“No I’m not making cocaine”

The challenges of archaeological conservation in northern highland Ecuador

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WAAC Annual Meeting, Austin, TX
Oct. 19, 2011
Pre-ceramic 9000-1550 BC
La Chimba 700 BC – 1 AD
Early Intermediate 1 – 700 AD
Late Intermediate/Early Cayambe 700 – 1250 AD
Late Cayambe 1250 – 1505 AD
Inka Period 1505-1534 AD
Spanish Conquest 1534 AD

At lower elevations than Inkan (below 3000m)
Many later sites characterized by mounds, often flat topped, with ramps
Construction is of blocks made of local volcanic soil called cangahua
Function not clear
At higher elevations than local ones (above 3200m)
- Construction made of quarried stone
- Contain Inkan structures, such as *ushnus*, and Inkan ceramics and bola stones
Local ceramics
Inkan ceramics
Red slipped aríbalo-hybrid?
Metals

http://it.wikipedia.org/wiki/Chalcochima
Solvents are not available in Ecuador—heavily regulated and restricted—Need a permit
Can only find 70% isopropyl alcohol, paint thinner sold at hardware stores, and nail polish remover that contains water
Found a few paint strippers but none listed ingredients.
Solvents restricted due to drug trade
Acetone used in the manufacture of cocaine-drying and purifying process
Several other chemicals used in the processing restricted in Andean countries where cocaine is made
Pre-made B72 tubes & acrysol

- Project had some HMG B72 adhesive
- Brought some tubes of B72 in acetone
- Brought Acrysol WS-24 for consolidation
poly (2-ethyl-2-oxazoline)
Soluble in a range of solvents, including water and isopropyl alcohol
Comes in a range of molecular weights, so perhaps high MW one, the 500, could be used to reconstruct ceramics?
Aquazol is very hygroscopic

+ humidity =
Aquazol Humidity Tests
61% RH-50 starts to get tacky

65% RH-50 dissolving; 200 tacky

70% RH-200 slightly dissolving; 500 tacky

75% RH-all tacky; 50 and 200 had solubilized
Butvar B-98 and ethanol

http://preparation.paleo.amnh.org/47/adhesives-and-consolidants
| B-98 in 70% isopropyl alcohol (did not entirely dissolve) | B-98 in alcohol passed from the molecular sieve (dissolved but appeared cloudy-alcohol was cloudy after filtering) | B-98 dissolved in ethanol-90% ethanol, 5% isopropyl alcohol, 5% methanol (dissolved) |
Possible to use a relatively pure drinking alcohol, like Everclear which comes as 190 proof (or 95.6% alcohol) as a substitute for ethanol

In Ecuador, alcohol commercially available was 40% (80 proof)

Illegal to purchase in California, and several other states, only sell 150 proof (75% alcohol)
Will Butvar B98 dissolve in “Everclear”?
Texas sells Everclear 190 proof!
Not Allowed

❌ Alcoholic beverages with more than 70% alcohol by volume (more than 140 Proof) including 95% grain alcohol and 151-proof rum.

http://www.faa.gov/about/office_org/headquarters_offices/ash/ash_programs/hazmat/media/MaterialsCarriedByPassengersAndCrew.pdf

http://www.fireresearch.com/frcnews/archives/185
Animal Glue

Image: http://en.wikipedia.org/wiki/Animal_glue
Allowed

☑ Toilet or medicinal articles that are hazardous materials such as rubbing alcohol, flammable perfume and colognes, nail polish and remover, and aerosols (hairspray, shaving cream, etc.).
Sam Connell, Chad Gifford and Ana Lucia Gonzalez (PAP project directors)
Conservators at the INPC
PAP team members
Colleagues who participated in this discussion on the OSG-L
Twins Liquors for supplying the Everclear 190 proof and Molly Gleeson for picking it up for me
All of you for sticking through to the last day of the conference and listening to this on a Saturday morning.