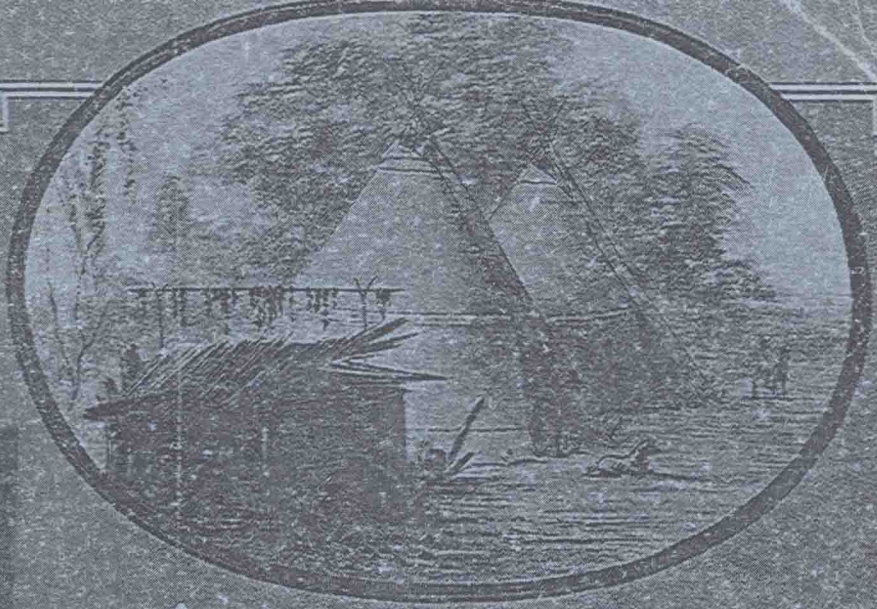


ANCIENT DRUMS, OTHER MOCCASINS

Native North American Cultural Adaptation

HARRIET J. K

Preface

This book differs from others presenting a broad perspective on native peoples of North America, for I have discarded the culture area as an organizational concept. A *culture area* is a geographic region whose residents are thought to have more cultural affinities with one another than they do with people in other regions. Clark Wissler and Alfred Kroeber did the most systematic work in delineating culture areas for North America. With some modifications, the concept remains the basis for categorizing American Indian and Eskimo cultures.

It has its uses, yet it—like most other concepts—has shortcomings. The North American continent includes 8 million square miles. In this enormous land mass, Kroeber proposed only ten areas. Others who followed him identified one or two fewer, only occasionally more. Such gross demarcations result in grouping populations who may share only a small number of distinctive traits. In many regions the differences outnumber similarities. The southeast culture area extending from the Atlantic ocean to the Mississippi River is an example. Among many distinct populations speaking different languages were small coastal peoples subsisting on shellfish and game; successful gardeners; and the now extinct, highly complex and socially stratified Natchez. The situation in the great southwest is comparable.

An additional disadvantage of the concept is that rarely do classifiers agree on the number of areas, boundaries, or designations for them. Some have used geographic regions as culture areas; others employed primary food types to classify the culture area. A few were inconsistent with their nomenclature, using geographic tags for some and language for others.

To avoid these contradictions, I have chosen to group native cultures using major subsistence mode as the basis. The underlying approach is essentially ecological. The fundamental premise is that culture (never static) is, among other things, an adaptive system. In adopting this premise, no doubt other pitfalls have been created, yet it seems reasonable to look for likenesses as well as differences among peoples who make a living in the same general way regardless of where they do it. Native cultures were (perhaps still are) interrelated matrices of ideas and consequent strategies which enabled people to adapt, however effectively, to conditions in their environments.

Cultural ecology is not, however, simple environmental determinism, which held that specific cultural traits as well as such phenomena as intelligence were caused by the environment. It also goes beyond the "permitting" or "possibilistic" viewpoint. "Possibilism" contended that only the absence of traits could be explained by environmental characteristics, otherwise, there were always options from which to choose. Possibilists did recognize that there were complex interactions with environments and that specific histories and diffusions were also important influences. But, as Vayda and Rappaport observed, "these other influences were allowed to constitute a dark middle region between man and his environment in which almost anything could happen."[1] There was little attempt made to assess adaptive functions of religion and ritual, the effects of disease or the presence of enemies on settlement patterns, or the functional value of other traits.[2]

The ecological model stresses interactions between a number of factors, including natural resources, technology, social organization, and ideology. Causality is difficult to establish, consequently stress is often on explanation. As yet there is no widely accepted unified theory of cultural ecology or ecological anthropology, although Emilio Moran has attempted to synthesize various concepts and approaches to the study of human societies and their environments.[3] Without a unified corpus of thought or tested methodology, cultural ecology cannot rightly be called a discipline, though it remains a convincing point of view.[4] Because this is so, scholars differ in

[1]Andrew P. Vayda and Roy Rappaport, "Ecology: Cultural and Non-cultural," in *Introduction to Cultural Anthropology*. James A. Clifton, ed. (Boston: Houghton Mifflin Co., 1968), p. 483.

[2]Ibid., pp. 487–492.

[3]Emelio F. Moran, *An Introduction to Ecological Anthropology*. (Boulder, CO: Westview Press, 1982).

[4]Robert McC. Netting, *Cultural Ecology*. Cummings Modular Program in Anthropology. (Menlo Park, CA: Cummings Publishing Co., 1977), p. 1.

their approach to the "point of view." Different questions are asked, different relationships are sought, and a variety of research techniques are employed. Definitions differ too. It is likely that such divergences stem from theoretical biases.

Although Leslie A. White was far from a cultural ecologist, in his efforts to build a theory of culture evolution, he emphasized the importance of energy. Said White: "The basic function of culture is the harnessing of energy and putting it to work in the service of man."[5] Correctly, he noted that through technology energy was put into service; the more energy captured, the more complex culture became. In his scheme of cultural evolution, he ignored human creativity and downplayed the importance of habitat. White's Universal Evolution theory was challenged by Julian Steward who proposed the idea of multilinear evolution in which he stressed the role of environment in the shaping of specific cultures and institutions. He was also probably the first to use the term *cultural ecology*. Through it, he wanted to explain the origin of particular cultural features and patterns that characterize different areas by examining environmental adaptations.[6]

Their ideas have been "cussed" and discussed by their colleagues, but their key concepts—White's of energy and technology and Steward's of environmental adaptation—have been put to use in later work.

Yehudi Cohen combined both the concept of adaptive processes and energy in his theory of culture evolution. "Human adaptation," he said, "is the result of energy systems that are harnessed by a group and the organizations of social relations in the group that make it possible to use its energy systems effectively."[7] A human group has adapted to its environment when it has achieved, and continues to have, a workable relationship with its environment. Whether or not intended by Cohen, his definition omits any reference to the role of belief in effective adaptation.

Marvin Harris developed a broad theory to explain cultural similarities and differences not too different from Cohen's, calling it Cultural Materialism. The scheme, said Harris, is "based on the simple premise that human social life is a response to the practical problems of human existence . . . Cultural Materialism leads to better scientific theories about the causes of sociocultural phenomena than any of the rival strategies."[8] The two principal concepts of his theory are technology and environment. Harris argued that "similar technologies applied to similar environment produce similar arrangements of labor in production and distribution, and, that these in turn call forth similar kinds of social groupings, which justify and coordinate their activities by similar systems of values and be-

[5]Leslie White, *The Evolution of Culture.* (New York: McGraw-Hill, 1959), p. 39.

[6]Julian H. Steward, *Theory of Culture Change: The Methodology of Multilinear Evolution.* (Urbana: University of Illinois Press, 1963).

[7]Yehudi A. Cohen, *Man in Adaptation: The Cultural Present.* (Chicago: Aldine Publishing Co., 1968), Introduction, p. 3.

[8]Marvin Harris, *The Rise of Anthropological Theory.* (New York: Crowell Co., 1968), p. 4.

lief."[9] To understand a culture using his proposal, one must examine the material conditions (technology, economics) and environment.

Both Cohen and Harris were technological determinists, but they recognized the interrelationships between technology, environment, and social organization and, in Harris's case, between belief and values. Like White, each assigned the primary role in cultural development to technology and contended that it was the causal factor. Marshall Sahlins described this position as the "layer cake model." The model asserts that technology or modes of production are the underpinnings of a cultural system and that social organization and ideology rest upon it and reflect the material foundations.[10]

Other ecological anthropologists admit to the importance of technology but refuse to accept it as the major mover in cultural adaptations, arguing that other factors, both internal and external, may be equally as important. These people employ a systems framework. Its roots lie in the earlier functionalist theories that held that every human institution is related to every other one; together they maintain the culture or society, usually in a homeostatic equilibrium. Changes in one cause reactions in all the rest. No one institution is necessarily more significant than the others in the system. This theory—often referred to as "holistic"—was wed to concepts derived from biological ecology, most especially that of the ecosystem. An *ecosystem* includes an interacting group of organisms or groups of organisms in a dynamic relationship with their environment. Because humans were organisms, it was concluded that human behavior could be investigated using the ecosystem model. As Bennett pointed out, humans interact with one another, and the patterned interactions can be seen as systems. People also interact with environmental networks; these interactions within the group of organisms and its habitat "also can be considered to be a system—an ecosystem if you will."[11]

While not denying the importance of technology in interaction with environment, I am more comfortable with the "holistic" view. This book, therefore, is an effort to utilize it in discussing native American cultures. Congruent with this approach is the absence of formal paragraph headings. This may create difficulties for some, but their presence often tends to give a fragmented view of culture. I wish to stress the interrelatedness of cultural patterns and institutions.

Readers will discover that I have condemned white behavior as it affected Indians. Traders, missionaries, settlers, and emissaries of the federal government have been judged harshly. Although there were individuals

[9]Harris develops his position more fully in *Cultural Materialism: The Struggle for a Science of Culture*. (New York: Random House Vintage Books, 1980), Preface, p. ix.

[10]Marshall Sahlins, "Culture and Environment," in *Horizons of Anthropology*, 2nd ed. Sol Tax and Leslie G. Freeman, eds. (Chicago: Aldine Publishing Co., 1977), p. 218.

[11]John W. Bennett, *The Ecological Transition: Cultural Anthropology and Human Adaptation*. (New York: Pergamon Press, 1976), p. 36.

who tried mightily to mitigate the problems brought by whites and supported Indians in their struggle, the overall result of contact was noxious to both whites and Indians.

The matter of tense has been vexing: tribal accounts are set in the past although, in a few cases, significant culture patterns persist. Habitats are described in the present except for those that civilization has irrevocably altered.

ACKNOWLEDGMENTS

The people who have had a part in this volume are legion. Dr. John Gulick made possible my first visit to the Cherokee. Subsequent research was funded by a NIMH grant. Dr. Laura Thompson as well as John Gulick patiently advised me. Dr. John J. Honigmann provided the means for field work in the north. Before her death, Irma Honigmann read drafts of the first four chapters. Their friendship encouraged me for 25 or more years.

Without the research of men and women who pioneered in Indian and Eskimo studies, no volume of this sort would have been possible. I am in their debt. I am also grateful to later scholars upon whom I have relied for material.

The University of North Carolina at Greensboro was generous with its support. A leave of absence allowed time for the inception of the project. Departmental colleagues cheered me on. Dr. Mary W. Helms read a portion of the manuscript; her advice was incorporated into the final draft. Mrs. Pattie Barlow typed and typed. Departmental supplies were looted for a gross of yellow pads, pencils, and reams of paper.

The Academic Computer Center afforded the funds for word processing and the final copies. Humming Puccini, John Cary processed and reprocessed. The University Library staff was always willing to go the extra mile.

Dr. Jack Hidore, Professor of Geography, supplied all kinds of necessary information. His colleague Dr. Jeffrey Patton directed the preparation of the maps; Miss Patricia Burkart drew them. Dr. Elizabeth Bowles, School of Education, straightened out the grammar and solved the intricacies of punctuation. Maggie Bushnell helped with final details.

But it is to the Indians and Eskimos with whom I played and worked (in that order) that I owe the greatest fealty. Among the Cherokee: Amanda Crowe, Bill Crowe, Molly Owl Blankenship, and Wilbur, Lloyd, and Molly Sequoyah were significant. Lizzie and Frances Cucumber, Tom McCoy and his family, the Smiths and the Burgesses, and many others also played an important part.

At Rupert's House we were enlightened by Chief Diamond and his extended family; Rosie and Anderson Jolly; Isiah Salt; the Stevens; and the

Contents

CHAPTER ONE

The Beginnings

When Columbus landed his three caravels in the Bahamas in October of 1492, neither he nor his crew realized the significance of the event. Although the early Greeks had believed that the world was round, this knowledge had all but vanished in the Middle Ages. But Columbus, convinced of a round world, sailed westward from Europe and thought he had succeeded in his search for a sea path to the Asian Indies. Who the people of the Bahamas were or where they had come from did not trouble him because he had fully expected to find the land occupied. Not until later voyages proved that America was not Asia, did questions arise about the people in the new land.

Sixteenth-century writers pondered the origins of the American Indians. Were they the remnants of the lost island of Atlantis? Such a theory, first propounded in about 1552, still has its adherents.[1] The Rosicrucian Order and the Theosophical Society both believe fervently in the lost continent of Atlantis. Others proposed that an island in the Pacific called Mu sank in a cataclysmic occurrence, and those people who lived through it made their way to America. Both these fantasies saw savagery growing out

[1]Lee Eldridge Huddleston, *Origins of the American Indians.* (Austin: University of Texas Press. 1967), p. 24.

of civilization. After the island disappeared, the survivors, perhaps jolted into amnesia by the sudden disaster, lost all memory of their former idyllic civilizations and thus were forced to construct a new life far more primitive than the one they had previously enjoyed.[2]

Others linked the people of the New World to ancient Greece. After the fall of Troy, they believed Ulysses sailed westward over the Atlantic reaching the Yucatan peninsula, where he and his companions sired the stock from which the Indians sprang. The Lost Tribes notion was first put forth in Antwerp in 1576.[3] Like the Lost Continent theory, this thesis, too, still continues. It finds expression in the Book of Mormon and the Articles of Faith of the Church of the Latter Day Saints. Still others proposed Old Testament origins; Suarez de Peralta believed that the Indians descended from Canaan, the son of Ham; Canaan was cursed by Noah for his father's sin.[4]

Fanciful and romantic as these speculations are, the modern position on the peopling of the New World is even more exciting. The people we now call Indians descended from early men and women who moved slowly out of Asia into Alaska and from there, through the years, followed a beckoning horizon to the south, east, and west. On their long and arduous trek they encountered a terrain and a climate vastly different from that which exists today. The story begins in the Pleistocene, a geologic term meaning "ice age" or the epoch of the glaciers. Vast sheets of ice covered parts of Europe and America; these retreated and advanced four times on both continents. Between each advance and retreat came periods called substages or interstadials. While the names for each of the major glacial periods in the western hemisphere differ from those used for the European sequence, the dates of each are similar, the total time for the Pleistocene being reckoned at about 2.5 million years. The glacial periods in America are called Nebraskan, Kansan, Illinoian, and Wisconsin. The Wisconsin, thought to have begun between 100,000 and 70,000 years ago,[5] is critical to the story, for sometime between its beginning and 13,000 BC Asiatic nomads wandered into Alaska. (see Table 1-1).

The movement of the great ice sheets during the Pleistocene vastly affected the geography of the land and sea. Sea levels shifted and fluctuated repeatedly as ocean water, locked up in ice, bore down by its sheer weight on the land which supported it. Geologic evidence from the Pleistocene shows clearly that both the Asian and North American continents were very different from their present condition. Most notable for

[2]Robert Wauchope, *Lost Tribes and Sunken Continents.* (Chicago: University of Chicago Press, 1962), pp. 31–39.

[3]Huddleston, *Origins of the American Indians*, p. 34.

[4]Ibid., p. 37.

[5]Richard Foster Flint, *Glacial and Quaternary Geology.* (New York: John Wiley and Sons, 1971), p. 44.

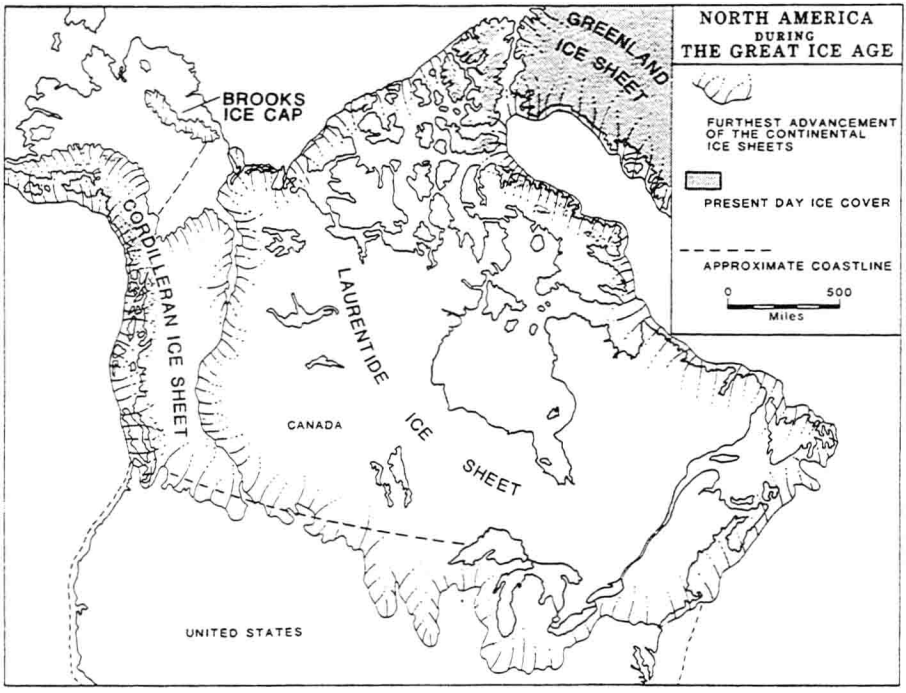


TABLE 1-1 Wisconsin Glacial Sequence

	Present		
Recent	Medithermal	2,500	BC
	Altithermal	5,000	
	Cochrane Advance	6,000	
	Valders Substage	9,000	
	(Two Creeks Interstadial)	10,000	
	Mankato Substage (Interstadial)	12,000	
Wisconsin Glaciation	Cary Substage (Interstadial)	14,000	
	Tazewell Substage (Interstadial)	18,000	
	Iowan (Interstadial)	22,500	
	Farmdale Substage (Interstadial)	28,000	
	Altonian Substage	70,000	
Illinoian	Sangamon Interglacial		

From Gordon Willey, *An Introduction to Archaeology*. (Englewood Cliffs, NJ: Prentice-Hall, 1966), p. 28. Permission granted by Gordon R. Willey.

our story, no Bering Strait separated Alaska and Siberia. The two continents were joined by a land bridge. In fact, geologically, the term "new world" ought not to be used. It was new territory only to the venturesome fifteenth- and sixteenth-century Europeans; it was most certainly not new to the ancestors of the American Indians.

The land bridge resulted from the shifting sea level. The stored up ice exposed the floors of the Bering and Chukchi seas, which lay about 180 feet beneath the present surface of the water. William Haag suggests that, as the glacier grew causing the oceans to recede, a sea-level fall of 150 feet would have produced an entry to Alaska nearly two hundred miles wide.[6] At the maximum of the Wisconsin glaciation a much larger plain may have been uncovered, perhaps 1300 miles wide. The number of times a land surface entry to Alaska appeared underlies the arguments surrounding the dates of arrival of the Asiatic immigrants. Any time the sea fell below its present level, land would have surfaced. Therefore a land bridge probably existed between about 50,000 and 40,000 years ago and once more between 28,000 and 10,000 BC.[7] One may have even surfaced earlier than 50,000 years ago.

Along with the land bridge itself, the low-lying land of Siberia, Alaska, and part of the Yukon is known as Beringia. David Hopkins described the climate of periglacial Beringia.[8] Summers were short, warmer and drier than they are now; the winters were long, probably colder but with less snow than at present. The ground was drier and smoother, trees and large shrubs were rare, and the winds blew mightily. What is now tundra and taiga (the subartic forest) was arctic steppe.

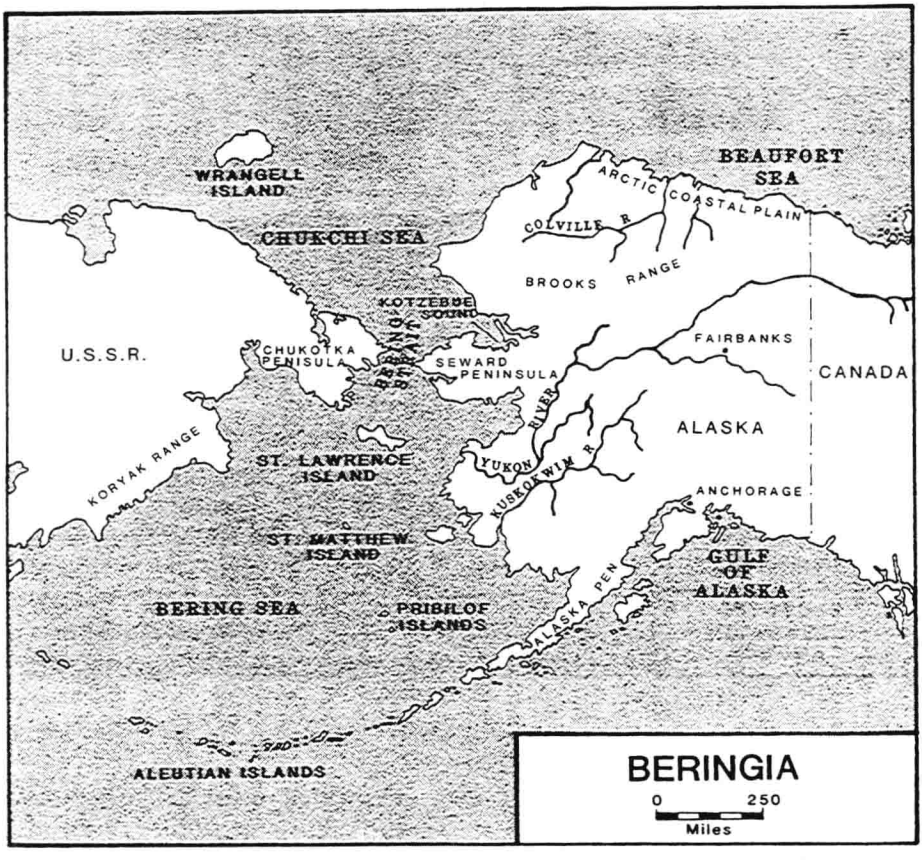
In the times when North America was joined to Asia, a great variety of plants and animals adapted to a cool climate were spread across Beringia. During the Nebraskan glaciation, at least three varieties of mastodon, a type of saber-tooth cat, the camel, and the groundsloth inhabited the area, some of which became extinct during the following glacial period. In the middle of the Kansan glaciation came the mammoth, antelope, musk ox, and later the ancient bison. Most of these very large Pleistocene mammals survived until the end of the ice age and then became extinct. Others, more adaptable perhaps to the climatic changes, live on today, although somewhat modified.

Enormous ice caps to the east and south of Beringia almost isolated it from the land further east. These ice sheets are called the Laurentide and

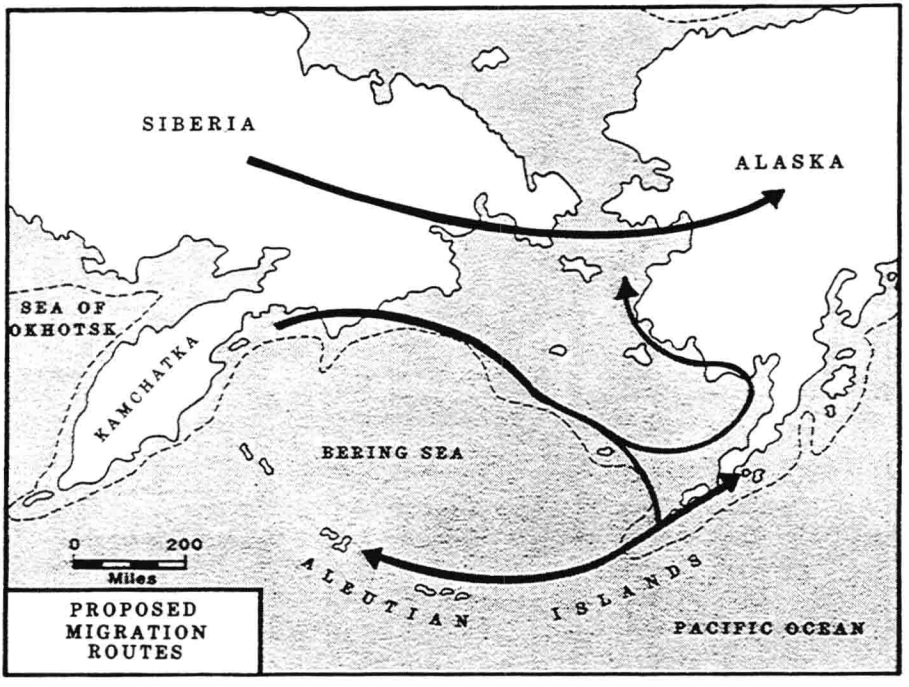
[6]William Haag, "The Bering Strait Land Bridge," *Scientific American* 206(1962): 112–120.

[7]Hansgurgen Müller-Beck, "Paleohunter in America: Origins and Diffusions," *Science* 152(1966):1203.

[8]David Hopkins, "Landscape and Climate of Beringia during Late Pleistocene and Holocene Time," in *The First Americans: Origins, Affinities, and Adaptations*. William S. Laughlin and Albert B. Harper, eds. (New York: Gustav Fisher, 1979), pp. 15–26.



the Cordilleran. The Laurentide, by far the larger, extended eastward of the Rockies, covering much of Canada, northeastern United States (including New England, New York, and New Jersey), and the middle west and Great Plains areas. The Cordilleran arose in the high western mountain ranges of Canada and penetrated eastward to the Rockies and westward to the Pacific coast. The two ice sheets came together, at least for a short time, along a front a hundred kilometers long in southern Alberta, and may have coalesced for some time in northeastern British Columbia; elsewhere they did not meet. Alaska and central North America may have been joined by a narrow ice-free corridor during most of the last glacial period. The corridor was perhaps blocked in southern Alberta and southeastern British Columbia for no more than a couple of thousand years. Although glaciation covered areas in Kamchatka and Koryak, most of Beringia remained unglaciated. Immense windswept plains and lower-lying lands extended from southeastern Europe across southern Siberia, down the Lean River



valley along the exposed continental shelf, and across the dry floors of the Chukchi and Bering seas into Alaska.[9]

South of the Laurentide glacier a narrow belt of treeless tundra may have stretched from southern New England all the way to the Rockies. A broad belt of coniferous trees bordered the tundra covering most of the Great Plains. Eastward this belt stretched from Illinois across the Appalachians to the Coastal Plains. The southwest, which is now desertic, was then dotted with lakes and streams; tall grasses covered miles of lush pasture land.[10]

Such was the country during the period of the Wisconsin glaciation, and it was to such a land that the newcomers came.

There is little about the coming of early man to America upon which anthropologists concur. Almost the only point of agreement is regarding the migration route through Beringia. At some time during the Wisconsin glaciation (or perhaps earlier) small nomadic bands moved out of Asia, crossed the connecting link between Siberia and Alaska, and filtered southward. Their meanderings were not deliberate; they did not know that a whole new land lay before them. Searching for food, following game trails,

[9]Ibid.

[10]Charles L. Matsch, *North America and the Great Ice Age*. Earth Science Paperback Series. (New York: McGraw-Hill, 1976), p. 81.

they wandered into Alaska. Much of Beringia was not glaciated, nor was it hostile to those who could withstand its challenges. Unsettled questions remain about the time (or times) of arrival and the routes taken as the migrants made their way southward. In the absence of extensive and unequivocal evidence, the whole subject of the peopling of the New World has been characterized by much speculation, educated guessing, and, too often, rancor among the experts.

The most heated disagreements turn on the matter of time of arrival. There are extremists on both sides of the argument, as well as a moderate view. To complicate the matter even further, those who accept the idea that Beringia may have been inhabited early—29,000 BP (before present) or before—are not sure that these people subsequently populated America south of Beringia. They may have died out, a not uncommon event in the history of animals and men, or, escaping the worsening weather, may have withdrawn back into Asia.[11] While the formation of an ice-free corridor during various periods is well accepted, some picture the latest corridor (13,000 BP) as boggy, terribly cold, punctuated by freezing glacial lakes, and lacking in plant food for both animals and men—not a very enticing path for travel.

George Carter,[12] an advocate of the earliest date for man in America, proposes a date of nearly 100,000 years ago. The Calico Hills site in the California Mohave desert, examined by L.S.B. Leakey, provided part of his support. Here lay broken, sharp-edged rocks and what appeared to be charcoal. The Calico material, according to Carter, is a blade-and-core type industry similar to that of the European middle and early Upper Paleolithic. Such assemblages are called a preprojectile-point stage. Critics of his interpretation contended that the finds Carter cited (material made by man) are not at all artifacts but were produced by the natural action of water. In reply, Carter contends: "The biggest myth in American archaeology is that nature breaks rocks by percussion and pressure and that this breakage reproduces human work." He has searched streams, creeks, and river beds and has yet to find fractured rocks of the sort present at the Calico and other sites. "Nature grounds and rounds, man bashes and smashes."[13]

San Diego, another area in California, is rich in archaeological sites. Here were found human skeletal material as well as Pleistocene faunal bones, including the horse which became extinct early in the new world. All of these bones, dated with a technique called protein racemization, are thought to be 50,000 years old. Carter believed that the horse was cooked

[11]Glen Cole, "Of Land Bridges, Ice Free Corridors, and Early Man in the Americas," *Bulletin of the Field Museum* Jan. (1979):19.

[12]George F. Carter, *Earlier Than You Think: A Personal View of Man in America.* (College Station: Texas A & M Press, 1980), pp. 96–98.

[13]Ibid.

and devoured by the first San Diego residents. He also reported extensive evidence for a blade-and-core industry there dating between 130,000 and 70,000 years ago.[14] To accept his dates we must admit to the presence of a Neanderthal-like group in California.

After studying sites in Washington, Oregon, Nevada, and Idaho, Charles Borden concluded that these areas were inhabited by hunting and gathering people when the interior regions of British Columbia were still buried under the Cordilleran ice cap.[15] How or when these hunter-gatherers got there remains to be discovered, but they must have arrived in areas south of British Columbia millennia earlier, at the latest before the formation of the Codilleran ice sheet of the last glacial maximum, when life in the Canadian plateau became unbearable.

The more moderate point of view, and probably the most popular at present, sets the date of migration between 42,000–27,000 BP just prior to the last flooding of the land bridge. MacNeish discovered crude stone tools and fossilized remains of the prehistoric sloth and horse in the Pikimachay Cave in Peru.[16] The dates established by radiocarbon range from 16,000 BP to 20,000 BP. Somewhat older sites are reported in Mexico (21,000–22,000 BP), but the material found was scattered, raising questions about the authenticity of the dates. Other early dates come from Santa Rosa Island off the coast of California. Here were charred bone fragments dated 30,000 BP. Many skeptics either do not accept the dates or do not believe that humans were on the island at the time. In Venezuela finds consisting of crude flakes and pebble tools were discovered in the company of mastodon and horse bones dated at 16,500 BP. If humans lived in Venezuela 16,000 years ago, their ancestors must have been in North America several thousands of years earlier.

Because early Americans used the Bering land bridge to enter the New World, evidence from Alaska and northwest Canada would be especially important. Some of it has been found in the area of the Old Crow and Porcupine rivers in the Yukon territory. Cole discussed the significance of the sites.[17] First, bones of a variety of later Pleistocene mammals occur in abundance. Along with these are bones that have been altered by human activity, either in the act of butchering, or in extracting marrow, or as raw material for tools. The bone tools have radiocarbon dates of 25,000–29,000 BP. Experiments with the mineralized bones show that modern Indians could not, many eons later, have made tools from them because they did not produce the kind of fractures present in the Old Crow material. Questions remain, but should the Old Crow data prove valid, a strong case will

[14]Ibid., pp. 161–206.

[15]Charles E. Borden, "Peopling and Early Cultures of the Pacific Northwest," *Science* 203(1979):964.

[16]Richard S. MacNeish, "Early Pleistocene Adaptations: A New Look at Early Peopling of the New World as of 1976," *Journal of Anthropological Research* 34:475–476.

have been made for the moderate position. In order to accept the 100,000-year or even the 40,000-year date, we have to be convinced that early migrants had the cultural wherewithall to deal with severe climates. There are hints that they did. Three hundred thousand years ago Peking Man survived under harsh circumstances, and, of course, Europe was occupied during the Wurm glaciation, the fourth European glacial period.

A few archaeologists will not admit to the presence of New World man much earlier than 13,000–14,000 years ago. Unwilling to accept very early dates, they argue that the sites were disturbed or that the material dated was contaminated. Only incontrovertible dates are recognized. The most famous and well documented of these are the Folsom and Clovis traditions, whose easily recognized fluted points are often found embedded between the bones of Pleistocene fauna. Folsom, the first point to be discovered, dated about 8500 BC, was found between the ribs of the ancient and now extinct bison. The Clovis point, a thousand years earlier, lay in mammoth skeletal remains in New Mexico. Widely distributed Clovis-type points appear in the midwest as well as the east. The people who hunted with Clovis and Folsom points are frequently called "Big Game Hunters," because all the sites seem to emphasize such a cultural focus.

C. Vance Haynes, Jr. most vigorously advocated the later dates.[18] It was clear to him that man was firmly established in the new world between 12,000 and 11,000 BP. Clovis points were, he thought, relics of the first major migration, and after it other cultural groups followed. A few anthropologists, he observed, insisted on purely conjectural grounds that man must have arrived 30,000 years ago or earlier, but Haynes questioned the sites—Calico Hills is one—used as evidence.[19]

The origin of the Big Game Hunters (people who survived on mammoth and mastodon) is clouded in mystery. There are two hypotheses: one, that Clovis points were brought from Siberian Beringia by the first migrants (Haynes' position); the other, that they arose in the new world, invented by some of the purported earlier folk and then diffused widely to other contemporary people. The latter idea rests on two beliefs: (1) that the dates reported for Mexico and Venezuela were accurate; and (2) that man, who had only arrived 13,000–14,000 years ago, could not have multiplied and traveled enough to have peopled the entire continent by 1400 AD. Paul Martin,[20] supporting Haynes, demonstrated through the use of a compli-

[17]Cole, "Of Land Bridges, Ice Free Corridors, and Early Man in the Americas," pp. 18–19.

[18]C. Vance Haynes, Jr., "Carbon 14 Dates and Early Man in the New World," in *Pleistocene Extinctions: The Search for a Cause*. Proceedings of the VII Congress of the International Association for Quaternary Research. (New Haven: Yale University Press, 1967), p. 284.

[19]C. Vance Haynes, Jr., "Ecology of Early Man in the New World," in *Geoscience and Man*, vol. XIII, Ecology of the Pleistocene. R. C. West and William Haag, eds. (Baton Rouge: Louisiana State University, 1976), pp. 72–73.

[20]Paul Martin, "The Discovery of America," *Science*, 179(1973):972–973.