

In summary, of the eight categories set up by Ames, five categories include information that is heavily in favor of accepting the hypothesis that there is cultural continuity from Period IB through the Modern Period. Another three allow no conclusion about the acceptance or rejection of the hypothesis. This is contrary to Ames' statement that the presently known archaeological data allow no conclusion about whether there is cultural continuity or discontinuity. Ames' conclusion is not supported by his own data, or his discussion of the data.

The third portion of the present paper presents a scenario of Plateau pre-contact history. I have attempted to explain the cultural dynamics on the Plateau by interpreting data presented by Ames. The resultant picture is one of a continuous flow of history. Changes along the way—and there are many—are explained in terms of adaptation and readaptation, given both a changing population density and a changing environment.

In conclusion, let it be stated that **there is absolutely no evidence of a cultural discontinuity of sufficient magnitude to suggest population replacement** in the archaeological record as we know it today.

ADDITIONAL EVIDENCE: BURLALS, ETHNOGRAPHY, HISTORY, AND LINGUISTICS

The evidence of archaeology need not stand alone. The Department of the Interior commissioned three Plateau experts to review data other than that derived from archaeology. Bio-archaeological data were reviewed by Dr. Steven Hackenberger of Central Washington University. Dr. Daniel L. Boxberger wrote up the traditional historical and ethnographic information, and Dr. Eugene S. Hunn covered linguistic information. The conclusions reached by these experts will be briefly summarized, and additional evidence will be presented where it is available.

Bio-archaeology

Dr. Hackenberger presents a lot of data in his report. He does not, however, come to any conclusions regarding the main concern; that is, is there continuity or discontinuity from about 9,500 years ago to the present on the Columbia Plateau? The following is a point by point review of Hackenberger's report.

Section I of this paper, the Introduction and Summary of Data, does not begin with the Statement of Work (SOW), which makes it hard to determine just what Hackenberger was trying to accomplish. I am assuming that the SOW for this project is very similar to that of the review of Plateau archaeology by Kenneth Ames; that is, Hackenberger is also looking for continuities and/or discontinuities in the metric-nonmetric physical data sets of human remains.

Hackenberger divides the various analyses into four forms. They are:

1. A chronological outline of major sites and osteological data sets;
2. Studies of mortuary practices, as changes in them reflect cultural change;
3. Biological anthropology in the Pacific Northwest; and
4. Osteological studies in the Pacific Northwest.

The data for the review of the analyses are presented in Section II of the report, and a Bibliography comprises Section III.

1. Hackenberger's chronology of burials and sites with burials are as follows:
 - 11,000 to 9,000 BP – the Buhl Site and Kennewick Man
 - 9,000 to 7,000 BP – three sets of remains
 - 7,000 to 5,000 BP – Hackenberger sees a 'significant gap' here
 - 5,000 to 3,000 BP – Hackenberger sees gaps in the record here
 - 3,000 to 1,000 BP – many, well-documented findsLate Prehistoric, Protohistoric, and Historic (i.e., pre-contact, contact, and post-contact sites – these relatively short time periods have the most and best-documented finds.

Although Hackenberger sees a 'significant gap in burial and osteological studies' in the 7,000 to 5,000 BP time period, he mentions several burials, including 'mass burials'. How this can form a significant gap from the previous five sets of remains is not explained. The gaps in the 5,000 to 3,000 BP time period also are not explained.

2. Studies of mortuary patterns are restricted almost exclusively to Late Prehistoric (Late Pre-contact), Protohistoric (Contact), and Historic (Post-contact) burials only. There are many of these. The interesting thing (to an archaeologist) about this study is that there is a lack of difference in tools placed with the burials according to gender. According to these studies, projectile points are found with females and males, and pestles and bone awls are placed with males as well as females.
3. Biological Anthropology in the Pacific Northwest consists of a summary of metric (measurements) and non-metric (the presence or absence of a particular trait) studies. Much of this information was collected from living humans. Hackenberger presents data on dentition (teeth) and blood types, but he does not add a discussion to show how these data could be applied to the investigation of continuities and discontinuities. The same applies to his presentation of genetic and DNA studies.
4. Osteological studies in the Pacific Northwest are included in his report. In a study quoted by Hackenberger, Heglar (1957) studied a representative sample of a population that existed from 3,000 to 200 years ago on the Plateau and in Western Washington. Heglar (1957:70), as quoted by Hackenberger (2000:21) states that "...the population of the Plateau represented by skeletal remains appears to be homogenous (i.e., the same) in the sense of 'physical type'." This is an interesting observation in light of the differences that others saw, as discussed below.

Another study cited by Hackenberger was that of Carino (1987) who tried to find out whether there is any difference between pre-contact Colville and pre-contact Nez Perce. He analyzed 25 non-metric traits on 91 Colville and 119 Nez Perce remains. The study was repeated by three other experts. The result of a statistical analysis was that the pre-contact "...Colville and Nez Perce Indian populations were biologically quite distinct". This is particu-

larly intriguing in light of the archaeological evidence cited above that shows an unbroken continuity from 10,000 years ago to the present.

There are other studies along these same lines. Tasa (1997) studied teeth and came to the conclusion the New World (American) pre-contact populations show much more variability in the traits of teeth than was previously described. My conclusion is that **there is more variation between and within Native American populations than has previously been recognized, and that a simple classification of any one set of human remains is not valid.**

Section II of Hackenberger's study consists of a review of the documents or studies used for the summaries in Section I. I will not bother with all of the documents; there are many. There are two cited by Hackenberger, however, that are important in showing continuity. Tasa, in his 1997 study, finds that there is greater variability between populations than previously recognized. Jantz and Owsley have a publication in press about 11 early Native American crania. The crania are from all over America; that is, Spirit Cave, Wizards Beach, Browns Valley, Pelican Rapids, Prospect, Wet Gravel Male, Wet Gravel Female, Medicine Crow, Turin, Lime Creek, and Swanson Lake. The Prospect burial, from Oregon, was lying below Mazama ash that is dated to about 7,000 BP. All remains were at least 4,500 years old.

The skulls were compared with 34 modern groups. Hackenberger states that six skulls (Prospect, the two Wet Gravel crania, Medicine Bow, Turin, and Wizard Beach) fall into the variations of modern groups. Yet, Hackenberger quotes the other authors as stating "In general, the 11 fossil crania do not show any particular affinity for the nine modern Native American samples for which we have data." No one explains here, first, why six skulls fall into the modern group, but are different, and second, what happened to the 34 modern groups mentioned in the first sentence of this paragraph.

Also, the 11 skulls fall into three distinct groups when compared to each other, which is another argument for variability. Jantz and Owsley are quoted by Hackenberger (2000:49) as stating:

The heterogeneity among early American crania make it inadvisable to form them into a single group for the purpose of analysis. Our results are inconsistent with hypotheses of a single ancestral group and they further suggest that the pattern of cranial variation is of recent origin, at least in the Plains region.

I do not know why they came to this conclusion, as there is variation among the old remains, as they state. So why are modern variations of recent origin?

More Information on Burial Practices from the Southern Plateau

As stated before, Hackenberger never explains what he is looking for, much less how he expects to find it. He notes that much bio-archaeological work has been done to test explanations of migrations and social relations. It seems to me that this kind of work is very much related to what the National Park Service is looking for, but Hackenberger does not even discuss the results, much less apply them to the problem at hand.

DOI 07623

Because of the shortcoming of the Hackenberger study, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) requested, and received, the help of an expert Plateau bio-archaeologist with many years of experience. Dr. Roderick Sprague, Professor Emeritus, Department of Anthropology, University of Idaho, provided the CTUIR with a study of burial customs in the southeastern Plateau cultural area. The study is included in the present report as Attachment I.

Sprague (2000:10) concludes his report with a discussion of burial practices along the middle and lower Columbia and lower Snake Rivers. The southern Plateau is characterized by primary burials, with cremation occurring among the Carrier and Klamath-Modoc during the ethnographic period. Archaeological evidence of cremation along the lower Columbia River is strong.

The evidence from the southern Plateau suggests that the prehistoric pattern was flexed burial on the side and sometimes on the back in any direction but south (Sprague 2000:11). Single burials are the rule except for epidemic cemeteries after Euroamerican contact. Grave goods are present as an almost universal trait in Plateau burials.

Sprague (2000:12) discusses burial practices in other areas of North America, particularly in regions adjoining the Plateau. He concludes; "In light of these varied traits found even in adjacent areas, the pattern found in the Plateau is surprisingly stable over an extensive period of time". He states:

When the early examples of burials found at Marmes Rock Shelter and the Rabbit Island Site, all within the area of concern, are combined with a total lack of any other early disposal forms and further supported by the now-dated Kennewick man, the obvious conclusion is that earth inhumation has a long and continuous history in the Plateau. Further, when this unbroken sequence is compared to the clear continuity of the weapon technology (projectile points) in the Plateau, the only possible conclusion is that the peoples driven from this area during the historic period are the direct descendents of the Ancient One. To find any other burial form for him, other than earth inhumation or possibly cremation, would clearly be the unexpected. It is abundantly clear from the cultural evidence that the local modern Native American population is descended from Kennewick Man.

Dr. Sprague's conclusion clearly supports the hypothesis that cultural continuity exists from Kennewick Man times to the Modern Period.

Traditional Historical and Ethnographic Information

Dr. Boxberger reviewed the traditional historical and ethnographic information for the National Park Service. His paper is organized in sections called Introduction, Data Analysis, and Interpretation of Data. This review will follow these headings. Also appended to the present report as Attachment II is a discussion of oral historic data collected by the Cultural Resources Protection Program of the CTUIR.

In the introduction to his review, Dr. Boxberger states that he was asked specifically to review published and archival materials related to traditional ethnography. Ethnography is that part of anthropology that studies existing cultures. It includes histories, kinship and patterns of residence, trade and social networks, artifact types and dwellings, community and settlement patterns, and economic and subsistence patterns.

He developed a four-step research strategy consisting of:

1. A search of published ethnographic and historic data;
2. A search of archival and other primary data;
3. Consultation with appropriate tribal representatives and other experts; and
4. An evaluation and assessment of the ethnographic and historic data base.

He includes archaeological reports among the published data, although he is aware that someone else (Ames) is doing the archaeology.

There is one statement (Boxberger 2000:3) that is particularly important. It is: **“Following the current theoretical understanding in the field of ethnohistory it is assumed that oral traditions should not be considered to be inferior to written records”**. In other words, oral history is as valid as written history.

In his data analysis, the first section is on traditional ethnography. Boxberger discusses all of the regular Plateau cultural traits listed by most archaeologists when discussing the Tribal background in archaeological reports; that is, what were the Tribes doing at contact time? He lists three types of ethnographic descriptions for the Plateau: early ethnographies (before the early 1950s), Indian Claims Commission records, and recent, subject-specific research. The last one means that anthropologists pick a problem they want to study and then contact the people and ask them specific questions about the problem under investigation.

The early studies are called “historical particularism”. This means that ethnographers collected information without trying to interpret that information or to build theories to explain it (sort of what Hackenberger did in his bioarchaeology report). This is where we get the information about how Tribes used to do things. Reports for the Indian Claims Commission suffer from two problems. First, they use the ethnographic studies from the early studies. Second, they focus on the post-contact period while our present goal is to get as far back into the pre-contact period as possible. Recent ethnographies deal with specific subjects, such as marriage, trade, and obtaining the resources.

Boxberger’s second section presents specific discussions of kinship and patterns of residency, trade and social networks, artifact types and dwellings, community and settlement patterns, and economic and subsistence patterns. Then he provides an overview of prehistory. Summaries of ‘protohistory’ and ‘ethnohistory’ follow. They are accounts of what is known from the time just before and for the hundred years after contact.

The third section involves Indian Claims Commission reports are next. One of the conclusions of this information is that most of the tribes used a lot of areas in common. For example, according to Suphan (1960, 1963), the area around the mouth of the Yakima River was used

by the Cayuse, Nez Perce, Palouse, Umatilla, Walla Walla, Wanapum, and Yakama. Chalfant (1967), on the other hand, argues that the Nez Perce 'had a definite sense of territory'.

Boxberger discusses Native History (also called oral history). He states that oral traditions are not merely stories, legends, or fables. Instead, they describe the original history of the Native people. Creation stories play a large role in this account. Many of them place people into a local environment at particular times. These stories are useful in showing that a particular group has lived in its area for a very long period of time. Some of the stories deal with great floods that are known by geologists as the Bretz floods. They occurred at the end of the Pleistocene ice age. Other stories deal with much ice and still others are about volcanic eruptions. All of these argue for the Tribes occupying their territories for a very long period of time.

For an example, Boxberger quotes from the Colville story called "Unsuccessful Suitor". It begins: "in the old days when the Columbia flowed down the Grand Coulee instead of where it is now..." This statement immediately places the story in space and in time. It tells the listener where and how long ago the event occurred; that is, over 10,000 years ago!

Boxberger's concluding remarks are particularly pertinent to our case. He says (2000:51):

This is a sampling from the selection of published oral traditions of the Native Peoples of the southern Plateau. From this selection one can readily distinguish certain features: the lack of a migration tradition; the environmentally imbedded nature of oral tradition; the time depth illustrated through residual knowledge concerning events that occurred during the glacial period; and the universal dependence on the Columbia River and its tributaries, due to the importance of salmon as one of the primary staples of the traditional diet.

In his interpretation of the data, Boxberger discusses the limitations of the ethnographic record. This record presents a picture of the Tribes as static. It should be dynamic; that is, it does not say anything about the past but only talks about things that went on at the time the anthropologists 'studied' the various Tribes. The problem with the Claims Commission Reports is that the information was gathered for a client (the Government or the Tribes). For example, Chalfant (1963, 1967), working for the Government, was more specific on Tribal territories and de-emphasized inter-group relations. Ray (1959), on the other hand, writing for the Tribes, made a case for considering as large an area as possible. According to Boxberger, archaeology also has its limitations. It can only tell us about artifacts but not about whether there was a physical change in people through time. Ethnohistory is also limited; it fails in the attempt to project culture back into the past. Boxberger talks about limits of oral traditions. They may discuss an event, like an eruption of a volcano, but this cannot be tied down in time because there were many volcanic eruptions. He does state (Boxberger 2000:55): "The melting of ice, floods, earthquakes, volcanic eruptions, are all events that occurred at the end of the Pleistocene. This is in accordance with the scientific traditions that argue humans first populated the Plateau over 10,000 years ago".

In conclusion, Boxberger states that ethnographic and historic information suggest that the Kennewick Man area, in his opinion, is within the traditional use area of the Confederated Tribes and Bands of the Yakama Nation, the Nez Perce Tribe, the Confederated Tribes of the

Umatilla Indian Reservation, the Confederated Tribes of the Colville Reservation, and the Wanapum Band. He asserts (Boxberger 2000:56):

The prehistoric, protohistoric and historic database suggest a **cultural continuity** in the southern Plateau for the last 10000 years. Cultural change occurred, as it does in all cultures, but this change can be seen as transitional and **continuous** with new forms emerging out of previous cultural forms. **There is no evidence of in-migration** causing cultural transformation. Rather, the adoption of cultural traits originating outside the Plateau, e.g., the Plains, Great Basin, Northwest Coast, were incorporated into existing Plateau traditions (emphases added).

Attachment II contains two kinds of oral history information. The first is a story about Elephant Rock; that is, a rock formation bearing a resemblance to an elephant. The myth talks about very large, furry animals with 'snakes in front of them' (i.e., trunks) which occupied the land when people came here. Moreover, the CRPP has located two mammoth teeth in a site on the Wildhorse Resort Golf Course on the reservation of the Confederated Tribes when it was being constructed. One of the teeth is over 10,000 and the other is over 14,000 years old. Although artifact association cannot be proven at this time, the find and the myth show that the local population of Native Americans was in this territory at the end of the Pleistocene.

The second type of oral histories are regional. They concern the Bretz Flood, dated to over 12,000 years ago, the large volcanic eruption of Mount Hood of about the same time, and the explosion of Mt. Mazama – now Crater Lake – that took place about 7,000 years ago.

In conclusion, data cited by Boxberger and oral histories gathered by the CTUIR **definitely tie the populations of the southern Plateau into events that took place at the end of the Pleistocene; that is, before 9,000 years ago.**

Linguistic Information

Dr. Hunn reviewed the linguistic information for the National Park Service. His paper is organized into sections called Introduction, Results, and Conclusion. The paper is reviewed briefly below. The CTUIR has no additional data that could be added because Dr. Hunn's review needs no support.

Hunn first tells us that he is not a linguist. He studies ethnobiology, which is the ethnographic study of human relationships with the natural environment. He does use linguistics in his research; he has studied under linguists; and he has published in the linguistic journals. In his review, Hunn will try to determine whether or not the Kennewick Man can be shown to be culturally affiliated with the five claimant Tribes. For this purpose he cites 43 CFR 10.2(e), "Cultural affiliation means that there is a relationship of shared group identity which can be reasonably traced historically or prehistorically between members of a modern-day Indian tribe and an identifiable earlier group. Cultural affiliation is established when the preponderance of the evidence – based on geographical, kinship, biological, archaeological, linguistic, folklore, oral tradition, historical evidence, or other information or expert opinion – reasonably leads to such a conclusion." (Hunn 2000:3).

Hunn (2000:4) explains Julian Steward's idea of the 'cultural core' as the group of cultural traits that are most closely related to subsistence activities and economic arrangements. This includes social, political, and religious patterns that can be demonstrated to be closely connected to these arrangements. Hunn focuses on evidence for linguistic continuities or discontinuities, on the one hand, and for linguistic evidence of continuities or discontinuities in features of the cultural core. He states that continuities in the cultural core are to be expected as a consequence of a group's continuous occupation of a common habitat while conserving basic technologies and economic strategies. "To the extent that the evidence suggests continuities rather than discontinuities, the evidence 'reasonably leads to a conclusion' of cultural affiliation" (Hunn 2000:4).

When presenting the results of his study, Hunn (2000:6) asks: "Which Indian groups lived near the site at first Euroamerican Contact?" A discussion of group identity results in the assertion that people identified themselves by the village in which they lived and by the dialect of the language they spoke, not by any political entity such as a 'Tribe'. He states that 'Tribes' were created by the treaty process; that is, they were in the minds of the Euroamericans rather than the Native Americans.

In response to the above quoted question, he asserts (Hunn 2000:7-9) that the *chamna-pam*' lived in the area of the site at Euroamerican contact. They were a Sahaptin-speaking people. Descendants of these people are affiliated with the contemporary CTUIR, Yakamas, and Wanapums.

Next, Hunn (2000:9-12) presents lexical evidence of Sahaptin occupation of the Columbia Plateau. He ties in language to familiarity of place by using animal terms, plant terms, and place names. For example, Sahaptin speaker not only distinguish between the various salmon species, but also between populations of species by using diminutive forms of the species name (Euroamericans use the term 'jack Chinook, or jack blueback salmon, etc.).

Sahaptin distinguishes two varieties of mule deer and has names for white-tailed deer, mountain goat, bighorn sheep, and pronghorn. According to Hunn (2000:10), there are few places in the world where these animals occur in close proximity. This shows that the Sahaptin-speakers were in close harmony with their environment. The absence of Sahaptin names for animals that exist in areas to the north, east, south, and west of the Plateau shows that Sahaptin speakers did not move into their historically known territory. He also discusses other animal names in the same vane. Then he mentions terms, such as the name for salt-water clams, which are borrowed from Puget Salish by the Sahaptin speakers.

He follow the same process with names of plants (Hunn 2000:10-11). The specificity of plant names proves the familiarity of the people with the Columbia Plateau and their restriction to this area. Hunn has also compiled a list of 1,100 Sahaptin place names. "They are without exception names for places within or on the margins of the historic Sahaptin range".

In his discussion of historic linguistics and prehistory Hunn notes that linguistic methods and techniques include genetic classification of languages, dating linguistic connections by lexi-

DOI 07628

cal comparisons, Greenberg's Amerind hypothesis, the affiliation of Plateau languages, and proto-Sahaptin and the Penutian hypothesis, discussed in sequence below.

Genetic classification means to reconstruct a common language from two different but related languages. The reconstruction is then assumed to represent the parent language of the two modern languages. For example, linguists reconstructed Proto-Indo-European, which was probably developed in western Asia and spread from there, with population movement, to Europe, western China, and other places.

Greenberg's (1987, as presented in Hunn 2000:13) Amerind hypothesis has three basic Native American languages: Amerind, Na-Dene and Eskimo-Aleut. Amerind includes, among other subgroups, Almosan and Penutian. The Salish family of languages is part of Almosan. Penutian includes Sahaptin, Nez Perce, Klamath-Modoc (first cousins to Sahaptin), and Wasco-Wishram, a Chinookan language.

As part of the affiliation of Plateau Languages, Hunn first discusses the Numic languages (part of Amerind) spoken, among others, by the Shoshone. According to geographic distribution and linguistic analysis, Numic speakers expanded from their southern California heartland in southeastern California during the last 2,000 years. Therefore, we can rule out that the southern Oregon Native American groups (Paiutes, Bannock, Shoshone, etc.) occupied the vicinity of the Plateau around the Kennewick Man site.

Another Northwest expert, Elmendorf (1965, as noted by Hunn 2000:16), studied the Interior Salishan languages. He concluded that Proto-Interior-Salish was probably spoken in the Fraser Canyon region as early as 4,000 to 5,000 years ago. Therefore, early occupation of the area around Kennewick by Salish-speakers is ruled out. Proto-Salish is postulated to be more recent than Proto-Interior-Salish, which was probably spoken by people exploiting the ocean.

Hunn (2000:16-18) discusses the Sahaptin language in detail. He notes the similarity between Sahaptin and Nez Perce, and concludes that Proto-Sahaptin was spoken near the mouths of the Yakima and Snake Rivers as far back as 2,000 years ago. He then discusses other Penutian languages, some related to Sahaptin like Klamath-Modoc and Cayuse and Molala, and concludes that there may have been a 'Plateau Penutian' pattern. Moreover, Penutian languages were spoken in western Oregon, California, up the Northwest Coast, and possibly into Mexico and Central America. This makes it difficult to establish a Proto-Penutian homeland. Hunn concludes that given north-south population movement and the many subgroups of Penutian in the Oregon-California area, "it is more than likely that Proto-Penutian was spoken in the Columbia Region, perhaps as early as 8,000-9,000 years ago. At least, no other language group can establish as strong a claim as Penutian" (Hunn 2000:17-18).

The last evidence Dr. Hunn presents concerns the Sahaptin name for the eastern prominence of Rattlesnake Mountain, which is *Laliik*. The name means 'standing above the water', which may refer to the Bretz Floods at the end of the Pleistocene. This ties the Sahaptin language to the place at a time of over 10,000 years ago!

In his conclusion, Hunn (2000:19-20) states that linguistic evidence establishes that the Sahaptin language or its predecessors were spoken on the Columbia Plateau 2,000 to 5,000 years ago. He speculates that Proto-Sahaptin was spoken here 8,000 or more years ago, but this language has not yet been reconstructed, so we have no direct evidence of this. Still, it is likely that Kennewick Man spoke a language that was ancestral to Sahaptin. Hunn states (2000:20): "However, I cannot rule out other possibilities, in particular, that the group to which Kennewick Man belonged spoke a language which was not Penutian – a language now extinct or ancestral to languages spoken outside the present region – and that the Penutian-speaking predecessors of the historic occupants of the region of the Columbia Plateau either displaced this earlier group or arrived after that group had moved elsewhere or had died out. *However, there is no evidence to suggest such an alternative*" (emphasis added).

SUMMARY AND CONCLUSION

This report has three main goals. The first is to comment in detail on the review of the archaeological data by Dr. Kenneth Ames of Portland State University, to add some data from the higher elevations of the Blue Mountains of northeastern Oregon, and to provide an alternate explanation for the archaeological data from the Columbia Plateau cultural area.

The second goal is to comment in more general terms on the reviews of the traditional historical and ethnographic information by Dr. Daniel Boxberger of Western Washington University, the bio-archaeological information by Dr. Steven Hackenberger of Central Washington University, and the linguistic information by Dr. Eugene Hunn of the University of Washington. Attachment I is to supplement Hackenberger's report.

The third goal is to use these reports and some additional data provided by the CTUIR to prove cultural affiliation. This concept is defined in the implementing regulations for the Native American Graves Protection and Repatriation Act as "Cultural affiliation means that there is a relationship of shared group identity which can be reasonably traced historically or prehistorically between members of a modern-day Indian tribe and an identifiable earlier group. Cultural affiliation is established when the preponderance of the evidence – based on geographical, kinship, biological, archaeological, linguistic, folklore, oral tradition, historical evidence, or other information or expert opinion – reasonably leads to such a conclusion" (43 CFR 10.2[e]).

When initially reading Ames' report, the main text led me to infer that Ames sees cultural continuity in the archaeological record rather than discontinuity. There are many statements to that effect in the text of his review as noted in my comments in this report. I was quite surprised, then, when he concluded that present archaeological information supports neither cultural continuity nor discontinuity. Many of my comments above placed the emphasis on those of Ames' observations that strongly suggests cultural continuity from the times of Kennewick Man to the Modern Period culture of the claimant tribes.

In order to show continuity, I set up the hypothesis that there is cultural continuity from pre-contact Period IB to the Modern Period; that is, from the time of Kennewick Man to the present. Using Ames' data to test this hypothesis by disproving it, the following results were ob-

tained. Ames had eight categories of data. They are radiocarbon dates, projectile points, pit-houses, microblades, other ground and chipped stone artifacts, bone technology, mobility patterns, and subsistence and economy. Using Ames' own data and arguments, five of the eight categories were shown to support cultural continuity. Another three, including microblades, chipped and ground stone artifacts, and bone technology supported neither continuity nor discontinuity. In conclusion, **archaeological data prove the statement that there is cultural continuity from Kennewick Man to the present. There are no data to disprove this explanation. Therefore, cultural continuity in the Southern Plateau area is proven.**

Following the review, I used an hypothesis presented in the Introduction of this paper to interpret the archaeological information presented by Ames. The hypothesis explains cultural dynamics in general. The interpretation of archaeological data from the Plateau resulted in a picture of a continuous flow of history. Changes along the way—and there are many—are explained in terms of adaptation and readaptation, given both a changing population density and a changing environment. However, the culture remains the same.

My conclusion is that **there is absolutely no evidence of a cultural discontinuity of sufficient magnitude to suggest population replacement** in the archaeological record of the Columbia Plateau as we know it today.

As part of the second goal, I briefly commented on Hackenberger's review of the bio-archaeological information. Although Hackenberger drew no conclusions regarding cultural continuity, there are two pieces of interesting information in his review. The first is that bio-archaeologists are identifying a lot of physical variation within groups of Plateau Native Americans. No attempt was made to explain this variation by citing population genetics or postulating physical evolution or multiple origins as causes.

The second point is that there appears to be a quite a bit of physical difference between pre-contact Colville and Nez Perce people. This difference is not supported by the archaeological information. Although there is some difference between Period II projectile points in the area, it is not sufficient to support physical data showing a pronounced biological difference between these two peoples.

Attachment I to this report contains additional bio-archaeological information which is, however, restricted to burial customs. The author of this report, Dr. Roderick Sprague, says: When the early examples of burials found at Marmes Rock Shelter and the Rabbit Island site, all within the area of concern, are combined with a total lack of any other early disposal forms and further supported by the now-dated Kennewick Man, the obvious conclusion is that earth inhumation has a long and continuous history in the Plateau. Further, when this unbroken sequence is compared to the clear continuity of the weapon technology (projectile points) in the Plateau, the only possible conclusion is that the peoples driven from this area during the historic period are the direct descendents of the Ancient One. To find any other burial form for him, other than earth inhumation or possibly cremation, would clearly be the unexpected. It is abundantly clear from the cultural evidence that the local modern Native American population is descended from Kennewick Man.