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Inca-Caranqui, Ecuador (Z2-F2-03) organic samples
Sept. 2011,
Christine Hastorf, UCB McCown Archaeobotanical Laboratory Report #71
For Tamara Bray, Department of Anthropology, Wayne State University, Detroit
Michigan 48202

Five organic samples and five ceramic sherds with residue were sent to my archaeobotanical laboratory by Tamara Bray, excavated from the highland site of Inca-Caranqui.

The ceramics went to Melanie Miller to process for stable isotope analysis. The laboratory here at UC Berkeley has been undergoing a series of renovations and cannot run the samples this academic year. Christine Hastorf looked at the 5 organic samples. I am assuming that these samples were not systematically collected in a standard amount of sediment, and thus I am only weighing the samples not the matrix that they came in.

Here is the brief overview of the organic samples:

Overall these samples are quite dirty, that is covered with sediment. This makes the surface hard to see. Nevertheless, it is the general shape of the seed, not the detail of the testa surface that makes these identifiable.

1. TU 20, L8 (80-90 cm below datum)- This sample contained 5 maize charred kernel fragments, only endosperm portions are included. The specimens all were hotly burned in that their inner anatomy is clinkered, that is not intact but vetrified (melted). Total Weight: .247 gms.
2. TU 29, L8 (85-95 cm below datum) This sample contained 1 maize charred kernel fragment – only endosperm and testa; thoroughly and evenly charred, Weight .0415 gms.
3. TU 74, L8 66 cm below datum Fused maize kernels, some of these fusions are quite large including up to 5 or 6 kernels up to 15 mm long in clump, suggesting a more stable environment post deposition. Weight of kernels 9.7756 gms, 116 count, but the sizes range widely.
4. TU 76, L8 (79 cm below datum) Fused maize kernels- all fragmented there are no complete kernels in this sample, mainly testas fused together, total mz weight 2.57 gms, 67 fragments; and wood, thin fragments as if a stalk broke. 20 pieces all seemingly from the same piece of wood, weight .2735 gms. Dra. Sonia Archila of Universidad de los Andes, Bogota, took a look and says that it is a hard wood, ie not maize stalks or conifers.
5. TU 20 L9, Fea 6, 2 Maize kernel fragments weight .0639 gms and 3 cob fragments weight .0421 gms. The whole sample is highly burned, in that it is

clinkered in many places. On one kernel however you can see a nice sample of kernel testa. The remainder of the sample is sediment and not analyzed.

All of these five samples seem to contain the same thing, fused wet maize (*Zea mays*) kernels. The situation of the fused charred maize kernels suggests that these kernels were charred when they were wet, and or resided in a wet environment throughout their taphonomic life in the archaeological record. I saw few embryos, that is the genetic material and much more dense than the endosperm the food for the young plant being rich in starch, and also the source of cornstarch. These attachment-more dense seed ends seemed to have been destroyed in the wetting, charring. I have seen some in a clump of fused kernels. In soups, stews and chicha it is usual to use the whole kernel, so these losses reflect taphonomy. Chicha beer production often begins with the kernel sprouting so that might be why we have so few in these samples.

Five sherds: were sent with an interest in studying their residues. This cannot be completed at Berkeley this year.

1. TU20, 50-70 cm bd (n=2)
2. TU22, L4 (n=1)
3. TU25, L5 (n=1)
4. TU41, L3 (n=1)
5. TU55, L5 (n=2)