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TITLE: Pollen Analysis, Site LA 9152  
Preliminary Report

(Aneth HWS)

Twelve sediment samples were received and processed for palynological analysis from Site LA 9152. The two from Feature 6 were unproductive, as were the lower three samples from the stratigraphic profile in Feature 5. Except for sample 9152-5-25, which was tabulated on the basis of a 100-grain base count, the others were quite polleniferous, and yielded the usual 200-grain base count without difficulty.

The surface sample (9152-00-8) is probably not truly representative of the modern pollen rain of the site area, because of the heavy disturbance of the site in recent years. This conclusion seems borne out in the pollen spectrum, which evidences more arboreal pollen (AP) than is expectable under the modern condition of barren ground, and some pollen of 2ea--which is probably from a prehistoric horizon.

and prehistoric samples, that of significantly greater amounts of juniper pollen in the former, may or may not be a significant matter.

The AP frequencies of the prehistoric samples, never more than 25.0%, are typical of the prairie of an ecological niche below the savanna border. Significantly greater frequencies of pine pollen at the 1.25 and

0.50 meter levels, however, are indicative of movements of the savanna border closer to and further from the site during the period of time encompassed by the sample series.

The trash midden character of the sediments is aptly reflected in the high frequencies of Zea pollen which occur. The variation in frequency of maize pollen which occurs through time, however, is in all probability not a function of maize production at the site. More likely, this variation is a statistical accident arising through accidental vagaries of sampling a trash deposit. Similarly, wide variations in maize pollen frequency are observed on single time horizons in other sites.

The record of Sarcobatus in the prehistoric samples indicates near presence of this plant, but the high frequency may be due to a number of factors. This plant is highly adapted to saline soils; so, in addition to development along the river below the site, it may have invaded the midden area. Whiting notes many uses of this plant by the modern Hopi, including digging sticks, rabbit sticks and kiva fuel, and it is not improbable that some of the Sarcobatus pollen represents use of the wood, with consequent disposal of the waste sticks, leaves and flowers on the midden.

Dating by the use of the pollen record alone is a very poor technique as yet, open to criticism from many directions. Especially is this the case where midden sediments are involved, since as the growth of the midden is neither constant nor consistent, the sediment samples--even assuming the midden is not mixed--do not represent known discrete time units. Ignoring these admonitions, in an attempt to extract the utmost use from these data, however, I have compared the results of this pollen study with those from the Navajo Reservoir and Navajo Irrigation Districts. If these samples form a legitimate time sequence, they compare quite well with those of one specific

time horizon in the other areas.

Between AD 800 and 1000, there seem to have been a series of minor movements of the savanna border up and down the elevational gradient in many areas, such as the ones that seem represented at LA 9152. Cross-dating would yield dates of between AD 825 and 900 for the series from the midden. These dates may be slightly off, but the cross-dating would indicate that the midden was in use before 850 and stayed in use at least to 900. Such dating accords well with the cross-dating of ceramics obtained from the midden.