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## McCown Archaeobotany Laboratory Reports

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Maize Project Progress Report (Part 1)

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#36

Maize Project Progress Report #1  
October 13, 1994

## Archaeological Maize

We are still in the process of pulling maize from the Tiwanaku samples. So far approximately 207 capsules have been pulled, of which 94 were kernels and 113 were cupules (45% and 55% respectively).

Of the capsules pulled, however, only 100 were found to be measurable (ie 48%).

The cupules are disproportionately more measurable than the kernels : 70% of the measurable capsules were cupules, 30% kernels. In the unmeasurable sample, 40% were cupules and 60% were kernels. Or to look at it another way, 62% of the cupules pulled were measurable, where only 32% of the kernels pulled were measurable.

This may pose an important difference in interpretation, because of the possibility (and in my opinion likelihood) that whether a kernel survives fairly intact (ie is measurable) is directly related to the variety of corn it represents : I think it is quite possible that the smallerkerneled, harder varieties (like Confite Puneño and Altiplano) may survive to measured better than the larger, lower valley floury types like Huilcaparu or Checchi. This is something that we can address experimentally when we burn our modern comparatives.

There are approximately 104 capsules left to pull : 42 of kernels and 62 of cupules (40% and 60% respectively). If the previous trend keeps up, this would represent 38 capsules of measurable cupules and 13 capsules of measurable kernels. Each capsule most commonly has one or two measurable item contained in it, but in quite rare cases a few particularly dense samples may contain up to 10-15 measurable items per capsule. So our total sample size from Tiwanaku *mismo* is likely to be around 100-200 cupules and 50-75 kernels, which is a little low.

There are a couple possible ways to address this problem. First, I could redefine what I mean by "measurable" to include more broken kernel and cob fragments, either by estimation of the bits missing, or simply measurement of fewer variables. The latter would cause problems in the stat analysis down the road, because many analytical procedures won't accept absent data.

The other possible route is to include in the sample maize from the valley sites near-ish to Tiwanaku which date to Tiwanaku times. I have not scanned Juan and Jim's book to see which/how many sites that might be, but it is sure to increase our sample size at least somewhat. And I feel fairly comfortable that the people at Kk'araña, for example, weren't living that differently from their counterparts in other valley sites. This is problematic, however.

## Modern Maize

In looking through the modern maize we have collected from Chiripa, Pocobaya and San Pedro, I have (very) tentatively identified 8 varieties. I am basing my tentative id's on the Races of Maize in Bolivia book by Ramirez, et al. I will need to look more at the other Races of Maize books (ie especially Peru and Chile) and also particularly at the varieties we have in our own comparative collection (mostly Peruvian varieties). But given that the varieties collected were specifically those which were locally grown and said to be *indigena*, it is likely that they represent Bolivia varieties.

From Chiripa, located in the high altiplano on the shores of Titicaca we have :

*cf* Confite Puneño

*cf* Altiplano

From Pocobaya in the Yungas north of La Paz we have :

*cf* Huilcaparu

*cf* Cuzco-Huilcaparu

*cf* Cuzco Boliviano

*cf* Kulli

plus 2 other varieties

From San Pedro in the lower valleys in the Norte de Potosí we have:

*cf* Checchi

Kcello

*cf* Chake Sara

*cf* Kulli

In addition, from the Museum we have a number of varieties collected from the Urubamba Valley in Cuzco in the late 1940's. Archaeologically, we have from the museum maize from a cemetery in Northern Chile, maize from Amy Oakland-Rodman's sites in Chile, and some other museum maize from further up the Peruvian coast.

It should be noted that some Bolivian varieties, particularly (and obviously) Cuzco Boliviano and Cuzco-Huilcaparu may well represent varieties introduced by the Inka to Bolivia. Ramirez et al report that Cuzco varieties are highly prized by lowland farmers, and that new seed stock is even today brought directly from Cuzco. It would be extremely helpful to have archaeological maize from lowland Bolivia from the Middle Horizon, or really any time pre-Inka. Maybe Clark Erickson's stuff from the Beni? Do we know anyone digging in Cochabamba? We should think about this.

### Next Steps

(not necessarily in any order)

1. Continue measuring cupules and kernels.
2. Redouble efforts on getting more comparative stuff. Letters to :  
Gudrun in Santa Cruz  
Klaus & Vanessa in Cochabamba  
Clark Erickson??  
Heidi, or any other of the Contisuyu bunch??  
Jane Buikstra?  
others?????
3. Seek John Rowe's permission to burn some of the museum stuff.
4. Check with Amy Oakland-Rodman re: burning her samples.
5. I have written to Bob re: the bunsen burners and haven't heard back. Next step is to try to call him to follow up.
6. Become more familiar with the varieties we have already and those in the various Races of Maize books.
7. Look over Sissel's notes in your file cabinet to get a better sense of how they went about various things, especially the statistical analyses.
8. Read read read stuff about maize!