THE EARLY PEOPLING OF THE NEW WORLD
—as seen from the Southwestern Yukon —

by

Richard S. MacNeish

Having just completed a first draft of a large manuscript concerning the archaeology of the southwest Yukon Territory, and having a personal inclination to quickly publish preliminary reports on my research, the request for a paper concerned with early relationships in Northwest America arrived at an opportune moment. Further, the opportunity to discuss some of my conclusions and speculations in print with my colleagues may very well enhance and necessitate beneficial changes in the final draft of the larger monograph.

In this article I shall briefly define the area of research, mention the sites discovered and gloss over the stratigraphic excavations. A drawing and two charts shall implement this meager data. Details on the above subjects will eventually be available in the monograph entitled "Preliminary Archaeological Investigations in the Southwest Yukon." Here, mention will only be made of the archaeological complexes and their artifact contents. The final part shall compare these southwestern Yukon archaeological complexes with those from surrounding areas and shall endeavor to bring the data to bear upon the problem of the peopling of the New World. This section, clearly labeled as speculations, I hope will foment discussion.

By definition, this volume is to be concerned with Early Man in the Western Arctic. By Early Man I mean nothing later in time than "Paleo-Eskimo," in other words before 1500 B.C. Exactly what is meant by Western Arctic was not well defined in our instructions. However, a glance at the various authors' use of the term would seem to define the area as somewhere west of the Mackenzie River and somewhere north of the 60th parallel in the New World. Basically, the problem is the peopling of the New World. I shall endeavor to approach the above subject and problem from the standpoint of my investigations in the Southwest Yukon Territory.

The part of the southwest Yukon investigated is that encompassed by a line from Burwash Landing to Carcross to Mayo to Dawson City and back to Burwash. Within this region 129 archaeological components have been discovered (MacNeish, 1958: 9 or MacNeish, 1960b: 591 for definition used below). Forty-two of these, for one reason or another, we are unable to classify as to cultural complex. Of the remaining classifiable sites, 62 came from single period sites. Only four of these were

briefly excavated. Eighteen of these single period sites were represented by large samples of artifacts that could be determined as coming from definite soil zones; nine sites with smaller samples came from well determined soil zones while the soil zones of four sites with large samples could not be determined; 27 sites with poor samples and no determinable soil zones were most hesitatingly classified as to cultural complex. Twenty-five components came from five excavated stratified sites and most of these had large samples of artifacts.

The *Gladstone Creek site* (JhVq-1) had artifacts that could be classified as belonging to the Kluane complex in the stratum under one with Gladstone type artifacts that in turn were under a stratum with a few Aishihik artifacts. The *Pelly Farm site* (KfVd-2) had two superimposed floors with artifacts of the Champagne phase under a floor with Little Arm, Gladstone, and Taye Lake complex artifacts, respectively. The *Little Arm site* (JiVs-1) had Little Arm materials under those of Gladstone which were in turn under those of the Taye Lake phase which lay below Bennett Lake remains. The *Canyon Creek site* (JfVg-1) had eleven superimposed floors or soil zones with a few artifacts in each. Some of the top floors seemed to have been of the Aishihik complex while the lowest one might be Gladstone but the others seem to have been Taye Lake. The *Taye Lake site* (JfVb-4) had Taye Lake remains under those of the Bennett Lake phase. About 5,000 artifacts came from these investigations of which about 4,000 came from 64 components of five phases or complexes that seem to have existed before 1500 B.C.

Analysis of the excavations and artifacts has revealed a sequence of seven cultural complexes or phases. The artifact types and complexes will be discussed in detail in the larger monograph. I shall, therefore, briefly mention but some of the salient features of the five earlier ones (of the relevant time period in this article).

The earliest complex, *Kluane,* is represented by only one component (Zone G) of JhVq-1, and only 19 artifacts occurred. However, the Lerma-like points, scraping planes, pebble choppers, split pebble choppers, and crude prismatic blades struck from polyhedral cores are distinctive features. The *Champagne* phase that follows is known from 13 components, only two of which were excavated yielding large samples of artifacts. Distinctive artifacts were Agate Basin-like points, and Pelly points (Mohave-like points) and points made from buffalo-rib bones, split pebble choppers, prismatic blades, end-of-blade scrapers, and keeled end scrapers, gravers, Ft. Liard flake burins, and burins made on artifacts (either projectile points or end scrapers), and buffalo fibula awls. Their economy seems to have been based on big game (buffalo hunting). Following the Champagne complex and represented at 14 components is the *Little Arm* phase. Three of the excavated components netted over 1,200 artifacts.

FIGURE 1 - The Identifiable Components both from survey and stratigraphic excavation in the Southwest Yukon (underline broken considered possible components; solid underline probable components; others pure components)

Phase or complex	STRATIFIED SITES					Excavated probable or pure components	Probable components--determined soil zone	Probable components--no determined soil zone	Possible components associated with soil zones	Possible components not associated with determined soil zones	Pure components	Probable components	Possible components	TOTAL COMPONENTS
	JhVq-1 Gladstone site	KfVd-2 Pelly Farm site	JiVs-1 Little Arm site	JfVg-1 Canyon Creek site	JfVb-4 Taye Lake site									
BENNETT			Level 1-2		Level 1	JhVf-4	JhVf-9 JkUs-1 JbUq-1	JjVi-1 KeVd-1	KjVd-3 JdUi-1	JhVf-3 JbUq-5 JbUq-2	2	6	5	13
AISHIHIK	Zone C			Floor 1 Floor 2 Floor 3			JjVi-3 JiVs-4 JhVf-5 KeVd-2			JaUe-1 JbUr-1		4	6	10
TAYE LAKE		Floor 1	Level 3	Floor 4 Floor 5 Floor 6 Floor 7 Floor 8 Floor 9 Floor 10	Level 2-3	IeSh-1	JiVs-5 JfVb-7 JfVb-5 JfVb-1 JeVc-4 JeVc-2		JeVc-6	KiVc-1 KkVa-1 KfVb-1 KbVa-1 HjKr-1 JcVa-1 JeUj-1	3	10	12	25
GLADSTONE	Zone F3	Floor 2	Level 4	Floor 11?			JgVp-1 JeVc-1	JfVg-3	JjVj-5 JjVi-5	JjVj-3 JhVf-1	2	4	5	11
LITTLE ARM		Floor 3	Level 5			KkVa-2 LaVk-2	JeVi-1 JiVs-2		JjVi-2 JeVg-1	KeVd-3 KaVa-1 KjTx-1 JjVj-2 JhVh-1 JeVc-5	3	3	8	14 3+
CHAMPAGNE		Floor 4 Floor 5					JeVc-3	KfVe-1	JjVj-4 JiVs-4	JhVf-6 KjTx-3 JqVd-1 JfVc-2 JbUq-6 JbUq-4	1	3	9	13
KLUANE	Zone G												1	1
TOTALS	3	5	4	11	2	4	18	4	9	27	11	30	46	87

Some artifacts that continue from the previous horizon are artifact burins, flake burins, split pebble choppers, gravers, keeled end scrapers, prismatic blades, and Agate Basin-like points. However, the Milnesand-like, Plainview-like, and small triangular points with an asymmetrical tang, multi-burins made on flakes, unifacial drills, serrated scrapers or saws, neatly chipped large plano-convex (turtle shell) end scrapers, burins made on microblades, and microblades made from tongue-shaped or conical polyhedral cores are diagnostic of this phase. Another big change from the previous horizon is that the subsistence now seems to have been based as much on lake fishing as on big game hunting and trapping.

This way of life (Northwest Microblade Tradition) and many of the artifacts continue into the next phase called *Gladstone*. This complex of artifacts was found at 11 components. Characteristic of this Gladstone horizon are: netsinkers, chitho scrapers, flat-topped and ovoid end scrapers, spokeshaves, retouched microblades, made not only from the cores mentioned previously but also from tabular cores, uni-barbed bilateral antler fish spears, as well as a number of new projectile point types. These include straight and contracting stem types (Destruction and Morhiss), side notched types with convex (Lockhart) or concave (Besant) bases, corner notched points with convex bases (Anderson), and a small lanceolate type with a concave base (Whitehorse).

Evolving out of the Gladstone phase is the *Taye Lake* phase. Although it starts perhaps as early as 2000 or 3000 B.C., it lasts for a long period of time and the later stages are after anything that can be considered "Early Man." Many of the Taye Lake traits continue from the Gladstone horizon. They include most of the projectile point types, the scrapers, the netsinkers, chitho and microblades. However, there are many differences because the tongue-shaped cores, Agate Basin-like points and most of the burin types are absent. Also, large crude blades outnumber the microblades; and tabular cores; crude bifaces, crude bifacial choppers and large rough plano-convex end scrapers are very prevalent; and half-moon side blades, notched end scrapers, beaver-tooth gouges, straight stemmed points with deep convex bases (Taye Lake points), antler hammers and perhaps ground three-quarter grooved adzes are new unique traits. Further, although the economy is still mainly based on lake fishing, river fishing appears and sites, generally speaking, are larger. The complex was found at 25 components and this is our best represented assemblage.

The final two phases of the southwest Yukon, *Aishihik* and *Bennett*, occurred within the last two thousand years and are not relevant to this paper.

While the chronology of the region is based on good solid stratigraphy, the dating of the sequence is more complicated. In fact too complicated to be dealt with in any detail in this summary statement. The details will be given in the final report on the southwestern Yukon. For the moment let

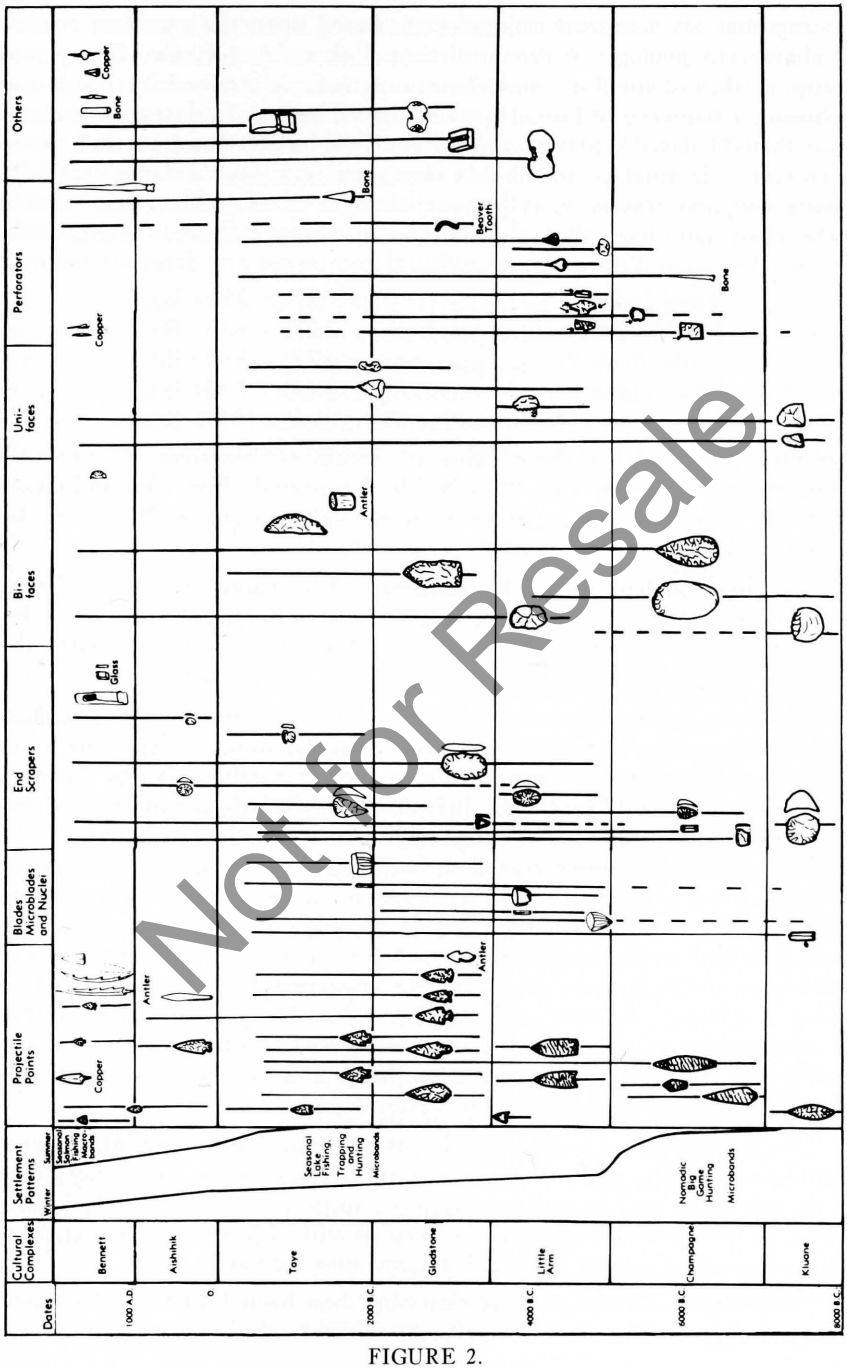


FIGURE 2.

me say that my temporal estimates are based upon the excellent studies of the recent geology of the southwest Yukon by Johnson, Derry and Raup; studies of the floral and climatic periods determined by Raup and Johnson; a sequence of faunal remains; seven carbon-14 dates, cross-dates to carbon-14 dated remains; and series of about 300 obsidian rind measurements. (It must be added that the latter technique although initially giving coherent results is, at present, thought of as yielding less reliable dates than those from the other methods mentioned above.) Tentatively the southwestern Yukon earlier cultural complexes are dated as follows:

Taye Lake	0 to about 2500 B.C.
Gladstone	2500 - 4000 B.C.
Little Arm	4000 - 5300 B.C.
Champagne	5000 - 7000 B.C.
Kluane	before 7000 B.C.

Let me warn you that these dates are tentative; moreover 27 years of experimentation with the "MacNeish Estimated Age Determination Method" reveals it has a tendency to err (plus or minus 10%) on the conservative (too recent) side!

Having touched upon the sequence of cultures in the southwest Yukon let us see if it is not possible to relate them, present their relationships in an understandable manner, and apply this information to the problem of the process of the peopling of the New World.

It is my opinion that the various relationships may be more coherently presented by the use of the concept of tradition. I have made an earlier attempt to do this for the entire area of northern North America at all time periods (MacNeish, 1959a). Here I shall confine my efforts to a consideration of only the early traditions in Northwest America. My previous efforts have been described flatteringly as daring and courageous (Larsen, 1961: 12). Quite frankly, even for a more limited part of the region and a more limited time period the gaps in our sequences are so great, the time estimates based on such flimsy evidence, and most of the cultures so poorly known, that I believe my attempts (at best) should be called "reckless". Be that as it may, if we are to get any clear picture of relationships in the area and any understanding of the process of the peopling of the New World, such hypotheses must be made—even if it is only to stimulate others to create better ones.

In the following pages I shall present the comparison of cultural complexes and the derived traditions in terms of how they may have come into being and how they may have spread. In other words, I shall speculate about the peopling of the New World. Thus having never been accused of treading like an angel, let me rush forward.

The seemingly earliest tradition that has been found in the north is called *British Mountain* (MacNeish, 1959b). It is at present poorly

defined and as yet no component has been excavated in a stratigraphic context that allows one to estimate its (very great?) antiquity with any degree of accuracy. Chemical change in the flint materials at the three Kogruk sites in the Brooks Range (Campbell, 1961a) as well as change in the flint of the British Mountain complex along the Firth River hint that these are the earliest remains in these areas. Obsidian rind determination at a Kogruk site in the Brooks Range, faunal association and stratigraphy at the Engigstciak site (albeit the badly solifluxed part) tend to show a similar picture.

It was unfortunate that the artifacts of this tradition were first recognized at Engigstciak and came from 13 places where there were conditions of complex soil folding and slipping. With further excavation, analysis, and study of the soil problems the definition of the complex, of course, changed (MacNeish, 1956a, Plate 1; MacNeish, 1959a, Plate I). Nevertheless, a recurring complex of artifacts was found not only here but at another single occupation along the Firth River, NhVl-2 (MacNeish, 1959a), at the Kogruk site in the Brooks Range (Campbell, 1961a), and at the Katakturuk River Lookout site on the north slope of the Brooks Range (R. Solecki, personal communication). Thus, in spite of the circumstances in which it was originally found, evidence of its existence elsewhere means it cannot just be dismissed. The recurring complex of traits that define the tradition include: pebble choppers, scraping planes or unifacial choppers, and flakes that were utilized as side scrapers, knives, and spokeshaves with adhering striking platforms that were struck from discoidal cores. These occurred at all components mentioned above. Hooked gravers, blade-like flakes, end-of-blade scrapers, and unifacial projectile points occurred only at Kogruk and along the Firth River while central burins occurred only at Engigstciak. As yet, this complex of traits (or tradition) has not been found near Bering Strait (the so-called Palisades I complex does not have this recurring complex of traits in spite of Giddings claiming a relationship to British Mountain [Giddings, 1961: 159]) but similar artifacts do occur in the Paleolithic of eastern Asia such as at Malta-Buryet (Bonch-Osmolvsky and Gromov, 1936; MacNeish, 1959a: 46), Ordos, and elsewhere (Okladnikov, 1961). Nevertheless it is still too soon in our research to even speculate about how this culture came into being or how it spread in the New World.

It is only when we come to the next tradition called *Cordilleran* that we can do such. This tradition is known from various components at different places in the north but the sample of artifacts from each one is not large. Perhaps the best component is that from the unsolifluxed buffalo pit at Engigstciak which was dug mainly during our second and third seasons of 1956 and 1958. The Flint Creek components from most of the other parts of the Engigstciak site may be mixed due to solifluction and were unearthed during our first season. This, of course, meant a far

better definition of the complex in the second Firth River report (compare MacNeish, 1956: Plate I with MacNeish, 1959a: Plate II). The Kluane complex of the southwest Yukon (see this report) and the material Rainey found at Rampart Rapids (Rainey, 1939: 378), although found under good stratigraphic conditions, are very limited. The material from the Kayuk complex in the Brooks Range is numerous, but the stratigraphic situation poor (Campbell, 1959). The number of artifacts found at the five sites in the survey along the Firth River is small. The materials from the Klondike site near Fort Liard, Northwest Territories are also limited. Farther south, a number of much better components are known. They would include the earlier components from the deeply stratified site excavated by Borden at Fraser Canyon, British Columbia (Borden, 1960), as well as a number of sites from Idaho, Oregon, and Washington such as Lind Coulee (Daugherty, 1956), Five Miles Rapids (Cressman, 1960), Indian Wells (Butler, 1961), and the others. Survey by Leechman in north-central British Columbia hints that this tradition exists in the area between our northern and southern representatives (National Museum of Canada files).

Now let us try to interpret this contextual data concerning the Cordilleran tradition. Because representatives of this tradition occur in northwest mountainous areas and as one of its components is Kayuk in the Brooks Range I would surmise it came into being in the general western Brooks Range area near Bering Strait. I would speculate that this tradition had its origins between 9,000 and 12,000 years ago when glaciers still existed in the mountains, when the vegetation was mainly tundra (with willow and shrubs in the valley flanks) and when the big game of the Pleistocene was still roving the north.

It seems probable that the British Mountain tradition or a descendant thereof was already in the area where a coalescence of traits gave rise to the Cordilleran tradition. This newly developing tradition maintained certain of the older British Mountain elements such as pebble choppers, thick and thin side scrapers, bifacial knife blades, bone awls, spokeshave-like scrapers, end-of-blade scrapers, and perhaps the use of conical polyhedral cores. Gradually fused with these older elements, and in some cases replacing older similar tools were a number of traits brought from Asia such as scale scrapers, lenticular (Lerma) projectile points, slab pebble choppers, pebble pendants, needles, Ft. Liard flake burins and perhaps scraping planes. (I might add that these Asiatic increments seem to occur mainly in the Trans-Baikal area of interior Siberia, so one might suspect that they flowed from this area via the Asiatic Arctic coastal region to Bering Strait [MacNeish, 1959a: 47]). Certain elements such as snub-nosed end scrapers may have been derived from cultures already in existence further south in the New World. The collateral and ripple flaking technique, found seemingly late in the Cordilleran tradition,

may have come from a similar source. The unilateral multi-barbed antler fish spear or leister of the Cordilleran complex may have been a new World invention based upon Asiatic concepts involved in the bilateral multi-barbed fish spears. The Flint Creek multiburins may have been based on concepts in the Asiatic derived flake burins. The narrow antler spatula and antler bi-pointed fish gorge seem to be original New World inventions. All these elements from a variety of sources did, however, coalesce and form a tradition. One might speculate that this tradition was well adapted to semi-glacial mountainous environs (in exactly what manner we do not fully understand). However, camps in such an environment seem to have been established in mountain valleys, on terraces, along the narrows of streams where big game could have crossed, where fish might have been easily caught, and where alder and willow were available.

The distribution of sites in this tradition (with two near Anaktuvuk Pass, nine in the Firth River region, one at Kluane Lake, one near Fort Liard, one at Fraser Canyon, and others in Washington and Oregon) seem to be in the same sort of ecological niche and seem to show the route by which this tradition spread.

In parts of the north following the Cordilleran tradition is the *Northern Plano* tradition, formerly called Yuma (MacNeish, 1959a). In the southwest Yukon, the Champagne phase is a typical representative of the tradition; it is known from 13 components. Elsewhere, there are two components of the Sandy Lake complex in the Simpson-Liard region of the Northwest Territories (MacNeish, 1954: 248-249 and Fig. 68), the Great Bear River component at the west end of Great Bear Lake (MacNeish, 1956a: 73-74 and Plate VI), about 30 sites of the Artillery Lake complex in the Barrenlands of the Northwest Territories (MacNeish, 1951: 33-34; Giddings, 1956a; Harp, 1959, 1961), two components of the Nayuk complex of the Brooks Range (Campbell, 1962b), and perhaps others from central interior Alaska (Rainey, 1940; Skarland and Keim, 1958). Earlier dates for similar materials in the more southerly Plains-Prairie region and the lack of newly derived Asiatic traits suggest it formed in the Great Plains to the south and then spread northward replacing the Cordilleran in parts of the northwest. From the Cordilleran tradition that Northern Plano was replacing in the north or perhaps from a similar culture that had formed in the south it may have acquired the pebble chopper, split pebble chopper, blades, side scrapers, end-of-blade scrapers, snub-nosed end scrapers, Ft. Liard burins and ovoid bifaces. Traits that originated in the south and were an integral part of the tradition are the Agate Basin points, keeled end scrapers, buffalo fibula awls, gravers, bifacial choppers, flake end scrapers, pebble hammerstones, and perhaps Pelly points (often called Mohave points further south). Local adaptations might be the artifact burins, rib-bone projectile points, and perhaps aberrant Agate Basin variety points.

Basically I see the Plano tradition as having a way of life and subsistence adapted to buffalo hunting in a Plains-Prairie environment. It originated in the south perhaps between 5000 to 7000 B.C. as the glaciers were retreating. As the glacier retreated the grasslands (with its faunal assemblage) crept into parts of the north replacing the tundra, willow and alder environment. Also, moving southwest was the Northern Plano tradition which replaced the Cordilleran tradition by migration, amalgamation, and diffusion. In areas such as Fraser Canyon, British Columbia, the Brooks Range, and the Firth River where the new environment did not penetrate, the older Cordilleran tradition may have continued. Except for the diffusion of certain elements like ripple flaking and the Agate Basin points, Plano did not appear to reach Bering Strait and only indirectly affected a developing tradition there which was receiving a steady flow of people and ideas from Asia.

Following the short-lived Northern Plano tradition in Alaska and the southern Yukon (but in part contemporaneous with its representatives to the east) was that tradition called *Northwest Microblade.* In the southwest Yukon there are three stages or phases of this tradition: Little Arm, Gladstone and Taye Lake. These phases are well represented with 14 components for Little Arm, 11 components for Gladstone, and 25 for Taye Lake (MacNeish, 1960a). The earlier stage (like Little Arm) is not well represented in surrounding areas although there are hints of its existence in Central Alaska (Skarland and Giddings, 1948; Johnson, 1946). The second stage (like Gladstone) is more widespread with the Campus site in Central Alaska (Rainey, 1939; Irving, 1955), Tuktu in the Brooks Range (Campbell, 1961a), perhaps Palisades in the Kotzebue region (Giddings, 1961), Pointed Mountain (MacNeish, 1954), and others in the Simpson-Liard region of the Northwest Territories (MacNeish, 1959), and perhaps some sites in British Columbia and southwest Alberta. The final stage (like Taye Lake) is found over an even wider area with Tyone site (Irving, 1957), and others of central Alaska, seven components of the Fisherman's Lake complex in the Simpson-Liard region (MacNeish, 1954), the Natalkuz component of central British Columbia (Borden, 1952), the many components of the Lockhart River in the Northwest Territories (MacNeish, 1951; Harp, 1961), the N.T. Docks complex at the west end of Great Bear Lake (MacNeish, 1956b), and perhaps even some of the microblade sites of southwest British Columbia and Washington State.

Based upon the above archaeological information, I would surmise that perhaps even as the Plano tradition spread into the Northwest, Asiatic traits (or other traits and adaptations) were being acquired at or near Bering Strait. Thus by the beginning of the post-glacial optimum (when the boreal forest was becoming dominant in much of central Alaska and the Yukon) an accumulative cultural process culminated in the establishment of a new tradition—*Northwest Microblade.*

This coalescence probably occurred somewhere in southwest central Alaska at about 5500 B.C. The Northwest Microblade tradition had acquired from the resident or neighboring populations (such as Cordilleran) such traits as conical polyhedral cores and blades, end-of-blade scrapers, pebble choppers, split pebble choppers, split bone awls, Ft. Liard burins, Flint Creek multiburins, side scrapers, and ovoid bifaces. Perhaps a few of the above items came from the Plano complex. Certainly the bifacial chopper, Agate Basin point, fibula awl, flake end scraper, pebble hammer, keeled end scraper, artifact burin, and graver were derived from Plano. The flow across Bering Strait from Asia (and here I suspect ultimately from the north China-Mongolia-Japan general region—see Maringer, 1950; Yoshizaki, 1959) contributed such items as the unifacial drill, the tongue-shaped polyhedral core (of two variants) and microblades, notched microblades, pointed microblades, microblades with rounded ends and microblades with one or two edges retouched, Anaktuvuk microblade burins, spokeshaves and perhaps the asymmetrical tanged small triangular (arrow?) point. More recent manifestations of the Plano complex gave the Milnesand and Plainview points as well as the square based bifacial knife. Invented locally, but based on older concepts were the ovoid, flat-topped and neatly chipped turtle-back end scraper and the serrated side scraper or saw. Original inventions were the chitho and the netsinker (and inferentially the gill net) and perhaps later the netsinker with a chipped end that could be used as an adze or axe.

The *Northwest Microblade* tradition, which had a subsistence based on summer lake fishing and winter hunting and trapping, was somehow well adapted to the boreal forest. The gill net for lake fishing and the adze for tree cutting are examples of forest adapted tools. After its initial stage in the central Yukon it spread into the Anaktuvuk Pass, the Liard and upper Mackenzie valleys, northern British Columbia and perhaps even northwest Alberta. By its final stages it extended as far south as the State of Washington and as far east as the Barrenlands of the Northwest Territories. In both cases it probably was replacing remnants of the Cordilleran and Plano traditions as well as taking on new traits from adjacent areas (such as projectile point types in Lockhart River that may have come from the eastern Archaic).

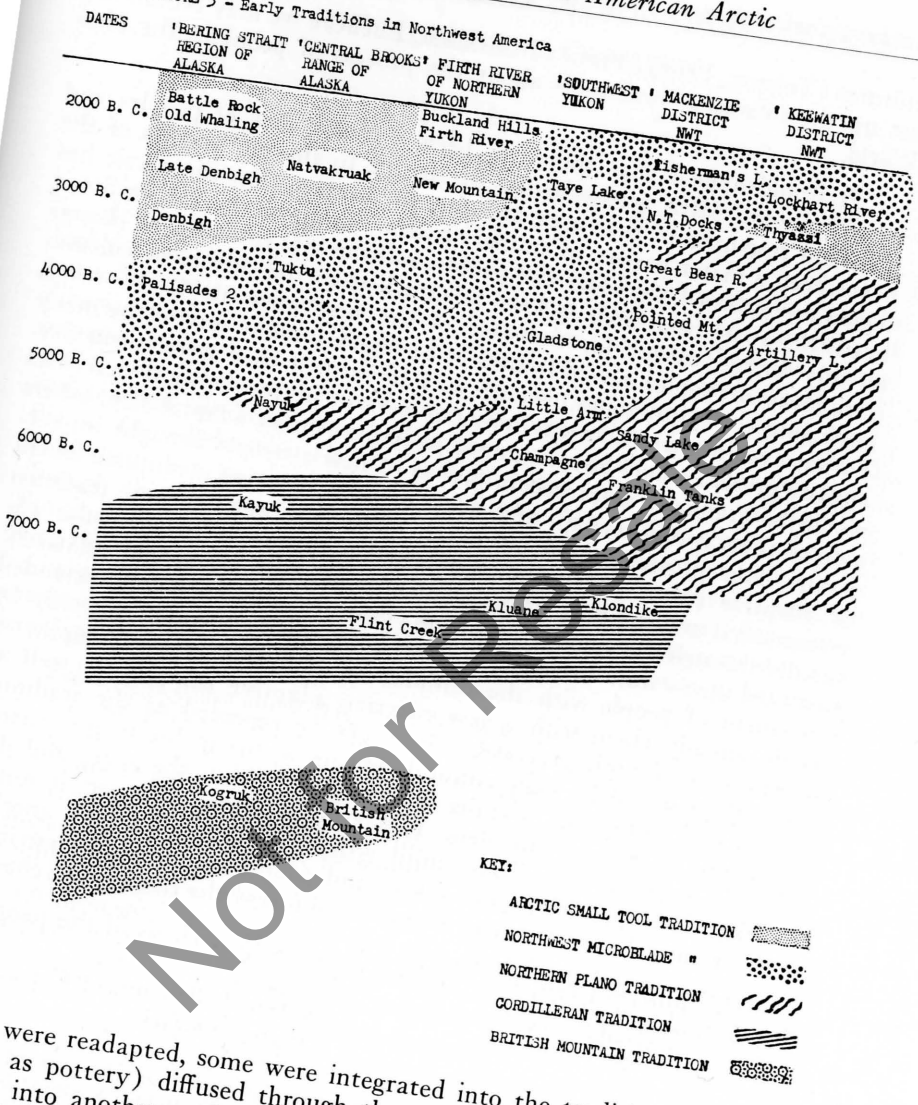
The next tradition that formed in northwest America was the *Arctic Small Tool* tradition (Irving, 1953). Manifestations of this tradition in the Arctic are extremely numerous. These would include over 50 components from the Kotzebue region belonging to the Denbigh, Late Denbigh, Old Whaling or Battle Rocks periods (Giddings, 1957, 1961); the Denbigh site itself from Norton Sound (Giddings, 1951); a number of sites from around Onion Portage in western Alaska (Giddings, 1961); a number of sites reported by Cressman from near the mouth of the Yukon River (Cressman, personal communication); five or six sites from the

Brooks Range, and about 25 from the Firth River area. These examples exclude many sites from north-central Canada, the Canadian archipelago, Ungava and Greenland which are outside of our area of discussion.

I believe the *Arctic Small Tool* tradition came into being at about 4000 B.C. in the tundra region, near Bering Strait on either the American or the Russian side. This tradition acquired from the Northwest Microblade peoples, already in the area, such items as: Ft. Liard flake burins and burins on microblades, microblades made from tongue-shaped or conical polyhedral cores, flat-topped end scrapers, side scrapers, ovoid bifaces, chithos, netsinkers, Agate Basin points, the ripple flaking technique, antler hammers, fish gorges, and sinew stones. This new tradition acquired from Asia (perhaps from interior northeast Siberia from the so-called "Neolithic" culture—see Tolstoy, 1958) such items as: the rectangular side blade, triangular end blades (either as an arrow point or harpoon end blade), lenticular, lanceolate and incipient stemmed arrow points, pointed antler flakers, chipped adzes, antler mattocks and perhaps some sort of semisubterranean house structure. The basic form of the Denbigh type burin was probably derived from Siberia, but it was revamped into a variety of new forms. Many of these various forms reveal that a multitude of spalls were struck from burins; and perhaps the Arctic Small Tool tradition invented the burin spall tool. The cuboid core seems to be a readaptation of either older forms or was derived from the Siberian Neolithic. Half moon side blades, that are so prevalent in the Arctic Small Tool tradition perhaps were their own adaptation of the Asiatic rectangular side blade. The antler arrow seems to be their own invention as well and perhaps the chipped stone drill bit. Two other items must be mentioned even though the evidence for their use as an integral part of the tradition is insufficient. One is the small shallow stone lamp. This may have been an Arctic Small Tool invention but it is strangely lacking in western manifestations of the tradition. The other item is the toggle headed harpoon. Chipped triangular points in the west and toggle harpoons in the east suggest it is a trait of the tradition. If so, this was most certainly acquired from Asiatic cultures of the Pacific coast.

The Arctic Small Tool tradition seems to have been somehow adapted to tundra region within the Arctic drainage. Animal bones and site distributions suggest a subsistence that was basically caribou hunting, while the harpoon, seal bones and coastal site locations suggest this economy was supplemented by exploitation of some of the ocean resources. Its big movement across the Canadian Arctic seems to have started about 2500 B.C. and by 1500 B.C. the tradition was well established in Ungava and Greenland. Again the easterly moving group adapted new traits, while the western ones were receiving a steady flow of items from Asia, such as pottery, bifurcated base antler arrows, semi-subterranean house types, antler spoons, combs, male harpoon types and others. Some of

FIGURE 3 - Early Traditions in Northwest America



these were readapted, some were integrated into the tradition and some (such as pottery) diffused through the culture and were perhaps integrated into another tradition (such as the Eastern Woodland?).

This terminates my speculations about the early peopling of the New World's Northwest. From the above information it seems possible hat a series of American traditions have spread over large areas of North merica in terms of certain ecological zones. Comparison of Old World nd New World traits by Tolstoy and others have revealed that similar aditions do not seem to exist in the Old World although certain elents of each of our New World traditions were derived from Asiatic

cultures (Tolstoy, 1958). From all this data, I believe we may tentatively set up the following hypothesis about the process of peopling the New World.

It would appear that there has been a steady flow of peoples and ideas back and forth across Bering Strait due to the movements of the rich food resources in that area and due to the fact that the Strait has never been a major barrier to animal or man. As far as the Bering Strait region is concerned, the ideas and peoples moving into it needed to change but little, apart from making local adaptations to the culture or cultures already there (except for the case of the first migrants!). However, once ideas or peoples moved from that ecological zone to any of the many impinging ecological zones, changes had to occur if they were to survive. To survive in their new environment certain of the cultural activities already present would be maintained in terms of their adaptability, others would be gradually discarded in favour of new concepts brought in, certain of them would readapt and a few original adaptive inventions would occur. This process would ultimately develop a new cultural tradition or adaptive cultural complex that would be adjusted to particular environmental zones. Then this complex would start to spread relatively rapidly through the whole of the zone (that probably but barely extended eastward up to western Alaska). In this spread there would not only be movement of people with the complex but diffusion of the complex to people already there with a less effective adaptive complex as well as conbinations of both processes. As might be expected as the tradition spread there would be some cultural changes within it due to inventions, cultural drift, adapting of traits from peoples within the zone, and diffusion into or through the zone. Generally speaking, however, it would maintain itself as a tradition, until either it was replaced by another tradition developed in a similar way and adapted to the same environment, or until the environment changed and forced the tradition to change.

This process I call the Adaptive Complex Hypothesis of the peopling of the New World.

National Museum of Canada
Ottawa, Ontario