces within a village. Coordinating hunting and trading expeditions, managing agricultural endeavors, and directing earthlodge construction and repair were examples of clan-sponsored activity (Bowers 1950:27, 29, 31-32; Hanson 1986:59-63; Holder 1970:58). Clans also regulated marriage patterns, though the extent of this regulation appears to have waned by the late eighteenth and early nineteenth centuries (Hanson 1987:53-54, 56- 57, 59-60; Wood 1986:69-72). Clans served as residential cooperative groups, and as such they attended to their fellow members especially in time of need—be it economic, defense, or medical.

The primary health-care unit appears to have been first the household and then the clan. Ethnographic and historical data—incomplete as they are—support this claim (Bowers 1950:60, 177, 1965:168-73; Lowie 1917:51-52; Thwaites 1966d, 23:358-60, 384; Weitzner 1979:286-87). Bowers (1950) suggests that Mandan clans played a crucial role in assisting the sick during epidemic outbreaks. His discussion of clan obligations regarding disposal of the dead, distribution and division of remaining material goods, and care of surviving relatives is quite specific:

> The deceased person's personal property was taken by the brothers and sisters, and, when there were none living, the people of the clan took possession of the goods and divided it among themselves...When the deceased was an old woman of a couple occupying a lodge by themselves, the man left the lodge to live with people of his own

> clan, and the lodge was either abandoned or taken over by a group of females belonging to the deceased person's clan. When an old woman having no children or younger females in the lodge became feeble, she usually moved into another lodge where the females were of her clan. When a woman died leaving small children, her unmarried sisters were expected to provide for them and to marry the widower if he asked them. When the deceased mother had no sisters, the children were cared for by the maternal grandmother and her sisters. The clan provided for those who had no close blood relatives. [Bowers 1950:99]

> It was the clan's duty to care for its old people having no blood children. During the smallpox epidemic of 1837, women went through the villages and gathered orphans of their clan, who were taken into their lodges to be reared. Old people were invited to be fed and clothed by younger members of their own clan. [Bowers 1950:31]

Bowers found similar cultural reactions to disease events and the effects of those events among the Hidatsas:

> It was the duty of the clan to assume responsibility for the care of orphans. The Hidatsa interpret an orphan to be one whose father and brothers, mother and her sisters, married sisters, and able-bodied maternal grandmothers were dead. Then the clan took over and provided a home. The number of such cases was quite large after 1800 owing to epidemics and enemy attacks on small hunting parties of both sexes. It is interesting to observe that some of the most distinguished Hidatsa of the 19th century were left orphans in 1837 by the inroads of smallpox. [Bowers 1965:71]

> Clan cooperation was expressed in many ways. In addition to assisting and caring for the old and orphans, women who were ill and could not do their work were assisted in caring for their households and gardens. One might even be brought into the lodge of clanswomen and nursed back to health. [Bowers 1965:75]

Lowie's (1917) work supports Bowers' conclusions along these lines. Most specifically, he established that funeral arrangements were carried out along clan lines (Lowie 1917:51- 52).

Understanding the general social organization of the Mandans, Hidatsas, and Arikaras at the household and clan level is crucial to developing a model of infectious disease transmission within a Plains Village community. However, transmission patterns during the course of an epidemic also may be influenced by daily work patterns. The intrahousehold division of labor among the villagers followed the lines of age and sex. These man-environment activities generally segregated men and women during work periods or task-specific assignments. The result was a general grouping of individuals who could acquire and then transmit disease on the basis of their daily work associations. Although the sexes occasionally shared work assignments, the general rule was a division of labor based on sex. Ethnohistorical and medical research suggest that transmission patterns for many infectious diseases are enhanced within a community along task-oriented lines. Work or task forces were significant cultural units within Plains Village societies and as such warrant the creation of two "spheres" for the transmission model.

The *farther-ranging area of contact sphere* was where villagers periodically came into contact with people from other settlements as well as with new physical and biological environments. Five major types of activities specific to Plains Village lifeways occurred in this sphere: war parties, communal hunting parties, hunting camps, trading parties, and general migration and coalescence. The great majority of these activities took place away from the permanent villages and were for the most part carried out by the male members of the societies.

Men's work thus tended to be characterized by mobility beyond the immediate village area (i.e., the area of farther-ranging activities), requiring occasional investment of heavy physical exertion. Hunting, raiding, and trading expeditions placed males in situations where they could readily acquire infections from outside populations. This mobility made the men unknowing potential agents for the introduction and transmission of disease into disease-free communities.

The following note in Chardon's diary from the summer of 1837 highlights this pattern:

> The War Party of Rees and Mandans that left here the 26th of June, all came back to day, haveing Killed seven Sioux, Men, Women and children, two Lodges that were camped at the Mouth of White River, it appears that the small pox has broke our amongst the Sioux, as some of the Party, on their way back, was taken sick at Grand River, haveing caught the disease from those that they butchered. [Abel 1932:128]

Male behavior in this "area of farther-ranging contact" had consequences beyond disease acquisition, introduction, and transmission. The "shuttle effect" produced by the movement of men in and out of villages during the summer could under certain circumstances serve to maintain and prolong infectious diseases. This behavior pattern may have contributed to higher morbidity and mortality rates during the 1837-1838 epidemic at Fort Clark. Studies have shown that if an illness is highly virulent, there is a corresponding higher secondary-attack rate (Heiner et al. 1971:319-21; Mack et al. 1972:166-68).

For the Plains villagers then, male behavior in the area of farther-ranging contact must be considered carefully in evaluating acute infectious-disease outbreaks. It certainly is possible that the male-dominated activities that took place within this sphere not only sustained but also maintained epidemics. If the epidemics were severe, the behavior often insured that a high morbidity and mortality rate would result.

The *production area sphere* encompasses man-environment activities. Gardening, food handling, care of the young, trading, maintenance of the lodges, and care of the sick were some of the major tasks performed within this component of the model. While this work was carried out primarily by women and was likely to be long, tedious, and time consuming,

> ...the matrilineally related co-resident women of the household were the stable unit in the fabric of village life. It was to and from these stable units that goods, personnel, and services flowed in a richly networked internal web of an ongoing social order. [Krause 1972:107]

However, the very tasks that women performed in work groups and especially within the extended families may have served to spread disease in a patterned fashion—initially among the close family group and associated clan members, and then among those individuals who cooperated in production area activities.

All of the aforementioned behavior spheres are products of a settlement, or more precisely, the earthlodge village. The *earthlodge-village sphere* encompassed the entire community, and included interaction among various local families, village clans, other villages, and outside visitors. In terms of disease transmission the village cannot be considered a dominant factor except in situations where the entire community moved from one place to another, bringing their diseases with them.

The *Euroamerican settlement sphere* was where villagers came into contact with non-native peoples on a periodic basis. This sphere included a fur company's post, support staff, and goods delivered by a provisioning steamboat. It also included itinerant traders who delivered goods to the village proper.

The Euroamerican fur trade and the effect it had upon the village tribes has been discussed by several authors (Abel 1932; DeVoto 1947; Lehmer 1971; Nasatir 1952; Ray 1974, 1975, 1976; Sunder 1968; Wood and Thiessen 1985). We briefly focus on the disease hazards posed by fur-trading posts.

Given the disease history of the village tribes, Fort Clark can be thought of as a repository for epidemic disease hazards (Figure 15.3). The post was situated directly next to the major Mandan village and within

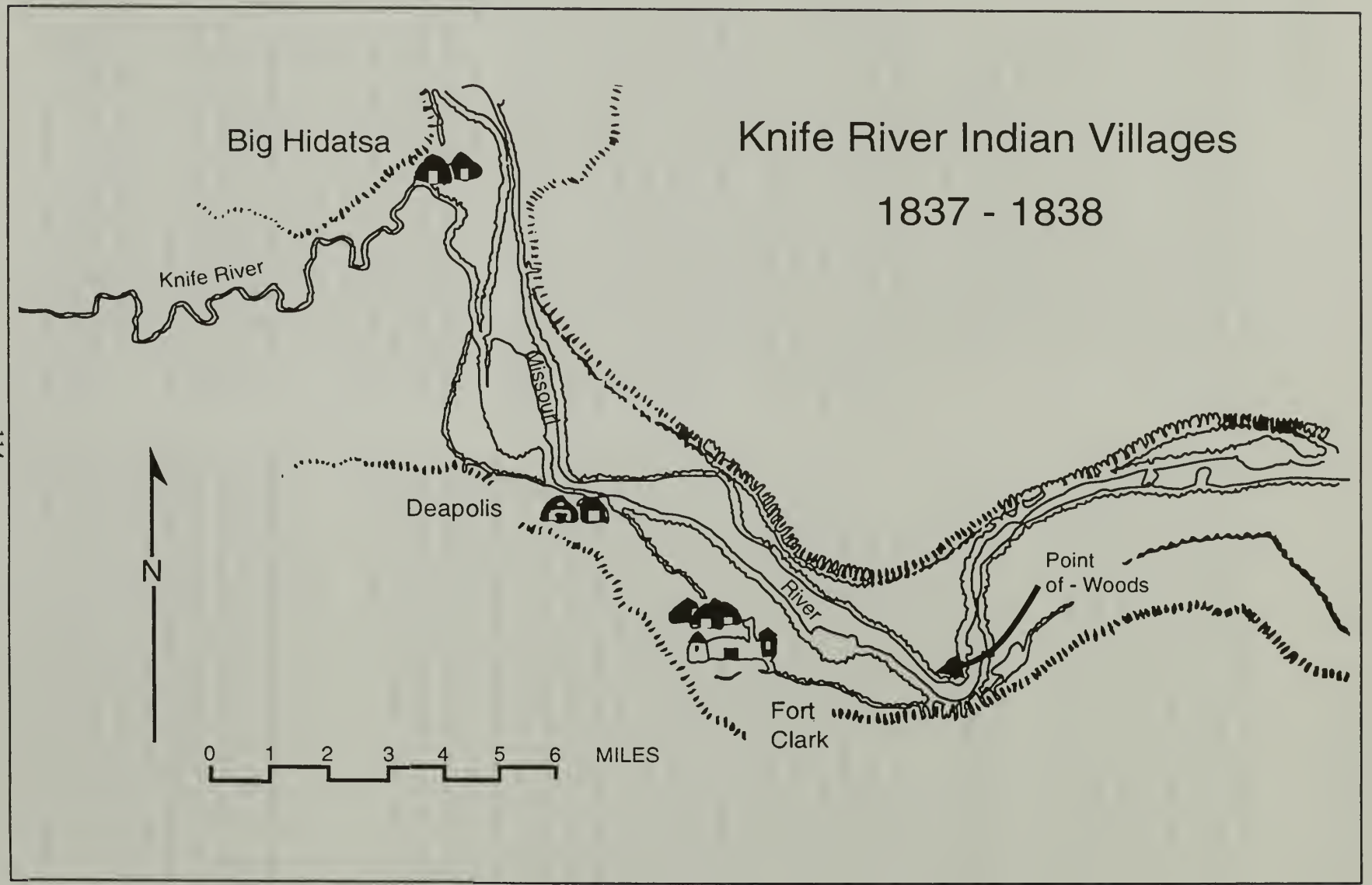


Figure 15.3. Fort Clark and the Plains Village settlements: 1837-1838.

three to 10 miles of the two other villages. The occupants thus were in almost constant contact with a community that possessed certain diseases to which they had little or no immunity. Fear of hostile neighbors kept them massed in nucleated communities; proximity to the fur-trading center kept them in constant jeopardy from European diseases that were brought up the Missouri River by traders based in the south. In essence, the villagers were hostages to a visible enemy and to an invisible, perhaps more deadly, foe.

The exchange of goods between Indians and Euroamericans did not take place solely at the fort. The fort regularly sent representatives with trade goods to the Big Hidatsa and Deapolis villages to accommodate those Indians who did not want to make a ten-mile trip. Therefore, disease could be transmitted to villagers as they visited the post, or as they were visited by a trading-post representative. The end result was constant contact with Euroamericans at the individual, household, and community level for every village.

All these activities served to create conditions in which a constant transfer of Euroamerican microbes occurred among and between the villages and the trading post at Fort Clark. That more serious epidemics did not occur among these villages beginning about 1830 (first construction of the post) is a medical miracle—or more likely an omission in the historical record.

Summary

In an effort to identify how epidemic disease may have affected Plains village populations a general model has been constructed incorporating elements of epidemiological and historical theory. The model is based on a synthesis of historical data describing the lifeways of the Upper Missouri villagers during the eighteenth and nineteenth centuries and general epidemiological descriptions of acute-crowd infections among Western and non-Western populations. An examination of general epidemiological methods suggested that anthropologists concerned with understanding disease occurrence and process among Native American populations prior to the late nineteenth century should examine the data available to them in terms of increased specificity in a) diagnosis; b) understanding the portals of invasion and avenues of shedding of the agent; c) determining transmission and reservoir mechanisms; d) evaluating contributing factors; and e) developing and evaluating cultural consequences associated with infectious disease.

By defining the core cultural activity areas of villages one can examine the historical data and determine the level of inter- and extra-village contact that occurred among the village tribes. From this we should be able to synthesize known historical facts with epidemiological principles and model the most likely avenues for disease introduction and transmission within a Plains Village community. The thesis behind this endeavor is straightforward: discrete contact situations promoted and structured the introduction and spread of acute-crowd infections within Plains Village communities.

Village organization, household activities, individual social behavior, shared clan obligations within a community, specific activity patterns, and extant Euroamerican settlements all served to structure infectious disease outbreaks among the Plains villagers.

It is hoped that historical data analyzed within the framework of this model will enable scholars to move to questions beyond construction of disease chronologies. Although disease chronologies are necessary first steps in the examination of disease and Native American lifeways, they do not address issues of culture change and adjustment. These are issues that define how populations adapted (or failed to adapt) to the introduction of Western diseases. These are issues that ultimately address the central question of archeology, reconstruction of past lifeways and defining culture process.

The model that has been presented is intended to be a general statement on what units of analysis are significant for deriving reasonable explanations for epidemic disease transmission in a Plains Village community. It is hoped that the model will be tested and amended.

Even if half the cited cultural practices are true, it is clear that traditional social behavior probably served as an efficient transmission vector for the spread of certain acute-crowd infections among the village horticulturists. In the most general sense acute-crowd infections are *introduced* through the individual and household sphere. *Transmission* of acute-crowd infections takes place within the family/clan, production, Euroamerican settlement and village spheres.

Attending to the sick, as well as handling of contaminated bodies, clothing, and personal belongings following death would have facilitated the spread of an infectious disease such as smallpox. However, the incorporation of potentially infectious individuals (survivors from a household) into a household that was disease free would have been the most damaging cultural practice. This practice more than any other would have insured that an infectious disease was transmitted rapidly throughout an entire village.

If the historical data cited are representative of village social behavior—and they appear to be—then many acute-crowd infections (smallpox, measles, chickenpox, etc.) spread first through the household and clan, and then through the production, Euroamerican, and village spheres. While social organization at the household and clan level had a unifying effect on the community, it also could serve to destroy a village during an epidemic outbreak.

Note: A portion of this paper, principally that dealing with the chronological information, was published as "Chronology of Epidemics Among Plains Village Horticulturalists: 1738-1838," by Michael K. Trimble, *Southwestern Lore* 54(4):4-31 (December, 1988).

REFERENCES CITED

Unpublished Documents

Minnesota Historical Society, St. Paul

Field notes of Gilbert L. Wilson's ethnographical research on the Fort Berthold Reservation, North Dakota, 1908-1918. Also on file at the American Museum of Natural History, New York.

Missouri Historical Society, St. Louis

Census of Upper Missouri tribes prepared by W. Clark, November 4, 1816, Indians Collection, Box 1.

Letter from J. Alcrow to P. D. Papin, January 17, 1838. Box 36/60, 4 pp.

Letter from F. A. Chardon to P. D. Papin, November 28, 1837. Box 35/60, 2 pp.

Letter from F. A. Chardon to P. D. Papin, December 12, 1837. Box 35/60, 3 pp.

Letter from F. A. Chardon to P. D. Papin, April 11, 1838. Box 36/60, 4 pp.

Letter from D. D. Mitchell to P. D. Papin, December 1, 1837. Box 35/60, 2 pp.

Letter from T. Papin to P. M. Papin, July 25, 1832. Box 28/60, 4 pp.

Letter from J. Pilcher to P. Chouteau, Jr., August 21, 1833. Box 30/60, 3 pp.

Letter from J. Pilcher to P. Chouteau, Jr., September 11, 1833. Box 31/60, 4 pp.

Letter from J. Pilcher to J. Halsey, May 30, 1837. Box 35/60, 3 pp.

National Archives and Records Service (NARS), Washington, D. C.

Letter from T. S. Bryant to L. Cass, August 26, 1831, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 883, frame 190.

Letter from W. Clark to D. Kurts, September 3, 1833, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 750.

Letter from D. H. Davis to L. Cass, October 21, 1832, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 750.

Letter from D. H. Davis to L. Cass, November 16, 1832, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 750.

Letter from J. Dougherty to W. Clark, August 9, 1831, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 883, frame 199-200.

Letter from J. Dougherty to L. Cass, June 6, 1832, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 883, frame 273-274.

Letter from J. Dougerty to L. Cass, August 12, 1832, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 883, frame 275.

Letter from J. Dougherty to W. Clark, November 20, 1832, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 883, frame 260-262.

Letter from J. Dougherty to L. Cass, December 6, 1832, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 750.

Letter from J. Dougherty to W. Clark, November 12, 1834, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 883, frame 353-356.

Letter from J. Dougherty to W. Clark, July 16, 1835, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 883, frame 464-467.

Letter from W. N. Fulkerson to W. Clark, October 1, 1835, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 750.

Letter from W. Fulkerson to W. Clark, September 30, 1836, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 751.

Letter from W. N. Fulkerson to W. Clark, September 30, 1837), Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 884, frame 180-191.

Letter from S. Latta to C. E. Mix, January 24, 1862, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 885, frame 456.

Letter from S. Latta to W. P. Dole, August 27, 1862, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 885, frame 4677-471.

Letter from M. Martin to L. Cass, November 28, 1832, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 750.

Letter from D. D. Mitchell to T. H. Crawford, September 12, 1842, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 753.

Letter from T. P. Moore to W. Mitchell, May 14, 1846, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 884, frame 527-532.

Letter from J. Pilcher to W. Clark, June 10, 1837, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 884, frame 280-282.

Letter from J. Pilcher to W. Clark, July 1, 1837, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 884, frame 277-278.

Letter from J. Pilcher to W. Clark, February 5, 1838, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 884, frame 272-275.

Letter from J. Pilcher to W. Clark, February 27, 1838, Record Group 75 (Records of the Office of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 884, frame 293-295.

Letter from J. Pilcher to W. Clark, July 3, 1838, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 884, frame 316-321.

Letter from J. Pilcher to W. Clark, September 12, 1838, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters received, 1824-1881), Microfilm roll 884, frame 353-358.

Letter from J. F. A. Sanford to W. Clark, July 17, 1832, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 750.

Letter from M. Wilkinson to N. Edmunds, September 5, 1865, Record Group 75 (Records of the Bureau of Indian Affairs), M234 (Correspondence of the Office of Indian Affairs, Letters Received, 1824-1881), Microfilm roll 886, frame 706-707.

Congressional Documents

22nd Cong., 1st sess., *H. Ex. Doc. 190* (Serial 220).

22nd Cong., 2nd sess., *H. Ex. Doc. 2* (Serial 233).

22nd Cong., 2nd sess., *H. Ex. Doc. 82* (Serial 234).

23rd Cong., 1st sess., *S. Doc. 512* (Serial 245).

23rd Cong., 1st sess., *S. Doc. 512* (Serial 246).

23rd Cong., 1st sess., *S. Doc. 512* (Serial 248).

40th Cong., 1st sess., *S. Ex. Doc. 77*, (Serial 1317).

Other Publications and Reports

Note: References in which an asterisk precedes the date were supported in whole or part by the Midwest Archeological Center's archeological and ethnohistorical research program for the Knife River Indian Villages National Historic Site.

Abel, A. H. (editor)
1921 Trudeau's Description of the Upper Missouri. *Mississippi Valley Historical Review* 89(1 and 2):149-179.

1932 *Chardon's Journal at Fort Clark, 1834-1839*. State of South Dakota, Department of History, Pierre.

1939 *Tabeau's Narrative of Loisel's Expedition to the Upper Missouri*. Translated by R. A. Wright. University of Oklahoma Press, Norman.

Ashburn, P.M.
1947 *The Ranks of Death: A Medical History of the Conquest of America*. Coward-McCann, New York.

Baerreis, D. A.
1961 The Ethnohistoric Approach and Archaeology. *Ethnohistory* 8(1):49-77.

Benenson, A. S.
1981 Smallpox. In *Communicable and Infectious Diseases*, edited by P. F. Wehrle and F. H. Top, pp. 577-588. Mosby, St. Louis.

Black, F. L.
1966 Measles Endemicity in Insular Populations: Critical Community Size and its Evolutionary Implication. *Journal of Theoretical Biology* 11(2):207-211.

1975 Infectious Disease in Primitive Societies. *Science* 187(4176):515-518.

Black, F. L., W. J. Hierholzer, F. de Pinheiro, A. S. Evans, J. P. Woodall, E. M. Opton, J. E. Emmons, B. S. West, G. Edsall, W. G. Downs, and G. D. Wallace
1974 Evidence for Persistence of Infectious Agents in Isolated Human Populations. *American Journal of Epidemiology* 100(3):230- 250.

Bowers, A. W.
1950 *Mandan Social and Ceremonial Organization*. University of Chicago Press.

1965 *Hidatsa Social and Ceremonial Organization*. Bureau of American Ethnology, Bulletin 194. Smithsonian Institution, Washington, D.C.

Brain, J. P., A. Toth, and A. Rodriguez-Buckingham
1974 Ethnohistoric Archaeology and the De Soto Entrada into the Lower Mississippi Valley. In *The Conference on Historic Site Archaeology Papers 1972*, 7:232-289.

Brittain, A.
1903 *The History, Discovery and Exploration of North America*. G. Barrie and Sons, Philadelphia.

Bruner, E. M.
1961 Mandan. In *Perspectives in American Indian Culture Change*, edited by E. H. Spicer, pp. 187-277. University of Chicago Press.

Burnet, Sir M., and D. D. White
1972 *Natural History of Infectious Disease*. 4th ed. Cambridge University Press.

Burpee, L. J. (editor)
1927 *Journals and Letters of Pierre Gaultier de Varennes de la Vérendrye and His Sons*. Champlain Society Publication XVI. Toronto.

Catlin, G.
1973 *Letters and Notes on the Manners, Customs, and Conditions of North American Indians*. 2 vols. Reprint of 4th ed., 1844. Dover, New York. First ed. originally published 1841, London.

Centerwall, W. R.
1968 A Recent Experience of Measles in a "Virgin Soil" Population. In *Scientific Publication 165*, pp. 77-80. Pan American Health Organization, Washington, D.C.

Charlton, T. H.
1981 Archaeology, Ethnohistory, and Ethnology: Interpretive Interfaces. In *Advances in Archaeological Method and Theory*, edited by M. B. Schiffer, vol. 4:129-176. Academic Press, New York.

Chomko, S. A.
1986 The Ethnohistorical Setting of the Upper Knife-Heart Region. In *Papers in Northern Plains Prehistory and Ethnohistory*, edited by W. R. Wood, pp. 59-96. South Dakota Archaeological Society, Special Publication No. 10. Sioux Falls.

Christensen, P. E., H. Schmidt, H. O. Bang, V. Anderson, B. Jordal, and O. Jensen
1953 An Epidemic of Measles in Southern Greenland, 1951. *Acta Medica Scandinavica* 144(6):430-449.

Cockburn, A.
1963 *The Evolution and Eradication of Infectious Disease*. John Hopkins University Press, Baltimore.

1971 Infectious Diseases in Ancient Populations. *Current Anthropology* 12(1):45-54.

Cook, S. F.
1937 The Extent and Significance of Disease Among the Indians of Baja California, 1697-1773. *Ibero-Americana* 12.

1973 The Significance of Disease in the Extinction of the New England Indians. *Human Biology* 45:485-508.

Coues, E. (editor)
1962 *Forty Years a Fur Trader on the Upper Missouri: The Personal Narrative of Charles Larpenteur, 1833-1872.* Reprinted. Ross and Haines, Minneapolis. Originally published 1898 in two vols., Francis P. Harper, New York.

1965 *The History of the Lewis and Clark Expedition.* 3 vols. Reprinted. Dover, New York. Originally published 1893 in four vols., Francis P. Harper, New York.

Crosby, A. W.
1972 *The Columbian Exchange: Biological and Cultural Consequences of 1492.* Greenwood, Westport, Connecticut.

1976 Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America. *The William and Mary Quarterly* 33(2):289-299.

Dale, H. C. (editor)
1941 *The Ashley-Smith Explorations and Discovery of a Central Route to the Pacific, 1822-1829.* Clark and Co., Glendale, California.

Deetz, J. F.
1965 *The Dynamics of Stylistic Change in Arikara Ceramics.* Illinois Studies in Anthropology No. 4. University of Illinois Press, Urbana.

DeVoto, B.
1947 *Across the Wide Missouri.* Houghton-Mifflin, Boston.

Dixon, C. W.
1962 *Smallpox.* Churchill, London.

Dobyns, H. F.
1963 An Outline of Andean Epidemic History to 1720. *Bulletin of the History of Medicine* 3:493-515.

1966 Estimating Aboriginal American Population: An Appraisal of Techniques with a New Hemispheric Estimate. *Current Anthropology* 7(4):395-416.

1983 *Their Number Become Thinned: Native American Population Dynamics in Eastern North America.* University of Tennessee Press, Knoxville.

Dollar, C. D.
1977 The High Plains Smallpox Epidemic of 1837-38. *Western Historical Quarterly* 8(1):15-38.

Drumm, S. M. (editor)
1964 *Journal of a Fur-Trading Expedition on the Upper Missouri, 1812-1813,* by J. C. Luttig. Reprinted with preface and notes by A. P.Nasatir. Argosy-Antiquarian, New York. Originally published 1920 by the Missouri Historical Society, St. Louis.

Duffy, J.
1951 Smallpox and the Indians of the American Colonies. *Bulletin of the History of Medicine* 25:324-341.

1953 *Epidemics in Colonial America.* Louisiana State University Press, Baton Rouge.

Dunn, F. L.
1968 Epidemiological Factors: Health and Disease in Hunter- Gatherers. In *Man the Hunter*, edited by R. B. Lee and I. DeVore, pp. 221-228. Aldine, Chicago.

Euler, R. C.
1972 Ethnohistory in the United States. *Ethnohistory* 19(3):201- 207.

Ewers, J. C.
1954 The Indian Trade of the Upper Missouri Before Lewis and Clark: An Interpretation. *Bulletin of the Missouri Historical Society* 10(4, Part 1):429-446. [Also published in slightly revised form as "The Indian Trade of the Upper Missouri Before Lewis and Clark," in *Indian Life on the Upper Missouri*, by J. C. Ewers, pp. 14-33. University of Oklahoma Press, Norman, 1968.]

1955 *The Horse in Blackfoot Indian Culture*. Bureau of American Ethnology, Bulletin No. 159. Smithsonian Institution, Washington, D.C.

1973 The Influence of Epidemics on the Indian Populations and Cultures of Texas. *Plains Anthropologist* 18(60):104-115.

Ewers, J. C. (editor)
1961 *Five Indian Tribes of the Upper Missouri: Sioux, Arickaras, Assiniboines, Crees, Crows*, by E. T. Denig. University of Oklahoma Press, Norman.

Fenton, W. N.
1962 Ethnohistory and Its Problems. *Ethnohistory* 9(1):1-23.

Ferch, D. L.
1983-1984 Fighting the Smallpox Epidemic of 1837-38: The Response of the American Fur Company. *The Museum of the Fur Trade Quarterly* 19(4):2-7 and 20(1):4-9.

Fortuine, R. F.
1971 The Health of the Eskimos, as Portrayed in the Earliest Written Accounts. *Bulletin of the History of Medicine* 45:98-114.

Fox, J. P., C. E. Hall, and L. R. Elveback
1970 *Epidemiology, Man and Disease*. Macmillan, New York.

Fox, J. P., W. S. Elveback, L. Gatewood, and E. Ackerman
1971 Herd Immunity: Basic Concept and Relevance to Public Health Immunization Practices. *American Journal of Epidemiology* 94:179-189.

Frost, W. H.
1976 Some Conceptions of Epidemics in General. *American Journal of Epidemiology* 103(2):141-151.

Gough, B. M. (editor)
1988 *The Journal of Alexander Henry the Younger 1799-1814*, vol. 1. Champlain Society Publication LVI. Toronto.

Hanson, J. R.
1986 Kinship, Marriage, and Residence Patterns in Hidatsa Village Composition. In *The Origins of the Hidatsa Indians: A Review of Ethnohistorical and Traditional Data*, by W. R. Wood, pp. 43-63. J & L Reprint Company, Lincoln.

*1987 *Hidatsa Culture Change, 1780-1845: A Cultural Ecological Approach.* J & L Reprint Company, Lincoln.

Harmon, D.
1988 Big Bends and Little Missouris: Place-Name Confusion on the Upper Missouri. *North Dakota History* 55(3):14-21.

Heiner, G. G., N. Fatima, and F. R. McCrumb
1971 A Study of Intrafamilial Transmission of Smallpox. *American Journal of Epidemiology* 94(4):316-326.

Hewitt, J. N. B. (editor)
1937 *Journal of Rudolph Frederich Kurz.* Translated by M. Jarrell. Bureau of American Ethnology, Bulletin No. 115. Smithsonian Institution, Washington, D.C.

Holder, P.
1970 *The Hoe and the Horse on the Plains: A Study of Cultural Development Among the North American Indians.* University of Nebraska Press, Lincoln.

Jackson, D.
1962 *Letters of the Lewis and Clark Expedition, with Related Documents, 1783-1854.* University of Illinois Press, Urbana.

Jackson, J. C.
1982 Brandon House and the Mandan Connection. *North Dakota History* 49(1):11-19.

Jacobs, W. R.
1974 The Tip of an Iceberg: Pre-Columbian Indian Demography and Some Implications for Revisionism. *The William and Mary Quarterly* 31(1):123-132.

Jarcho, S.
1964 Some Observations on Disease in Prehistoric America. *Bulletin of the History of Medicine* 38:1-19.

Joralemon, D.
1982 New World Depopulation and the Case of Disease. *Journal of Anthropological Research* 38(1):108-127.

Krause, R. A.
1972 *The Leavenworth Site: Archaeology of an Historic Arikara Community.* Publications in Anthropology No. 3. University of Kansas, Lawrence.

Lehmer, D. J.
1971 *Introduction to Middle Missouri Archeology.* Anthropological Papers 1. National Park Service, Washington, D.C.

1977a Epidemics Among the Indians of the Upper Missouri. In *Selected Writings of Donald J. Lehmer*, pp. 105-111. J & L Reprint Company, Lincoln.

1977b The Other Side of the Fur Trade. In *Selected Writings of Donald J. Lehmer*, edited by W. R. Wood, pp. 91-104. J & L Reprint Company, Lincoln.

Lilienfield, A. M.
1976 *Foundations of Epidemiology*. Oxford University Press, New York.

Lowie, R. H.
1917 Notes on the Social Organization and Customs of the Mandan, Hidatsa, and Crow Indians. *Anthropological Papers of the American Museum of Natural History* 21(1). New York.

Lurie, N. O.
1961 Ethnohistory: An Ethnological Point of View. *Ethnohistory* 8(1):78-92.

McGee, W. J.
1897 The Siouan Indians: A Preliminary Sketch. In the *Fifteenth Annual Report of the Bureau of Ethnology*, Smithsonian Institution, pp. 153-204. Government Printing Office, Washington D.C.

McNeill, W. H.
1977 *Plagues and Peoples*. Doubleday, New York.

Mack, T. M., D. B. Thomas, A. Ali, and M. M. Khan
1972 Epidemiology of Smallpox in West Pakistan. *American Journal of Epidemiology* 95(2):157-168.

Mallery, G.
1886 Pictographs of the North American Indians. A Preliminary Paper. In the *Fourth Annual Report of the Bureau of Ethnology*, Smithsonian Institution, pp. 3-256. Government Printing Office, Washington, D.C.

May, J. M. (editor)
1961 *Studies in Disease Ecology*. Hafner, New York.

Meyer, R. W.
1977 *The Village Indians of the Upper Missouri: The Mandans, Hidatsas, and Arikaras*. University of Nebraska Press, Lincoln.

Milner, G. R.
1980 Epidemic Disease in the Postcontact Southeast: A Reappraisal. *Midcontinental Journal of Archaeology* 5(1):39-56.

Mooney, J.
1928 The Aboriginal Population of America North of Mexico, edited by J. R. Swanton. *Smithsonian Miscellaneous Collections* 80(7).

Morgan, L. H.
1871 The Stone and Bone Implements of the Arickarees. *Twenty- First Annual Report of the Regents of the University of the State of New York*, pp. 25-46. Van Benthuysen Printing House, Albany.

Morse, J.
1822 *Report to the Secretary of War on Indian Affairs*. Converse, New Haven.

Moulton, G. E.
1983 Atlas of the Lewis and Clark Expedition. *Journals of the Lewis and Clark Expedition*, vol. 1. University of Nebraska Press, Lincoln.

Nasatir, A. P.
1952 *Before Lewis and Clark: Documents Illustrating the History of the Missouri, 1785-1804.* 2 vols. St. Louis Historical Documents Foundation.

Neel, J. V.
1977 Health and Disease in Unacculturated Amerindian Populations. In *Health and Disease in Tribal Societies*, pp. 155-168. Ciba Foundation Symposium 49. Amsterdam.

Neel, J. V., W. R. Centerwall, N. A. Chagnon, and H. L. Casey
1970 Notes on the Effect of Measles and Measles Vaccine in a Virgin-soil Population of South American Indians. *American Journal of Epidemiology* 91(4):418-429.

Osgood, E. S. (editor)
1964 *The Field Notes of Captain William Clark, 1803-1805.* Yale University Press, New Haven.

Panum, P. L.
1940 *Observations Made During the Epidemic on the Faroe Islands in the Year 1846.* American Public Health Association, New York.

Quaife, M. M. (editor)
1916 Extracts from Capt. McKay's Journal—and Others. *Proceedings of the State Historical Society of Wisconsin*, 63rd Annual Meeting. Madison.

Ramenofsky, A. F.
1982 *The Archaeology of Population Collapse: Native American Response to the Introduction of Disease.* Ph.D. dissertation, Department of Anthropology, University of Washington, Seattle.

Ray, A. J.
1974 *Indians in the Fur Trade: Their Role as Hunters, Trappers and Middlemen in the Lands Southwest of Hudson Bay, 1660-1870.* University of Toronto Press.

1975 Smallpox, the Epidemic of 1837-38. *The Beaver* 306(2):8-13.

1976 Diffusion of Diseases in the Western Interior of Canada, 1830-1850. *Geographical Review* 66(2):139-157.

1978 History and Archaeology of the Northern Fur Trade. *American Antiquity* 43(1):26-34.

Reid, R., and C. G. Gannon (editors)
1929 Journal of the Atkinson-O'Fallon Expedition. *North Dakota Historical Quarterly* 4(1):5-56.

Robinson, D. (editor)
1902 Official Correspondence of the Leavenworth Expedition into South Dakota in 1823. *South Dakota Historical Collections* 1:179-256. News Printing Company, Aberdeen.

1918 Fort Tecumseh and Fort Pierre Journal and Letter Books. *South Dakota Historical Collections* 9:69-239. Hipple Printing Company, Pierre.

Ronda, J. P.
1984 *Lewis and Clark Among the Indians*. University of Nebraska Press, Lincoln.

Schoolcraft, H. R.
1851-1857 *Information Respecting the History, Condition and Prospects of the Indian Tribes of the United States*. 6 vols. Lippincott, Grambo & Company, Philadelphia.

Simmons, M.
1966 New Mexico's Smallpox Epidemic of 1780-1781. *New Mexico Historical Review* 41:319-326.

Smith, G. H.
1980 *The Explorations of the La Vérendryes in the Northern Plains, 1738-43*, edited by W. Raymond Wood. University of Nebraska Press, Lincoln.

Spores, R.
1980 New World Ethnohistory and Archaeology, 1970-1980. In *Annual Review of Anthropology*, edited by B. J. Siegel, vol. 9, pp. 575-603. Annual Reviews, Palo Alto.

Stearn, E. W., and A. E. Stearn
1945 *The Effect of Smallpox on the Destiny of the Amerindian*. Humphries, Boston.

Stewart, F. H.
1974 Mandan and Hidatsa Villages in the 18th and 19th Centuries. *Plains Anthropologist* 19(66):287-302.

1975 Village Movements of the Northern Horticulturalists (Mandan and Hidatsa), 1675 to 1860. Manuscript deposited in the library of the National Park Service, Midwest Archeological Center, Lincoln.

Sunder, J. E.
1968 *Joshua Pilcher, Fur Trader and Indian Agent*. University of Oklahoma Press, Norman.

Taylor, J. F.
1977 Sociocultural Effects of Epidemics on the Northern Plains: 1734-1850. *The Western Canadian Journal of Anthropology* 7(4):55-81.

Thurman, M. D.
1982 Plains Indian Winter Counts and the New Ethnohistory. *Plains Anthropologist* 27(96):173-175.

1988 The Little Missouri River: A Source of Confusion for Plains Ethnohistory. *Plains Anthropologist* 33(122):429-447.

Thwaites, R. G. (editor)
1966a Travels in the Interior of America, in the Years 1809, 1810, and 1811, by John Bradbury. *Early Western Travels*, vol. 5. Reprinted. AMS Press, New York. Originally published 1904, Arthur P. Clark, Cleveland.

1966b Journal of a Voyage up the River Missouri, by H. M. Brackenridge. *Early Western Travels*, vol. 6:21-166. Reprinted. AMS Press, New York. Originally published 1904, Arthur P. Clark, Cleveland.

1966c Account of an Expedition from Pittsburgh to the Rocky Mountains, Performed in the Years 1819, 1820, by Edwin James. *Early Western Travels*, vol. 14. Reprinted. AMS Press, New York. Originally published 1905, Arthur P. Clark, Cleveland.

1966d Travels in the Interior of North America, by Maximilian, Prince of Wied. Translated by H. E. Lloyd. *Early Western Travels*, vols. 22-24. Reprinted. AMS Press, New York. Originally published 1906, Arthur P. Clark, Cleveland.

1966e Travels in the Great Western Prairies, the Anahuac and Rocky Mountains, and in the Oregon Country, by Thomas Jefferson Farnham. *Early Western Travels*, vol. 28. Reprinted. AMS Press, New York. Originally published 1906, Arthur P. Clark, Cleveland.

1969 *Original Journals of the Lewis and Clark Expedition 1804-06*. 8 vols. Reprinted. Arno Press, New York. Originally published 1904-1905, Dodd, Mead and Company, New York.

Toom, D. L.
1979 *The Middle Missouri Villages and the Early Fur Trade: Implications for Archeological Interpretation*. Master's thesis, Department of Anthropology, University of Nebraska, Lincoln.

Trimble, M. K.
*1985 *Epidemiology on the Northern Plains: A Cultural Perspective*. Ph.D. dissertation, Department of Anthropology, University of Missouri, Columbia.

*1986 *An Ethnohistorical Interpretation of the Spread of Smallpox in the Northern Plains Utilizing Concepts of Disease Ecology*. J & L Reprint Company, Lincoln.

Tyrrell, D. A. J.
1967 The Spread of Viruses of the Respiratory Tract by the Airborne Route. In *Airborne Microbes*, edited by P. H. Gregory and J. L. Monteith, pp. 16-24. Cambridge University Press, London.

1977 Aspects of Infection in Isolated Communities. In *Health and Disease in Tribal Societies*, pp. 137-143. Ciba Foundation Symposium 49. Amsterdam.

Tyrrell, J. B. (editor)
1968 *David Thompson's Narrative of His Explorations in Western America, 1784-1812*. Reprinted. Greenwood Press, New York. Originally published 1916, Champlain Society, Toronto.

Warren, W. W.
1885 History of the Ojibways. *Collections of the Minnesota Historical Society* 5.

Wedel, M. M., and R. J. DeMallie
1980 The Ethnohistorical Approach in Plains Area Studies. In *Anthropology on the Great Plains*, edited by W. R. Wood and M. Liberty, pp. 110-128. University of Nebraska Press, Lincoln.

Wehrle, P. F., and F. H. Top (editors)
1981 *Communicable and Infectious Diseases*. Mosby, St. Louis.

Weitzner, B.
1979 Notes on the Hidatsa Indians Based on Data Recorded by the Late Gilbert L. Wilson. *Anthropological Papers of the American Museum of Natural History* 56(2). New York.

Wheat, C. I.
1957-1963 *Mapping the Transmississippi West: 1540-1861*. 5 vols. Institute of Historical Cartography, San Francisco.

Wilson, G. L.
1917 *Agriculture of the Hidatsa Indians: An Indian Interpretation*. Studies in the Social Sciences, No. 9. University of Minnesota, Minneapolis.

1924 The Horse and the Dog in Hidatsa Culture. *Anthropological Papers of the American Museum of Natural History* 15(2). New York.

1934 The Hidatsa Earth Lodge. Edited by B. Weitzner. *Anthropological Papers of the American Museum of Natural History* 33(5). New York.

Wishart, D. J.
1979 *The Fur Trade of the American West, 1807-1840*. University of Nebraska Press, Lincoln.

Wood, W. R.
1955 Historical and Archaeological Evidence for Arikara Visits to the Central Plains. *Plains Anthropologist* 4:27-39.

1967 *An Interpretation of Mandan Culture History*. River Basin Surveys Papers, No. 39. Bureau of American Ethnology, Bulletin No. 198. Smithsonian Institution, Washington, D.C.

1974 Northern Plains Village Cultures: Internal Stability and External Relationahips. *Journal of Anthropological Research* 30(1):1-15.

1977 David Thompson at the Mandan-Hidatsa Villages, 1797-1798: The Original Journals. *Ethnohistory* 24(4):329-342.

1980 Plains Trade in Prehistoric and Protohistoric Intertribal Relations. In *Anthropology on the Great Plains*, edited by W. R. Wood and M. Liberty, pp. 98-109. University of Nebraska Press, Lincoln.

*1981 The John Evans 1796-97 Map of the Missouri River. *Great Plains Quarterly* 1(1):39-53.

*1986 *The Origins of the Hidatsa Indians: A Review of Ethnohistorical and Traditional Data*. J & L Reprint Company, Lincoln.

Wood, W. R., and T. D. Thiessen (editors)
*1985 *Early Fur Trade on the Northern Plains: Canadian Traders Among the Mandan and Hidatsa Indians, 1738-1818*. University of Oklahoma Press, Norman.

CHAPTER 16

HIDATSA ETHNOHISTORY: 1800-1845

Jeffery R. Hanson

INTRODUCTION

The period from 1800 to 1845 is of tremendous importance from the standpoints of Hidatsa culture history and culture change, both of which have special relevence to the Knife River Indian Villages research and interpretive programs. It was during this period that the Hidatsas, historic representatives of the archeological culture known as the Plains Village Tradition, were becoming increasingly impacted by culture contact with Euroamericans. Knowledge of Hidatsa cultural patterns during this period is crucial for culture history in providing archeologists with analogs for interpreting prehistory as well as providing them with a data set the ethnic affiliation of which may be retrodicted via methodologies such as the direct historical approach. From the perspective of culture change, knowledge of early historic Hidatsa lifeways provides a benchmark from which ethnologists and archeologists can begin to assess the magnitude of culture change during historic times. Additionally, these data can be used to construct and test hypotheses about the causes and consequences of culture change among this important Plains Village tribe.

Knowledge of early historic Hidatsa cultural patterns comes primarily from ethnohistoric and ethnographic materials. It is the aim of this chapter to summarize these data and to suggest some possible archeological implications which may strengthen our interpretations of Hidatsa culture history and culture change.

Two major goals are envisioned here. The first is to provide a detailed summary of Hidatsa cultural patterns during the period 1800-1845, when three Hidatsa subgroups lived in as many villages near the mouth of the Knife River. The remains of two of these villages, Big Hidatsa (32ME12) and Sakakawea (32ME11), lie within the boundaries of the Knife River Indian Villages National Historic Site and contain a wealth of archeological materials. The ethnographic summary of Hidatsa cultural patterns is somewhat generalized, and presents an "ideal" picture of how the cultural system operated during the early 1800s. While the summary is holistic to some degree, emphasis has been placed on Hidatsa subsistence and the political/domestic economies. Thus the discussion is biased toward those aspects of culture which appear to be more compatible with archeological analysis, such as settlement/subsistence, techno-environmental relations, community patterning, and material culture (particularly bone, ceramics, and lithics). Discussions of Hidatsa religion and ideology are limited to those elements which bear directly on economic and political behavior or archeological problems.

The second goal envisioned here is to provide an ethnographic data set and accompanying hypotheses that may guide archeologists in interpreting Hidatsa culture history and culture change. By focusing a number of theoretical problems derived from the ethnographic and ethnohistoric data, sets of hypotheses are generated that may be put to archeological testing. It should be pointed out that the advocation of alternate hypotheses for specific theoretical issues stems from the fact that the data on the Hidatsas can be variously interpreted. These differences in interpretation are due to theoretical and methodological biases among investigators as well as ambiguities and contradictions in the ethnographic record itself. In light of these problems, it has made sense to view differing interpretations, as well as some of the contradictory ethnographic data, as competing hypotheses, the implications of which might be tested archeologically.

This chapter is organized along the following lines. First, an ethnohistoric summary is presented to provide the reader with a generalized overview of the Hidatsa cultural system as it operated during the period 1800 to 1845. This period is marked by the first comprehensive account of the Hidatsas by Lewis and Clark in 1804, and by the abandonment by the Hidatsas of their Knife River villages in 1845. This summary is followed by specific discussions of the archeological potential of the ethnographic/ethnohistoric data, with considerable focus on how archeology might resolve problems in the ethnographic record. Finally, conclusions are offered suggesting the role of Hidatsa ethnography as an aid and complement to archeological studies of the Hidatsa and Mandan peoples.

Before proceeding further, however, there are methodological issues concerning the advantages and limitations of ethnohistoric and ethnographic data that require discussion. These two forms of data are temporally distinct and each is therefore characterized by different problems which suggest caution in their use.

In the present context, "ethnohistoric" data has a precise meaning: it consists of data derived from the accounts, reports, narratives, and journals of Euroamerican travelers whose presence among the Hidatsas was primarily for reasons other than their ethnographic description. Such documentation includes the journals and/or narratives of Lewis and Clark in 1804-1806, Prince Maximilian in 1833-1834, and Francis Chardon in 1834-1839. There are two major advantages of ethnohistoric documentation. First, they represent direct observations of the Hidatsas, and closely related Mandans, while they were still living in their Knife River villages of Big Hidatsa (32ME12), Sakakawea (32ME11), and Amahami (32ME8), thus providing "in situ" accounts of Hidatsa cultural patterns. Second, the documentation is of a diachronic nature, beginning (with varying degrees of reliability and comprehensiveness) with the Evans-Mackay maps of 1796-1797 (Wood 1983) and continuing well beyond the Hidatsa exodus to Like-a-Fishhook village in 1845. These and other sources provide a great deal of potentially useful information on Hidatsa cultural continuity and change during a very dynamic period in their history. Furthermore, ethnohistorical documentation provides an important means of differentiating between Hidatsa and Mandan archeological sites. Another important feature of ethnohistoric documentation is that it can provide a check on cultural patterns described by subsequent ethnographic studies.

The major limitation of ethnohistoric documentation is that the descriptions of Hidatsa lifeways often are sketchy, vague, written in retrospect, and difficult to corroborate. Recognition of these problems is critical to ethnohistorical analysis, and therefore should be uppermost in the minds of scholars using an ethnohistorical approach. Vague and sketchy sources make generalization more difficult while lack of corroboration leaves many observations of questionable ethnohistoric worth. In addition, some sources reflect distortions as a result of ethnocentric cultural biases on the part of the observer. Consequently documentation of this sort must be carefully scrutinized for consistency, ambiguity, and contradiction.

By contrast the ethnographic data consist of observations and descriptions by individuals whose primary objective was the recording of Hidatsa cultural patterns. These individuals have provided a solid, albeit idealized, record of Hidatsa culture as it existed during the latter half of the nineteenth century. While numerous investigators have contributed to the Hidatsa ethnographic record (Curtis 1909, Lowie 1917, Matthews 1877, White 1959), the works of Gilbert L. Wilson (1917, 1924, 1928, 1934) and Alfred W. Bowers are by far the most comprehensive, detailed, and useful in providing substantive material on the nature and functioning of Hidatsa culture.

While the ethnographic data are rich in providing details on all aspects of Hidatsa culture they are subject to a critical limitation: the data were gathered, analyzed, and interpreted long after the Hidatsas, Mandans, and Arikaras had fused into a single village at Like-a-Fishhook Bend in 1862 (Smith 1972), and during a period when the Hidatsas were undergoing extensive changes in their culture as a result of the great acculturative pressures inherent in the reservation system (Meyer 1977). The results of these conditions were twofold: a) the earlier (pre-1845) trend of Hidatsa/Mandan cultural convergence accelerated to the point where the delineation of independent customs became, in some cases, difficult to establish; and b) much of the aboriginal culture had been abandoned by the time ethnographers arrived on the scene. Despite these problems, however, a great deal of the aboriginal cuture was reconstructed through the sustained fieldwork of Gilbert L. Wilson in the early 1900s and Alfred W. Bowers in the 1930s. Due to the lapse in time, both of these fieldworkers relied heavily on the memories of elderly informants to reconstruct Hidatsa cultural patterns. The works of both suffer somewhat from the well known flaws inherent in relying on "memory culture" (a problem of which Bowers, perhaps more than Wilson, was well aware), which may partly explain some of the inconsistencies in their data. Whenever possible, the works of Wilson and Bowers should be carefully compared for consistency and accuracy in interpretation.

With the advantages and limitations of ethnohistoric and ethnographic data in mind, the following Hidatsa ethnographic summary represents the conjunction of these complementary data bases. The aim is to present an idealized reconstruction of the Hidatsa cultural system circa 1800-1845.

HIDATSA CULTURAL SYSTEM

Village Locations and Population

In 1804 the Lewis and Clark expedition found the Hidatsas living in three earthlodge villages near the mouth of the Knife River in present-day North Dakota. Their allies and close cultural affiliates, the Mandans, lived in two villages a short distance downstream on either side of the Missouri River (Thwaites 1969). Each Hidatsa village was inhabited by a distinct, autonomous subgroup: the Hidatsas-proper at Big Hidatsa (32ME12), the Awatixas at Sakakawea (32ME11), and the Awaxawis at Amahami (32ME8) (Thwaites 1969; Bowers 1965). Native traditions, ethnohistoric evidence pre-dating 1800, and preliminary archeological investigations indicate that, of these three village locations, Big Hidatsa had been occupied for the longest period of time (perhaps since about AD 1600), while Sakakawea and Amahami were founded sometime after the smallpox epidemic of 1780 and prior to 1804 (Lovick and Ahler 1982; Bowers 1965; Wood 1977, 1986; Wood 1983; see also the summary of traditional movements of each of these subgroups presented in Chapter 12 of this volume).

Hidatsa village locations remained unchanged from 1804 through 1833, as indicated by the accounts of Bradbury and Brackenridge in 1811, Catlin in 1832, and Maximilian in 1833 (Catlin 1973; Thwaites 1966a, 1966b, 1966c). In the spring of 1834 both Sakakawea and Amahami were sacked and burned by the Dakotas and apparently abandoned by the Awatixa and Awaxawi inhabitants (Stewart 1974:296; Wood 1986:10). Where these subgroups lived until the general Hidatsa exodus to Like-a-Fishhook Village in 1845 is not well known. However, there is some archeological support for an Awatixa occupation of the Taylor Bluff site during the interim (Ahler 1988). Another possibility—that they moved in with the Hidatsas-proper at Big Hidatsa—is based on the fact that neither the subsequent journals of Francis Chardon (Abel 1932) nor J. J. Audubon (M. Audubon 1960) mention more than one Hidatsa village in their entries. This line of evidence is slim at best, and should now be treated with some skepticism in light of the fact that one of Gilbert Wilson's key informants, Buffalo Bird Woman, claims to have been born at "Awatixa village" (Sakakawea) around 1840 (Wilson field notes for 1908:18). The possibility that the Awatixas occupied Taylor Bluff or reoccupied Sakakawea for a brief period between 1834 and 1845, might be viewed in this light.

As a result of the cyclic recurrence of epidemic diseases among the Hidatsas, their overall population declined precipitously during the period circa 1780-1850. This severe decline, from an approximate high of 5,500 in 1780 to about 800 in 1850, was primarily due to the smallpox epidemics of 1780 and 1837 (Lehmer 1977:107; Wilson 1934:353). However, between 1800 and 1837, the Hidatsa population appears to have been more or less stable, as the normal rate of increase was offset by combat deaths and less virulent diseases such as whooping cough (Hanson 1987). Early estimates of Hidatsa population suggest a range of approximately 2,100 to 2,700 during this period (Hanson 1987:156-157; Thwaites 1969, 6:90-91; Wood 1977:339). Just prior to the smallpox epidemic of 1834 the total Hidatsa population was estimated at 2,500 (Meyer 1977:97).

There was a great deal of variation in the population size between Hidatsa village groups. Big Hidatsa was the largest of the three villages. Recent archeological investigations have documented approximately 112 earthlodge depressions (Lovick and Ahler 1982:229). Ethnohistoric evidence indicates that 82 earthlodges were occupied in 1797 (Wood 1977:336). Assuming an average lodge size of 13 persons (Hanson 1987), the population of the Hidatsas-proper may have ranged from between 1,066 and 1,456 during the early historic period. Sakakawea, second in size to Big Hidatsa, contained approximately 52 inhabited earthlodges in 1797 (Wood 1977). Recent archeological investigations have documented at least 47 house depressions (Lovick and Ahler 1982:227). While the archeological documentation may underrepresent the total number of earthlodges due to bank slumping, it is not unreasonable to suggest a range of between 611 and 676 Awatixas living at Sakakawea during the early historic period. Amahami was the smallest of the Hidatsa villages. Lewis and Clark estimated approximately 200 inhabitants in 1804 (Thwaites 1969, 6:90). This agrees well with recent archeological investigations which document 21 house depressions in the Knife River phase component of the site (Lovick and Ahler 1982:221; Stanley A. Ahler, personal communication).

Hidatsa Technology and Subsistence

As horticulturists and hunters in the Knife-Heart region in the Northern Plains, the Hidatsas relied on four essential technological complexes to transform the energy in their habitat into subsistence and other

useful cultural products: lithics, bone, ceramics, and wood. Upon this pre-contact technological base was added a wide variety of Euroamerican metal, glass, and other goods, some of which eventually replaced the native materials. Of the native technological complexes, lithics, bone, and ceramics bear particular importance because of their role in current archeological investigations.

Lithic resources were vital to the Hidatsas prior to historic times as this technology created a vast array of stone tools used for hunting, butchering, warfare, hide processing, woodworking, food processing, and other cultural tasks (Bowers 1965; Weitzner 1979; Wilson, 1917, 1924, 1928, 1934). Archeological investigations have documented large numbers of chipped and ground stone tools in Hidatsa village sites as well as vast amounts of flaking debris indicative of intense lithic technological operations (cf. Ahler and Weston 1981; Lehmer et al. 1978; Lovick and Ahler 1982).

Hidatsa bone technology was fueled by the procurement of big game, particularly bison, elk, pronghorn, and deer. From these animals came not only the raw material for making many forms of bone tools, but also hides, sinew, hooves, and other useful animal parts (Lehmer 1971; Wilson 1917, 1924, 1928, 1934). Bone tools were used in a variety of cultural tasks that included, but were not limited to, hunting, horticulture, stone tool-making, clothing industries, food preparation and consumption, hide processing, warfare, and ritual (Weitzner 1979). Recent archeological investigations have documented large numbers of bone tools in Hidatsa villages as well as immense quantities of bone debris indicative of intense big game procurement and utilization (Ahler and Weston 1981; Lehmer et al. 1978; Lovick and Ahler 1982).

While there was a general decline in the quality of Hidatsa ceramic technology during the historic period, it is clear from ethnohistoric and ethnographic sources that pottery was still being utilized to some degree (Bowers 1965; Weitzner 1979). Alexander Henry had this to say concerning Hidatsa pottery in 1806:

> They make use of large Earthen pots of their own manufacture made of a black clay of which they have plenty near their Villages. They make them of different sizes from five gallon to one quart. In those vessels is never any thing cooked of a greasy nature every family being provided with a Brass or Copper Kettle for the purpose of cooking flesh in... they assured us that any kind of flesh cooked in those earthen pots would cause them to split. There are constantly standing by the fire one or more of the largest kind...The bottom of those pots are of an oblong shape. It therefore requires much care to keep them from upsetting...Some of their pots are provided with two ears or handles... [Gough 1988:220]

In addition to the variety of shapes and sizes of ceramic vessels, archeologists have documented a number of decorative styles or attributes in Hidatsa and Mandan ceramics (Bowers 1950, 1965; Lehmer 1971; Lehmer et al. 1978; Lovick and Ahler 1982). Like other Hidatsa industries such as arrowmaking and basketry, pottery-making had been elevated to a semi-specialized craft which ideally was restricted to certain individuals in the village who possessed the ceremonial rights to practice the art (Bowers 1965).

As the historic period progressed, the Hidatsas were inundated with goods of Euroamerican manufacture: metal axes, kettles, knives, and hoes; firearms; and glass beads, to name just a few items in the inventory (Lehmer 1971; Smith 1972). Euroamerican wares completely replaced some native tools. For example, Buffalo Bird Woman, one of Gilbert Wilson's key Hidatsa informants, stated that as a young girl (circa late 1840s and early 1850s) she recalled only three women in the village who still used bison scapula hoes for gardening while everyone else used iron hoes (Wilson 1917:12). This statement is corroborated by archeological investigations at Like-a-Fishhook Village where only one scapula hoe was recovered. Interestingly, it was found in the Hidatsa ceremonial lodge (Smith 1972:67).

The hunting/horticultural modes of production were a basic adaptation by Hidatsa villagers. These practices were complementary ways of transforming the energy potential in the regional floodplain and upland ecosystems. Each of these subsistence commitments

entailed opportunities and restrictions with respect to traditional technology, climate, animal behavior, soils, and so on.

The Hunting Mode

The role of bison as the predominant focus of overall hunting subsistence is a longstanding one, as indicated by archeological remains which demonstrate the overwhelming importance of bison as a source of food and raw materials for tools, clothing, lodge covers, bullboats, and other elements of material culture (Lehmer 1971:55; Wilson 1917, 1924, 1928, 1934). However, bison were not always available and the Hidatsas compensated for this by hunting other large game including pronghorn, elk, deer, and mountain sheep. Fish also supplemented the Hidatsa diet, as fish traps, weirs, and hook and line methods were used to procure this riverine resource (Weitzner 1979).

The most common method of procuring bison, and to a lesser extent pronghorn, was the pedestrian drive prior to the introduction of horses. While mounted hunting replaced the traditional drive in some Plains Indian societies, the Hidatsas continued to use it during the historic period. Charles McKenzie described Hidatsa drive activities during the winter of 1805:

> At other times the Indians would Contrive to conduct large bands [of bison] to the Mississouri and multitudes of people flying from every direction would form a lines which would confine them by gradual approaches into a narrow Space Where the ice was weakest until by the weight and pressure large squares perhaps of fifty Yards would give way covered with animals which in an instant the force of the current would carry under the other ice to a marr [pool] a little distance below where they again emerge, float and were watched by men women and children Who being provided with the proper means haul them out of the water... [Wood and Thiessen 1985:265]

That the Hidatsas continued to use the drive and its variants, the trap and corral, is illustrated in the Butterfly winter count for 1842-1843: "This same winter we made a buffalo trap and caught many buffaloes at Trap Creek" (Wilson field notes for 1913, Part 1:161). Commenting on this particular winter, Buffalo Bird Woman added:

> Black-shield, or Painted-black-his-shield, was the man for whom my father made fire to drive buffaloes into a trap. The first time they made fire they took no buffaloes; but the second time, they took a great many buffaloes; and it was in this winter that the buffaloes were taken. Winter was the season for using buffalo traps. [Wilson field notes for 1918:95]

Illustrations by Edward Goodbird among Gilbert Wilson's field notes also show how the Hidatsas used fire and rock alignments to channel bison into corrals built at endpoints such as the outwash areas of creekbeds (Wilson field notes for 1910:264-265).

The horse was an important addition to the Hidatsa habitat from the standpoints of hunting technology and organization. Technologically, the application of horse energy usually proved to be vastly superior to pedestrian methods. Hunting bison from horseback had several advantages over the drive: the mobility and striking speed of the mounted surround allowed groups of hunters to increase their search radius, facilitated herd reconnaissance, and allowed quick and efficient pursuit. With a properly trained horse an experienced hunter could singlehandedly bring down several choice bison, and a well coordinated group could kill hundreds before giving up the chase. The net result was a more efficient pattern that reduced considerably the uncertainty involved in hunting. While the Hidatsas still employed pedestrian hunting techniques during the historic period, the mounted surround quickly became the preferred method as well as the dominant form of communal bison hunting (Bowers 1965:446-447). The ability to mobilize hunters quickly and to employ the surround swiftly was vital to the Hidatsas during a period of intense, chronic warfare with the Sioux, for about 1815 some Hidatsas had all but given up the practice of an extended summer bison hunt in favor of local surrounds near the villages and winter camps (Hanson 1987:129; Will and Hyde 1917:110).

As the organization of the hunt differed between pedestrian and mounted methods, so apparently did the subsequent processing and division of game. After a

successful drive, bison lying within the corral or kill area were divided on a moiety basis as each moiety claimed bison from a prescribed half of the corral:

> A moiety selected beforehand one of its number to divide the animals among the households. Each man knew the number of households in his moiety. The division went by men of the moiety, the wife butchering with her husband on this side of the corral. They tried to give one buffalo to each family when enough buffaloes came into the corral, otherwise one buffalo was given to two related households, such as brothers. [Bowers 1965:449]

After a successful surround, however, a different approach was taken:

> As soon as the surround was completed, word went back to the camp (or village) for the people to come out and help with the butchering. At first, the women would come out to assist, but, in time, as the supply of meat reaching the camp grew, the women would stay in camp curing the meat and hides while men with packhorses would butcher and transport the meat and hides to camp. Meat and hides were taken to a number of convenient parts of the camp and piled in heaps. There was no particular attempt at supplying one's own household...Until the meat was taken from the communal piles for curing on household scaffolds, it remained group property and could be taken by anyone able to cure it. Due to the division of male labor at this time, many households would have no hunters and butchers out, but in the manner of distribution of the meat and hides, all shared according to their ability to dry and store meat. [Bowers 1965:54-55]

In addition to communal hunting, bison and other large game were hunted by individual families or small multi-family parties. In some instances packhorses were taken along, but in others the hunts were of a pedestrian nature, although the party returned by bullboat down the Missouri to the village (Wilson 1924:227-228, 247, 250).

The Horticultural Mode

Hidatsa horticulture involved a set of technological and social adaptations to environmental parameters that included climate, arable land, and timber resources. Climate set general opportunities and limitations on Hidatsa horticulture while arable land and timber resources conditioned the location, size, and length of occupation of semipermanent villages (Griffin 1977; Holder 1970:35). Arable land consisted of the bottomlands of the Missouri River, and the Hidatsas exhibited a number of subsistence practices and work patterns to make effective use of this habitat. These activities were scheduled in such a manner that they reduced interference between hunting and horticultural activities.

To prepare bottomlands for cultivation, garden plots were cleared of trees and brush. As the native cover was removed it was spread evenly over the plots and burned to make the soil soft, easy to work, and more nutritious (Wilson 1917:12,15). After the plots had been burned the soil was broken for planting with bone or metal hoes. Soil preparation commonly was done in the spring as soon as the ground was workable, usually in early April. The first crop to be sown was sunflowers, which were planted in hills around the margins of a particular plot. Corn, beans, and squash were planted next, ideally in May or early June. Corn was planted in hilled rows with each hill being approximately four feet apart. By modern standards these hills were widely spaced, but such spacing was tuned to average conditions of scanty rainfall. Thus the Hidatsas may have accepted a trade-off: exchanging the potential of very high yields during unusually wet years that would accrue through closer spacing, for adequate or stable yields during normally dry seasons (Thompson 1933:7).

Beans and squash were intercropped among the hilled rows of corn. This practice was particularly important since beans acted to counteract the drain on nitrogen in the soil caused by corn growth.

During the planting and early growth stages of crops, garden weeding and other caretaking activities

were undertaken daily (Wilson 1917:26). When the dangers from weed competition were past (usually by late June) the Hidatsas traditionally prepared for the communal bison hunting expeditions which would bring meat, hides, and other animal products into the villages.

By early August, communal bison hunting expeditions had returned to the villages, and attention again was focused on the gardens. The first crop to be harvested was squash, which ripened by early August. By the time squash was harvested and processed the green corn harvest commenced, followed by the harvesting of mature corn. Much of the garden produce was dried and stored in cache pits either to serve as winter food or as a "surplus" for trading or feasting activities (Wilson 1917:27, 33-36, 91).

There are indications that while the Hidatsas had to contend with variable climatic factors such as drought or early frosts, soil exhaustion was not a significant problem. There appear to be environmental as well as cultural reasons for this. Environmentally, the bottomlands were subject to frequent flooding, depositing rich alluvium that bolstered the nutritive value of the soil and increased subsurface moisture. Culturally, the intercropping of beans and corn fostered recycling of important nitrogen supplies in the soil. Additionally, the practice of fallowing, described by Maximilian in 1833-1834, also aided soil conservation:

> The Mandans and Manitaries [Hidatsas] cultivate very fine maize, without ever manuring the ground...When, after many years, the field is exhausted, they let it lie fallow, and cultivate another spot... [Thwaites 1966c, 23:241]

A more detailed account of fallowing, as practiced later at Like-a-Fishhook Village, is provided by Buffalo Bird Woman:

> The first crop on new ground was always the best, though the second was nearly as good. The third year's crop was not so good; and after that, each year, the crow grew less, until in some seasons, especially in dry summer, hardly anything was produced. The owners then stopped cultivating the garden and let it lie for two years; the third year they again planted the garden and it would yield a good crop as before. During the two years the garden lay fallow, the family owning it would plant their season's crop elsewhere...Everyone in the village knew the value of two year's fallowing. [Wilson 1917:114]

Settlement Patterns

Hidatsa settlement patterns reflected a long tradition of relatively stable adaptations by Plains villagers to specific ecological conditions in the Northern Plains. Semipermanent earthlodge villages were established along the flood-free terraces of the Missouri River and its tributaries. These villages, normally occupied during the period from early spring through late fall (April-October), served as central communities from which the adjacent environmental zones were exploited: the river channel offered aquatic resources and attracted a large variety of large and small game; the floodplain and bottomlands were exploited for garden space as well as critical timber supplies for fuel and construction materials; and the upland prairie was exploited through the hunting of bison, pronghorn, and other grassland fauna (Wood 1974:6). From the villages, the Hidatsas also gathered plants such as chokecherries, prairie turnips, and buffalo berries for food as well as many of the native grasses for earthlodge construction and for lining cache pits.

While the practice of horticulture brought the benefits of a relatively stable food supply to the Hidatsas, a significant cost was engendered which had an important impact on their settlement patterns and overall seasonal round. The establishment and maintenance of semipermanent earthlodge villages resulted in the intensive use and eventual depletion of local timber resources near the villages (Griffin 1977). The building of earthlodges, drying stages, village palisades, and garden watching stages, coupled with high fuel demands, created large timber budgets for the Hidatsas. The scarcity of timber has been given as one reason why the Hidatsas abandoned the Knife River locality in 1845 (Poor Wolf 1906:441).

The Hidatsas employed two practices in attempting to conserve the timber near their summer vil-

lages. One involved salvaging driftwood from the Missouri River. The trader Alexander Henry described this practice as early as 1806 (Gough 1988:230-231). A second timber-conserving strategy involved earthlodge reclamation, wherein a number of clanswomen aiding in the rebuilding of an earthlodge were entitled to claim usable firewood from old timbers, beams, and rafters (Wilson 1934:2). While these practices contributed to the efficient use of limited timber resources, these measures could not have prevented the eventual depletion of exploited timber stands near the village. These practices were fuel-oriented, but probably did not come close to meeting the fuel demands of a prolonged Northern Plains winter.

After produce from the gardens was harvested, processed, and safely cached (about mid-October) the Hidatsas left their villages and established winter camps in the nearby bottomlands. Such camps were conveniently located in well-wooded areas, often several miles from the summer village. Here, smaller, more rudely constructed earthlodges were built and the Hidatsas endeavored to pass the winter months "gathering firewood and hunting buffalo" (Wilson 1934:395). It is suggested here that a primary function of the winter camp was to maximize winter fuel efficiency while at the same time conserving the timber resources near the summer villages. Ethnohistoric and ethnographic evidence supports such an interpretation. In 1806 Henry noted that the Hidatsas-proper at Big Hidatsa village

> ...reside at this Village only during the summer season. Early in the Fall when the cold weather begins, they all in a body decamp for the Snakes Lodge where they take up their residence for the winter, in huts of the same construction as those already mentioned [earthlodges]...This custom of abandoning their summer habitation is not so much a matter of choice as necessity. This Village has been so long settled that fire wood is now only to be got from a great distance... [Gough 1988:237-238]

If Henry was correct in his opinion that firewood was already scarce in 1806, the fact that the Hidatsas-proper still occupied this village for another forty years attests to the efficacy of winter camping as a partly effective conservation measure.

The amount of wood consumed for fuel in the winter camps themselves demonstrates the necessity of the practice. Henry Boller, who was among the Hidatsas between 1858 and 1862, remarked on wood consumption during his visit to a Hidatsa winter camp: "A large camp will very soon consume all the small dry wood in the vicinity and the women are then compelled to go a long distance, often two miles, before they can obtain the needed supply" (Quaife 1959:200). The availability of preferred timber, in conjunction with relative rates of consumption, was likely to condition the extent to which winter camp locations were successively occupied. Thus after only four years of successive occupation of one location, the Hidatsa, Wolf-Chief, remarked that:

> the cottonwoods were becoming pretty well cut off about our camping place, so that the women often had to go out some distance to find suitable trees. [Wilson 1924:175]

Whether occupied for one or a succession of winters, this settlement practice functioned to lessen the taxation on timber resources that continual occupation of the more permanent villages would have engendered.

Winter camps were also important from the standpoint of hunting. Often, winter campsites were located not only on the basis of fuel potential but also on the basis of expected bison hunting potential (Bowers 1965:57). The Hidatsas relied heavily on bison for winter food as well as for the superior robes that came from winter hides. The Hidatsas ideally left their winter quarters in the spring when the ice began to break up on the Missouri, and returned to their summer villages to prepare the earthlodges for habitation and the gardens for planting.

Domestic Economy

Because of the commitment to horticulture which necessitated semipermanent villages and the attendent domestic attachment to tracts of arable land, the basic productive unit for the Hidatsas was the earthlodge household. This household was composed of individuals spanning roughly three generations, and who were related to one another through consanguineal and

affinal ties. Household organization was based on the presence and continuity of the matrilocal extended family (Thwaites 1966c, 23:280; Matthews 1877:52; Bowers 1965). In this form of household structure a core of consanguineally-related females (grandmothers, mothers, and daughters) inhabited an earthlodge along with their husbands, unmarried siblings, and offspring. The continuity of the matrilocal extended family through time cemented unilineal ties between this core of women and was expressed through the transmission of garden plots and earthlodges from mother to daughter. The matrilocal extended household was responsible for both horticulture and hunting, as well as the recruitment of new members through marriage and procreation. While some members of the household were more or less permanent inhabitants (blood-related females), males would marry and move into the households of their spouses.

This ideal pattern of household organization was upset to a significant degree during the historic period by the depopulation of households and villages caused by epidemic diseases. Often households had to implement optional marital residence practices such as patrilocal and bilocal residence in order to restore the balance of female and/or male personnel upset by disease mortality (Hanson 1983b). Thus while the Hidatsa households and clans strained to approximate the matrilocal ideal, the realities of disease-cycling made this aim difficult for most families to attain.

The presence of a relatively large extended family household (averaging roughly 10 to 14 persons per lodge) cemented together by blood-related females tied to tracts of land had important implications for the division of labor. Hidatsa garden plots averaged between three and five acres, and were collectively farmed by the women of the household (Wilson 1917; Will and Hyde 1917:99-100). Women were also responsible for the construction and maintenance of earthlodges (Wilson 1917, 1934) and storage pits, butchering and processing of products of the chase, gathering firewood, and specialized activities such as basketry and pottery making. Women learned these tasks at an early age, as adolescent girls were proficient in gardening, hide processing, earthlodge construction, and other tasks (Wilson 1981). Semispecialized crafts, however, such as basketry and ceramics took longer for girls to master since these abilities were accompanied by ceremonial rights which girls theoretically acquired from their mothers or other clanswomen (Bowers 1965).

In their subsistence contribution women manufactured and used a variety of stone, bone, and ceramic tools. These included: bison scapula hoes used in gardening; bone fleshers, bone beamers, and scrapers tipped with flint used in hide processing; horn spoons used in cooking; and pottery of variable sizes (from five gallons to one quart), for both utility (non-flesh cookers) and decoration (Weitzner 1979; Wilson field notes). While sorting out the age differences in female technological use and manufacture is difficult ethnographically, a general impression is that adult women were responsible for manufacturing some of the more important and durable tools such as scapula hoes, fleshers, and scrapers, as well as the manufacture of pottery.

Adult males were primarily responsible for hunting, both on the household and village levels. Males of the household were also involved in time-consuming raiding and trading ventures, specialized activities such as arrow-making or eagle-trapping, and ritual activities such as fasting and the acquisition and disposition of sacred medicine bundles. Males of the household, particularly adolescents, were responsible for the care and feeding of household horse herds.

Males also manufactured and used a variety of bone and stone (and, historically, metal) tools, some of which were dependent on age and/or rank. Most males, excluding children, appear to have been proficient in making such items as bone arrow polishers, arrowshaft wrenches, horn bows, flint knives and axes, and gunflints (Weitzner 1979; Wilson field notes). Other items seem to have been confined to specific ranks or age. Ceremonial stone hammers, for example, were displayed only by members of the Stone Hammer Society, the youngest fraternal organization in the Hidatsa age grade system. Members of this society were usually in their early to mid-teens when joining (Bowers 1965; Wilson field notes for 1911). Officers of the Lumpwood Society carried "spear-head bows," bows that had been tipped with a flint projectile point roughly four inches in length (Weitzner 1979:237). Adult males, particularly as they advanced in age, comprised the corps of semispecialized arrowmakers who provided arrows to other males in the village (Bowers 1965). Historically, the Hidatsas appear to have differentiated between two types of iron arrowpoints: barbed, used for war (making removal of the arrow difficult and thereby increasing the severity of the wound); and "forehead-wide," used in hunting (non-barbed with an ovate blade) (Wilson field notes for 1911:58).

Peak labor demands on household members occurred during communal bison hunts when hunting, butchering, and processing of meat and other products (hides, bone grease, glue, sinew) required intense and efficient operations. Peak labor demands also would have occurred during the harvest, as indicated by the efficient scheduling of harvesting and processing activities and the recruitment of extra-familial labor to complete the mature corn harvest (Wilson 1917:43). Thus the productivity of the dual subsistence base rested on an explicit sexual division of labor within the household, and cooperation between related households.

Ties between households were supplemented by matrilineal clans which crosscut and integrated the three Hidatsa villages. During historic times, there were seven clans which "played an important role in holding the tribal population together and avoiding intervillage warfare" (Bowers 1965:77). Clan members pooled resources for many village activities such as labor for earthlodge construction, reciprocal exchange of goods at marriages, feast-sponsoring, and funerary exchanges of property from the clan of the deceased to the clan of the deceased's father (Wilson 1934:356, 372, Bowers 1965:75, 158). It is important to emphasize that activities involving extra-familial labor, and feasting during ceremonial rites of passage, served to redistribute goods to a wider network of relatives and non- relatives alike than that of the immediate household. Thus one of the features of the Hidatsa domestic economy was that goods and services were produced by the household but the consumption and exchange of these goods and services took place *both* within and between households—through extra-familial labor recruitment and an interdependent exchange network brought about by marriage and a matrilineal clan system.

Political Economy

The political economy of a cultural system can be defined as the organization of reproduction, production, consumption, and exchange within and between sociopolitical units (Harris 1979). Interest here is on the presence of such organization within and between the three Hidatsa villages and their external relations with other Plains sociopolitical groups.

Each Hidatsa village traditionally held prescribed hunting territories as well as garden acreage (Bowers 1965:29). Therefore, it can be assumed that these villages were economically autonomous units. Villages were also partly autonomous politically in the sense that each village contained its own system of age-grade organization from which village chiefs and camp police originated. Villages were integrated politically, however, by a common-interest tribal council that was established sometime around 1797-1798 in response to Sioux hostilities (Bowers 1965:27). This council was composed of the most distinguished warriors of each village. It was the duty of this council to maintain peaceful relations within the Hidatsa tribe as well as with the neighboring Mandans. The Hidatsa tribal council attempted to discourage efforts by enemy tribes to make alliances with one village to the exclusion of the others. Despite the extreme cultural homogeneity which existed between the Hidatsa and Mandans, they considered themselves separate polities:

> There was no tendency [by the Hidatas] to include the Mandan representatives in the council...Instead, the two tribes maintained independent councils which met jointly from time to time to discuss common problems. Each tribe defended the village of the other tribe from attack and peace treaties were not entered into by one tribe unless the other was included. [Bowers 1965:29]

It was surely this political separateness that led Lewis and Clark to clearly distinguish between the two tribes.

Because the Hidatsas were horticulturists in the Northern Plains, their villages were pivotal cogs in a far-flung intertribal trading network, both prehistorically and historically (Ewers 1970:2; Wood 1980). The Hidatsa villagers attracted a number of nomadic tribes who exchanged meat and meat products, horses, and exotic items from outside the Plains region in exchange for garden produce (Wood 1980:99-100). Western nomads such as the Crows and Cheyennes were attracted to the Hidatsas not only for garden produce, but also for firearms when they became available during the late eighteenth century.

Two economic consequences resulted from this intricate trading network which, from the standpoint of regional Plains economies, were mutually reinforcing. First, the extensive nature of this trading enterprise gen-

erated a market for Plains products outside the Plains region as well as within it. This facilitated an overall increase in productive activities toward that end. Second, within the Plains itself, trade facilitated specialization by the groups involved. Thus nomadic groups intensified their bison hunting and hide-dressing efforts, while horticultural groups like the Hidatsas, Mandans, and Arikaras intensified their horticultural efforts (Ewers 1954). An ancillary consequence of this trading structure, and one which must have had significant impact on the political relations between Plains tribes, was that those tribes with the same productive infrastructures were in commercial competition with one another.

The economic importance of this interniche trading network between nomads and villages is highly significant from the standpoint of overall cultural adaptation. For both cultural types, subsistence was not a certainty (particularly for nomadic bison hunters, even with horses). Local famine could be averted by nomadic groups through the acquisition of garden produce from Hidatsa villages where formal trading partners had been established. The Hidatsas, on the other hand, could obtain badly needed meat supplies from nomads in the event of temporary scarcities of local bison herds. Thus the trading networks acted to redistribute food supplies and other resources from areas of temporarily high productivity to areas of temporarily low productivity.

Like other Plains tribes the Hidatsas based their exchange structure with other tribes on the "father-son" adoption model (Wood 1980). The adoption ceremony functioned to create fictive kinship ties between leading men of the participating groups. Among the Hidatsas, such adoption ceremonies/trading ventures usually occurred during the summer or fall. In some cases, nomadic groups such as the Crows carried the trade to the Hidatsa villages. The trader Charles McKenzie witnessed such an episode at the Hidatsa villages in the summer of 1805 (Wood and Thiessen 1985:245-250). At other times the Hidatsas traveled to the camps of nomadic tribes to perform the adoption/trading ceremonies (Bowers 1965:48; Wood and Thiessen 1985:289-294). The ceremonial adoptions were formal procedures of exchange between two leading headmen or chiefs who acted as representatives for their respective tribes or camps. Each chief would collect goods from their fellow tribesmen, exchange them in toto with one another, and then reallocate the incoming goods among individuals in proportion to the value of the articles which they had respectively furnished. While the adoption ceremony was transpiring, informal trade might take place between individuals.

The intertribal trading system, in conjunction with the endemic patterns of warfare that characterized the historic Hidatsa environment, was intricately bound with two other aspects of Hidatsa political economy: the age-grade system and the status/authority structure. Each of the three Hidatsa villages possessed independently functioning, yet equivalent, age-grade organizations (Bowers 1965:185). In such a system, a number of individuals of relatively the same age collectively advanced through a hierarchy of age grades or orders in a formally ritualized fashion. One order in particular, the Black Mouth Society composed of experienced and mature warriors, was entrusted with the responsibility of serving as camp and village police. This society was also responsible for executing decisions of the village councils and policing the communal bison hunts (Bowers 1965:175, 186). Within its village policing authority, the Black Mouth Society was also responsible for the coordination and supervision of public works projects such as the building and maintenance of village palisades, and village cleanups (Wilson 1917:36; Wilson 1981:52).

Age sets passed through each grade in the system by collectively purchasing the rights and statuses from the age set immediately above it in the hierarchy (Bowers 1965:211). This was accomplished through the father-son adoption ceremony. It differed from the trading ceremony in that while reciprocal exchanges took place in trading, in the age-grade purchases the lower or "adoptee" group (ceremonial sons) amassed and presented material goods to the "adopters" (ceremonial fathers) in return for their status, rights, medicines, songs, regalia, and obligations. Aside from the social importance of these transfers, the net result was a distribution of goods that flowed upward and eventually to the older age sets who were ready to retire from the system.

Paralleling the men's age societies were from two to four women's age societies (Bowers 1965:199). Ethnographic evidence indicates that these societies performed important ceremonial as well as economic functions. Ceremonial functions included buffalo-calling and corn fertility rites, both of which were viewed by the Hidatsas as necessary adjuncts to their overall subsistence (Bowers

1965:200-205). An important economic function of the women's age societies was in assisting a member in building an earthlodge during which labor was organized into specific tasks (Wilson 1934:366-367, 403).

The Hidatsa age-grade structure was systemically related to the status/authority structure. In the absence of formal restrictive criteria for positions of leadership (formal in the sense of hereditary chieftanship and kinship validation of political and priestly offices), competition and personal accomplishment defined avenues to high status, prestige, and authority (Bowers 1965:51). The Hidatsa social system was ranked through competition where differential access to high status positions was determined by the advancement of men through the age-grade system (Bowers 1965:184). By bringing individuals through the system incrementally in small groups and selecting for military skills and the competitive accumulation of property, the Hidatsas were ensured of a continual core of skilled, responsible leaders. Only through economic and military accomplishments could aspiring men accumulate the wealth necessary for feasting and society purchases that would allow them to advance to the threshold of leadership, eminence, and authority in the village.

Age-grading for the Hidatsas was a means of regulating the rise of individuals to valued positions within the village. Such positions included the directors of communal bison hunts, village chiefs, camp police, and winter camp headmen. For example, a prerequisite for membership on the village council was membership in an age-grade *above* that of the Black Mouth Society, which represented roughly the half-way point in the hierarchy. Men who had gone beyond the Black Mouth grade had attained the ideal objectives of the culture and therefore were entitled to sit in the village council.

To summarize, Hidatsa political economy was an intricate blend of productive forces, trading institutions and enterprises, military organization, and competitive ranking. Males attained prescribed, albeit limited, positions of authority through an exceedingly competitive array of personal accomplishments. Eminent men possessed high feasting and gift-giving budgets. These competing leaders were characteristic of political leaders who have been cross-culturally typed by anthropologists as "big men" (Sahlins 1968:42, note). In a society where political influence and decision-making were ultimately based on the consensus and will of the community, the practices of feasting and give-aways maintained important alliances in addition to stimulating household production (Hanson 1987).

Hidatsa Religious Beliefs and Ideology

Like other Plains tribes the underlying basis of Hidatsa religion was the medicine bundle complex (Hanson 1980). This religious and cosmological system was universally characterized by the following associated elements: a set of portable, sacred objects which were kept in protective wrappings when not in use; which served as repositories for harnessable supernatural power or "medicine"; which had their origin in either individual vision experiences or a conventionalized body of myth, both of which imposed rules of ritual use and care; were acquired through personal vision quests, purchase, or inheritance; and were variably transferred to others at the death of the owner or keeper (Hanson 1980:200).

The nature and functioning of the Hidatsa medicine bundle system has been described in exhaustive detail by A. W. Bowers in *Hidatsa Social and Ceremonial Organization* (1965). Rather than duplicate the essentials of Bowers' work, attention here is focused on the relationship between certain ceremonial and ideological elements with Hidatsa political and domestic economies.

Many of the semispecialized crafts were controlled by bundle owner's rights (Bowers 1965:372). Pottery-making, basketry, eagle-trapping, arrow-making, and doctoring were among those activities which were "licensed" within the village. That is, those wishing to learn these trades were required to purchase the ceremonial rights to practice these crafts:

> Much of their culture was transmitted through purchase from those of the previous generations who had bought from their elders. Thus arrows were made only by those with ceremonial rights in bundles carrying arrow-making songs; pottery was made by those with bundles associated with Old-Woman-Who-Never-Dies; basket-making was practiced by those with Holy Women rights; fish, eagle, and game traps were controlled by those

> with Black Bear rights; and bullboats and earthlodges went with River bundles...A person wishing to learn to chip flint and to make arrows could buy the rights and receive the instructions from those with the sacred bundle or he could buy the rights from one who had bought secondary rights from the bundle owner. In practice, it meant that a young man would go first to the people of his own household, generally a maternal grandfather, for instruction and training. The same rules would apply to a woman wishing to obtain the knowledge of pottery making...Thus, much of the knowledge which one acquired during his or her lifetime, often at a high price, was shared with the younger generations, while the goods received in payment helped to sustain them in old age. [Bowers 1965:120]

Since these crafts were transferred in increments over a period of time the buyer and the seller stood in a teacher/apprentice relationship. Bowers (1965:373) had noted the economic implications of this system of craftsmanship, commenting that there were "a limited number of households possessing the rights to make pottery, and the other households bought their pottery in exchange for decorated robes, clothing and other property." Many of the pottery specialists were elderly people whose advancing age induced them to practice their crafts more energetically compared to other activities (Bowers 1965:165). This situation probably held for arrow-makers as well.

Like pottery-makers, stoneworkers ideally practiced their craft in secret, keeping their flints moistened and covered (cached) until used (Bowers 1965:166).

Hidatsa medicine bundle conceptions were also systematically related to the age-grade and status/authority structures. A connection between the acquisition of supernatural power and the age-grade system is illustrated by the fact that

> A man was expected to become informed in tribal lore as he advanced in status. Beyond what he knew of tribal lore from the sacred bundles he had bought, he was expected to give feasts frequently to those possessing other important sacred lore and to have these myths related. [Bowers 1965:295]

These bundle rights were purchased in increments as one advanced through the sequence of statuses prescribed in the age-grade system. Theoretically, a number of prominent men would carry on the tradition of community medicine bundle cosmology by learning and relating specialized pieces of the total mythical/ceremonial puzzle. In this vein Bowers notes that

> the Hidatsa ceremonial system is based on a series of segmented rites originating through time. Each segment was preserved by formal instructions to those making the ceremonial purchase. Those who had completed the preliminaries to ceremonial participation and were admitted as legitimate custodians of various segments of the ceremony were entrusted with the responsibility of correct interpretation and performance to their parts. [Bowers 1965:295]

Just as the segmented nature of the age-grade structure formed a coherent organizational whole, the segmented nature of the Hidatsa medicine bundle system formed a coherent ceremonial whole.

Attaining high ceremonial status took years of ritual purchases and training, and therefore acted to legitimate the authority of age in leadership positions and to associate age with wisdom and knowledge (Bowers 1965:164).

There are indications that the Hidatsa medicine bundle system also served to stimulate production in the household. The functioning and continuity of the system was predicated on the ceremonial purchases by successful individuals. Success, as measured through the advancement in the age-grade structure, was attained through the production, acquisition, and distribution of wealth and property via institutionalized feasting obligations and ceremonial purchases. These outflows were such that the material store of the household or related households (since clansmates often put up goods for one's feasting

obligations and giveaways) were expected to be drained. For example, during a funeral, the clan of the deceased would collect and distribute property and food to the clan of the deceased's father as payment for funeral ceremonies which they had performed. It was believed that "a lavish display of goods expressed the generosity and solidarity of the clan" (Bowers 1965:75). Goods thus flowed from one clan to another, eventually to be reciprocated. Lavish displays brought prestige to the household and the clan. Prestige was associated with success, competence in village affairs, and strong supernatural power. Feasting and disposition of wealth also occurred during societal purchases and bundle transfers, both of which could drain the stores of households and call for an increase in work effort.

As with wealth and property, supernatural power was subject to depletion and replenishment. It was believed that personal accomplishments that brought success to an individual also drained his power. Consequently, it had to be replenished through feasting, fasting, bundle renewals, and ritual purchases (Bowers 1965:285). Since greater sacrifices resulted in greater power, and greater power resulted in increased success, such success in turn necessitated even greater sacrifices. The net result was an upward spiral in the status/ceremonial cycle. As an individual moved through the age-grade structure and increased his/her status proportionately, social obligations of sponsoring feasts, purchasing bundles, and generous gift-giving also increased (Bowers 1965:155). These circumstances often resulted in a temporary condition wherein eminent men had given away virtually everything they possessed (Thwaites 1966c, 22:321). In Hidatsa theory, this attribute of generosity was a necessary moral condition for the acquisition and maintenance of village leadership. It was, however, also a consequence of the economic nature of the status/ceremonial complex.

Summary

The foregoing has been a generalized overview of the Hidatsa cultural system as it operated during the period 1800 to 1845. Systemic relationships between elements of Hidatsa settlement/subsistence, political/domestic economies, and ideology were suggested. An aboriginal horticultural/hunting subsistence base was fueled by a technology centering on the use of stone, bone, ceramic, and timber resources. High timber budgets (particularly during winter) coupled with bottomland horticulture conditioned a settlement pattern of semipermanent villages occupied during the period spring-fall and relatively temporary winter camps nearby. The normative Hidatsa matrilocal household was functionally related to a subsistence base that emphasized the use and transmission of tracts of arable land through time. Matrilineal descent and the age-grade system acted to knit households and villages together in common economic and political activities. Hidatsa participation in their intertribal trading network acted not only to supplement their economy but also fostered intertribal alliances. Hidatsa religion, exemplified by the medicine bundle complex was intricately related to the age-grade and authority structures as well as to the Hidatsa belief that supernatural power or knowledge could be drained as well as acquired, and that success entailed ever-increasing commitments both on the social and supernatural levels.

The ideal picture presented above, however, was offset in significant ways by Euroamerican impaction. Technological complexes were altered, populations were substantially reduced, marital residence practices were changed, and many medicine bundle lines became extinct. Thus, archeological investigations must go beyond ideal ethnographic constructions in order to more accurately appraise Hidatsa culture history and change. It must, therefore, look to the ethnographic materials not only for ideal patterns but for variations from these patterns. In the next section several questions are analyzed that bear on the ways in which Hidatsa ethnography can aid archeological research about the village peoples.

HIDATSA ETHNOGRAPHY AND ARCHEOLOGY: A REVIEW OF HYPOTHESES

This chapter concludes with the presentation of a series of theoretical issues which bear on the relationship between Hidatsa ethnography and archeology. These issues are presented in the following order: 1) differentiation of Hidatsa and Mandan village sites; 2) differences in degrees of Hidatsa and Mandan sedentism; 3) a reoccupation of Sakakawea after being burned in 1834; 4) ceramic change and epidemic disease; 5) Hidatsa intervillage variation in subsistence and technology. These discussions do not necessarily exhaust the possibilities of relating Hidatsa ethnography to archeological problems. Rather, they have been chosen as representative of key issues in Hidatsa culture history and change.

Before proceeding, two qualifications are in order concerning the ethnographic and ethnohistoric data. First, the quality of the data is not uniform with regard to the above problems, so that in some cases the ethnographic potential may be quite limited. Second, in most cases, the ethnographic data can be variously interpreted, so that more than one hypothesis can be derived from them. Rather than favor one interpretation over another, which would involve theoretical and methodological biases, the goal here is to provide latitude for archaeologists by offering alternative hypotheses for the issue presented.

Differentiation of Hidatsa and Mandan Village Sites

Early chroniclers of Hidatsa and Mandan culture and society were virtually unanimous in emphasizing the similarities between the two tribes (e.g., Catlin 1973; Thwaites 1966a-c, 1969). A review of the major ethnographic sources on these tribes has led to the conclusion that ethnographically, with rare exceptions, Hidatsa and Mandan material culture cannot be distinguished (Bowers 1950, 1965; Wilson 1917, 1924, 1928, 1934). This homogeneity in material culture is the result of the rapid cultural convergence experienced by the two tribes during the historic period, but which began in the prehistoric period. This convergence accelerated rapidly when the remnants of the Hidatsa and Mandan coalesced into a single village at Like-a-Fishhook Bend after 1845. Thus, whatever distinctions had been present in Hidatsa and Mandan material culture were considerably blurred by the time Gilbert L. Wilson launched his exhaustive field studies of Hidatsa material culture in the early 1900s.

The problem of Hidatsa and Mandan culture homogeneity is significant for archeological studies to the extent that Hidatsa and Mandan village sites can be distinguished in the absence of historical documentation. Dependent on the remains of material culture, the problem of Hidatsa and Mandan site differentiation becomes very difficult. On the one hand, it could be hypothesized from the ethnographic data that the material cultures of the two tribes were too similar to be archeologically salient. The implication of this hypothesis is that ethnic distinctiveness (e.g., a Mandan versus an Hidatsa village site) cannot be retrodicted in tracing the culture history of these two tribes. On the other hand, there is some evidence which suggests that the historic blurring of Hidatsa and Mandan culture was not universal, and consequently archeological differentiation may, in fact, be possible. This evidence comes primarily from ethnographic material bearing on community patterning and the social context of pottery-making.

Ethnohistoric sources consistently mention differences in Hidatsa and Mandan settlement plans prior to their amalgamation at Like-a-Fishhook Village. Mandan villages contained a central plaza which housed a semi-rectangular medicine lodge and the highly venerated Sacred Ark. This arrangement was noted by Alexander Henry in 1806 and by Maximilian in 1833 (Gough 1988:228; Thwaites 1966c, 23:370). Hidatsa villages, on the other hand, did not contain a central plaza, medicine lodge, or Sacred Ark. The NaxpikE ceremony, the Hidatsa equivalent to the Mandan Okipa, was held in a specifically prepared lodge outside the village. Charles McKenzie contrasted the Hidatsa medicine lodge with the centrally-located Mandan version by noting that

> ...this lodge [Hidatsa] whose frame is always Standing in the field at Some distance from the village—...[is] Supported upon a pillar, which rises in the Center, twenty five feet high. [Wood and Thiessen 1985:253]

If these differences in Hidatsa and Mandan settlement plan are viewed as consistent village patterns in time and space, then archeologists may reasonably expect to see these differences in the archeological record. Hence, village plan may then be a reliable indicator of Hidatsa and Mandan site variability.

Among both the Hidatsas and the Mandans, pottery-making was theoretically a controlled craft, practiced by women, which was transmitted through ceremonial purchase of the rights to learn and practice the craft (Bowers 1950, 1965). Ideally, for both groups, women bought the pottery-making rights, including certain decorative styles, from their mothers or other clanswomen (Bowers 1950:62; 1965:165). If Bowers is correct in his assertion that intermarriage was rare between the Hidatsas and Mandans prior to the smallpox epidemic of 1837, then it is reasonable to conclude that each tribe maintained rather distinct ceramic traditions. If this is the case, then archeologists should expect to find differences in ceramic attributes between Hidatsa and Mandan archeological assemblages. Thus, for example, pottery from

village sites which are known to have been inhabited either by Hidatsas or Mandans (but not both) should theoretically be more homogeneous than pottery from villages known to have been occupied by an admixture of Hidatsas and Mandans. Archeologists should also expect, as Bowers (1965:22) has noted, that the differences between Hidatsa and Mandan ceramics should become less pronounced through the prehistoric-historic sequence as the cultures of the two tribes became increasingly similar. As intermarriages became more frequent after the 1837 epidemic, ceramic traditions would be expected to become mixed, leading eventually to the inability to differentiate them on the basis of ethnographically-described ceramic techniques (Wilson field notes for 1910:272-290).

On the other hand, the ethnographic data can be interpreted in another manner, suggesting that normative cultural rules about ceramic transmission do not adequately cover the variability of actual transmission of ceramic knowledge and practice. For example, Bowers has noted for both the Mandans and the Hidatsas that women *could* purchase the rights of pottery-making (including the decorative attributes) from women other than their lineage or clan mates (Bowers 1950:91; 1965:165). Especially after severe depopulation which followed epidemics such as those of 1780 and 1837, it is conceivable that women went outside the traditional avenue of transmission to learn their craft. Thus, while Hidatsa and Mandan women may have tended to follow in the "potprints" of their mothers or other clanswomen, closing off the possibility of extraclan transmission rigidifies the ethnographic situation, as well as questions which archeologists might pursue. Consequently, there exists an alternative ethnographic hypothesis which is archeologically testable: that the Hidatsa/Mandan convergence, which began in the prehistoric period and accelerated rapidly after 1780, is reflected in the homogeneity of Hidatsa and Mandan pottery in terms of stylistic attributes that would be meaningful to the native potters.

Other controlled crafts which bear archeological significance, particularly stoneworking, can probably be treated in the same terms as noted above with ceramics. However, the quality of ethnographic data bearing on the techniques/designs of Hidatsa and Mandan stonework is too poor to allow any precise extrapolations for archeological interpretation. One exception to this pertains to ceremonial stone hammers, the symbolic accoutrements of the Hidatsa Stone Hammer Society at Sakakawea and Big Hidatsa (Bowers 1965:175). Rock Village, for example, has been putatively identified as an Hidatsa site based on the presence of these stone hammers (Hartle 1960; Lehmer et al. 1978). It should be noted, however, that the Awaxawi Hidatsas did not have a Stone Hammer Society, so that the presence of stone hammers is not necessarily a prerequisite for identifying a site as Hidatsa. By the same token the absence of stone hammers cannot be considered evidence for Mandan occupation of a site.

In sum, archeologists interested in differentiating Hidatsa and Mandan village occupations are best aided by the ethnographic data in terms of village plan and ceramic assemblages. A reasonable expectation is one which shows Mandan occupation consistent with central plazas and a semirectangular (much larger) medicine earthlodge at its periphery. Archeologists might also hypothesize differentiation of Hidatsa and Mandan villages on the basis of separate ceramic traditions which has some ethnographic support. A corollary to this hypothesis, however, is the expectation of increasing homogenization of Hidatsa and Mandan pottery through the prehistoric-historic continuum as a result of the cultural convergence of the two tribes. Alternatively, archeologists may wish to test the hypothesis that Hidatsa and Mandan ceramic differentiations cannot be made, and that the differences in ceramic assemblages do not reflect ethnicity in this particular case. That is, the ethnic classifications of ceramics may not correspond to ethnographically described sociopolitical groups.

Degrees of Hidatsa and Mandan Sedentism

In discussing the cultural position of the Hidatsas in the Northern Plains, Bowers states that

> The Hidatsa-proper were intermediate between the other two Hidatsa villages groups and the Crow. This intermediate cultural position was also indicated by their frequent abandonment of agriculture for a few seasons at a time to go out onto the Plains as true nomads. They were away on one of these periodic migrations in 1837, thus partially

> avoiding the devastating smallpox losses suffered by the other two village groups and the Mandan. [Bowers 1965:287]

The idea that the Hidatsas, particularly the Hidatsas-proper, were less stationary than the Mandans was also put forth by Alexander Henry in 1806 (Gough 1988:239).

If, in fact, the Hidatsas-proper *were* more prone to seasons of nomadic behavior than the other Hidatsa subgroups and the Mandans, such behavior probably revolved around hunting. The Hidatsas-proper claimed a large stretch of hunting territory along the Missouri River from their village to the mouth of the Yellowstone (Bowers 1965). The lack of access to these prime hunting grounds in conjunction with their small population may explain Henry's observation that the Awaxawi Hidatsas, like the Mandans, were more given to horticulture than the Hidatsas-proper (and perhaps the Awatixas) (Gough 1988:229).

Archeologists might test the ethnographic validity of these variations in subsistence of the Hidatsa and Mandan villages, although the test implications of this hypothesis would seem difficult to derive. Variations in the degree of nomadism, if related to the amount of hunting, may be reflected in the quantity or quality of faunal assemblages in Hidatsa and Mandan villages. If, for example, the Hidatsas-proper were more prone to operate antelope pounds than their neighbors as a result of their "less stationary" habits, archeologists might look for a larger pronghorn assemblage at Big Hidatsa than at the other villages. Archeologists might also analyze the qualitative and quantitative differences in faunal bison remains that might result from long distance (e.g., more "nomadic") hunting operations, such as were implemented by the Hidatsas-proper, and local, opportunistic, short-term hunting operations which apparently characterized the Mandans during the historic period (Gough 1988:227; Will and Hyde 1917:110).

However, there exists the possibility that the variations in subsistence noted in the ethnographic/ethnohistoric literature were only very minor and not very significant. Comparison of Hidatsa-proper clans, age-societies, matrilineages, settlement patterns, subsistence patterns, material culture, and architecture with other Hidatsa subgroups and the Mandans could be interpreted to mean that there was not enough variation among these village groups to be archeologically salient. Archeologists might, therefore, consider settlement/subsistence homogeneity as an alternative hypothesis to one suggesting heterogeneity.

The Reoccupation of Sakakawea Village

Historic evidence suggests that Sakakawea was burned by the Dakotas sometime during the late spring of 1834 (Stewart 1974:296). It is usually inferred that this village was not reoccupied prior to the Hidatsa exodus from the Knife River in 1845, for contemporary journals mention only one Hidatsa village (Abel 1932; Audubon 1960; Hanson 1987). Documentation from Gilbert Wilson's field notes for 1908, however, suggests that this inference should be reexamined. Buffalo Bird Woman, one of Wilson's principal informants, states that she was born (about 1840 or 1841) in "Awatixa village" (Wilson field notes for 1908:18). If this is true, it means that Sakakawea may have been reinhabited, albeit briefly, after being sacked in 1834. From an ethnohistoric perspective Sakakawea could have been reoccupied for approximately four years and gone unrecorded, since Chardon's journal ends in 1839 while Audubon's does not begin until 1843. An hypothesis suggesting a reoccupation of Sakakawea during this late period would seem to be testable archeologically. An alternative hypothesis is that the Awatixa Hidatsas did not reoccupy Sakakawea; rather, they occupied the Taylor Bluff site, which was labelled "Awatixa Village" by Buffalo Bird Woman.

Ceramic Change and Epidemic Disease

A recent hypothesis advanced to explain the appearance of "decadent" Knife River phase pottery suggests that the death of large numbers of village pottery specialists during epidemics interrupted the transmission of pottery rights to apprentices (Lehmer et al. 1978:184-185; Ahler and Weston 1981:188; Hanson 1983a:174; Wood 1986:23). This hypothesis needs to be reexamined in light of a reappraisal of Bowers' ethnographic data as well as information from Wilson's field notes. Keeping in mind the previous discussion of transmission rights, it is suggested here that supporters of this hypothesis have been overly rigid in their interpretation of Bowers' data. A close reading of these data makes it clear that: 1) lineal transmission was augmented by a number of ways of purchasing designs outside the lineage and clan; 2) there is an important difference between knowledge of pottery

manufacture and technique on the one hand and the sanctioned right to employ them publicly on the other; and 3) the wider network of possible teachers meant a greater flexibility if, for example, all female potters of a lineage died. The question raised here is this: would the death of many of the "licensed" specialists result in the interruption of manufacturing knowledge, or, in the interruption of formally sanctioned methods of employing such knowledge? If the latter, then the recognition and honoring of, and protection for, established potters through ceremonial protocol is rendered academic.

From another standpoint it logically follows that if epidemic diseases eliminated the majority of skilled potters from a village they would be equally likely to eliminate other craftspersons of equal susceptibility. Furthermore, if these other crafts were similar to pottery in that they were licensed activities requiring ceremonial transmission, then these crafts should also experience a deterioration in quality. Thus, if the hypothesis that disease caused a deterioration in ceramics is correct, then archeologists might also expect to see similar changes in lithic technology, especially in arrowpoints.

The ethnographic data can shed little light on this problem by focusing on lithic technology. However, recourse to another controlled craft, basketry, is insightful.

According to Wilson's field notes for 1912, basket-making rights had to be purchased, and gifts were required at each lesson. As Buffalo Bird Woman put it, "we wanted to keep the privilege to ourselves, as it gave us the right to get gifts, and if everyone learned and did not pay, then we would not get anything" (F. N. Wilson's field notes for 1912:24-25). Thus, basketry was much like ceramics and lithics in the context of manufacture and transmission of knowledge and technique. Yet there appears to have been no deterioration or major alteration of Hidatsa twilled basketry styles. While this proposition would be difficult if not impossible to test archeologically, the basketry techniques described and illustrated by Wilson are virtually identical with artists' illustrations and historic descriptions of Hidatsa and Mandan twilled baskets prior to the smallpox epidemic of 1837 (Schneider 1984). If the knowledge and techniques of Hidatsa basketry survived the death of large numbers of skilled basketmakers, then knowledge and techniques of ceramic and lithic manufactures may also have survived. What may not have survived, however, was the incentive to invest large expenditures of time and energy in pottery-making or stonework. For ceramics, this may have resulted from a combination of the increased workload of women in processing bison robes for the fur trade and the availability of functional alternatives in copper/iron kettles. For lithic technology, items of the fur trade may have provided functional alternatives to many kinds of stone tools (hoes, knives, metal arrowpoints, etc.) thereby causing a relaxation in this craft. These are in contrast to Hidatsa burden baskets, used for carrying bulk quantities of garden produce and other goods, where there was not a functional equivalent in the fur trade inventory.

In sum, from the ethnographic data presented here, the hypothesis associating the deterioration of Hidatsa (and Mandan) ceramics with the epidemic mortality of skilled potters has little support, and therefore, should be subject to skepticism and further archeological testing.

Hidatsa Intervillage Variation in Subsistence and Technology

The ethnographic/ethnohistoric data are not very illuminating regarding intervillage variations in Hidatsa subsistence and technology. It is not altogether clear whether this is a reflection of reality or merely of gaps in our data. There is some evidence which may point archeologists in particular, albeit slim, directions for addressing this issue.

In the summer of 1806 Alexander Henry said of the Awaxawis, living at Amahami Village:

> They are a stationary people the same as their neighbours the Mandans, with whom they have always been at peace... [Gough 1988:234]

Of the Hidatsas-proper living at Big Hidatsa, Henry noted that in contrast to their "neighbours" (presumably the Awaxawis and Mandans):

> They are not so fond of cultivating the ground...although they raise an immense quantity of Corn &c. Still it falls far short of what is gathered in by the Mandans...and [they] appear to be more

> of a Roving and restless disposition...
> [Gough 1988:237]

Henry was only among the Hidatsas for approximately one month, so his observations and statements must be read with caution. However, the suggestion that the Awaxawis were more sedentary, and more prone to horticulture, than the Hidatsas-proper should be investigated. While these statements by Henry are highly impressionistic, they do make theoretical sense in that the Awaxawis were a very small village group living in a hostile environment where hunting might prove to have been a dangerous risk. To offset this, this group may have increased their horticultural efforts for subsistence and trade. Contrarily, the Hidatsas-proper were much more numerous than any other village group (Hidatsa or Mandan) and theoretically could have carried out extended hunting operations with considerably less risk of interference by Dakota, Arikara, or Assiniboin raiding parties. Perhaps Hidatsa-proper "nomadism," or, at the other end of the scale, Awaxawi "sedentism," might be reflected in comparative differences in faunal remains as measured against some other standard in the assemblages. If the Awaxawis *were* more sedentary than other Hidatsa subgroups, then other subsistence pursuits, particularly fishing, may also have been correspondingly more important to the Awaxawis. Such a possibility would also seem to be archeologically testable. However, the alternative proposition that these differences do not constitute any generalizable pattern, but are artifacts of impressionistic observations, should also be considered. In other words, one could hypothesize that whatever differences occurred between the Hidatsa subgroups in subsistence and technology may have been too insignificant to have become archeologically salient.

Summary and Conclusions

Ethnography, ethnohistory, and archeology can provide complementary data sets for elucidating problems in culture history, and for increasing our understanding of cultural process and change. The foregoing discussions have attempted to bring together ethnographic and ethnohistoric data on the Hidatsas in ways which may be useful for archeological interpretations. These discussions have also provided threads of reasoning by which archeologists may tie together ethnographic/ethnohistoric data on the Hidatsas with archeological assemblages from Hidatsa villages within the boundaries of the Knife River Indian Villages National Historic Site, and other Hidatsa/Mandan sites in the upper Knife-Heart region. Ethnographic analysis is of significance to these archeological studies not only in providing a set of working hypotheses and interpretive data but also in setting down limitations where these data are not of sufficient quality to be useful. As the previous discussions demonstrate, ethnographic/ethnohistoric data on the Hidatsas is of considerable significance to understanding the archeological resources of the Knife River Indian Villages National Historic Site.

REFERENCES CITED

Unpublished Documents

Minnesota Historical Society, St. Paul

Field notes of Gilbert L. Wilson's and F. N. Wilson's ethnographical research on the Fort Berthold Reservation, North Dakota, 1908-1918. Also on file at the American Museum of Natural History, New York.

Publications and Reports

Note: References in which an asterisk precedes the date were supported in whole or part by the Midwest Archeological Center's archeological and ethnohistorical research program for the Knife River Indian Villages National Historic Site.

Abel, A. H. (editor)
1932 *Chardon's Journal at Fort Clark, 1834-1839*. State of South Dakota, Department of History, Pierre.

Ahler, S. A. (editor)
*1988 *Archeological Mitigation at Taylor Bluff Village (32ME366), Knife River Indian Villages National Historic Site*. University of North Dakota. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Ahler, S. A., and T. Weston
*1981 *Test Excavations at Lower Hidatsa Village (32ME10), Knife River Indian Villages National Historic Site*. University of North Dakota. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Audubon, M. R.
1960 *Audubon and His Journals*. With zoological and other notes by E. Coues. 2 vols. Reprinted. Dover, New York. Originally published 1897, Charles Scribner's Sons, New York.

Bowers, A. W.
1950 *Mandan Social and Ceremonial Organization*. University of Chicago Press.

1965 *Hidatsa Social and Ceremonial Organization*. Bureau of American Ethnology, Bulletin 194. Smithsonian Institution, Washington, D.C.

Catlin, G.
1973 *Letters and Notes on the Manners, Customs, and Conditions of North American Indians*. 2 vols. Reprint of 4th ed., 1844. Dover, New York. First ed. originally published 1841, London.

Curtis, E. S.
1909 *The North American Indian*, vol. 4. [The Apsaroke, or Crows. The Hidatsa.] University Press, Cambridge, Massachusetts.

Ewers, J. C.
1954 The Indian Trade of the Upper Missouri Before Lewis and Clark: An Interpretation. *Bulletin of the Missouri Historical Society* 10(4, Part 1):429-446. [Also published in slightly revised form as "The Indian Trade of the Upper Missouri Before Lewis and Clark," in *Indian Life on the Upper Missouri*, by J. C. Ewers, pp. 14-33. University of Oklahoma Press, Norman, 1968.]

1970 The Influence of the Fur Trade on the Indians of the Northern Plains. In *Peoples and Pelts*, edited by M. Bolus, pp. 1-26. Peguis, Winnipeg.

Gough, B. M. (editor)
1988 *The Journal of Alexander Henry the Younger 1799-1814*, vol. 1. Champlain Society Publication LVI. Toronto.

Griffin, D. E.
1977 Timber Procurement and Village Location in the Middle Missouri Subarea. *Plains Anthropologist, Memoir 13* 22(78, part 2):177-185.

Hanson, J. R.
1980 Structure and Complexity of Medicine Bundle Systems of Selected Plains Tribes. *Plains Anthropologist* 25(89):199-216.

*1983a *Hidatsa Culture Change, 1780-1845: A Cultural Ecological Approach.* Ph.D. dissertation, Department of Anthropology, University of Missouri, Columbia; and submitted to the National Park Service, Midwest Archeological Center, Lincoln.

1983b Changes in Hidatsa Residence Patterns: a Cross-Cultural Interpretation: *Plains Anthropologist* 28(99):69-75.

*1987 *Hidatsa Culture Change, 1780-1845: A Cultural Ecological Approach.* J & L Reprint Company, Lincoln.

Harris, M.
1979 *Cultural Materialism*. Random House, New York.

Hartle, D. D.
1960 *Rock Village: An Ethnohistorical Approach to Hidatsa Archaeology*. Ph.D. dissertation, Department of Anthropology, Columbia University, New York.

Holder, P.
1970 *The Hoe and the Horse on the Plains: A Study of Cultural Development Among the North American Indians.* University of Nebraska Press, Lincoln.

Lehmer, D. J.
1971 *Introduction to Middle Missouri Archeology*. Anthropological Papers 1. National Park Service, Washington, D.C.

1977 Epidemics Among the Indians of the Upper Missouri. In *Selected Writings of Donald J. Lehmer*, pp. 105-111. J & L Reprint Company, Lincoln.

Lehmer, D. J., W. R. Wood, and C. L. Dill
1978 *The Knife River Phase*. Dana College and the University of Missouri. Submitted to the National Park Service, Rocky Mountain Region.

Lovick, S. K., and S. A. Ahler
*1982 *Cultural Resource Reconnaissance in the Knife River Indian Villages National Historic Site.* University of North Dakota. Submitted to the National Park Service, Midwest Archeological Center, Lincoln.

Lowie, R. H.
1917 Notes on the Social Organization and Customs of the Mandan, Hidatsa, and Crow Indians. *Anthropological Papers of the American Museum of Natural History* 21(1). New York.

Matthews, W.
1877 *Ethnography and Philology of the Hidatsa Indians*. Miscellaneous Publications No. 7. United States Geological and Geographical Survey, Washington, D.C.

Meyer, R. W.
1977 *The Village Indians of the Upper Missouri: The Mandans, Hidatsas, and Arikaras*. University of Nebraska Press, Lincoln.

Poor Wolf (Hidatsa Indian)
1906 Autobiography, recorded by C. L. Hall. *Collections of the State Historical Society of North Dakota* 1:439-443. Bismarck.

Quaife, M. M. (editor)
1959 *Among the Indians: Eight Years in the Far West, 1858-1866*, by H. A. Boller. Lakeside Classics edition. Reprinted. R.R. Donnelley & Sons, Chicago. Originally published 1868, T. Elwood Zell, Philadelphia.

Sahlins, M.
1968 *Tribesmen*. Prentice-Hall, Englewood Cliffs, New Jersey.

Schneider, M. J.
1984 An Investigation into the Origin of Arikara, Hidatsa, and Mandan Twilled Basketry. *Plains Anthropologist* 29(106):265-276.

Smith, G. H.
1972 *Like-a-Fishhook Village and Fort Berthold, Garrison Reservoir, North Dakota*. Anthropological Papers 2. National Park Service, Washington, D.C.

Stewart, F. H.
1974 Mandan and Hidatsa Villages in the 18th and 19th Centuries. *Plains Anthropologist* 19(66):287-302.

Thompson, W. R.
1933 *Yield of Maize in Relation to Espacement*. University of Pretoria, South Africa.

Thwaites, R. G. (editor)
1966a Travels in the Interior of America, in the Years 1809, 1810, and 1811, by John Bradbury. *Early Western Travels*, vol. 5. Reprinted. AMS Press, New York. Originally published 1904, Arthur P. Clark, Cleveland.

1966b Journal of a Voyage up the River Missouri, by H. M. Brackenridge. *Early Western Travels*, vol. 6:21-166. Reprinted. AMS Press, New York. Originally published 1904, Arthur P. Clark, Cleveland.

1966c Travels in the Interior of North America, by Maximilian, Prince of Wied. Translated by H. E. Lloyd. *Early Western Travels*, vols. 22-24. Reprinted. AMS Press, New York. Originally published 1906, Arthur P. Clark, Cleveland.

1969 *Original Journals of the Lewis and Clark Expedition 1804-06*. 8 vols. Reprinted. Arno Press, New York. Originally published 1904-1905, Dodd, Mead and Company, New York.

Weitzner, B.
1979 Notes on the Hidatsa Indians Based on Data Recorded by the Late Gilbert L. Wilson. *Anthropological Papers of the American Museum of Natural History* 56(2). New York.

White, L. A. (editor)
1959 *Lewis Henry Morgan: The Indian Journals, 1859-62*. University of Michigan Press, Ann Arbor.

Will, G., and G. E. Hyde
1917 *Corn Among the Indians of the Upper Missouri*. W. H. Miner, St. Louis.

Wilson, G. L.
1917 *Agriculture of the Hidatsa Indians: An Indian Interpretation*. Studies in the Social Sciences, No. 9. University of Minnesota, Minneapolis.

1924 The Horse and the Dog in Hidatsa Culture. *Anthropological Papers of the American Museum of Natural History* 15(2). New York.

1928 Hidatsa Eagle Trapping. *Anthropological Papers of the American Museum of Natural History* 3(4). New York.

1934 The Hidatsa Earth Lodge. Edited by B. Weitzner. *Anthropological Papers of the American Museum of Natural History* 33(5). New York.

1981 *Waheenee, An Indian Girl's Story*. University of Nebraska Press, Lincoln.

Wood, W. R.
1974 Northern Plains Village Cultures: Internal Stability and External Relationahips. *Journal of Anthropological Research* 30(1):1-15.

1977 David Thompson at the Mandan-Hidatsa Villages, 1797-1798: The Original Journals. *Ethnohistory* 24(4):329-342.

1980 Plains Trade in Prehistoric and Protohistoric Intertribal Relations. In *Anthropology on the Great Plains*, edited by W. R. Wood and M. Liberty, pp. 98-109. University of Nebraska Press, Lincoln.

*1986 *The Origins of the Hidatsa Indians: A Review of Ethnohistorical and Traditional Data*. J & L Reprint Company, Lincoln.

Wood, W. R. (compiler)
1983 *An Atlas of Early Maps of the American Midwest*. Scientific Papers 18. Illinois State Museum, Springfield.

Wood, W. R., and T. D. Thiessen (editors)
*1985 *Early Fur Trade on the Northern Plains: Canadian Traders Among the Mandan and Hidatsa Indians, 1738-1818*. University of Oklahoma Press, Norman.

REPORT CERTIFICATION

I certify that "The Phase I Archeological Research Program For The Knife River Indian Villages National Historic Site, Part II: Ethnohistorical Studies." Edited by Thomas D. Thiessen.

has been reviewed against the criteria contained in 43 CFR Part 7 (a)(1) and upon recommendation of the Regional Archeologist has been classified as available.

Regional Director

10/20/92
Date

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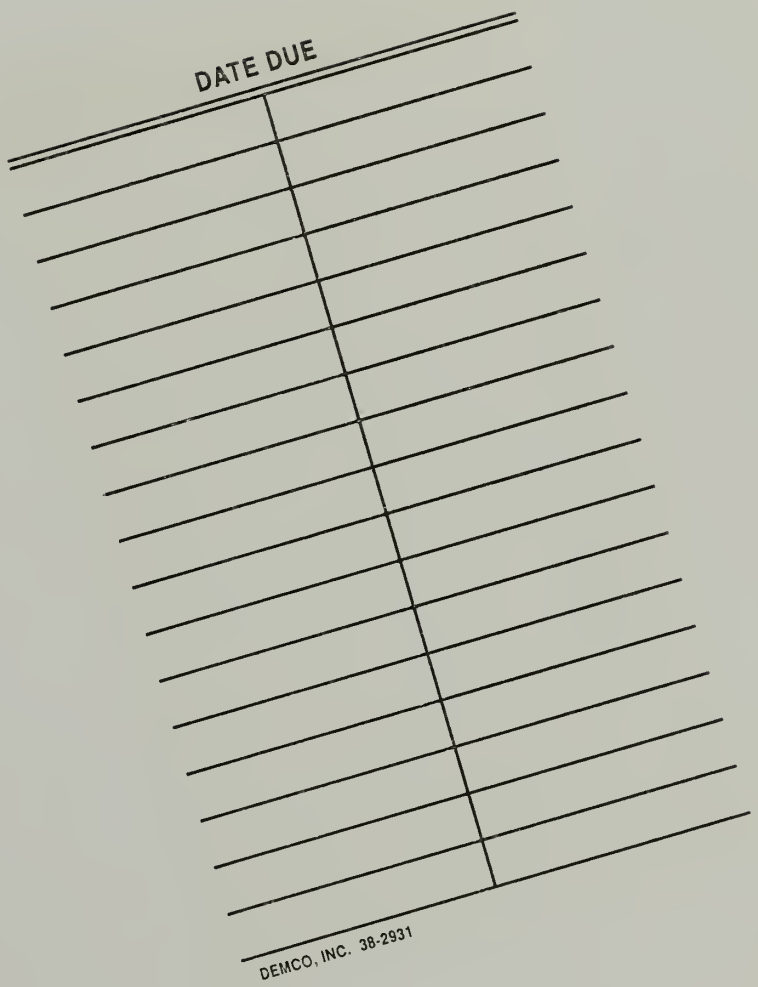

Painting of the three historic Hidatsa villages at the confluence of the Knife and Missouri rivers, North Dakota, made in 1904-1905 by Sitting Rabbit, a Mandan Indian. Courtesy of the State Historical Society of North Dakota (accession number SHSND 673).