

Andean Archaeology and Ethnohistory - Anthro 326: Class 6
Peopling of the New World and early occupation

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- There are two common ways of expressing dates in archaeology
 - BP (years before present)
 - actually, years before 1950, so that the meaning does not depend on when the article was published
 - BC/AD (years before or after a conventional date 2006 years ago)
 - exactly the same as BCE/CE, ("Common Era", preferred by some)
 - $BC/AD = 1950 - BP$ (if the result is positive, it is AD; if negative, BC)
 - Watch out as you read; Moseley and others use both, and can easily confuse you
 - People working in very early periods tend to use BP more
 - I will mostly use BC/AD here, to be consistent with dates for later periods
- Dating
 - early dates are often given in "radiocarbon years" before present
 - radiocarbon dating works, but it is not perfectly linear
 - like a watch that runs at roughly the right speed, but has sometimes slightly speeded up, slowed down, even gone backwards a little
 - we can correct for this, based on radiocarbon dates on tree rings
 - these corrected radiocarbon are called "calibrated" dates
 - for the earliest periods we look at today, calibrated dates are roughly 2,500 years older than "radiocarbon year" dates
 - but the discrepancy gets smaller as we get closer to the present
 - I try to use calibrated dates throughout the course
 - I identify dates that are definitely calibrated with "cal", as in "8,000 cal BC"
 - otherwise, I leave off the "cal"; some of these dates may be calibrated, others may not.
- This gives us four (!) kinds of dates
 - Radiocarbon years BP
 - Radiocarbon years BC/AD
 - calibrated years BP
 - calibrated years BC/AD, which is the scale I will use as consistently as possible
 - The handout shows how these four time scales relate
 - you may want to make copies and plot periods, sites, etc. on this to help you organize things in time. I do this often myself.
- Lithic Period
 - dating
 - the period during which the Pleistocene (ice ages) was tapering off
 - specifically: starting from the arrival of the first people...
 - to the stabilization of modern climate and ecological conditions
 - Moseley puts this at "around 5,000 years ago", presumably using radiocarbon years
 - that is about 3,800 cal BC; we can round to 4,000 cal BC
 - many people would say that modern conditions were present considerably before then

- by 5,000 cal BC, or even well before that
 - it was a very gradual transition
- in the earlier part of the Lithic period, up to around 8,000 cal BC, though, climate and ecological change as the Pleistocene ended was more drastic
 - temperatures rose
 - glaciers melted
 - sea level rose, drowning low-lying coastal areas
 - ecological zones moved upwards
 - and northwards in the northern hemisphere, southwards in the southern hemisphere
 - Pleistocene megafauna like mammoths, mastodons, and giant sloths died out
 - at least partially due to the climate and ecology changing
 - maybe also pushed towards extinction by newly-arrived hunters
 - people appeared in the New World and moved into many different ecological zones
- the initial peopling of the New World
 - some of the issues:
 - when did people arrive, both the first ones and any possible later groups?
 - along what routes did they spread through North and South America, why, and how rapidly did they spread?
 - what sort of people were they, that is, how did they live?
 - what was their ecological adaptation:
 - generalized foragers (hunter-gatherers)?
 - specialized big-game hunters?
 - marine specialists, with boats or without?
 - did they settle in year-round camps, move through annual seasonal rounds, or migrate through the nearly empty new territory?
 - what was their social organization like?
 - Very widely accepted that people entered the New World from Siberia, by crossing the Bering Strait
 - debate rages over when this happened
 - was the route along the shore, through an "ice-free corridor" inland, or some other path?
 - by people walking, or using boats? and so on.
 - apparently 3, maybe 4 genetically distinct groups crossed the Bering Strait at different times
 - based on linguistics, dental morphology, DNA
 - only 1 of these groups spread south through Central America into South America, at least in any numbers
 - the “founder effect”
 - principle: a population that grows from a limited number of founders will be different from the source population that the founders came from
 - because any small sample of a population (that is, the founding individuals) will not include all the variants in the source population
 - the descendants of a small group of founders are automatically more homogeneous than the source population

- and any features among the founders that are rare in the source population will be relatively much more common in the founding population
 - say red hair is almost unknown in the source population, but by chance, one of the fifty founders happens to have red hair.
 - Among the descendants, several percent may have red hair.
 - small, individual variations in reproduction can have a huge effect on small founding populations:
 - if the one red-haired person happens to have a lot of kids compared to the others, the descendent population could have a large fraction of redheads
- probably explains some of the physical and cultural similarities in South American populations
- Moseley argues that features found in most descendent cultures in the New World are probably features that were present among the founders
 - So he suggests some likely characteristics of the culture of the first settlers of the New World
 - based on traits that were widespread in ethnographic and archaeological South American cultures
 - dual moiety structure
 - minimal leadership, probably informal, based on kinship and personal ability
 - spears and spearthrowers (*atl-atls*), no bows and arrows yet
 - used flaked stone for projectile points and cutting tools
 - "lithic" means "stone", referring to these tools
 - most of what we find are the stone parts of arrows, spears, knives, etc.
 - but that is just because stone preserves well
 - the many handles, and other wooden parts, completely wooden tools, baskets, skins, etc. will have mostly decayed away
 - textiles made from wild plant fibers by looping, knotting, and twining
 - all very laborious hand work, no weaving yet
 - firemaking with a fire drill
 - people probably spread down the western coastal strip of South America
 - because coastlines offer the most resources
 - fish and shellfish
 - wild plants and animals in the valleys
 - *lomas*: edible plants, birds, deer, wild camelids, land snails
 - relatively easy travel
 - comfortable weather, no harsh cold, rain, snow, etc.
 - while the higher mountains
 - lack the marine and *lomas* resources
 - have more limited range of plants
 - are colder, wetter, and generally harsher as you go up
 - are more mountainous and difficult to travel in
 - lack oxygen at high elevations
 - but some areas have herds of wild camelids that may have attracted hunters

- many of the camps and settlements of this early spread near the coastline are probably now offshore and underwater, flooded as the sea level rose
- Early sites in North America
 - Meadowcroft rock shelter, Pennsylvania
 - earliest levels, disputed by some: c. 13,150 cal BC
 - slightly later levels, very hard to dispute: c. 12,000 cal BC
 - Many sites are known with Clovis style points, generally in the range of 11,250-10,500 cal BC
 - Clovis points are large, and are thought to have been spearpoints for hunting big game
 - You may still hear about the "Clovis first" versus "pre-Clovis" debate
 - "Clovis first" was the view that the first people in the New World were the makers of Clovis points
 - and therefore that the New World was first populated by hunters pursuing Pleistocene megafauna
 - for almost everyone, the evidence of other, earlier settlers is convincing
 - the debate is actually pretty much over, and "pre-Clovis" won
 - so now we don't know whether big game had anything to do with people spreading throughout the New World
 - or whether this was an adaptation that developed only later
 - Bottom line:
 - people were widespread in North America by around 11,000 cal BC (that is, Clovis point users)
 - and some people were here, probably in more limited numbers, one thousand, two thousand, or more years before that
- Earliest reasonably secure site in South America
 - Monte Verde (more details below): c. 12,750 cal BC
 - there is still debate about whether these dates are valid
 - but if they are:
 - this is *earlier* than Clovis sites in North America, which are much closer to the Bering Strait
 - and only a few centuries later than the possible earliest encampment in Meadowcroft rock shelter
 - so the spread of people into North America and all the way down to the southern part of South America must have been pretty fast
 - or we must be missing earlier sites, especially to the north
 - Dillehay suggests that the people at Monte Verde were well adapted to their environment, so their ancestors must have been there for some time, learning about local plants, etc.
 - if so, the first arrivals must have been even earlier
 - how much earlier? How long would foragers take to develop these adaptations?
- Monte Verde
 - apparently the settlement of a small group living on a small creek surrounded by boggy areas, sandy knolls, and cool, damp forest

- the creek flooded and the site was covered with peat, remaining wet up to present
 - what's peat?
 - partly decomposed plant material, like certain mosses, the roots of turf, etc.
 - these wet anaerobic (no oxygen) conditions allowed for incredible preservation
 - but are a nightmare to excavate well
- numerous radiocarbon dates, starting around 12,750 cal BC
 - at a different part of the site, there are also some much earlier dates around 33,000 BP, which few people accept as being associated with humans (I don't)
- wooden-frame tentlike structure
 - 60 feet long
 - big enough for 20-30 people
 - logs and planks laid out in a rectangular pattern, anchored by stakes
 - vertical saplings next to them at meter intervals, tied with junco reed cordage, possibly holding up hides
 - 12 rooms or areas marked off inside in 2 parallel rows, each with a shallow, clay-lined hearth, possibly for light, since they are small for cooking
 - hide flecks in floor suggest hide floor covering [or it is from the walls?]
 - two large hearths outside for cooking
- special building
 - “wishbone-shaped”, separated from others
 - 3 x 4 m platform extends from behind, forming “Y” shape
 - open front, facing a clearing with small hearths
 - hide, burned reeds and seeds
 - medicinal plants
 - chewed leaves
 - around the clearing and structure
 - hearths
 - wood piles
 - tools
 - medicinal plants
 - identified based on use of these plants by the modern Mapuche, the traditional indigenous people in the region
 - bones, including most of the mastodon bones found
 - was this a special-purpose setting?
 - ground soaked with animal fat, mastodon bones
 - suggests butchery, meat preparation
 - medicinal plants suggest preparation of remedies
 - maybe a setting for curing or ritual by shamans?
- artifacts
 - wooden artifacts: stakes, cut logs
 - 3 wooden mortars
 - various flaked stone tools, including 3 hafted scrapers, but not too many
 - lots of pecked, pounded, or ground stone tools

- long points
- sling stones
- grooved bola stones
 - what are those?
- grinding stones
- this emphasis on ground stone over flaked stone is unusual...
- subsistence
 - plants
 - wild potatoes, seeds, fruits, nuts, berries, rhizomes, leafy vegetables, seaweed
 - potato residues in the wood mortars and in indoor storage pits
 - from marshes, forests, and coast
 - plant parts from all seasons are represented
 - meaning that the occupants were there year-round, or at least often during the year
 - thus presumably a permanent settlement, not a temporary camp of mobile foragers
 - plant remains include seaweed and plants that would have grown on the coast and at higher elevations, that is, at some distance from the site
 - suggesting that this was a central base from which people made long gathering trips
 - animal bones
 - including mastodons, small animals
 - hunted or scavenged?
 - even mastodon meat found by the bones!
 - some freshwater shellfish shells
- 3 footprints!
- Dillehay 1997: The Battle of Monte Verde
 - caution: Dillehay uses uncalibrated radiocarbon dates here, roughly 2000 years "younger" than calibrated ones for this era
 - Dillehay summarizes the background of the debate
 - Monte Verde dates to 1,500 years before “Clovis people” supposedly entered North America
 - and supposedly hunted the Pleistocene megafauna to extinction
 - also possible early levels about 30,000 BC!
 - this is effectively a separate site, and few people accept it
- Dillehay's conclusions:
 - people spread through South America earlier than thought, before the Clovis style of point became widespread
 - some early occupants were settled, not mobile
 - the separation of different kinds of debris in different parts of the site suggests that people may have specialized in different activities
 - mastodon hunting and butchery
 - gathering of coastal plants
 - shamanism
 - implying unexpectedly complex division of labor, more complex economic and social arrangements than usually imagined for the earliest foragers on the continent

- Dillehay defends his claims:
 - attributes the controversy to Junius Bird's brief visit before they began much excavation
 - Dillehay defends the integrity of the late occupation
 - and provides other supporting arguments
 - linguistic argument
 - Richard Rogers: need at least 18,000 years to get observed North American language diversity from an assumed single starting language
 - a response: estimating time this way is extremely shaky (why?)
 - dental studies
 - waves of immigration
 - first over 12,000 years ago (10,000+ BC), to southern Chile
 - a later wave brought ancestors of modern Eskimo and Aleuts
 - genetic studies
 - maybe an initial, small immigration
 - then a bigger one around 12,000 - 11,000 BP (10,000 - 9000 BC)
 - Pedra Furada, Brazil, said to be up to 45,000 BP !
 - most people don't buy this one...
- Although Dillehay has won acceptance for Monte Verde from most people in the field, there are still rabid doubters
 - Stuart Fiedel has been especially vocal (a lot of his objections are available on the web)
 - critics point out the appalling number of errors in the "final" Monte Verde report
 - the authors later published over 180 pages of corrections to one volume of the report
 - there are many inconsistencies in the report and the corrections
 - the objections make for detailed, tedious reading
 - the critics' point is, if there are this many problems, can we really trust any of it?
 - could the artifacts come from a later occupation, not really associated with the dated material?
 - could the "site" actually be an accumulation of stuff washed in by the stream?
 - if the recordkeeping was so bad, can we trust the excavators to have correctly interpreted the soils, features, etc. in very difficult conditions?
 - "extraordinary claims require extraordinary evidence"
 - archaeological evidence ultimately depends on trusting the excavators to have understood the site correctly...
- Other generally accepted evidence of people in South America is sparse until around Clovis times, 11,000 cal BC (note that Moseley still uses uncalibrated dates here)
 - it gets pretty complicated (and I am not an expert in these periods)
 - so what follows is simplified and borrows a lot from Moseley
- Monte Verde is an exceptionally well-preserved site; most of the other early evidence is simply stone points and associated other stone tools and flakes
 - "points" may have been projectile points for atlatl darts, arrows, or spears, but some may also have knives or other tools
 - since we don't have the shafts or handles, it can be hard to tell
 - some points have distinctive shapes

- presumably, some groups (ethnicities? language groups? "cultures"?) made certain styles of points, while others made different ones
 - but points may also vary depending on their intended use, or how often they have been resharpened, for other reasons
 - so different styles might be made by a single population
 - maybe even by the same people, but at different places, depending on what they did there
- being stone, points survive to be found
- since they are distinctive and survive, points are important to archaeologists as markers of cultural groups
 - but we probably see lithics as much more significant than did the people at the time
 - and probably much more than a cultural anthropologist would if she or he could go back and visit the people who made them
- if there were groups who were distinguished from each other by, say, their styles of leather hats, we would probably never realize that there were multiple groups, because the hats would not be preserved
- also remember that people who made distinctive, easily identifiable stone points were not necessarily any more important than people who made homely, generic points
 - it is just easier to detect and track the ones who made distinctive points
- Fluted fishtail points
 - apparently used by grasslands hunters
 - apparently hunting horses
 - widespread from the site of El Inga in Ecuador to Fell's cave in southernmost Chile
 - dating: about 11,000-9,000 cal BC
 - 54 dates from 15 sites in Chile, Argentina, and one in Ecuador
 - dates range from 12,600-6,800 cal BC
 - mostly (middle 80%) between 11,200-9,000 cal BC
 - that is, maybe the earliest fishtail point sites are almost as early as Monte Verde
 - but most date to a span of about 2200 years that began 1600 years after Monte Verde
 - were they made by the descendents of people like those at Monte Verde, who later began to use a different kind of stone points?
 - but then, why did people up in Ecuador start making the exact same style of points?
 - or were they made by a second influx of paleoindians with a different culture and/or adaptation?
 - proponents of this view would say that it better explains how a single kind of point would be found over the whole length of the Andes
 - the custom of making fishtail points would have been carried south by the people who made them, leaving fishtail points and/or people who made them all along the route
 - the technique of "fluting" these points is similar to (but not the same as) that used on Clovis points, which were roughly contemporaneous in North America
 - so maybe they were related?
- Paijan Tradition
 - needle-nosed points with tail for mounting in reed shaft

- so fragile they are probably meant for fish
- mostly limited to far north coast of Peru, but some as far south as Ica; all coastal
- but principal sites are presumably under water, due to rising sea level, so we probably have only peripheral inland ones
 - quarries, lithic workshops, temporary camps
- dating: ranges from 10,600-7,900 cal BC
 - this is roughly contemporary with the fishtail point tradition
- in fact, Paijan and fishtail points have been found together
 - in one archaeological excavation, both kinds of points and the flakes from making them, all from the same kind of stone, were laying on the same prehistoric ground surface
 - maybe they were made by the same people, but for different purposes?
 - or two different groups that lived nearby at the same time and happened to use the spot at close but different times?
 - or two different groups that happened to use the same places at very different times, without actually having much or any contact?
- An example site excavated by Moseley: Quirihuac Shelter
- Later, as the millennia pass by, we detect more different, localized stone tool styles
 - presumably meaning different cultural groups with different adaptations
 - groups were staying in set regions more, becoming locally specialized and/or isolated?
- Northwestern tradition
 - no points; stone used only for simple choppers, scrapers, sharp flakes
 - due to scarcity of material in tropical forest
 - must have used wood, bone, etc. instead
 - coastal Ecuador example: Las Vegas culture 9,200-5,500 cal BC
 - based mostly on the site of Las Vegas
 - which also had some earlier "pre-Las Vegas" remains, 10,750-9,700 cal BC
 - 2 m circular houses, mudded cane walls
 - hunted, especially deer, plus fish and shellfish from mangrove swamps
 - several types of burials
 - primary burials of single individuals
 - **primary burial** = burial of a body more or less intact, not too long after death
 - two burials with pairs of adults
 - secondary burials of disarticulated bones that were bundled in some sort of container
 - **secondary burial** = burial of remains that have either been dug up or left out for a long time, so that the burial is usually of parts or bones, not a mostly intact body
 - four pits full of secondary burials of many individuals
 - one had 17 adults and 21 subadults, many apparently placed as wrapped bundles
 - very early evidence for tending of plants:
 - bottle gourd by 9,700 cal BC
 - primitive maize phytoliths by 6,000 cal BC
 - these seem improbably early to some researchers, but who knows?
- a little later, in the upper Zaña valley: Nanchoc, 6,600-5,600 BC

- two long, low, parallel mounds
- rebuilt many times, eventually reaching 32 - 35 m long
- 1.2 - 1.5 m high
- stone faced, with three tiers
- floors separated by fill: repeated rebuilding
- very early ceremonial architecture?
- very early evidence of dual social organization?
- other Zaña valley sites:
 - buried furrows and feeder ditches: later half of Lithic period (ie. somewhere in 6,000-3,000 cal BC)
 - like Las Vegas, implies very early advances in agriculture
 - but presumably still just an adjunct to a mostly foraging adaptation
- Central Andean Tradition
 - a hodge-podge category, including various adaptations and probably various ethnicities, languages, etc.
 - willow leaf points (rounded base, tapered point)
 - different cultures on the coast, sierra, and puna
 - in the high mountain valleys (sierra basins) in central and northern Peru, people were foragers
 - example: Guitarrero cave, in the Callejon de Huaylas (Thomas Lynch)
 - 2,580 masl (~8,400 feet), highlands, but well below the puna
 - main early occupation about 9,500 cal BC
 - generalized animal remains: vizcacha, rabbits, birds, deer, few camelids
 - probably seasonal occupation to exploit nearby grasslands
 - in dry season (April - November)
 - visiting from lower elevation bases
 - i.e. transhumance (seasonal rounds) within the sierra but not reaching up to the puna
 - only one marine shell
 - implies little contact with the coast, only 80 km away
 - that is, the cultural division between coast and highlands may have already been developing
 - in the puna in central Peru, people specialized on hunting, and eventually tending, camelids
 - example site: Pachamachay cave (John Rick)
 - ~11,000 - 8,000 cal BC
 - leaf-shaped, triangular, and shouldered points
 - mobile hunters of camelids and gatherers
 - ~8,000 - 6,000 cal BC
 - similar stone points
 - permanent small population dependent on camelid meat for a large part of the diet
 - for this, they had to manage a permanent wild herd of camelids that lived in the vicinity
 - by limiting human population and managing herd composition
 - "sustainable hunting" of a stable, fixed herd

- probably led to domestication of camelids
- in the south-central highlands, people were transhumant foragers (hunter-gatherers who made seasonal rounds):
 - south of Ayacucho, the puna and sierra are not rich enough to maintain separate foraging groups
 - instead, people were transhumant in a pattern including both the sierra and the puna
 - example site: Asana: a seasonal hunting camp for people who were probably based in the puna, but came down into the upper valleys to hunt
 - maybe starting by 8,500 BC
 - again, marked cultural contrast with coast suggests two distinct groups
- Further south, people were transhumant foragers over an even broader range of elevations:
 - in Chile and Bolivia, the environment gets even drier, and people probably were transhumant in a single large pattern that ran from the coast to the puna...
- Coastal fishing traditions, from central to far south coast
 - generally leaf-shaped points
 - Quebrada Tacahuay: specialized bird-processing site
 - probably coastal people who came a bit inland to hunt birds
 - dates back to 10,700 cal BC
 - Ring Site (Moquegua coast): shell midden, one date back to 9,500 cal BC
 - indicates full-on marine adaptation by this time
 - ring of shell midden, apparently intentionally built
 - but this was done well after the earliest date, ballpark 3,000 BC
 - Chinchorro tradition, ballpark 7,000-1,000 cal BC
 - well-preserved fishing equipment
 - oldest artificially prepared mummies in the world
 - possibly intended to stand upright
 - apparently not immediately buried
 - or possibly exhumed occasionally?
 - concentrated in cemeteries
 - possibly indicates an attempt to legitimize territorial claims?
 - if so, implies that people were beginning to compete for resources and claiming areas for their group
- Summary of Lithic Period events:
 - 13,200 cal BC, maybe earlier: Probable pre-Clovis group(s) crossed Bering Strait, spread thinly around North America, including to Meadowcroft Rockshelter
 - when? by what routes? what were they like?
 - by 12,800 cal BC: Probable pre-Clovis people had spread down the Andes to Monte Verde in Southern Chile
 - 11,300-10,500 cal BC: Clovis points were widespread in North America
 - the first immigrants? descendants of the first immigrants, having developed a new hunting adaptation? a second, more successful wave of immigrants? or...?
 - 11,000-9,000 cal BC: Fluted fishtail points were used from Central America, down the Andes to the southernmost tip of South America

- contemporary with Clovis, lasted a bit later
- a related technology or culture?
- developed by earlier immigrants? or were there really no earlier immigrants? or were they made by members of a second wave of immigrants?
- 10,600-7,900 cal BC: Paijan points were used in limited area along far north coast of Peru, and occasionally down to the central coast of Peru
 - a separate population ("Paijanes"), contemporary with and later than "fluted fishtail point people"?
 - separate immigrants, or a splinter group from early populations?
 - or the same people, simply making Paijan points for fishing near the coast, and fluted fishtail points for inland hunting?
- ~11,000-3,000 cal BC: As time passed, more local variation seems to have developed
 - maybe the ranges that groups could move through freely became more restricted by the presence of others, limiting each group to a certain regions, leading to specializations suited to those regions
 - some examples are discussed above
 - including the first hints of tending plants, building ceremonial mounds, dual social organization, artificial mummification...
 - Moseley's generalizations about these regional traditions:
 - richer, wetter ecological zones to the north allowed groups to live year-round in limited altitude ranges: separate groups on the coast vs. sierra vs. puna
 - Further south, puna and sierra had to be combined ("Altiplano hunter-gatherers") to support people year-round
 - Still further south in Chile, people had to be transhumant from coast to altiplano to get by
 - this is very much a hypothetical model
- Moseley talks about early domestication in this chapter, but we'll start off with it next time