A Brief Discussion of the Faunal and Floral Remains Uncovered at the Evanston Chinatown

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Over the past five summers, extensive excavations have been conducted at the Evanston Chinatown. While the analyses of the faunal and floral remains are preliminary, we are slowly beginning to gain a clearer picture of the dietary patterns of the Chinese immigrants who lived in Evanston. From the historic record, and the faunal and floral material analyzed to date, we can piece together a glimpse into the food resources utilized at Evanston.

To view the excavation area click on the thumbnail:

Historical Background

On the backs of day laborers working for the railroad, the Evanston Chinatown emerged in the period between 1869 and 1873. By 1873, six "Chinamen" lived and worked at Evanston. By 1879, twenty-two men in the Evanston Chinatown had accrued $4,750 in personal property. The wealthiest man, "Mr. Wah Chin" had $750 in personal property, while the poorest man, Ah Yuk, had $50.00. Yet even Ah Yuk had assets.

In fact, he had fourteen hogs valued at $100. Owning a swine herd in a Chinese community was one path to success, as pork made up one of the cornerstones of a Chinese immigrant's diet.

One adjustment the Chinese made was to adapt to the ecological diversity of resources which differed from their homeland. At Evanston, the Bear River, fed by runoff from the Uinta Mountains to the south, provided fresh water and fish. The "Bear" literally flowed around Chinatown. Situated on a bench that jutted out into the river, the north, south, and east sides of town had boundaries marked by water. Chinese boys fished and swam in the river, and men and women alike used the water to wash their clothes. Using bamboo poles with wire nooses, the children in Chinatown added to the food supply by catching fish. Clearly, the Bear River provided several basics of life for the Chinese.

The Evanston Chinatown contained a variety of buildings where foods were either processed or served. Restaurants, grocery stores, and vegetable stands marked the small town. Sign posts, written in Chinese, advertised that cooked chicken and *oysters* were available. The smell of fish and *oysters* mingled with the sounds of fresh vegetables being cut on butcher blocks. In March 1885 a Chinese merchant, Chung Lee, built a "neat new store near the depot" in Evanston, where he proposed to keep a good stock of "spring chickens." Chickens were raised by numerous Chinese residents in Evanston. Through a variety of historical sources, we have begun piecing together the diet of Chinese immigrants in Evanston.

The celebration of Chinese New Year and funeral ceremonies are among two of the most important functions preformed by a Chinese community. The preparations of food for these two events provide valuable insight into nineteenth-century Chinese communities. For example, from the 1881 New Year's celebration at Evanston we gain not only insight into life inside Chinatown, but also an idea of what type of foods Chinese immigrants in Wyoming consumed in the nineteenth century. The residents of the Evanston Chinatown in 1881, "feasted on roasted hogs . . . cakes, tarts and all kinds of cookery. . . ." One of the Chinese New Year's traditions involved placing "roast pigs and bowls of fragrant liquors . . . " inside the Joss House as a gift to the ancestors or the patron deity of Chinatown. The presents of food "are set before Joss as an offering . . . " From the description of a 1867 funeral we know that "pears, nuts, candy, sugar, flour . . . rice, pork steaks, eggs, onions, and a glass of brandy" were prepared as part of the memorial services. In fact, the very cooking of food was said to be enough to appease the departing spirit, and the living often partook of an elaborate banquet prepared for the " *goa* " (ghost). While the historical record provides brief glimpses into the dietary patterns of the Chinese immigrants in Evanston, the faunal record produced during excavation provides some concrete implications about the nature of the foods prepared inside Chinatown.

The Faunal Remains

The dietary choices of Chinese immigrants in Wyoming followed practices learned in southern China. This statement, in many ways, is generally accepted as being the case wherever Chinese immigrants chose to reside in North America. Yet while cooking utensils, manners of preparation and food choices might have continued, the New World brought with it the reality that some food stuffs would either not be readily available, or if available the quantities were limited.

One hundred and forty-nine bones found *in situ* have been analyzed and cataloged. All of these were excavated from one bone concentration. There were three main limitations to the study of this bone bed. First, only bones found *in situ* were cataloged. This possibly eliminated fish and bird fragments which have been found elsewhere at the site. Previous analysis has shown that sea bass, trout, perch, oysters, cuttlefish, as well as domesticated chicken, sage grouse, and turtle are present in the faunal assemblage of the Chinatown. Therefore, primarily mammalian bones are the focus of this effort. Second, there was a tendency for larger bones to have been cataloged due to their time of extraction. During the 1998 excavation some bone was collected in order to uncover larger bone beneath. Bone

that was collected in the earlier part of the excavation has not yet been cataloged, consequently a more detailed analysis has not been performed. Third, many fragments of bone have not been identified beyond certain levels for two reasons; the bone was too fragmentary or the bone was too cut or broken to have identifying landmarks or portions.

The analysis of bone focused on four components; class, taxon, age, and breakage. This was done in order to gather data on meat preferences of the Evanston Chinese community.

By far the largest percentage of identified bone is of the Mammalia Class. This class constitutes 98% of the bone recovered. The other 2% was identified as Aves. Specimens that were identified as mammal, but not designated to the species level, were size classed. For the purposes of this presentation only the three that pertain to these results will be discussed. Size class four consists of mammals between the weight of 5-25 kg, and includes dogs. Size class five designates mammals between the weight of 25-84 kg, and includes pig, sheep and goat. Size class six is the largest size grade and is any mammal more than 84 kg, this class includes horse and cow size mammals.

Based on the historical research a large number of pig bones were expected since traditional Chinese diets include a significant amount of pork. This is also consistent with archaeological reports of Chinese communities dating to the same time period. As anticipated, a significant

percentage of bones in the bed were identified as pig. Fifty-six of the 70 bones that were identified to the species level were pig remains. The remaining 14 bones were cow, which is also consistent with other reports. Sheep remains were anticipated, however, have yet to be concretely classified. Although sheep remains were expected, evidence from most other historic Chinatowns has shown the percentage of consumed sheep to be less than that of pig or cow. There is a great possibility that size class five would include more pigs, sheep, and goat. In fact, protein analysis points out that goat protein was present in the bone bed.

The majority of bone analyzed could not be aged as juvenile or adult, mainly due to being too fragmentary. However, the majority which still had relevant landmarks intact, 53 of 60, were identified as juvenile mammals based on epiphyseal fusion. This age distribution is consistent with other reports of faunal remains that date to this time period, as well as contemporary slaughtering methods.

After species and age preferences were determined, identification of major butchery trends became the next step in looking at the cultural preference of butchering techniques. Major observed classes of bone modification include cleaver cuts, saw cuts, knife cuts and a small number of impact notches. Using the bone modification results, it became necessary to compare and contrast butchering techniques between Euro-Americans and Chinese. Specifically analyzed were the possible differences between the proportions of cleaver cuts, saw cuts, and knife cuts found in the faunal assemblage.

Based on other historic archaeo-faunas, it is clear that cleaver cuts are more prevalent in Chinese assemblages than in Euro-American assemblages. One reason cleavers are used more frequently by the Chinese is directly related to the food cuts. The Chinese tend to divide portions of meat into smaller pieces. Using a cleaver is a more efficient method. The reason portions are smaller is to allow reduced cooking time and increased manageability when using chopsticks. Regarding tool preference, the Chinese prefer the cleaver, whereas Euro-Americans prefer the knife.

Based on tool preference, one would expect to see more cleaver marks than knife marks in this bone assemblage. Indeed, this was the case in the sampled collection. There were only 11 bones which had knife marks, compared to 22 bones which had been cleaver cut.

One way to determine how much meat was consumed is based on minimum number of individual for each species. This is calculated by counting repeated elements of the same size and species. Based on this method this assemblage contained one minimum number of individuals for cow, and the minimum number of individuals for pig was four. Pig identification was based on left tibias. Not only is this number of individuals too small to give a good representation of meat used, but because of the fact that this is an urban historic site other considerations of meat

availability must be examined.

The assumption was initially made that meat was obtained from a local butcher shop, rather than being butchered at this locality. It appears instead this bone bed was the location of *final* food processing and preparation. The

archaeological evidence in support of this claim is the presence of saw cuts, which as mentioned earlier infers a Euro-American influence. Because both pig and cattle represented in this sample also lack a *complete* individual, this suggests that portions, rather than whole animals were brought to this locality for final food processing. If this had been a primary butchering locality, instead of a secondary one, bones not typically consumed for food would be present. However, this was not the case in this collection.

Another way to determine historic dietary patterns, by means of archaeological investigations, is to preform chemical analyses of soils. In the case of this site, soil samples were taken from an outhouse and a food refuse area. Protein residue analysis of the bone bed sediments in and around the bone bed yielded positive results to goat, horse, and bovine antisera. The positive result to horse most likely reflects the presence of horse dung on the street outside the laundry, while the positive result to bovine antiserum most likely represents final butchering remains discarded in this area. Positive results to goat antiserum in both samples may reflect either the presence of goat fecal material in the street or butchering remains discarded. Since proteins are present in urine and feces, positive results are expected in areas where animals are kept or where they frequent.

During the course of analyzing the fill from one feature at the site, specifically an out house located on the south side of the site, additional faunal remains were found. Fish bone and eggshell also suggests that eggs and fish were eaten. The fish bones analyzed were from the salmonide or trout family. Protein residue analyses of sample 283 yielded positive results to human antiserum, reflecting the human fecal material present, and to trout antiserum, reflecting

fish remains discarded in the privy or possibly fish proteins present in the fecal material due to consumption of fish. A positive result to mouse antiserum most likely represents local rodent activity in this area. No parasite eggs were noted, generally associated with such disease as hookworm in humans noted in either of the bone bed samples.

The faunal analysis coupled with the protein residue analysis has aided in our understanding of the site's inhabitants. As we shall see, the faunal analysis coupled with the floral analysis is leading us to more clearly understand how diverse the diet of the Chinese residents in Chinatown actually was.

The Floral Remains

Unquestionably, floral analysis has added to our understanding of how the Chinese residents at Evanston lived. Initially we felt, that the floral analysis would compliment the faunal analysis and give us a more holistic view of food resources used and consumed by Chinese immigrants in

Evanston. Thus, pollen, starch granule, parasite, protein residue, and macro floral analyses were performed on three sediment samples from Evanston Chinatown in 1997 taken within a bone concentration immediately east of the bone bed.

In terms of the general environment, the pollen record indicates little has changed at the site in the last one hundred and thirty years. The pollen analysis conducted in 1997 indicates that the local vegetation present at the late nineteenth century Chinatown resembled that found in the surrounding area today. Specifically, at the site the pollen indicates sagebrush dominated the landscape in the late 1800's.

In regards to the bone concentration certain generalizations can be made based on the 1997 excavations. The pollen record yielded no evidence of plant processing in the bone concentration area sampled. Again, no evidence of parasite eggs was found.

In sum, the macrofloral and pollen analysis in 1997 provided basic insights. Combined pollen and phytolith analysis of a sediment sample from Evanston Chinatown indicate that the local vegetation was very similar to that of the surrounding area today and was dominated by sagebrush. The pollen record yielded no evidence of plant processing in the area sampled.

The analysis for 1998 was more complete. Pollen and starch analysis of sample 283 from the privy deposits yielded evidence suggesting that commercial flour, a member of the mint family, currants, strawberries, a member of the Prunus group, and grapes were consumed. In the late nineteenth and early twentieth century prunes, currants, raisins and strawberries could be readily purchased in the grocery stores. The macrofloral record from the privy contained an abundance of uncharred seeds and seed fragments indicating that several types of fruits and vegetables were eaten, including squash/pumpkin, fig, strawberry, olive, a member or members of the Rubus group such as raspberries and/or blackberry, grapes, peppers, tomatoes, possibly hawthorn berries, and possibly eggplant. Again all of these food sources could either be purchased from a grocery store or purchased locally.

Summary

Based on the faunal and floral analysis conducted to this point, we can draw some brief inferences about the Chinatown in Evanston and offer a few

recommendations for the future.

To aid the analysis of the bone bed, future excavations will be performed on surrounding units to the east. Past excavations have been conducted to the west, and these faunal remains will be analyzed. By incorporating the relevant data, a better understanding of this bone bed will be achieved. In addition to faunal remains present in the sampled assemblage, faunal analysis and interpretation of the remains covering the rest of the site are needed to give an accurate depiction of Chinese meat preferences.

The section on faunal material presented here focused on the remains from one bone concentration. This assemblage has reflected results which are consistent with archaeological evidence from other historic Chinatowns. First, the species with the highest number of bones was pig. Second, butchering marks indicated a Chinese cultural preference of cleaver over knife for tool choice. Third, this locality was used for final food preparation, rather than the primary division of meat cuts.

The cereals consumed included wheat, (Triticum), oats, (Avena sativa), barley (Hordeum vulgare), and rye (Secale cereale). Meanwhile, a diverse variety of fruit and vegetables that included: carrots, mints, currants, gooseberries, strawberries, cherries,

plums, grapes found their way into the diet of the areas residents. Add to this egg plant and peppers and it can be seen that the diet on the nineteenth and early twentieth century inhabitants

was diverse and relatively nutritious. The goal of our future endeavors is to expand our understanding of this diet through carefully quantifying and analyzing what we find in order to more fully present the lives of nineteenth century Chinese immigrants in Wyoming.

For a copy of the sources cited write to: dgardner@wwcc.cc.wy.us