

Pan American Health Organization

ADVISORY COMMITTEE ON MEDICAL RESEARCH

Seventh Meeting

Washington, D.C., 24-28 June 1968

Special Session on:

Biomedical Challenges Presented
by the American Indian

Item 1.1

THE ORIGIN AND DISPERSION OF AMERICAN
INDIANS IN NORTH AMERICA

Ref: RES 7/SS/1.1

6 June 1968

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The historically effective discovery of the New World by Europeans in 1492 opened the Americas to large scale colonization and to a long period of speculation on the ultimate origin of the New World peoples. For almost four hundred years the chronological framework was based on biblical sources and was not adequate to explain the cultural diversity of New World culture. Prominent among the speculations on origins were the multiple migration hypotheses which provided civilized Mediterranean, European, and even Southeast Asian groups to bring a level of higher culture into the Americas and produce the more complex civilizations of Mesoamerica and the Andes. Such explanations were also employed to explain a presumed multiracial origin of the American Indian.

As early as the sixteenth century some writers recognized the predominantly Asiatic relationships of the native American populations and postulated that the movement of people took place from northeast Asia to northwestern North America. This is, of course, the only seriously considered route of entry for contemporary scholars, but there is considerable room for disagreement in many phases of the origin and dispersion of American Indian populations. For this paper I have chosen not to present many reference citations to support the points of view which are included in the paper, or to cite directly other views. Instead I have included in the references a list of books and other articles which have a wide spectrum of interpretations and which can be read by those who care to do so.

THE TEMPORAL FRAMEWORK FOR EARLY INDIAN GROUPS

The time of arrival of the first human groups is far from settled and is likely to remain a research problem for some time. For purposes of this paper I will refer to the period of time from the first arrival of man to about 8000 B.C. as the Paleo-Indian period and all cultural complexes and skeletal material, if any, of this age will be included within this period. A rapid review of evidence from the United States and Canada includes only one fairly homogeneous and widely dispersed complex, a few examples of other early Paleo-Indian period peoples, and a number of purported sites that, in this paper, are not regarded as soundly established.

The Fluted Point Hunters are the sole recognizable group with a continent-wide occupancy of the latter part of the Paleo-Indian period from about 10,000 to 8000 B.C. The earliest radiocarbon dates in association with an established cultural context are about 9300 to 9000 B.C., from sites in Arizona, New Mexico, Colorado, and Oklahoma. This is referred to as the Llano complex with the Clovis fluted point as a major diagnostic tool. The Sandia finds are regarded as a potential predecessor with an uncertain age which is probably within a thousand years of Clovis. In the western plains the later Folsom assemblages at several sites have been dated between 9000 to 8000 B.C. In the eastern United States fluted points are known from the South Atlantic and Gulf Coast to the Great Lakes and Ontario, Canada and into New England, and as far northeast as Nova Scotia. At the Debert site in Nova Scotia, a series of radiocarbon dates suggest man had occupied that area between 9000 and 8500 B.C. Provisional correlations of the distribution of fluted points in the Great Lakes area have

proposed an age of from 10,000 to 8000 B.C. for that area, and the evidence from the southeast also suggests an antiquity for fluted points of about the same order of magnitude.

In the area west of the Rocky Mountains there are a number of complexes which may begin before 8000 B.C., but as yet this has not been adequately demonstrated. Among these are the Desert Culture, Lake Mohave and the San Dieguito culture of southern California, and a number of sites and complexes from Oregon to British Columbia and Washington compressed by some archaeologists into an Old Cordilleran culture. In extreme northwest Canada, the British Mountain complex is assigned considerable antiquity but its age, except on typological grounds, is not known, and no archaeological assemblage from Alaska is as old as 8000 B.C.

The oldest radiocarbon dates in association with human habitation in the United States are from Nelson Butte Cave in south-central Idaho where from the lower zone of Stratum C there is a date of $12,550 \pm 500$ B.C. (M-1409), and from Stratum E, a date of $13,050 \pm 800$ B.C., was obtained (M-1410). The context of the material in the cave indicates the presence of man with extinct fauna such as camel and horse and some Boreal zone micro-fauna, but the few artifacts found are not particularly diagnostic (7).

Fluted points are known from Mexico and as far south as Guatemala and perhaps Costa Rica. In none of these instances however is there an associated industry. Most of the few fluted points are found in northern Mexico where they are on the southern fringe of the Llano and Folsom concentrations in the Southwest and western Texas. There are no soundly established cultural assemblages in Mexico and Central America directly dated by radiocarbon before 8000 B.C.

There are a large number of locations in North America for which considerable antiquity has been claimed as places which early Indians inhabited. Even whole books have been published on non-sites. The reasons why it is now difficult to impossible to include such "finds" in this paper varies from location to location. A detailed dissent is not within the scope of this paper. In this category I would include the claims for occupation at Tule Springs, Nevada, of the order of 20,000 to 30,000 years ago; on Santa Rosa Island of man much before 8000 B.C.; at the Scripps Institute bluff at La Jolla, California, of slightly over 20,000 B.C.; at Lewisville, Texas, of more than 37,000 B.C.; at Sheguiandah, Manitoulin Island, Ontario, of a cultural complex much before 7000 B.C.; of a completely pebble tool culture in Northern Alabama of extreme antiquity; of a chopper-chopping tool complex of an interglacial or an interstadial period; or of a simple bone tool tradition of any age; or of Pleistocene man in the Trenton, New Jersey gravels.

In Mexico particularly, and in Central America, there are indications of the presence of man before 8000 B.C., but many of these identifications were made quite a number of years ago and these suffer from a lack of sound dates or are isolated artifacts which are not adequate to reconstruct a cultural assemblage. Some of these finds from the Late Pleistocene Upper Becerra formation may well record human occupation, and continuing excavations in Mexico will eventually place the temporal position and industrial activities during the Paleo-Indian period on a firmer basis. At present there are investigations being conducted in the Valsequillo gravels of Pueblo and at Tlapacoya in the Valley of Mexico. As usual, there is some uncertainty about the temporal correlation of gravel deposits from one area

to another; of radiocarbon dates of 35 to 24,000 years ago of high antiquity, but not directly associated with adequate artifacts; or of the precise age of a cultural complex on a buried living surface.

While the South American evidence for early Indian occupations is to be evaluated by Prof. J. M. Crucent at this conference, I shall include some observations on this area because of its importance in assessing the probable age of the first inhabitants of North America. On the north side of the Straits of Magellan in Fells Cave there is a date of 8760 B.C. (W-915) obtained by Junius Bird. From eastern Brazil at Lagoa Santa there is evidence of occupation around 8000 to 7000 B.C., and a sambaquis on the southeast Brazilian coast has provided a date close to 6000 B.C. In northeastern Venezuela at the Muaco site there is a possible association of man and extinct fauna in the period from 14,500 to 12,000 B.C. In the northern Andean area artifact complexes have been given ages in the neighborhood of 8000 B.C.

The South American data with its wide geographic spread of early man of around or before 9000 to 8000 B.C., implies the arrival of man on that continent substantially before the known dated complexes. Similarly in Mexico and Central America the wide distribution of human occupations at just before or after 8000 B.C., implies that the arrival of the first human groups was substantially before this date. If the proposed dates for man in the Valley Puebla and the Valley of Mexico are confirmed to be between 40,000 to 24,000 years ago there will be much work for archaeologists to do in the future to find substantiating evidence in the rest of the New World. The North American geographical spread of dated evidence and the considerable diversity of assemblages shortly after 8000 B.C., implies

an antiquity of man in North America considerably greater than the known age of the Fluted Point Hunters or of the occupants of Wilson Butte Cave. In summary, an age of about 15,000 years for man in the New World is viewed as reasonable with the possibility that his age might be considerably greater.

THE TEMPORAL FRAMEWORK FOR NORTHEAST ASIA

Sound dating of the Late Pleistocene occupations of Siberia is just beginning, and in fact, adequate investigation of ancient man in northeast Siberia has only recently been initiated. Most of the sites with an age of more than four or five thousand years are along the southern borders of Siberia from Russia to the Japanese Islands. A radiocarbon date of 12,800 B.C. \pm 120 (GIN-97) has recently been obtained on fossil bone from the lower cultural level of Mal'ta near Irkutsk, often attributed to the older Upper Paleolithic of the Irkutsk area. A date of 18,950 B.C. \pm 300 was obtained on charcoal from the lower cultural level of Afontova Gora II in the Upper Yenesei Valley near Krasnoyarsk (14). From Kamchatka there is a date of close to 18,000 B.C. on charcoal from the Uski I site. Other sites in southwest Siberia are presumed to date substantially earlier and sites in Japan of an Upper Paleolithic cast date well back toward the 20,000 year range.

The southern Siberian complexes of about 30,000 to 12,000 B.C. have a strong early relationship to the late Mousterian stone industries of eastern Europe. As the Upper Paleolithic developed, there was corresponding modification in Siberia, but the patterns of change in Siberia are sufficiently

different from the better-known areas to the west so that an easy alignment has not been possible. The industrial development of these Siberian populations was the result of the long Eurasian cultural development which became adapted to the late Pleistocene. The level of occupation is attributed to the lower section of deposits on Terrace II of the Yenesei. The faunal composition represents cold periglacial conditions and the date corresponds to about the maximum of the last major Siberian glaciation called the Sartan. Also in the Middle Yenesei at the Kokorevo sites radiocarbon dates range from about 14,000 to 11,000 B.C. In the same area as the Mal'ta site a date of about 7000 B.C. was obtained on a Mesolithic-like complex located on the higher areas of the Terrace I floodplain deposits.

In these Siberian sites there are crude heavy chopping tools, a variety of flake implements including scrapers and knives, discoidal cores, and some bifacially flaked points or knives. There is a trend toward greater use of true blades made from prepared cores, to fashion end and side scrapers, piecers, perforators, graters and burins, and an increase in bone tools and ornaments. The animals on which they fed are those from arctic to sub-arctic and cold arid steppe environments. They made skin clothing and had substantial houses in which the bones of large mammals such as woolly rhinoceros and mammoth were used for construction. Probably the most important animal was the reindeer in the tundra area. It might be said that the spread of man into North America awaited the presence of arctic-alpine tundra species during the late Pleistocene on which man could live as he hunted his way across northeastern Siberia into North America.

While the extent of the mountain glaciers in eastern Siberia are not satisfactorily known, it is certain that only a small part of the land mass was glaciated and that most of the area was occupied by xerophytic arctic tundra, or alpine tundra. A long tongue of steppe or periglacial steppe extended from southwest Siberia eastward between the Central Siberian Plateau and Lake Baikal as far as Yakutsk on the Middle Lena. From this area the best access route to the north was down the Lena Valley to the Arctic Ocean.

The fall of sea level during the last major glacial advance of the Wisconsin-Wurm is estimated to have produced a land bridge at the Bering Straits from about 24,000 to 8000 B.C. with two periods of submersion of the highest part of the shelf corresponding to major ice melting phases of the retreat of the Wisconsin ice. The size of the exposed land was considerable. Most of it was not forested but was occupied by tundra vegetation similar to that of the Siberian arid steppe tundra. During the last glacial dominance between 23,000 to 10,000 B.C., the arctic trees and shrubs were more restricted in their distribution than they are today and the climate was colder than it is now.

THE MOVEMENT OF EARLY MAN INTO NORTH AMERICA

Keeping in mind the lack of direct evidence for the presence of early man in northwest North America and northeast Siberia, we can still present an acceptable hypothesis for a spread of hunting bands from west to east. Their way of life was developed from southern Russia to south-central Siberia during the latter part of the Pleistocene and was based on a late Mousterian

industry modified by the initial elements of Upper Paleolithic emphasis on blade tools and the beginnings of a bone industry which was an aid in the production of skin clothing and shelter. This gradual expansion to the north into new territories from northeastern Siberia to Alaska would have taken place without resistance from resident hunters. If this gradual expansion took place in the time period suggested then a substantial number of hunting camps must now be under ocean water but some will eventually be found in favorable areas such as elevations overlooking passes followed by game animals in moving from one feeding ground to another.

This early population spread is believed to have been diverted south along the west side of the McKenzie valley. A number of recent papers (9, 11, 28) have emphasized the difficulty of passing from the Lower McKenzie valley into the eastern Rocky Mountain slopes of the United States because of the presence of the coalesced continental and cordilleran ice from Montana to the Yukon Territory along the eastern margin of the Canadian Rockies. The evidence for the closing and opening of the corridor between these sheets is not so firmly established that sound datings for these events are available. The position adopted in this paper is that the corridor would have been closed only at the maximum of the Wisconsin glaciation for a few thousands years, about 19,000 to 15,000 years ago.

If the early hunters came into the United States before 17,000 B.C., then archaeologists in the United States have either been unlucky or have not been able to correctly evaluate the evidence for his occupancy before the 13,000 B.C. date mentioned at Wilson Butte Cave. Entry shortly before 17,000 B.C. would allow ample time for penetration into extreme southern

South America for the known occupancy there, but would not accommodate the proposed Valsequillo and Tlapacoya occupations in Central Mexico. If the corridor was closed between 21,000 and 10,000 B.C., archaeologists are faced with at least as impressive dilemmas in the form of the absence of sound data representing man in North America before 21,000 B.C., and the long period from then to 13,000 B.C., or in accepting the speed with which man moved from Alberta to Tierra del Fuego.

The environmental changes in North America as the result of the retreat of the Wisconsin ice would have had an effect upon the way of life of ancient man through the shift of climatic zones, vegetation and animal life. The expansions of the Canadian continental ice sheets effectively obliterated the vegetation and animal life from much of Canada. The expansion of the ice into the northern sections of the United States markedly altered the biota and compressed and interdigitated elements of previous periods into assemblages distinctive to late Wisconsin times. The climatic conditions during the life of the western mountain glaciers lowered the tree line, changed the faunal associations and distributions, and produced thousands of lakes in the now-dry basins of the western Plains, Southwest, intermontane plateau region and in the Pacific Coast states and Mexico. The lowered forest zones and more extensive and effective grass lands supported the large grazing and browsing animals of the late Pleistocene fauna. There were more streams, with corridors of pine and spruce crossing the grassland.

The changes in climatic regime accompanying the withdrawal of the Wisconsin ice had already produced notable shifts from the full glacial environments by the time of the early Fluted Point Hunters of 10,000 to

9000 B.C. The shift in vegetation and accompanying animal life took place on a large scale over North America causing some shifts in hunting and collecting areas and assisted in the displacement or disappearance of a small number of game animals. The northward movement of muskox and mammoth is thought to have been in a park-tundra vegetation zone which initially occupied the soils left free of glacial ice in the Great Lakes area. It has been suggested that there was an early post-Valders invasion of the east of animal forms now associated with western prairie environments and this would correlate with recent similar hypotheses of prairie vegetation movement eastward at an early period (8). The park-tundra and cool prairie would be suitable for barren ground caribou which have been identified in Michigan and New York. Did they penetrate this far south before the last Wisconsin advance or did they arrive with the "reopening" of the corridor?

THE FLUTED POINT HUNTERS OF NORTH AMERICA

By 10,000 to 8000 B.C. the people of the Late Paleo-Indian period had sparsely occupied most of the area south of the present Canadian boreal forest to South America and from the Pacific to the Atlantic. Most of these populations we know had a strong dependence on hunting because of the spear and dart points, knives, scrapers of various kinds to work skins, and because these tools have been found in association with a small number of large game animals. This latter fact gave rise for a time to the idea of almost a limitation of diet to Big Game animals. Data from sites such as Lindenmeier in Colorado, Graham Cave in central Missouri, and others proves that the meat diet was quite varied and, at least in the east, there is very little evidence of early man killing the mammoth and mastodon. In addition the

early Fluted Point Hunters would have recognized a large variety of the plant foods available, from nuts to berries and tubers. The diet of early man was not likely to stay restricted to a few classes of foods when he entered environments with a wide variety of them. It should be possible to discover sites which will reflect varieties of food gathering and processing activities which were part of the life of the Fluted Point Hunters. They should have had some seasonal activity patterns. A number of students of the Paleo-Indian Cultures are beginning to recognize regional tool and behavior complexes which will aid our understanding of this earliest known complex.

The wide distribution of Fluted Point bands and the relative homogeneity of the implements recovered implies a rather rapid spread of these early hunting people, and apparently into areas not hitherto occupied. There is also the implication that there would have been continuing contact between neighboring bands perhaps for group hunting or other food procuring activities at favorable seasonal locations, or at favorable locations for shelter during the winter seasons. Such collective activity would have permitted exchanges of new cultural developments in terms of sources of food, raw materials, manufacturing techniques, hunting technology, and of people. It is doubtful that individual bands would have been isolated from other groups for extensive periods or that peoples moving into new regional environments would have been cut off by those environments from culture sharing with peoples in their former territory.

ARCHAIC PERIOD ADAPTATIONS IN NORTH AMERICA

In the long Archaic period in the United States between 8000 B.C. to the effective introduction of agriculture around 1 B.C., there were many regional cultural developments as the Indian groups became more familiar with and developed the knowledge of successfully exploiting the local resources. In so doing successful adaptations to particular environments tended to restrict band and group activity to these environments and to produce a higher level of cultural exchange and of people within these areas, than between them. This is reflected archaeologically by the growth of distinguishable regional cultural traditions.

One of the best documented cultural continuities from the Paleo-Indian period Fluted Point Hunters to later complexes is in the western Plains states. The production of fluted points was gradually abandoned and non-fluted points and knives of essentially the same basic form continued in use along with the rest of the stone tools. New tools appear such as the specialized Cody knife, and new techniques such as the parallel flaking of the Scottsbluff and Eden forms. All of the evidence from sites in this region from the Rio Grande north into the Canadian prairie provinces continue to reflect the existence of a hunting economy with bison as an important supplier of food, tools and clothes. At some locations there is clear evidence of mass killings evidently the result of communal drives. Indications of variability of animal food comes from sites where giant beaver, pronghorn antelope, elk, deer, raccoon, coyote and smaller mammals as well as bison were a part of the food supply. At other sites there are indications of grinding and milling stones, burins, sandstone abraders and whetstones.

West of the Rocky Mountains from around 8000 B.C., and continuing for many millenia archaeologists recognize the Desert Culture which has a number of named regional variants from Mexico into Oregon and Washington. These variants emphasize the gathering and preparation of small seeds by hand and milling stones; the hunting of a wide variety of animals, the extensive utilization of wood, bone, hide and vegetational sources for tools, ornaments and containers. It was a gradually developing adjustment to the essentially desert environment which only supported small bands, and where population density remained low up to the historic period. It was not however a static complex for many significant changes took place in the technology, some of them representing almost continent wide shifts in tool forms, and new weapons, and shifts in the techniques of manufacturing baskets. Important variants are recognized in areas along streams and lakes, in upland forested or alpine areas, and where minor shifting climatic patterns allowed expansion of desert bands into sometimes better watered areas, or penetration of foreign groups into the Desert Culture region.

Between 8000 and 6000 B.C. along the Northwest Coast and into the interior along the major rivers at least some part of the year was spent in obtaining food from the spawning runs and in otherwise exploiting the food supply associated with the streams and coastal areas. The latter is a reasonable inference for some parts of the then coast are now under water. It was to be a long time however before the striking Northwest Coast sea-adapted complex would develop between Washington and the Alaskan peninsula.

In the interior from the Yukon territory to Idaho there is an Old Cordilleran Complex which may be viewed as an Asiatic derived parent to the

Fluted Point, as a collateral contemporaneous variant, or as the result of the northern and western expansion of the Llano to Plano tradition. At present there would seem to be a basic relationship, and current radio-carbon dates indicate the time period of Old Cordilleran is not over 8000 B. C.

In southern California the San Diequito hunting culture with percussion flaked lanceolate points, knives, scrapers and choppers is known from about 8000 B.C. to 6000 B.C. Shortly afterward there is a development of a number of areal specializations in coastal, desert, and forest environments which during the last few thousand years resulted in an unusually dense population for a hunting-gathering population in the oak forest area of central California.

Southwestern Alaska was sparsely populated by around 8000 to 6000 B.C. by people with a unifacial core and blade industry whose movement into Alaska was likely to have been from the Pacific side of the Chuckchi peninsula into coastal Alaska and south to the eastern Aleutian area. If these early coastal adapted groups were the first Aleuts as is implied, it would suggest that the occupation of the Bering Straits area by Eskimoan speaking peoples has a time depth longer than has been thought. In interior and northern Alaska there is a considerable variety of assemblages reflecting inland and coastal developments with continuing ties with Siberia, and also influences from northward spreading groups primarily moving with the expansion of bison and other game animals.

Between 3000 to 2000 B.C. the Denbigh Flint Complex with a marked coastal adaptation spread with surprising speed eastward to provide the

first successful occupation of the eastern Arctic, the first Eskimo bands reached northern Greenland by 2000 B.C. Eskimo cultural traditions have a considerable time depth and a main hearth area was the Bering Straits on both sides of the International Date Line where people have been moving across in both directions for many millenia.

In the woodland area of the Eastern United States there is a gradual transition recognized in several areas from the Fluted Point Hunters complex to assemblages maintaining the same basic manufacturing stone working techniques and tools, but with development or adoption of non-fluted projectile forms which are highly similar to some of the early Plano forms of the Plains. By 7000 to 6000 B.C. stemmed and notched projectile forms become common and an increasing diversity of regional areas through time reflects the increasing specialization of groups who are learning to exploit the resources of these local regions. Many of the changes are related in form and function to those of areas to the west but the east acquires a distinctive flavor of its own through the development of a series of woodworking tools and ground and polished stone forms. While regional specializations are present in the eastern Archaic complexes there is also evidence of increasing exchange of raw materials or manufactured objects as travel or trade routes become established.

Many archaeologists view most of the cultural complexes of Mexico from about 8000 to 4000 B.C., as a southern extension of the Desert Culture. Certainly the general hunting-gathering pattern is similar and there are certain tool forms that are held in common with early Archaic and Desert Culture groups from California to Texas. The most important feature of the

Mesoamerican scene is the early domestication of plants, from Tamaulipas to Chiapas which has been demonstrated where systematic efforts have been expended to search for such evidence. This area has a very gradual increase in the number of plants domesticated in the several regions and in the proportion of domesticates consumed. Marked population increase is observed by 1000 B.C., in some areas such as the Valley of Mexico, the Valley of Oaxaca, the Coastal lowland of southern Vera Cruz and Tabasco, and the Pacific Coast of adjacent Chiapas and Guatemala, when agricultural practices were well developed and the Early Formative cultures were becoming established.

SUMMARY

All of the supportable evidence available indicates that the first human occupants of North America came from Northeast Asia. Some archaeologists support the view that this first occurred from 30,000 to 40,000 or more years ago, others from about 25,000 to 20,000 years ago, and some have contended that it could not have been until about 12,000 years ago. The time of arrival has not been settled.

Some archaeologists emphasize the Mousterian origins of the first emigrants believing that the earliest American cultural complexes indicate a spread into North America before elements of Upper Paleolithic origin had reached eastern Asia. Many archaeologists, however, believe that Upper Paleolithic developments were a part of the cultural mechanisms that allowed man to move into North America and spread throughout the New World.

The main access route into interior North America was east of the Rocky Mountains and dispersion into most of the Americas was by this route.

Population increase and any physical differentiation of human groups south of the Arctic area is derived primarily from the populations of the Paleo-Indian period. There are no indications in the prehistoric record of any substantial migrating groups influencing the cultural life of the residents of North America south of the Alaskan and Canadian Arctic region.

The archaeological evidence, except in rare instances, supports the view that in spite of regional adaptations to food supplies and raw materials, that there was a continuous exchange of new developments between regions, with the additional implication of population interaction as well.

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MISSING MATL. RETURN <input type="checkbox"/>	BIND <input type="checkbox"/>		
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FOR TEMPORARY INSTRUCTIONS		IMPRINT	
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