

Ethnobotanical Frequency Variation for
the Pre-Inca and Inca Periods
at the Site of Hatunmarca

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Introduction

The Inca imperial conquest had a far reaching impact on local societies throughout what was to become their empire. The Inca conquest differed in one respect from other defeats the regional populations had suffered, the Incas had an interest in retaining control of and re-organizing their conquered territories. A major policy instigated by the Inca for the reorganization of the newly dominated regional societies was the relocation of a substantial portion of its new subjects. This meant aggregating the dispersed rural population and resettling the larger population centers from the defensive hilltops down to smaller and more vulnerable settlements in the valleys. This would not only have reduced the possibility for rebellion, but also opened up the valleys for intensive cultivation, helping to satisfy the economic needs in other regions of the empire (Rowe 1946:269-270). The agricultural surplus created through intensification was vital to supporting the large number of non-food producing craft specialists, bureaucrats, and military personnel needed for the maintenance of the empire.

It has been well documented throughout the literature that in order to obtain an adequate supply of the products they needed, the Inca state granted itself total control over the productive resources in the empire. By doing so they were merely extending and elaborating on a relationship that

already existed between the population and their elites (Wachtel 1977:62; Murra 1980 [1956]). In order for the Inca state to realize its economic goals, cooperation from the subjugated population was essential. Incentives such as increased security would have facilitated the process of change. However, this economic reorganization undoubtedly greatly impacted the local subsistence economy as it was made to accommodate the priorities of the Inca ruling state.

Historical accounts, such as that of Cieza de Leon (1862 [1551]), contain valuable insights into social and political structure during the Inca period. But the extent of control the Inca had over a population's staple food crops is not found in these accounts. Archaeological data can be used can help elucidate the control the ruling Inca state had on any particular local subsistence economy.

Research Outline

The nature and extent of Inca influence on production and consumption of food crops is what I tried to document through my research which focused on the site of Hatunmarca, located in the Peruvian central highlands. I began an analysis of the frequencies of ethnobotanical remains on this site, attempting to distinguish any change between the period immediately preceding that of Inca domination (hereafter known as Huanca II) to the period of actual Inca influence and control (Huanca III). An analysis was done of the relative frequencies of the different types of food remains

in the samples from Hatunmarca to see if they would reflect the increased availability of preferred crops (especially maize), for both commoners and the elite, assuming the increased security and accessibility of the valleys where maize grows well. The relative frequencies were compared of both domesticated plant foods (tubers, maize, certain legumes) and undomesticated plant foods such as trifolium, ~~domesticated~~ quinoa, and scirpus, to see how their numbers differed from Huanca II to Huanca III, and generally to discover any major changes in dietary pattern that could be interpreted from the data between the pre-Inca and post-Inca periods.

The Upper Mantaro Valley, in which the site of Hatunmarca is located, was conquered by the Incas about A.D. 1460, and was essential to the Incas for movement of troops and for grain production (D'Altroy and Earle 1985:192). Hatunmarca was a major center with an elevation of about 3700 meters (Earle et al 1985:49). This site was chosen for study because of distinct features that set it apart from the sites surrounding it. Hatunmarca is the only site in the nearby area that was continuously occupied during the periods Huanca I, II, and III. This settlement was not emptied of people as others were, but was allowed to remain inhabited. Also intriguing about the site is that it is comprised of two knolls, suggesting perhaps the existence of a moiety or a type of societal division. Elite as well as commoner sectors were built on the tops of both knolls. Hatunmarca is also one of the best excavated sites in the area, making data from

a number of contexts available for study.

While focusing solely on midden contexts for purposes of uniformity and project scope, I had originally hoped to compare data of botanical frequencies from both the North and South knolls. But there is a large disparity in the number of midden samples available for analysis (seventy five from the South knoll and only nine from the North knoll), and analysis of this data would not have centered on my main research question, which concerned change through time. Out of curiosity, and for purposes of future study, data from the site was separated by knoll can be found in Appendix B.

A decision was then made to analyze and compare the data on the basis of elite and commoner contexts. But this too proved difficult due to the small number (3) of available Huanca II commoner samples. This severely limited the comparability of the data from that period, as well as the comparison of commoner with elite. For the other status-period contexts, the total number of samples used from the Huanca II elite context was twenty three, from Huanca III commoner, seven, and from Huanca III elite context, fifty-one, making up the largest part of the total midden samples. Complete frequency tables from all proveniences analyzed can be found in Appendix A. The following discussion and interpretation is based solely on this data.

H II C 3
H II - E = 23
H III C = 7
H III E = 51

Although a great variety of food crops would have been available through cultivation and trade to the people who lived at Hatunmarca, the following discussion centers on

charred botanical remains which came from the floatation samples taken from midden contexts.

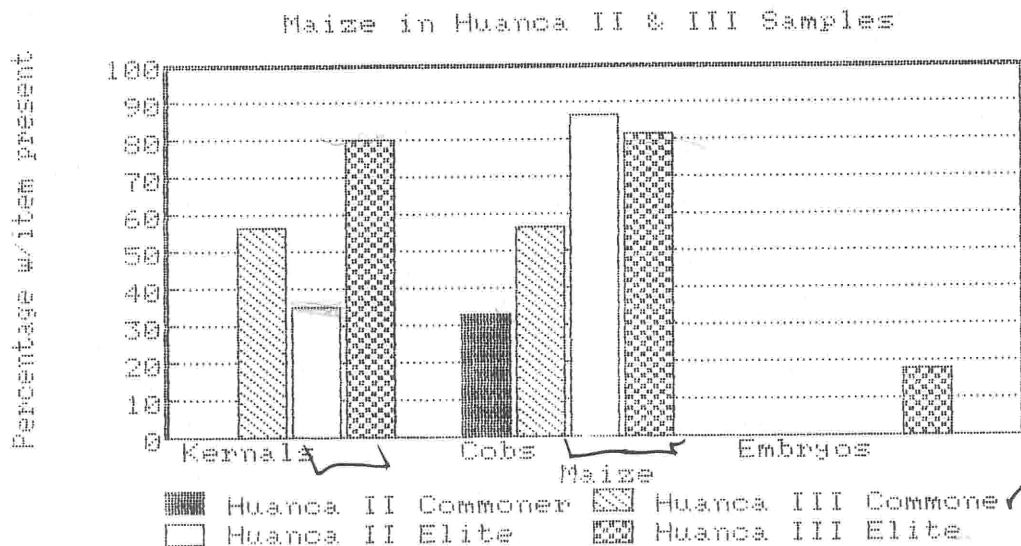
A major assumption made between analysis of the data and interpretation of it was that a certain percentage of food would become charred during the cooking process, and be thrown in the midden, and that this percentage would reflect not the amount of food eaten, but its relative importance in the diet. The analysis presented here was done simply on a present/absent basis. The relative frequency figure came from dividing the number of samples (from any of the four period/status contexts) with the given item by the total number of samples in that context. Thus a figure is obtained that can be expressed as a percentage of the total sample (or sample context) with any given item present.

Maize (Zea mays L.)

Maize is the dominant type of plant crop from Huanca III elite and commoner contexts, comprising the majority of the crop remains that were recovered from middens. Maize was also found in the Huanca II elite context, though only one cupule was found in the Huanca II commoner context. Maize, for purposes of this study, was broken down into two separate and distinct categories, one consisting of whole kernels and kernel fragments, representing a source of food, and the other whole cobs, cupules, and cob fragments, which could be taken to represent not only waste from food remains, but an exhausted fuel source as well.

In the commoner samples, no kernals or fragments were found in Huanca II commoner samples, although 57% of Huanca III commoner samples contained edible maize products, more ^{than?} than the percentage of Huanca II elites containing maize. Even given the small number of samples available for study for ^{both} Huanca II ^{III} commoner, the commoners in the Huanca III experienced a significant influx of maize into their diet.

The relative frequency of fragmented and whole maize kernals in Huanca II elite is .35, or as is shown in the chart below, maize kernals are present in 35% of the samples. In Huanca III the relative frequency is 80, a very sharp rise. Clearly the availability and consumption of maize has increased enormously for the elites.



It is evident from this data that the overall

availability and consumption of maize from Huanca II to Huanca III increased dramatically in both elite and commoner contexts. This increase may be attributed in part to the shift in settlement of the population to lower elevations below 3550 meters where maize yields ^{was} well (Earle et al. 1985). But, because the settlement of Hatunmarca was not moved to a lower elevation, other factors ~~as well~~ must also account for this evidence showing the increase in the production and consumption of maize. Any explanation would include factors such as a pressure to use agricultural land to grow the preferred crop of the dominant Inca, and a greater overall accessibility to the lower zones, created by a greater sense of security due to the military presence and protection of the Inca. *Increased trade? Mono? Change in preference?*

Maize cobs, which represent a remnant of a food crop, were also a source of fuel. Whole or fragmented cobs were found in every period and status context, but in varying frequencies. Only one small cupule was found in the Huanca II commoner samples, giving a somewhat deceptive relative frequency of .33. ^(N=3) In a larger number of samples for Huanca III commoner the relative frequency of presence is .57. ^(N=7) For Huanca II and III elite the percentage stays amazingly close, ^(N=) figuring at 87% for Huanca II and ^(N=) 82% for Huanca III.

The relative cob frequency for commoners again shows this dramatic increase in the use of maize from Huanca II and III. The cob frequencies by themselves show in the elite context a continued reliance on maize as a source of fuel,

as the percentage of samples containing cobs remains more or less the same. This would seem to indicate that although maize consumption had risen due to increased availability, the practice of burning cobs for fuel remained the same. Excess cobs were probably stored until needed, thus turning up in a relatively consistent amount of samples as the data shows. This evident in the elite context, but it is not so clear in the commoner context, due to the scarcity of data available at this time.

Examining the ratios of kernels to cobs in each of the contexts also yields some interesting results and raises some interesting questions. Making any assumptions about use of maize in the Huanca II commoner context on the basis of one cupule in the three samples is a little hard, but in Huanca II elite the relative frequency for kernels is .35 and for cobs .87, indicating many more cobs than kernels were ending up in the midden. This may indicate that maize was a valuable commodity in Huanca II times, and more care was taken so that less of it became charred during cooking, thus having less end up as garbage. We can see ^{the} that rational behind this statement by looking at maize in the Huanca III context. Here, both kernels and cobs were present in 57% of the samples, showing that a larger percentage of kernels were ending up in the middens samples. Similar ratios are found in Huanca III elite as well with kernels found in 80% and cobs found in 82% of the samples. The total numbers of samples represented are 7 and 51 respectively, but the ratios

remain almost the same for each. I feel that this can be taken to represent that maize kernels, through increasing availability, had decreased in overall value so that carelessness was becoming a factor increasing the likelihood of preservation, due to more maize being deposited in the middens.

An interesting statement we could come back to this - perception change later

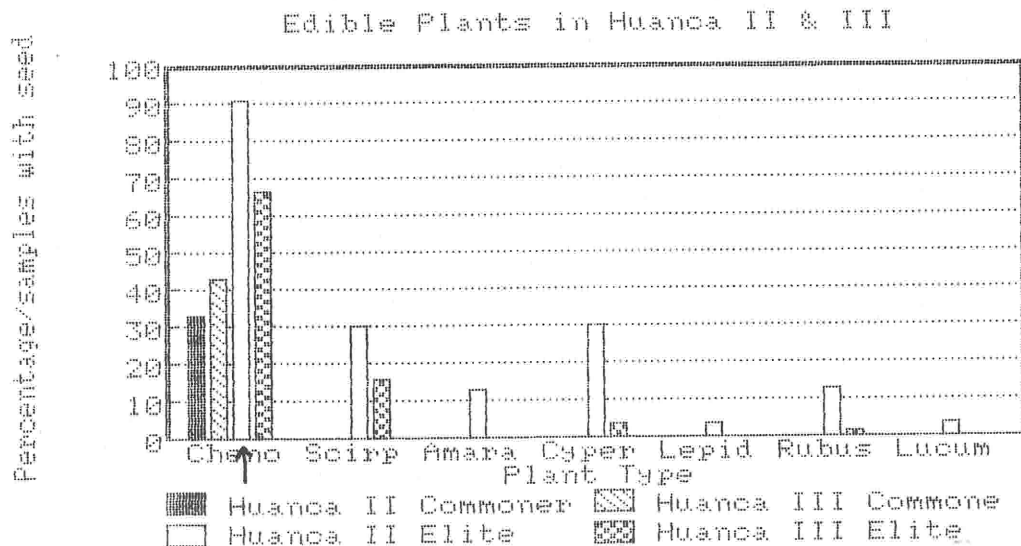
The presence of separated maize embryos may perhaps be taken to indicate that maize was being used in a different context than that strictly of a staple food. Chicha, an alcoholic beverage made from fermented corn is found throughout the Andes. Chicha is often made in a ritual context, often associated as an activity of the elite. The presence of maize embryos ^{might} can be interpreted to signify chicha production. The only maize embryos found in middens on Hatunmarca until now are in the Huanca III elite context, where they were found to be present in 18% of the samples. This indicates that on Hatunmarca, chicha making was confined to the elites during the Inca period. *abit strong, but suggestive*

Seeds

A wide variety of seeds were found in the midden samples from Hatunmarca, although Ethenopodium was the only type of seed found in any commoner sample. For the purposes of discussion here, the seeds were separated into categories of food and/or medicinal value and seeds that may be found in either a functional or ritual context. This was done to facilitate the explanation of what I see happening in the

Huanca II and III periods.

Examining first the plants that probably were used as a source of food during the Huanca period at Hatunmarca, some interesting relationships appear. The seeds representing the edible plants contained in the samples included chenopodium, Scirpus, amaranthus, Cyperaceae and Lepidium. Umbelliferae, Polygonum, Euphorbia and Plantago were also present in the midden samples, and have not only documented value as food, but may also have medicinal value as well. Fruit seeds found were Rubus, a type of blackberry, and lucuma, a rare fruit grown mainly on the coast ^{or jungle}. The graph below shows their relative frequencies in each context and in relation to each other.



Chenopodium was found in all contexts, both elite and

commoner, Huanca II and III, and had the highest relative frequency of all the seeds. This may have been another crop besides maize that was cultivated by the Huancas for its food value. In the Huanca II commoner context the relative frequency for chenopodium appears as .33, in one third of the samples, but this figure may easily be too high or low. The percentage of samples containing chenopodium is high (91%) for Huanca II elite, indicating the importance of chenopodium in the diet of the elite of that period. Little can be said about the differences that existed between the commoners and elite concerning chenopodium as part of their total food intake, but it will be interesting to see any further data might indicate.

It is interesting to note that the relative frequency of chenopodium goes up in the commoner context for Huanca II and III and goes down in the elite context, pointing out that the relative importance of chenopodium in the diet is going down for elites and up for commoners. This may be reflecting the greater value and prestige given to a diet rich in maize, very evident in the elite context. Due to the frequency of chenopodium in the samples though, it continued to be a valuable and exploited food source.

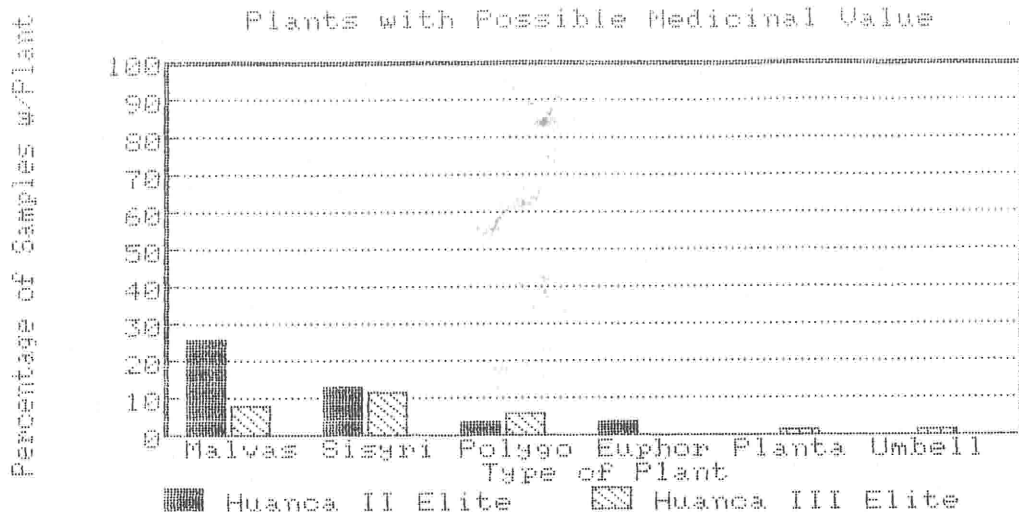
The other seeds from edible plants in the sample were found solely in the elite context. These come from a variety of ecological zones. Scirpus, amaranthus, cyperaceae, lepidium, polygonum, euphorbia, plantago, and umbelliferae all have either roots, seeds, stalks or leaves that are

reference.

edible, and all of these were found in the midden samples from Hatunmarca. It is not known if any of these plants were cultivated by the Huancas. If polygonum, euphorbia, umbelliferae and plantago are excluded from this grouping, due to their possible use from medicinal purposes, a general decrease in relative frequency of these seeds is seen from Huanca II to Huanca III.

This seemingly lack of diversity of wild and gathered food remains found in the elite middens from Huanca III is not due to a small number of available samples, nor would it be caused by restricted access to adjacent environmental zones or trade goods. The explanation for this again may be found in the increased frequency of maize in the diet of the elites during the Huanca III period, perhaps diminishing in importance the value of the uncultivated food plants. Status was probably a key factor in the decreased importance of these plants as a source of food. But it must be stressed that they did not disappear from the elite diet completely, as rubus, scirpus, cyperaceae were found in the Huanca III context.

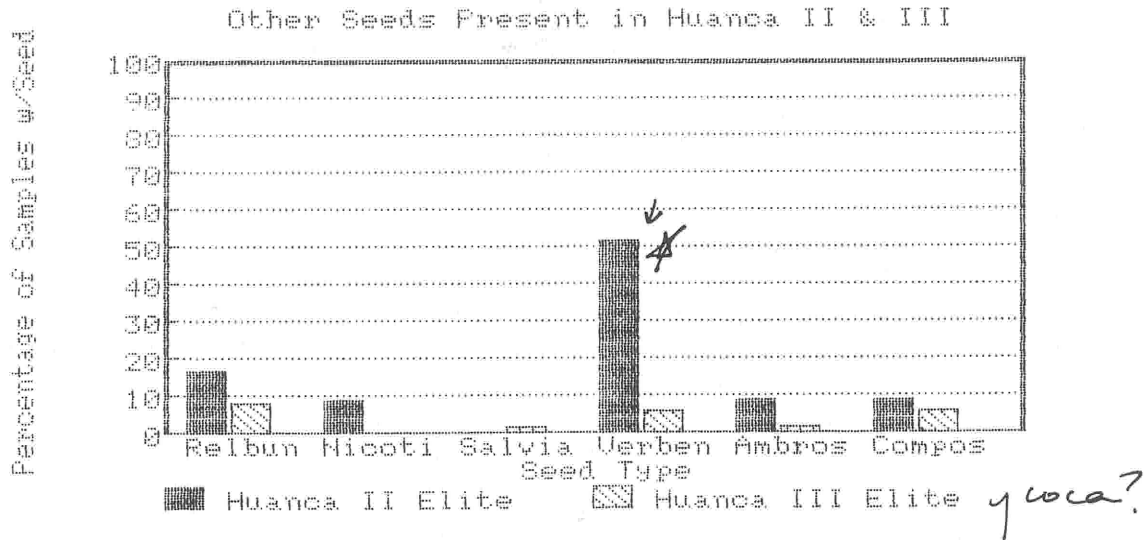
The relative frequencies for plants with possible medicinal value are somewhat more difficult to interpret. Again, seeds were only found within the elite context.



These included malvastrum, sisyrichium, polygonum, euphorbia, plantago, and umbelliferae. Umbelliferae was used by the Inca for medicinal purposes. ^{(ry) discussion} The changing frequencies may be best interpreted at this stage of research as changing practices and preferences that occurred through time. There is a question of the chance that the seeds of plants used for this purpose would have for preservation. Burning of the seed is necessary for preservation and so it is logical that unless purposely burned, plants used for medicinal purposes have much less chance of being preserved. One must ask ^{the} ~~white~~ review ^{of} ~~the~~ ^{data} how likely it is that these plant would become charred in some manner. ?

The seeds placed in the functional and ritual category must be considered in the same light. In this group are relbunium, a seed from a plant that produces a red dye, nicotiana, which may have ritual as well as medicinal

significance, salvia, a spice and ornamental flower greatly prized by the Inca, and verben^{medicinal}a, whose use is not clear, as well as the ambrosia seed and the ubiquitous composite seed.



Relbunium, nicotiana, verben and ambrosia all continue with the trend of decreasing relative frequency and variety from Huanca II to Huanca III in the elite context. This may be attributed to the decreasing variety of activity on ^{or more} specialization Hatunmarca during Huanca III, but more likely is due to the different factors that determined preservation that will be discussed later. Salvia, plantago and umbelliferae were the only seeds found in a strictly Huanca III elite context. The composite seed is perhaps a good gauge to measure equity in the samples of Huanca II and III. It was found in 9% of Huanca II samples and in 6% of Huanca III samples.

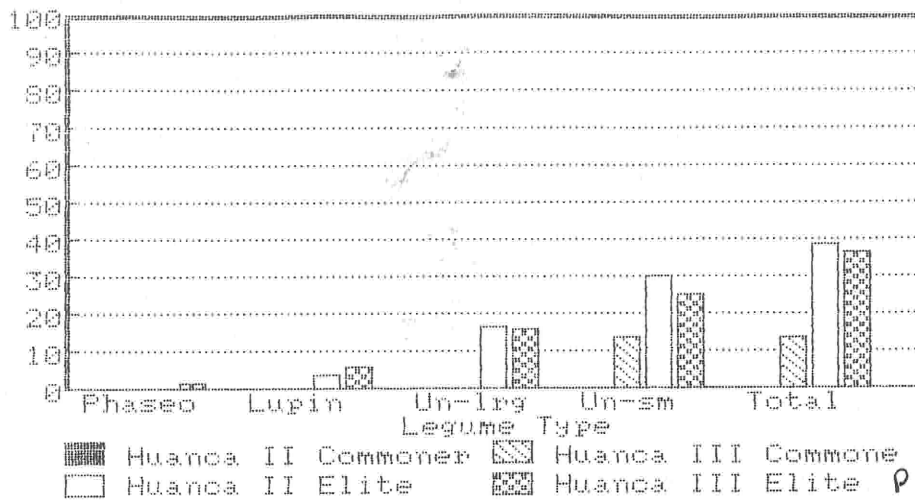
Unidentified seeds do not appear on the graph, but their relative frequency reflects as well the range of diversity that exists among the samples. In Huanca II commoner their relative frequency was .33, in Huanca III commoner .14, in Huanca II elite .61 and in Huanca III elite .29. This highlights Huanca II ~~elite~~ as a period showing perhaps the greatest diversity in plant use.

Legumes

Legumes were found in Huanca III commoner, Huanca II and III elite contexts. Types that have been identified are Phaseolus vulgaris, and Lupinus mutabilis, both domesticates. Unidentified types were separated into two groups, large and small, large being associated with the domesticates, and small representing undomesticated legumes. The percentage of samples with legumes (both identified and unidentified) were tallied for a relative frequency for the total number of samples.

Percentage of Samples w/Legume

Legumes In Huanca II and III Samples



= not part of diet - a field volunteer.

Small legumes were found in every context but Huanca II commoner. For the Huanca elite, their relative frequency went down from .30 in Huanca II to .25 for Huanca III, indicating a slight decrease in consumption, but maintaining their place in the diet. Large legumes were also found to be present at an almost consistent rate in the elite context from Huanca II to Huanca III (.39/.37), thus indicating that they remained an important part of the diet as well.

It is interesting to compare the frequencies of the large unidentified (domesticated) legumes with the frequencies of the small unidentified (undomesticated) legumes. Small undomesticates are present in more samples than large legumes, perhaps indicating a greater relative importance in the elite diet in Huanca II and remaining a steady part of their diet in Huanca III.

This is reflected as well in the overall trend evident

in the totals from the different contexts. The only legumes found in the commoner context were in Huanca III samples, and these included only small undomesticated legumes, perhaps indicating that commoners had less access to cultivated legumes. This sharp increase from 0 to 14% for Huanca II and III commoner may be deceiving, again due to the lack of data available at this time for Huanca II commoner context. But it is evident from the existing data that legumes remained at a relatively constant level in the diet of the elites in Huanca II and III.

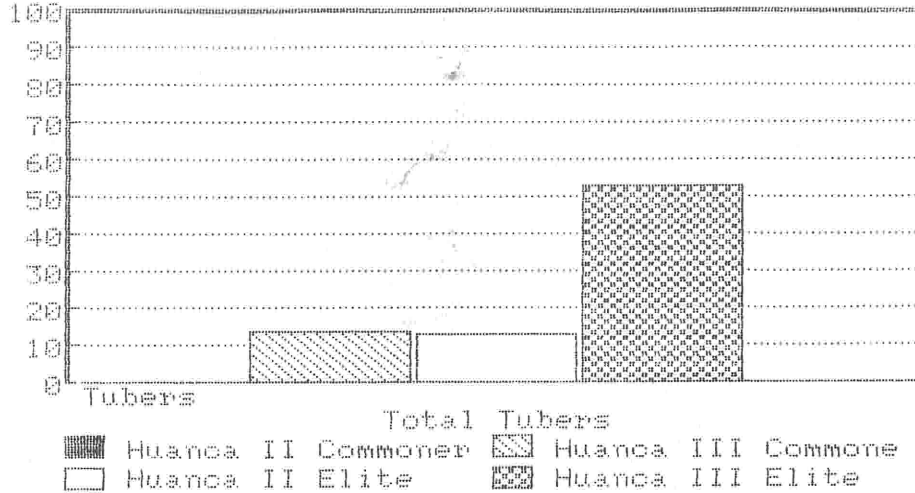
preservation
problems

Tubers

Tubers were absent in Huanca II commoner context, but were found in all other contexts. For analysis, the use of specific identifications were attempted, such as Solanum tuberosum, Oxalis tuberosa or Ullucus tuberosus but analysis proved difficult, due to the small amount of tubers that have been identified to species ^{level} thus far. Relative frequencies of tubers identified thus far can be found in Appendix A. For purposes of discussion here, tubers were lumped into a single group. Their frequencies can be seen in the table below.

Percentage of Samples w/Tubers

Presence of Tubers in Huanca II and III



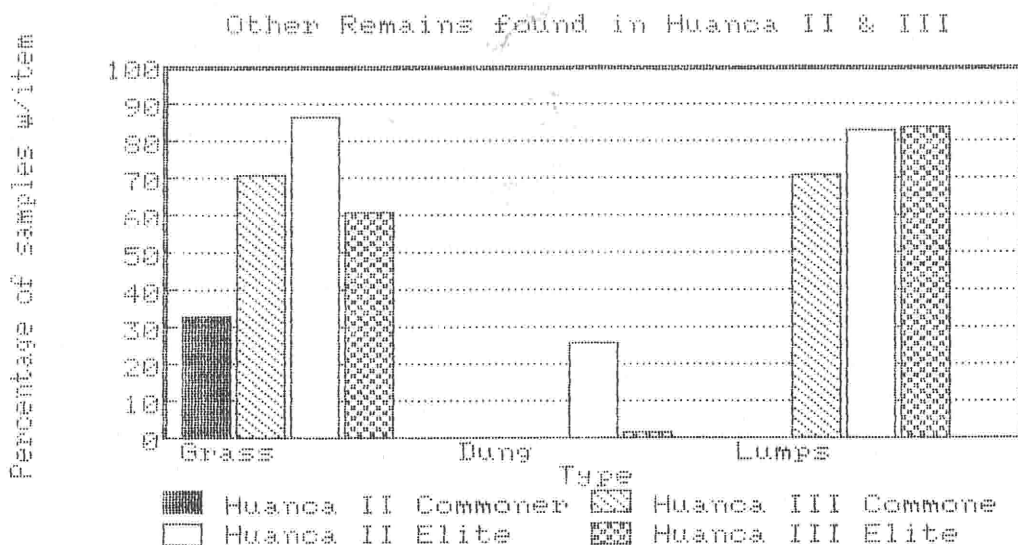
The relative frequency of tubers present in the samples increases from Huanca II to Huanca III 14% for commoners, and 40% for elites, showing a substantial increase in the relative importance of tubers in the diet of the Huanca III peoples. An explanation for this can be found in the fact that more effort was being expended for maize agriculture during Huanca III, and this may have extended to tubers as well. Tubers may have been a preferred crop of the elites in Huanca II, and as ^{w/ increased} accessibility to agricultural lands by elites to increased in Huanca III, so did consumption, as with maize.

2/or - more processing/cooking of crops.

Other Types of Remains

Other types of charred remains frequently found in the midden samples were grass (seeds and stalk), dung, and lumps (plant material so severely charred that all identifying characteristics are lost). Their relative

frequencies are found in the chart below.



Grass seeds were found in all of the contexts examined. Grass was undoubtedly used for a variety of purposes, but the one that shall be examined here is the possible use of grass as tinder, since this is how it is best likely to end up burned, and thus be preserved. With this assumption in mind, the use of grass as tinder showed an increase for commoners from Huanca II to III, and a decrease for elites. This may be explained by the increased availability to wood (due in part to increased access to adjacent environmental zones) and increased abundance of maize cobs, which may have also functioned as tinder.

pyiz/wood/dung

Charred dung was found in the elite contexts, decreasing 24% from Huanca II to Huanca III. Assuming again that

charred dung indicates use as fuel, this represents a decrease in the overall importance of dung as a source of fuel in Huanca III, due again perhaps to the increased availability of maize and wood.

Lumps were found to be present at a fairly consistent level in Huanca II elite, and in Huanca III commoner and elite. The three samples examined from Huanca II commoner contained no lumps. the relative frequency of lumps found in the samples for the different contexts were similar. In each context and almost equal percentage of samples contained plant remains that were burned beyond recognition.

It is clear that the ethnobotanical data exhibits change through time, which presents a strong case for a change in subsistence base from Huanca II to Huanca III. It is difficult at this stage of the research to talk about definitive changes in the commoner diet, but clearer statements can be made about changes that took place in the elite context. These changes included a greater reliance on maize and tubers, a decrease in importance of gathered foods, such as scirpus, cyperaceae and lepidium. and legumes, both domesticated and undomesticated remained at a consistent level of importance in the diet of the elites. The overall trend from Huanca II to Huanca III that is evident from the data presented here is increase in the frequency and density of certain types of plant remains (see tables in Appendix A). At the same time analysis shows a decreasing overall variability in the midden samples, indicating an increased

dependence on a limited crop mix.

Notes on Preservation

The many variables involved in the preservation of the plant remains undoubtedly would greatly effect the contents of the sample. These would include many cultural and natural factors such as cooking methods (which plays a part in the amount of a type of food remain preserved), rodent activity (which may mix and destroy part of a sample), as well as overall differential preservation from one area to the next. The exact manner in which these factors have influenced the data and also its interpretation is difficult to say.

On aspect of preservation I do wish to discuss here is location of middens on the site. Hatunmarca is a large site, and contains many middens located on different areas of the patios. The mean density of plant remains for each midden was calculated and it was found that the middens with the highest density of remains per sample (J2=3-55, J2=5-53) were located against a wall between two circular structures. This would have decreased the likelihood of crushing, and aided overall preservation. One other midden (J2=1-55) had a high density of botanical remains as well, but was situated between two structures in what appears to have been a walkway to the central plaza area. Location alone then is not completely responsible for good preservation of plant remains in an archaeological context. The initial density of deposit may have been a key factor in the outstanding preservation of

this particular midden.

The comparability of the data presented to other neighboring sites was examined by calculating the relative frequencies for limited number of samples from these sites as well. The results can be found in Appendix C. From Huanca II, 39 midden contexts were compared, 20 from J7=2, and 19 from J2=3. Maize kernals appeared in almost equal percentage (30/37), whereas the frequency of cobs varied by 79% (10/89). J2=3 contained both a greater variety and amount of seeds. Legumes (40/53) and tubers (30/32) had similar relative frequencies.

For Huanca III, nine samples were compared, four from J54=7, and five from J2=5. Maize kernals again show up in an almost equal percentage in the samples (75/80), and cobs had a high relative frequency as well (75/100). Seeds occur more often in J2=5, perhaps due to good preservation. Legumes have roughly the same frequency (50/60), but in the case of tubers a large discrepancy was found, with every sample in J2=5 contained tubers, and none of the J54=7 samples containing any.

The data from the different sites was compared with the data from Hatunmarca to check for accuracy of the resulting relative frequencies of the plant remains. This comparison of preliminary data does show that both similarities and differences do exist on an intersite basis, and that different frequencies are not due entirely to differential preservation, as similarities in frequencies can be found.

An interpretation can be placed on the data then, based on the fluctuation in relative frequencies of staple plant foods through time. Frequencies will not indicate the amount of food eaten, but a statement about the relative importance of a type of food in the diet can be made, as Guilay concluded in his article on dietary reconstruction at Fort Ligonier (1977:131).

what about production $\frac{1}{2}$ or processing

Analysis so far has yielded interesting results. This research has shed some light on the extent and nature of control exercised by a dominant state over a population's resources. This is only a preliminary analysis, and the blanket interpretations presented here are based on limited analysis of a small amount of data and are far from complete. Determining the essential features of Inca control requires more research and application of more sophisticated statistical methods. This study has been useful perhaps to suggest what results may be obtained when the data is more thoroughly and systematically analyzed.

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Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	-----Zea Mays-----			
	Kernals	Kernal Frags	Kernals & Frags	Cupules
HII C				
2=4-52-1-2-1/1				
2=4-52-2-3-3/5				1
2=4-53-1-2-1/1				
Total HII Commoner Counts	0	0	0	1
Total Number HIIC Samples	3	3	3	3
Total # Samples w/item	0	0	0	1
Rel. Frequency in HII C	0.00	0.00	0.00	0.33
HIII C				
2=2-52-1-2-2/2				2
2=2-52-1-3-1/3		1	1	1
2=2-54-1-2-1/1				
2=2-54-1-3-1/5	1		1	1
2=2-54-2-3-1/8		1	1	
2=2-55-1-2-1/2				
2=2-55-2-2-1/1		1	1	1
Total HIII C Counts	1	3	4	5
Total # HIII C Samples	7	7	7	7
Total # Samples w/item	1	3	4	4
Rel. Frequency in HIII C	0.14	0.43	0.57	0.57
HII E				
2=3-52-1-10-1/16				2
2=3-52-1-8-1/11	13		13	18
2=3-52-1-8-1/14				4
2=3-52-1-9-1/15				6
2=3-52-2-11-1/59		6	6	9
2=3-52-2-10-1/51	4		4	18
2=3-52-2-11-1/58				1
2=3-52-2-11-1/57		4	4	6
2=3-52-2-11-1/56				6
2=3-52-2-9-1/48				5
2=3-52-3-10-16/54				3
2=3-52-3-10-1/52	1	1	2	3
2=3-52-3-9-1/48		4	4	13
2=3-52-3-11-1/60				5
2=3-52-3-11-16/61		1	1	15
2=3-52-4 11 16				

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Zea Mays			
	Cobs	Cob Frags	Total Cobs & Cupules	Embryos
HII C				
2=4-52-1-2-1/1				
2=4-52-2 3 3/5			1	
2=4-53-1-2-1/1				
Total HII Commoner Counts	0	0	1	0
Total Number HIIC Samples	3	3	3	3
Total # Samples w/item	0	0	1	0
Rel. Frequency in HII C	0.00	0.00	0.33	0.00
HIII C				
2=2-52-1-2-2/2			2	
2=2-52-1-3-1/3			1	
2=2-54-1-2-1/1				
2=2-54-1-3-1/5			1	
2=2-54-2-3-1/8				
2=2-55-1-2-1/2				
2=2-55-2-2-1/1			1	
Total HIII C Counts	0	0	5	0
Total # HIII C Samples	7	7	7	7
Total # Samples w/item	0	0	4	0
Rel. Frequency in HIII C	0.00	0.00	0.57	0.00
HII E				
2=3-52-1-10-1/16		2	4	
2=3-52-1-8-1/11			18	
2=3-52-1-8-1/14			4	
2=3-52-1-9-1/15			6	
2=3-52-2-11-1/59			9	
2=3-52-2-10-1/51			18	
2=3-52-2-11-1/58		1	2	
2=3-52-2-11-1/57			6	
2=3-52-2-11-1/56			6	
2=3-52-2-9-1/48			5	
2=3-52-3-10-16/54			3	
2=3-52-3-10 1/52			3	
2=3-52-3-9-1/48			13	
2=3-52-3-11 1/60		2	7	
2=3-52-3-11 16/61			15	
2=3-52-4-11 16				

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	-Zea M- Stalk	Cheno	Scir	Seeds Sisy	Trit	Verb
HII C						
2=4-52-1-2-1/1						
2=4-52-2-3-3/5		6				
2=4-53-1-2-1/1						
Total HII Commoner Counts	0	6	0	0	0	0
Total Number HIIC Samples	3	3	3	3	3	3
Total # Samples w/item	0	1	0	0	0	0
Rel. Frequency in HII C	0.00	0.33	0.00	0.00	0.00	0.00
HIII C						
2=2-52-1-2-2/2		5				
2=2-52-1-3-1/3		3				
2=2-54-1-2-1/1						
2=2-54-1-3-1/5		4				
2=2-54-2-3-1/8						
2=2-55-1-2-1/2						
2=2-55-2-2-1/1						
Total HIII C Counts	0	12	0	0	0	0
Total # HIII C Samples	7	7	7	7	7	7
Total # Samples w/item	0	3	0	0	0	0
Rel. Frequency in HIII C	0.00	0.43	0.00	0.00	0.00	0.00
HII E						
2=3-52-1-10-1/16		30				4
2=3-52-1-8-1/11		19		1		1
2=3-52-1-8-1/14		16				
2=3-52-1-9-1/15		5				1
2=3-52-2-11-1/59		98		1		34
2=3-52-2-10-1/51		29				1
2=3-52-2-11-1/58		13				1
2=3-52-2-11-1/57		16	1			7
2=3-52-2-11-1/56		13				
2=3-52-2-9-1/48		23	1			
2=3-52-3-10-16/54		16				
2=3-52-3-10-1/52		22				1
2=3-52-3-9-1/48		9				
2=3-52-3-11-1/60		22	2	3	1	1
2=3-52-3-11-16/61		26	5			3
2=3-52-4-11-16						

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Seeds					
	Poly	Malv	Relb	Lepi	Cyper	Lucu
HII C						
2=4-52-1-2-1/1						
2=4-52-2-3-3/5						
2=4-53-1-2-1/1						
Total HII Commoner Counts	0	0	0	0	0	0
Total Number HIIC Samples	3	3	3	3	3	3
Total # Samples w/item	0	0	0	0	0	0
Rel. Frequency in HII C	0.00	0.00	0.00	0.00	0.00	0.00
HIII C						
2=2-52-1-2-2/2						
2=2-52-1-3-1/3						
2=2-54-1-2-1/1						
2=2-54-1-3-1/5						
2=2-54-2-3-1/8						
2=2-55-1-2-1/2						
2=2-55-2-2-1/1						
Total HIII C Counts	0	0	0	0	0	0
Total # HIII C Samples	7	7	7	7	7	7
Total # Samples w/item	0	0	0	0	0	0
Rel. Frequency in HIII C	0.00	0.00	0.00	0.00	0.00	0.00
HII E						
2=3-52-1-10-1/16						
2=3-52-1-8-1/11					2	
2=3-52-1-8-1/14		3			10	
2=3-52-1-9-1/15						
2=3-52-2-11-1/59		5	4	1	4	
2=3-52-2-10-1/51		1			4	1
2=3-52-2-11-1/58						
2=3-52-2-11-1/57					1	
2=3-52-2-11-1/56						
2=3-52-2-9-1/48	1					
2=3-52-3-10-16/54						
2=3-52-3-10-1/52						
2=3-52-3-9-1/48						
2=3-52-3-11-1/60						
2=3-52-3-11-16/61		1				
2=3-52-4-11-16						

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Seeds					Unid
	Ambr	Nico	Amar	Rubu	Plan	
HII C						
2=4-52-1-2-1/1						1
2=4-52-2-3-3/5						
2=4-53-1-2-1/1						
Total HII Commoner Counts	0	0	0	0	0	1
Total Number HIIC Samples	3	3	3	3	3	3
Total # Samples w/item	0	0	0	0	0	1
Rel. Frequency in HII C	0.00	0.00	0.00	0.00	0.00	0.33
HIII C						
2=2-52-1-2-2/2						
2=2-52-1-3-1/3						
2=2-54-1-2-1/1						1
2=2-54-1-3-1/5						
2=2-54-2-3-1/8						
2=2-55-1-2-1/2						
2=2-55-2-2-1/1						
Total HIII C Counts	0	0	0	0	0	1
Total # HIII C Samples	7	7	7	7	7	7
Total # Samples w/item	0	0	0	0	0	1
Rel. Frequency in HIII C	0.00	0.00	0.00	0.00	0.00	0.14
HII E						
2=3-52-1-10-1/16	1					
2=3-52-1-8-1/11		1				2
2=3-52-1-8-1/14						5
2=3-52-1-9-1/15						
2=3-52-2-11-1/59						12
2=3-52-2-10-1/51						
2=3-52-2-11-1/58			2			2
2=3-52-2-11-1/57		1				4
2=3-52-2-11-1/56						
2=3-52-2-9-1/48						1
2=3-52-3-10-16/54						2
2=3-52-3-10-1/52	1					4
2=3-52-3-9-1/48						
2=3-52-3-11-1/60						1
2=3-52-3-11-16/61			1	2		13
2=3-52-4-11-16						

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Seeds				
	Comp	Carex	Euphor	Salvia	Umbell
HII C					
2=4-52-1-2-1/1					
2=4-52-2-3-3/5					
2=4-53-1-2-1/1					
Total HII Commoner Counts	0	0	0	0	0
Total Number HIIC Samples	3	3	3	3	3
Total # Samples w/item	0	0	0	0	0
Rel. Frequency in HII C	0.00	0.00	0.00	0.00	0.00
HIII C					
2=2-52-1-2-2/2					
2=2-52-1-3-1/3					
2=2-54-1-2-1/1					
2=2-54-1-3-1/5					
2=2-54-2-3-1/8					
2=2-55-1-2-1/2					
2=2-55-2-2-1/1					
Total HIII C Counts	0	0	0	0	0
Total # HIII C Samples	7	7	7	7	7
Total # Samples w/item	0	0	0	0	0
Rel. Frequency in HIII C	0.00	0.00	0.00	0.00	0.00
HII E					
2=3-52-1-10-1/16					
2=3-52-1-8-1/11					
2=3-52-1-8-1/14					
2=3-52-1-9-1/15					
2=3-52-2-11-1/59	2				
2=3-52-2-10-1/51					
2=3-52-2-11-1/58					
2=3-52-2-11-1/57					
2=3-52-2-11-1/56					
2=3-52-2-9-1/48					
2=3-52-3-10-16/54					
2=3-52-3-10-1/52					
2=3-52-3-9-1/48					
2=3-52-3-11-1/60					
2=3-52-3-11-16/61	1				
2=3-52 4-11-16					

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Legumes				Total
	Phaseo	Lupin	Lr Un	Sm Un	
HII C					
2=4-52-1-2-1/1					
2=4-52-2-3 3/5					
2=4-53-1-2-1/1					
Total HII Commoner Counts	0	0	0	0	0
Total Number HIIC Samples	3	3	3	3	3
Total # Samples w/item	0	0	0	0	0
Rel. Frequency in HII C	0.00	0.00	0.00	0.00	0.00
HIII C					
2=2-52-1-2-2/2					
2=2-52-1-3-1/3					
2=2-54-1-2-1/1				1	1
2=2-54-1-3-1/5					
2=2-54-2-3-1/8					
2=2-55-1-2-1/2					
2=2-55-2-2-1/1					
Total HIII C Counts	0	0	0	1	1
Total # HIII C Samples	7	7	7	7	7
Total # Samples w/item	0	0	0	1	1
Rel. Frequency in HIII C	0.00	0.00	0.00	0.14	0.14
HII E					
2=3-52-1-10-1/16				1	1
2=3-52-1-8-1/11			1	2	3
2=3-52-1-8-1/14					
2=3-52-1-9-1/15			1		1
2=3-52-2-11-1/59					
2=3-52-2-10-1/51		1	1		2
2=3-52-2-11-1/58				1	1
2=3-52-2-11-1/57				2	2
2=3-52-2-11-1/56					
2=3-52-2-9-1/48					
2=3-52-3-10-16/54					
2=3 52 3 10-1/52					
2=3-52-3-9-1/48				1	1
2=3-52-3-11-1/60					
2=3-52-3-11-16/61					
2=3-52-4-11-16					

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Tubers				Total
	Sola	Ullu	Oca	Unsp	
HII C					
2=4-52-1-2-1/1					
2=4-52-2-3-3/5					
2=4-53-1-2-1/1					
Total HII Commoner Counts	0	0	0	0	0
Total Number HIIC Samples	3	3	3	3	3
Total # Samples w/item	0	0	0	0	0
Rel. Frequency in HII C	0.00	0.00	0.00	0.00	0.00
HIII C					
2=2-52-1-2-2/2					
2=2-52-1-3-1/3				2	2
2=2-54-1-2-1/1					
2=2-54-1-3-1/5					
2=2-54-2-3-1/8					
2=2-55-1-2-1/2					
2=2-55-2-2-1/1					
Total HIII C Counts	0	0	0	2	2
Total # HIII C Samples	7	7	7	7	7
Total # Samples w/item	0	0	0	1	1
Rel. Frequency in HIII C	0.00	0.00	0.00	0.14	0.14
HII E					
2=3-52-1-10-1/16					
2=3-52-1-8-1/11					
2=3-52-1-8-1/14					
2=3-52-1-9-1/15					
2=3-52-2-11-1/59				1	1
2=3-52-2-10-1/51					
2=3-52-2-11-1/58					
2=3-52-2-11-1/57					
2=3-52-2-11-1/56					
2=3-52-2-9-1/48					
2=3-52-3-10-16/54					
2=3-52-3-10-1/52					
2=3-52-3-9-1/48					
2=3-52-3-11-1/60					
2=3-52-3-11-16/61				3	3
2=3-52-4-11-16					

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Grass			Total
	Foac	Node	Stalk	
HII C				
2=4-52-1-2-1/1				
2=4-52-2-3-3/5	1			1
2=4-53-1-2-1/1				
Total HII Commoner Counts	1	0	0	1
Total Number HIIC Samples	3	3	3	3
Total # Samples w/item	1	0	0	1
Rel. Frequency in HII C	0.33	0.00	0.00	0.33
HIII C				
2=2-52-1-2-2/2				
2=2-52-1-3-1/3	3			3
2=2-54-1-2-1/1	4			4
2=2-54-1-3-1/5	3			3
2=2-54-2-3-1/8	1			1
2=2-55-1-2-1/2				
2=2-55-2-2-1/1	1			1
Total HIII C Counts	12	0	0	12
Total # HIII C Samples	7	7	7	7
Total # Samples w/item	5	0	0	5
Rel. Frequency in HIII C	0.71	0.00	0.00	0.71
HII E				
2=3-52-1-10-1/16	20			20
2=3-52-1-8-1/11	13	2	3	18
2=3-52-1-8-1/14				
2=3-52-1-9-1/15	1			1
2=3-52-2-11-1/59	64			64
2=3-52-2-10-1/51	6			6
2=3-52-2-11-1/58	6			6
2=3-52-2-11-1/57	5			5
2=3-52-2-11-1/56	3			3
2=3-52-2-9-1/48	6			6
2=3-52-3-10-16/54	12			12
2=3-52-3-10-1/52	9			9
2=3-52-3-9-1/48	1			1
2=3-52-3-11-1/60	11			11
2=3-52-3-11-16/61	46			46
2=3-52-4-11-16				

Appendix A
Ethnobotanical Midden Data J2 - Matunmarca

	Lumps	Fr Nodes	Other Rind	Misc Twig	Gourd	Dung
HII C						
2=4-52-1-2-1/1						
2=4-52-2-3-3/5						
2=4-53-1-2-1/1						
Total HII Commoner Counts	0	0	0	0	0	0
Total Number HIIC Samples	3	3	3	3	3	3
Total # Samples w/item	0	0	0	0	0	0
Rel. Frequency in HII C	0.00	0.00	0.00	0.00	0.00	0.00
HIII C						
2=2-52-1-2-2/2	4					
2=2-52-1-3-1/3	20					
2=2-54-1-2-1/1						
2=2-54-1-3-1/5	7					
2=2-54-2-3-1/8	1					
2=2-55-1-2-1/2						
2=2-55-2-2-1/1	7					
Total HIII C Counts	39	0	0	0	0	0
Total # HIII C Samples	7	7	7	7	7	7
Total # Samples w/item	5	0	0	0	0	0
Rel. Frequency in HIII C	0.71	0.00	0.00	0.00	0.00	0.00
HII E						
2=3-52-1-10-1/16	13					
2=3-52-1-8-1/11	20				1	1
2=3-52-1-8-1/14	7					
2=3-52-1-9-1/15	13			3		
2=3-52-2-11-1/59	50					9
2=3-52-2-10-1/51	28	1	1			
2=3-52-2-11-1/58	35					5
2=3-52-2-11-1/57	49					
2=3-52-2-11-1/56	76					1
2=3-52-2-9-1/48	5					
2=3-52-3-10-16/54	40					
2=3-52-3-10-1/52	29					
2=3-52-3-9-1/48	6					
2=3-52-3-11-1/60	1					
2=3-52-3-11-16/61						1
2=3-52-4-11-16						

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Zea Mays			
	Kernels	Kernel Frags	Kernels & Frags	Cupules
2-3-52-4-10-1/55				40
2-5-51-1-2-3/6				2
2-5-51-1-2-1/5				
2-5-51-2-2-1/3				1
2-5-53-2-3-1/9	10	4	14	7
2-3-52-1-8-1/12				
2-3-52-4-9-1/50				25
Total HII Elite Count	28	20	48	189
Total # HII E Samples	23	23	23	23
Total # Samples w/item	4	6	8	20
Rel. Frequency in HII E	0.17	0.26	0.35	0.87
HIII E				
2-1-51-2-2-1/6		4	4	2
2-1-51-3-2-1/2	3	3	6	3
2-1-51-3-3-5/7	15	5	20	1
2-1-51-4-2-1/3		1	1	
2-1-54-1-2-2/2				
2-1-54-1-2-3/3		16	16	3
2-1-54-1-2-1/1		3	3	1
2-1-54-1-3-1/7		33	33	4
2-1-54-1-3-1/6		2	2	6
2-1-54-1-3-1/5	17	6	23	4
2-1-54-2-2-1/4				
2-1-54-2-3-1/8	2	3	5	3
2-1-54-4-2-1/10		1	1	
2-1-54-4-3-7/13				1
2-1-55-1-2-2/2	1,660	300	1,960	39
2-1-55-1-2-2/1		2	2	2
2-1-55-1-2-1/3		2	2	2
2-1-55-1-3-1/6		3	3	1
2-1-55-1-3-2/4		149	149	8
2-1-55-1-4-2/8	7	47	54	26
2-1-55-1-4-1/7		18	18	6
2-1-55-1-4-1/9				
2-1-55-2-2-1/12	2		2	
2-1-55-3-2-1/13				
2-1-55-4-3-1/17				
2-3-53-1-4-1/3	3	17	20	3
2-3-53-1-5-1/4		5	5	1
2-3-53-2-3-1/13	2	1	3	1
2-3-53-3-3-1/16	2	1	3	2
2-3-53-3-3-4/14	21	12	33	2
2-3-53-3-3-4/15	37	39	76	5
2-3-53-4-3-1/18	2	1	3	1

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Zea Mays			
	Cobs	Cob Frags	Total Cobs & Cupules	Embryos
2-3-52-4-10-1/55			40	
2-5-51-1-2-3/6			2	
2-5-51-1-2-1/5				
2-5-51-2-2-1/3			1	
2-5-53-2-3-1/9		1	8	
2-3-52-1-8-1/12				
2-3-52-4-9-1/50			25	
Total HII Elite Count	0	6	195	0
Total # HII E Samples	23	23	23	23
Total # Samples w/item	0	4	20	0
Rel. Frequency in HII E	0.00	0.17	0.87	0.00
HIII E				
2-1-51-2-2-1/6	1		3	
2-1-51-3-2-1/2			3	
2-1-51-3-3-5/7			1	1
2-1-51-4-2-1/3				
2-1-54-1-2-2/2	3		3	
2-1-54-1-2-3/3			3	
2-1-54-1-2-1/1			1	
2-1-54-1-3-1/7			4	2
2-1-54-1-3-1/6			6	
2-1-54-1-3-1/5	1		5	
2-1-54-2-2-1/4				
2-1-54-2-3-1/8		1	4	
2-1-54-4-2-1/10				
2-1-54-4-3-7/13			1	
2-1-55-1-2-2/2			39	10
2-1-55-1-2-2/1			2	
2-1-55-1-2-1/3			2	
2-1-55-1-3-1/6			1	
2-1-55-1-3-2/4			8	
2-1-55-1-4-2/8		2	28	
2-1-55-1-4-1/7			6	
2-1-55-1-4-1/9				
2-1-55-2-2-1/12				
2-1-55-3-2-1/13				
2-1-55-4-3-1/17	1		1	
2-3-53-1-4-1/3			3	
2-3-53-1-5-1/4	2		3	
2-3-53-2-3-1/13			1	
2-3-53-3-3-1/16			2	
2-3-53-3-3-4/14			2	1
2-3-53-3-3-4/15			5	1
2-3-53-4-3-1/18	1		2	

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Zea M-		Seeds			
	Stalk	Cheno	Scir	Sisy	Trit	Verb
2-3-52-4-10-1/55		12				1
2-5-51-1-2-3/6		17				
2-5-51-1-2-1/5		44				
2-5-51-2-2-1/3		11	1			
2-5-53-2-3-1/9		65	16			
2-3-52-1-8-1/12						
2-3-52-4-9-1/50		15	2			1
Total HII Elite Count	0	521	28	5	1	56
Total # HII E Samples	23	23	23	23	23	23
Total # Samples w/item	0	21	7	3	1	12
Rel. Frequency in HII E	0.00	0.91	0.30	0.13	0.04	0.52

HIII E

2-1-51-2-2-1/6						
2-1-51-3-2-1/2						
2-1-51-3-3-5/7		5				
2-1-51-4-2-1/3						
2-1-54-1-2-2/2						
2-1-54-1-2-3/3		5				
2-1-54-1-2-1/1				1		
2-1-54-1-3-1/7		3				
2-1-54-1-3-1/6		2				
2-1-54-1-3-1/5		2				1
2-1-54-2-2-1/4						
2-1-54-2-3-1/8		7				
2-1-54-4-2-1/10					269	
2-1-54-4-3-7/13					80	
2-1-55-1-2-2/2						
2-1-55-1-2-2/1						
2-1-55-1-2-1/3						
2-1-55-1-3-1/6		2	1			
2-1-55-1-3-2/4		3	1			
2-1-55-1-4-2/8		85	1			
2-1-55-1-4-1/7		37	1			
2-1-55-1-4-1/9						
2-1-55-2-2-1/12						
2-1-55-3-2-1/13						
2-1-55-4-3-1/17		2				
2-3-53-1-4-1/3		8				
2-3-53-1-5-1/4		5				
2-3-53-2-3-1/13		11				
2-3-53-3-3-1/16		3	1			
2-3-53-3-3-4/14		10				
2-3-53-3-3-4/15		5				
2-3-53-4-3-1/18		5				

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Seeds					
	Poly	Malv	Relb	Lepi	Cyper	Lucu
2=3-52-4-10-1/55		1	1			
2=5-51-1-2-3/6						
2=5-51-1-2-1/5						
2=5-51-2-2-1/3					1	
2=5-53-2-3-1/9		1	4			
2=3-52-1-8-1/12						
2=3-52-4-9-1/50			1		2	
Total HII Elite Count	1	12	10	1	24	1
Total # HII E Samples	23	23	23	23	23	23
Total # Samples w/item	1	6	4	1	7	1
Rel. Frequency in HII E	0.04	0.26	0.17	0.04	0.30	0.04

HIII E

2=1-51-2-2-1/6						
2=1-51-3-2-1/2						
2=1-51-3-3-5/7						
2=1-51-4-2-1/3						
2=1-54-1-2-2/2						
2=1-54-1-2-3/3						
2=1-54-1-2-1/1						
2=1-54-1-3-1/7						
2=1-54-1-3-1/6						
2=1-54-1-3-1/5						
2=1-54-2-2-1/4						
2=1-54-2-3-1/8						
2=1-54-4-2-1/10						
2=1-54-4-3-7/13						
2=1-55-1-2-2/2						
2=1-55-1-2-2/1						
2=1-55-1-2-1/3						
2=1-55-1-3-1/6						
2=1-55-1-3-2/4						
2=1-55-1-4-2/8			1			
2=1-55-1-4-1/7						
2=1-55-1-4-1/9						
2=1-55-2-2-1/12						
2=1-55-3-2-1/13						
2=1-55-4-3-1/17						
2=3-53-1-4-1/3		1				
2=3-53-1-5-1/4						
2=3-53-2-3-1/13						
2=3-53-3-3-1/16						
2=3-53-3-3-4/14					1	
2=3-53-3-3-4/15						
2=3-53-4-3-1/18						

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Seeds					Unid
	Ambr	Nico	Amar	Rubu	Plan	
2=3-52-4-10-1/55						5
2=5-51-1-2-3/6						
2=5-51-1-2-1/5						
2=5-51-2-2-1/3						1
2=5-53-2-3-1/9			2	2		15
2=3-52-1-8-1/12						
2=3-52-4-9-1/50				1		4
Total HII Elite Count	2	2	5	5	0	71
Total # HII E Samples	23	23	23	23	23	23
Total # Samples w/item	2	2	3	3	0	14
Rel. Frequency in HII E	0.09	0.09	0.13	0.13	0.00	0.61
HIII E						
2=1-51-2-2-1/6						7
2=1-51-3-2-1/2						
2=1-51-3-3-5/7						3
2=1-51-4-2-1/3						
2=1-54-1-2-2/2						
2=1-54-1-2-3/3						
2=1-54-1-2-1/1						1
2=1-54-1-3-1/7						
2=1-54-1-3-1/6						
2=1-54-1-3-1/5						
2=1-54-2-2-1/4						
2=1-54-2-3-1/8						
2=1-54-4-2-1/10						
2=1-54-4-3-7/13						
2=1-55-1-2-2/2						
2=1-55-1-2-2/1						1
2=1-55-1-2-1/3						
2=1-55-1-3-1/6						
2=1-55-1-3-2/4						
2=1-55-1-4-2/8					1	6
2=1-55-1-4-1/7						
2=1-55-1-4-1/9						
2=1-55-2-2-1/12						
2=1-55-3-2-1/13						
2=1-55-4-3-1/17						
2=3-53-1-4-1/3						2
2=3-53-1-5-1/4						
2=3-53-2-3-1/13						
2=3-53-3-3-1/16						1
2=3-53-3-3-4/14				6		5
2=3-53-3-3-4/15						
2=3-53-4-3-1/18						1

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Seeds				
	Comp	Carex	Euphor	Salvia	Umbell
2-3-52-4-10-1/55					
2-5-51-1-2-3/6					
2-5-51-1-2-1/5					
2-5-51-2-2-1/3					
2-5-53-2-3-1/9		1	1		
2-3-52-1-8-1/12					
2-3-52-4-9-1/50					
Total HII Elite Count	3	1	1	0	0
Total # HII E Samples	23	23	23	23	23
Total # Samples w/item	2	1	1	0	0
Rel. Frequency in HII E	0.09	0.04	0.04	0.00	0.00

HIII E

2-1-51-2-2-1/6
 2-1-51-3-2-1/2
 2-1-51-3-3-5/7
 2-1-51-4-2-1/3
 2-1-54-1-2-2/2
 2-1-54-1-2-3/3
 2-1-54-1-2-1/1
 2-1-54-1-3-1/7
 2-1-54-1-3-1/6
 2-1-54-1-3-1/5
 2-1-54-2-2-1/4
 2-1-54-2-3-1/8
 2-1-54-4-2-1/10
 2-1-54-4-3-7/13
 2-1-55-1-2-2/2
 2-1-55-1-2-2/1
 2-1-55-1-2-1/3
 2-1-55-1-3-1/6
 2-1-55-1-3-2/4
 2-1-55-1-4-2/8
 2-1-55-1-4-1/7
 2-1-55-1-4-1/9
 2-1-55-2-2-1/12
 2-1-55-3-2-1/13
 2-1-55-4-3-1/17
 2-3-53-1-4-1/3
 2-3-53-1-5-1/4
 2-3-53-2-3-1/13
 2-3-53-3-3-1/16
 2-3-53-3-3-4/14
 2-3-53-3-3-4/15
 2-3-53-4-3-1/18

1

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Legumes			Total
	Phaseo	Lupin	Lr Un Sm Un	
2=3-52-4-10-1/55				
2=5-51-1-2-3/6				
2=5-51-1-2-1/5				
2=5-51-2-2-1/3				
2=5-53-2-3-1/9			1	2
2=3-52-1-8-1/12				2
2=3-52-4-9-1/50				2
Total HII Elite Count	0	1	4	11
Total # HII E Samples	23	23	23	23
Total # Samples w/item	0	1	4	7
Rel. Frequency in HII E	0.00	0.04	0.17	0.30

HIII E

2=1-51-2-2-1/6			10	10
2=1-51-3-2-1/2			2	2
2=1-51-3-3-5/7		2		2
2=1-51-4-2-1/3		1		1
2=1-54-1-2-2/2				
2=1-54-1-2-3/3			3	3
2=1-54-1-2-1/1		2		2
2=1-54-1-3-1/7				
2=1-54-1-3-1/6				
2=1-54-1-3-1/5				
2=1-54-2-2-1/4				
2=1-54-2-3-1/8				
2=1-54-4-2-1/10				
2=1-54-4-3-7/13			2	2
2=1-55-1-2-2/2				
2=1-55-1-2-2/1				
2=1-55-1-2-1/3				
2=1-55-1-3-1/6			1	1
2=1-55-1-3-2/4				
2=1-55-1-4-2/8		1	4	5
2=1-55-1-4-1/7			1	1
2=1-55-1-4-1/9				
2=1-55-2-2-1/12				
2=1-55-3-2-1/13				
2=1-55-4-3-1/17				
2=3-53-1-4-1/3				
2=3-53-1-5-1/4				
2=3-53-2-3-1/13		1		1
2=3-53-3-3-1/16				
2=3-53-3-3-4/14				
2=3-53-3-3-4/15				
2=3-53-4-3-1/18				

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Tubers				Total
	Sola	Ullu	Oca	Unsp	
2=3-52-4-10-1/55					
2=5-51-1-2-3/6					
2=5-51-1-2-1/5					
2=5-51-2-2-1/3					
2=5-53-2-3-1/9				4	4
2=3-52-1-8-1/12					
2=3-52-4-9-1/50					
Total HII Elite Count	0	0	0	8	8
Total # HII E Samples	23	23	23	23	23
Total # Samples w/item	0	0	0	3	3
Rel. Frequency in HII E	0.00	0.00	0.00	0.13	0.13

HIII E

2=1-51-2-2-1/6				1	1
2=1-51-3-2-1/2				2	2
2=1-51-3-3-5/7				25	25
2=1-51-4-2-1/3				1	1
2=1-54-1-2-2/2				1	1
2=1-54-1-2-3/3				1	1
2=1-54-1-2-1/1					
2=1-54-1-3-1/7				6	6
2=1-54-1-3-1/6					
2=1-54-1-3-1/5					
2=1-54-2-2-1/4					
2=1-54-2-3-1/8				1	1
2=1-54-4-2-1/10					
2=1-54-4-3-7/13					
2=1-55-1-2-2/2				2	2
2=1-55-1-2-2/1					
2=1-55-1-2-1/3					
2=1-55-1-3-1/6					
2=1-55-1-3-2/4					
2=1-55-1-4-2/8				128	128
2=1-55-1-4-1/7				30	30
2=1-55-1-4-1/9				1	1
2=1-55-2-2-1/12					
2=1-55-3-2-1/13					
2=1-55-4-3-1/17					
2=3-53-1-4-1/3					
2=3-53-1-5-1/4					
2=3-53-2-3-1/13					
2=3-53-3-3-1/16				3	3
2=3-53-3-3-4/14		4			4
2=3-53-3-3-4/15				3	3
2=3-53-4-3-1/18					

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Grass			Total
	Poac	Node	Stalk	
2-3-52-4-10-1/55	19			19
2-5-51-1-2-3/6	5			5
2-5-51-1-2-1/5	1			1
2-5-51-2-2-1/3	4			4
2-5-53-2-3-1/9	16			16
2-3-52-1-8-1/12				
2-3-52-4-9-1/50	21			21
Total HII Elite Count	269	2	3	274
Total # HII E Samples	23	23	23	23
Total # Samples w/item	20	1	1	20
Rel. Frequency in HII E	0.87	0.04	0.04	0.87
HIII E				
2-1-51-2-2-1/6	1			1
2-1-51-3-2-1/2				
2-1-51-3-3-5/7	4			4
2-1-51-4-2-1/3				
2-1-54-1-2-2/2	2			2
2-1-54-1-2-3/3	13			13
2-1-54-1-2-1/1				
2-1-54-1-3-1/7	1			1
2-1-54-1-3-1/6	2			2
2-1-54-1-3-1/5	3			3
2-1-54-2-2-1/4	1			1
2-1-54-2-3-1/8				
2-1-54-4-2-1/10		2	4	6
2-1-54-4-3-7/13	3	3		6
2-1-55-1-2-2/2	1			1
2-1-55-1-2-2/1				
2-1-55-1-2-1/3				
2-1-55-1-3-1/6	1			1
2-1-55-1-3-2/4				
2-1-55-1-4-2/8	15			15
2-1-55-1-4-1/7	2			2
2-1-55-1-4-1/9	1			1
2-1-55-2-2-1/12				
2-1-55-3-2-1/13				
2-1-55-4-3-1/17	2			2
2-3-53-1-4-1/3				
2-3-53-1-5-1/4	1			1
2-3-53-2-3-1/13	1			1
2-3-53-3-3-1/16	1			1
2-3-53-3-3-4/14				
2-3-53-3-3-4/15	1			1
2-3-53-4-3-1/18				

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	-----Other Misc-----					
	Lumps	Fr Nodes	Rind	Twig	Gourd	Dung
2-3-52-4-10-1/55	4					
2-5-51-1-2-3/6	9					
2-5-51-1-2-1/5	5					
2-5-51-2-2-1/3	28					
2-5-53-2-3-1/9	21					16
2-3-52-1-8-1/12						
2-3-52-4-9-1/50						
Total HII Elite Count	439	1	4	0	1	33
Total # HII E Samples	23	23	23	23	23	23
Total # Samples w/item	19	1	2	0	1	6
Rel. Frequency in HII E	0.83	0.04	0.09	0.00	0.04	0.26

HIII E

2-1-51-2-2-1/6	17
2-1-51-3-2-1/2	4
2-1-51-3-3-5/7	62
2-1-51-4-2-1/3	3
2-1-54-1-2-2/2	3
2-1-54-1-2-3/3	90
2-1-54-1-2-1/1	17
2-1-54-1-3-1/7	90
2-1-54-1-3-1/6	40
2-1-54-1-3-1/5	17
2-1-54-2-2-1/4	
2-1-54-2-3-1/8	25
2-1-54-4-2-1/10	252
2-1-54-4-3-7/13	53
2-1-55-1-2-2/2	1,701
2-1-55-1-2-2/1	15
2-1-55-1-2-1/3	17
2-1-55-1-3-1/6	14
2-1-55-1-3-2/4	180
2-1-55-1-4-2/8	91
2-1-55-1-4-1/7	9
2-1-55-1-4-1/9	3
2-1-55-2-2-1/12	7
2-1-55-3-2-1/13	
2-1-55-4-3-1/17	1
2-3-53-1-4-1/3	38
2-3-53-1-5-1/4	17
2-3-53-2-3-1/13	27
2-3-53-3-3-1/16	108
2-3-53-3-3-4/14	68
2-3-53-3-3-4/15	59
2-3-53-4-3-1/18	17

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Zea Mays			
	Kernals	Kernal Frags	Kernals & Frags	Cupules
2=3-53-4-3-4/17	23		23	7
2=3-53-4-4-4				
2=3-54-1-3-1/3		8	8	1
2=3-54-1-4-1/5	12	38	50	7
2=3-54-1-5-7/20		11	11	4
2=3-54-1-5-1/22		31	31	5
2=3-54-2-4-1/6	2	6	8	7
2=3-54-2-4-3/8				
2=3-55-1-3-1/4	2	15	17	8
2=3-55-1-2-1/2	3	21	24	9
2=3-55-2-2-1/3	1	16	17	13
2=3-55-2-3-1/5	28	52	80	67
2=5-51-1-1-1/1				1
2=5-51-2-1-1/2	1		1	2
2=5-53-2-2-1/7		20	20	27
2=5-53-2-2-1/6	15	9	24	16
2=1-54-4-4-8				
2=3-54-2-3-1	5		5	
2=5-53-1-2-1/8	2	6	8	3
Total HIII Elite Count	1,867	907	2,774	298
Total # HIII E Samples	51	51	51	51
Total # w/item present	24	37	41	39
Rel. Frequency in HIII E	0.47	0.61	0.80	0.76

Appendix A
Ethnobotanical Midden Data JE - Hatunmarca

	Zea Mays			
	Cobs	Cob Frags	Total Cobs & Cupules	Embryos
2-3-53-4-3-4/17	9		16	
2-3-53-4-4-4				
2-3-54-1-3-1/3			1	
2-3-54-1-4-1/5			7	
2-3-54-1-5-1/20			4	
2-3-54-1-5-1/22		1	6	1
2-3-54-2-4-1/6			7	
2-3-54-2-4-3/8				
2-3-55-1-3-1/4			8	
2-3-55-1-2-1/2			3	
2-3-55-2-2-1/3			13	
2-3-55-2-3-1/5	7		74	2
2-5-51-1-1-1/1			1	
2-5-51-2-1-1/2			2	
2-5-53-2-2-1/7	1		28	1
2-5-53-2-2-1/6			16	3
2-1-54-4-4-8		7	7	
2-3-54-2-3-1				
2-5-53-1-2-1/8		2	5	
Total HIII Elite Count	26	13	337	22
Total # HIII E Samples	51	51	51	51
Total # w/item present	9	5	42	9
Rel. Frequency in HIII E	0.18	0.10	0.82	0.18

Appendix A
Ethnobotanical Midden Data T2 - Hatunmarca

	-Zea M-		Seeds			
	Stalk	Cheno	Scir	Sisy	Trit	Verb
2=3-53-4-3 4/17		4				
2=3-53-4-4-4						
2=3-54-1-3-1/3		12		1		
2=3-54-1-4-1/5		85				
2=3-54-1-5-7/20		54		1		
2=3-54-1-5-1/22		75	2	1		
2=3-54-2-4-1/6		100				
2=3-54-2-4-3/8		1				
2=3-55-1-3-1/4		24			1	
2=3-55-1-2-1/2		16				
2=3-55-2-2-1/3		19				
2=3-55-2-3-1/5		102			10	2
2=5-51-1-1-1/1		1				
2=5-51-2-1-1/2		1				
2=5-53-2-2-1/7		77	1	2		1
2=5-53-2-2-1/6		155	6			
2=1-54-4-4-8						
2=3-54-2-3-1						
2=5-53-1-2-1/8		25		1		
Total HIII Elite Count	0	951	14	7	360	4
Total # HIII E Samples	51	51	51	51	51	51
Total # w/item present	0	34	8	6	4	3
Rel. Frequency in HIII E	0.00	0.67	0.16	0.12	0.08	0.06

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	-----Seeds-----					
	Poly	Malv	Relb	Lepi	Cyper	Lucu
2=3-53-4-3-4/17						
2=3-53-4-4-4						
2=3-54-1-3-1/3						
2=3-54-1-4-1/5						
2=3-54-1-5-7/20						
2=3-54-1-5-1/22			1			
2=3-54-2-4-1/6			1			
2=3-54-2-4-3/8						
2=3-55-1-3-1/4		1				
2=3-55-1-2-1/2						
2=3-55-2-2-1/3						
2=3-55-2-3-1/5						
2=5-51-1-1-1/1	1					
2=5-51-2-1-1/2						
2=5-53-2-2-1/7	3	3	8		1	
2=5-53-2-2-1/6						
2=1-54-4-4-8						
2=3-54-2-3-1						
2=5-53-1-2-1/8	1	1				
<hr/>						
Total HIII Elite Count	5	6	11	0	2	0
<hr/>						
Total # HIII E Samples	51	51	51	51	51	51
<hr/>						
Total # w/item present	3	4	4	0	2	0
<hr/>						
Rel. Frequency in HIII E	0.06	0.08	0.08	0.00	0.04	0.00
<hr/>						

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Seeds					Unid
	Ambr	Nico	Amar	Rubu	Plan	
2=3-53-4-3-4/17						
2=3-53-4-4-4						
2=3-54-1-3-1/3						1
2=3-54-1-4-1/5						
2=3-54-1-5-7/20						
2=3-54-1-5-1/22						
2=3-54-2-4-1/6						3
2=3-54-2-4-3/8						
2=3-55-1-3-1/4						
2=3-55-1-2-1/2						
2=3-55-2-2-1/3						2
2=3-55-2-3-1/5						6
2=5-51-1-1-1/1						
2=5-51-2-1-1/2						
2=5-53-2-2-1/7	1					25
2=5-53-2-2-1/6						6
2=1-54-4-4-8						
2=3-54-2-3-1						
2=5-53-1-2-1/8						
<hr/>						
Total HIII Elite Count	1	0	0	6	1	70
<hr/>						
Total # HIII E Samples	51	51	51	51	51	51
<hr/>						
Total # w/item present	1	0	0	1	1	15
<hr/>						
Rel. Frequency in HIII E	0.02	0.00	0.00	0.02	0.02	0.29

Appendix A
Ethnobotanical Hidden Data J2 - Hatunmarca

	Seeds				
	Comp	Carex	Euphor	Salvia	Umbell
2-3-53-4-3-4/17					
2-3-53-4-4-4					
2-3-54-1-3-1/3					
2-3-54-1-4-1/5					
2-3-54-1-5-7/20					
2-3-54-1-5-1/22					
2-3-54-2-4-1/6					
2-3-54-2-4-3/8					
2-3-55-1-3-1/4					
2-3-55-1-2-1/2					
2-3-55-2-2-1/3					
2-3-55-2-3-1/5	2				
2-5-51-1-1-1/1					
2-5-51-2-1-1/2					
2-5-53-2-2-1/7	3			1	2
2-5-53-2-2-1/6					
2-1-54-4-4-8					
2-3-54-2-3-1					
2-5-53-1-2-1/8					

Total HIII Elite Count	6	0	0	1	2

Total # HIII E Samples	51	51	51	51	51

Total # w/item present	3	0	0	1	1

Rel. Frequency in HIII E	0.06	0.00	0.00	0.02	0.02

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	-----Legumes-----			Total	
	Phaseo	Lupin	Lr Un		Sm Un
2=3-53-4-3-4/17			2	2	
2=3-53-4-4-4					
2=3-54-1-3-1/3					
2=3-54-1-4-1/5					
2=3-54-1-5-7/20				1	
2=3-54-1-5-1/22				1	
2=3-54-2-4-1/6					
2=3-54-2-4-3/8					
2=3-55-1-3-1/4		1	1	2	
2=3-55-1-2-1/2					
2=3-55-2-2-1/3	1			2	
2=3-55-2-3-1/5			1	1	
2=5-51-1-1-1/1		1		1	
2=5-51-2-1-1/2					
2=5-53-2-2-1/7				1	
2=5-53-2-2-1/6			1	2	
2=1-54-4-4-8					
2=3-54-2-3-1					
2=5-53-1-2-1/8					
<hr/>					
Total HIII Elite Count	1	3	11	29	44
<hr/>					
Total # HIII E Samples	51	51	51	51	51
<hr/>					
Total # w/item present	1	3	8	13	19
<hr/>					
Rel. Frequency in HIII E	0.02	0.06	0.16	0.25	0.37
<hr/>					

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Tubers				Total
	Sola	Ullu	Oca	Unsp	
2=3-53-4-3-4/17					
2=3-53-4-4-4					
2=3-54-1-3-1/3					
2=3-54-1-4-1/5					
2=3-54-1-5-7/20					
2=3-54-1-5-1/22					
2=3-54-2-4-1/6				2	2
2=3-54-2-4-3/8					
2=3-55-1-3-1/4				2	2
2=3-55-1-2-1/2				1	1
2=3-55-2-2-1/3				5	5
2=3-55-2-3-1/5			3	13	16
2=5-51-1-1-1/1				1	1
2=5-51-2-1-1/2				1	1
2=5-53-2-2-1/7				36	36
2=5-53-2-2-1/6				20	20
2=1-54-4-4-8				1	1
2=3-54-2-3-1					
2=5-53-1-2-1/8				8	8

Total HIII Elite Count	0	4	3	295	302

Total # HIII E Samples	51	51	51	51	51

Total # w/item present	0	1	1	26	27

Rel. Frequency in HIII E	0.00	0.02	0.02	0.51	0.53

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	-----Grass-----			Total
	Poac	Node	Stalk	
2=3-53-4-3-4/17				
2=3-53-4-4-4				
2=3-54-1-3-1/3				
2=3-54-1-4-1/5	5			5
2=3-54-1-5-7/20	4			4
2=3-54-1-5-1/22	15			15
2=3-54-2-4-1/6	4			4
2=3-54-2-4-3/8				
2=3-55-1-3-1/4	4			4
2=3-55-1-2-1/2	1			1
2=3-55-2-2-1/3				
2=3-55-2-3-1/5	10			10
2=5-51-1-1-1/1				
2=5-51-2-1-1/2	2			2
2=5-53-2-2-1/7	21			21
2=5-53-2-2-1/6	16			16
2=1 54-4-4-8				
2=3-54-2-3-1				
2=5-53-1-2-1/8	5			5
<hr/>				
Total HIII Elite Count	143	5	4	152
<hr/>				
Total # HIII E Samples	51	51	51	51
<hr/>				
Total # w/item present	30	2	1	31
<hr/>				
Rel. Frequency in HIII E	0.59	0.04	0.02	0.61
<hr/>				

Appendix A
Ethnobotanical Midden Data J2 - Hatunmarca

	Lumps	Fr. Nodes	Other Rind	Misc Twig	Gourd	Dung
2=3-53-4-3-4/17	40					
2=3-53-4-4-4						
2=3-54-1-3-1/3	45					
2=3-54-1-4-1/5	283					
2=3-54-1-5-7/20	8					
2=3-54-1-5-1/22						
2=3-54-2-4-1/6	61					
2=3-54-2-4-3/8	3			1		
2=3-55-1-3-1/4						
2=3-55-1-2-1/2	56			1		
2=3-55-2-2-1/3	112					
2=3-55-2-3-1/5	1,510					
2=5-51-1-1-1/1	7					
2=5-51-2-1-1/2						
2=5-53-2-2-1/7	652					2
2=5-53-2-2-1/6	554				2	
2=1-54-4-4-8						
2=3-54-2-3-1						
2=5-53-1-2-1/8	2					
Total HIII Elite Count	6,378	0	0	2	2	2
Total # HIII E Samples	51	51	51	51	51	51
Total # w/item present	43	0	0	2	1	1
Rel. Frequency in HIII E	0.84	0.00	0.00	0.04	0.02	0.02

Appendix B
Frequency Table for Comparison of Huanca II & III Sites

	-----Zea Mays-----			
	Kernals	Kernal Frags	Kernals & Frags	Cupules
HII E				
Total J7=2 Samples	20	20	20	20
Frequency	4	3	6	1
Relative Frequency	0.20	0.15	0.30	0.05
Total # J2=3 Samples	19	19	19	19
Frequency	3	5	7	17
Relative Frequency	0.16	0.26	0.37	0.89
HIII E				
Total J54=7 Samples	4	4	4	4
Frequency	1	3	3	3
Relative Frequency	0.25	0.75	0.75	0.75
Total # J2=5 Samples	5	5	5	5
Frequency	3	3	4	5
Relative Frequency	0.60	0.60	0.80	1.00

Appendix B
 Frequency Table for Comparison of Huanca II & III Sites

	-----Zea Mays-----			
	Cobs	Cob Frags	Total Cobs & Cupules	Embryos
HII E				
Total J7=2 Samples	20	20	20	20
Frequency	1	1	2	1
Relative Frequency	0.05	0.05	0.10	0.05
Total # J2=3 Samples	19	19	19	19
Frequency	0	3	17	0
Relative Frequency	0.00	0.16	0.89	0.00
HIII E				
Total J54=7 Samples	4	4	4	4
Frequency	0	0	3	0
Relative Frequency	0.00	0.00	0.75	0.00
Total # J2=5 Samples	5	5	5	5
Frequency	1	1	5	2
Relative Frequency	0.20	0.20	1.00	0.40

Appendix B
Frequency Table for Comparison of Huanca II & III Sites

	-Zea - Stalk	Cheno	Scir	Sisy	Seeds Trit	Verb	Poly	Malv
HII E								
Total J7=2 Samples	20	20	20	20	20	20	20	20
Frequency	0	15	5	0	0	0	0	0
Relative Frequency	0.00	0.75	0.25	0.00	0.00	0.00	0.00	0.00
Total # J2=3 Samples	19	19	19	19	19	19	19	19
Frequency	0	17	5	3	1	12	1	5
Relative Frequency	0.00	0.89	0.26	0.16	0.05	0.63	0.05	0.26
HIII E								
Total J54=7 Samples	4	4	4	4	4	4	4	4
Frequency	0	2	0	0	0	0	0	0
Relative Frequency	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00
Total # J2=5 Samples	5	5	5	5	5	5	5	5
Frequency	0	5	2	2	0	1	3	2
Relative Frequency	0.00	1.00	0.40	0.40	0.00	0.20	0.60	0.40

Appendix B
 Frequency Table for Comparison of Huanca II & III Sites

	-----Seeds-----							
	Relb	Lepi	Cyper	Lucu	Ambr	Nico	Amar	Rubu
HII E								
Total J7=2 Samples	20	20	20	20	20	20	20	20
Frequency	0	0	0	0	0	0	0	0
Relative Frequency	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total # J2=3 Samples	19	19	19	19	19	19	19	19
Frequency	3	1	6	1	2	2	2	2
Relative Frequency	0.16	0.05	0.32	0.05	0.11	0.11	0.11	0.11
HIII E								
Total J54=7 Samples	4	4	4	4	4	4	4	4
Frequency	1	0	0	0	0	0	0	0
Relative Frequency	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total # J2=5 Samples	5	5	5	5	5	5	5	5
Frequency	1	0	1	0	1	0	0	0
Relative Frequency	0.20	0.00	0.20	0.00	0.20	0.00	0.00	0.00

Appendix B
Frequency Table for Comparison of Huanca II & III Sites

	-----Seeds-----						
	Plan	Unid	Comp	Carex	Euphor	Salvia	Umbell
HII E							
Total J7=2 Samples	20	20	20	20	20	20	20
Frequency	0	1	1	0	0	0	0
Relative Frequency	0.00	0.05	0.05	0.00	0.00	0.00	0.00
Total # J2=3 Samples	19	19	19	19	19	19	19
Frequency	0	12	2	0	0	0	0
Relative Frequency	0.00	0.63	0.11	0.00	0.00	0.00	0.00
HIII E							
Total J54=7 Samples	4	4	4	4	4	4	4
Frequency	0	0	0	0	0	0	0
Relative Frequency	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total # J2=5 Samples	5	5	5	5	5	5	5
Frequency	0	2	1	0	0	1	1
Relative Frequency	0.00	0.40	0.20	0.00	0.00	0.20	0.20

Appendix B
 Frequency Table for Comparison of Huanca II & III Sites

	-----Legumes-----				Total
	Phaseo	Lupin	Lr Un	Sm Un	
HII E					
Total J7=2 Samples	20	20	20	20	20
Frequency	0	6	3	2	8
Relative Frequency	0.00	0.30	0.15	0.10	0.40
Total # J2=3 Samples	19	19	19	19	19
Frequency	0	1	3	7	10
Relative Frequency	0.00	0.05	0.16	0.37	0.53
HIII E					
Total J54=7 Samples	4	4	4	4	4
Frequency	0	0	0	2	2
Relative Frequency	0.00	0.00	0.00	0.50	0.50
Total # J2=5 Samples	5	5	5	5	5
Frequency	0	1	1	2	3
Relative Frequency	0.00	0.20	0.20	0.40	0.60

Appendix B
 Frequency Table for Comparison of Huanca II & III Sites

	Tubers				
	Sola	Ullu	Oca	Unsp	Total
HII E					
Total J7=2 Samples	20	20	20	20	20
Frequency	1	0	0	6	6
Relative Frequency	0.05	0.00	0.00	0.30	0.30
Total # J2=3 Samples	19	19	19	19	19
Frequency	0	0	0	6	6
Relative Frequency	0.00	0.00	0.00	0.32	0.32
HIII E					
Total J54=7 Samples	4	4	4	4	4
Frequency	0	0	0	0	0
Relative Frequency	0.00	0.00	0.00	0.00	0.00
Total # J2=5 Samples	5	5	5	5	5
Frequency	0	0	0	5	5
Relative Frequency	0.00	0.00	0.00	1.00	1.00

Appendix B
Frequency Table for Comparison of Huanca II & III Sites

	-----Grass-----			-----Other Misc-----			
	Poac	Node	Stalk	Total	Lumps	Fr Nodes	Rind
HII E							
Total J7=2 Samples	20	20	20	20	20	20	20
Frequency	10	0	0	10	2	0	0
Relative Frequency	0.50	0.00	0.00	0.50	0.10	0.00	0.00
Total # J2=3 Samples	19	19	19	19	19	19	19
Frequency	16	1	1	16	7	1	2
Relative Frequency	0.84	0.05	0.05	0.84	0.37	0.05	0.11
HIII E							
Total J54=7 Samples	4	4	4	4	4	4	4
Frequency	3	0	0	3	1	0	0
Relative Frequency	0.75	0.00	0.00	0.75	0.25	0.00	0.00
Total # J2=5 Samples	5	5	5	5	5	5	5
Frequency	4	0	0	4	3	0	0
Relative Frequency	0.80	0.00	0.00	0.80	0.60	0.00	0.00

Appendix B
 Frequency Table for Comparison of Huanca II & III Sites

	----Other Misc----		
	Twig	Gourd	Dung
HII E			
Total J7=2 Samples	20	20	20
Frequency	0	0	0
Relative Frequency	0.00	0.00	0.00
Total # J2=3 Samples	19	19	19
Frequency	0	1	5
Relative Frequency	0.00	0.05	0.26
HIII E			
Total J54=7 Samples	4	4	4
Frequency	0	0	0
Relative Frequency	0.00	0.00	0.00
Total # J2=5 Samples	5	5	5
Frequency	0	1	1
Relative Frequency	0.00	0.20	0.20

Appendix C
Frequency Data from North and South Knolls

	Zea Mays			
	Kernels	Kernal Frags	Kernels & Frags	Cupules
HII E				
So. Total HII Elite Count	18	16	34	179
So. Total # HII E Samples	19	19	19	19
S. Total # Samples w/item	3	5	8	17
S. Rel. Freq. in HII E	0.16	0.26	0.42	0.89
No. Total HII Elite Count				
No. Total HII Elite Count	10	4	14	10
No. Total # HII E Samples	4	4	4	4
N. Total # Samples w/item	1	1	2	3
N. Rel.Frequency in HII E	0.25	0.25	0.50	0.75
HIII E				
S. Total HIII Elite Count	1,849	872	2,721	249
S. Total # HIII E Samples	46	46	46	46
S. Total # w/item present	22	34	38	34
S Rel.Frequency in HIII E	0.47	0.73	0.82	0.73
N. Total HIII Elite Count				
N. Total HIII Elite Count	18	35	53	49
N. Total # HIII E Samples	5	5	5	5
N. Total # w/item present	3	3	4	5
N. Rel.Frequency in HIII E	0.60	0.60	0.80	1.00

Appendix C
Frequency Data from North and South Knolls

	Zea Mays			
	Cobs	Cob Frags	Total Cobs & Cupules	Embryos
HII E				
So. Total HII Elite Count	0	5	184	0
So. Total # HII E Samples	19	19	19	19
S. Total # Samples w/item	0	3	20	
S. Rel. Freq. in HII E	0.00	0.16	1.05	0.00
No. Total HII Elite Count				
No. Total # HII E Samples	4	4	4	4
N. Total # Samples w/item	0	1	4	0
N. Rel.Frequency in HII E	0.00	0.25	1.00	0.00
HIII E				
S. Total HIII Elite Count	25	11	285	18
S. Total # HIII E Samples	46	46	46	46
S. Total # w/item present	8	4	38	7
S Rel.Frequency in HIII E	0.17	0.08	0.82	0.15
N. Total HIII Elite Count				
N. Total # HIII E Samples	5	5	5	5
N. Total # w/item present	1	1	5	2
N. Rel.Frequency in HIII E	0.20	0.20	1.00	0.40

Appendix C
Frequency Data from North and South Knolls

	-Zea M- Stalk	Cheno	Scir	Seeds Sisy	Trit	Verb
HII E						
So. Total HII Elite Count	0	384	11	5	1	56
So. Total # HII E Samples	19	19	19	19	19	19
S. Total # Samples w/item		17	5	3	1	12
S. Rel. Freq. in HII E	0.00	0.89	0.26	0.16	0.05	0.63
No. Total HII Elite Count						
No. Total # HII E Samples	4	4	4	4	4	4
N. Total # Samples w/item	0	4	2	0	0	0
N. Rel.Frequency in HII E	0.00	1.00	0.50	0.00	0.00	0.00
HIII E						
S. Total HIII Elite Count	0	692	7	4	360	3
S. Total # HIII E Samples	46	46	46	46	46	46
S. Total # w/item present	0	29	6	4	4	2
S Rel.Frequency in HIII E	0.00	0.63	0.13	0.08	0.08	0.04
N. Total HIII Elite Count						
N. Total # HIII E Samples	5	5	5	5	5	5
N. Total # w/item present	0	5	2	2	0	1
N. Rel.Frequency in HIII E	0.00	1.00	0.40	0.40	0.00	0.20

Appendix C
Frequency Data from North and South Knolls

	Seeds					
	Poly	Malv	Relb	Lepi	Cyper	Lucu
HII E						
So. Total HII Elite Count	1	11	6	1	23	1
So. Total # HII E Samples	19	19	19	19	19	19
S. Total # Samples w/item	1	5	3	1	6	1
S. Rel. Freq. in HII E	0.05	0.26	0.16	0.05	0.32	0.05
No. Total HII Elite Count						
No. Total HII Elite Count	0	1	4	0	1	0
No. Total # HII E Samples	4	4	4	4	4	4
N. Total # Samples w/item	0	1	1	0	1	0
N. Rel.Frequency in HII E	0.00	0.25	0.25	0.00	0.25	0.00
HIII E						
S. Total HIII Elite Count	0	2	3	0	1	0
S. Total # HIII E Samples	46	46	46	46	46	46
S. Total # w/item present	0	2	3	0	1	0
S Rel.Frequency in HIII E	0.00	0.04	0.06	0.00	0.02	0.00
N. Total HIII Elite Count						
N. Total HIII Elite Count	5	4	8	0	1	0
N. Total # HIII E Samples	5	5	5	5	5	5
N. Total # w/item present	3	2	1	0	1	0
N. Rel.Frequency in HIII E	0.60	0.40	0.20	0.00	0.20	0.00

Appendix C
Frequency Data from North and South Knolls

	Seeds					
	Ambr	Nico	Amar	Rubu	Plan	Unid
HII E						
So. Total HII Elite Count	2	2	3	3	0	55
So. Total # HII E Samples	19	19	19	19	19	19
S. Total # Samples w/item	2	2	2	2	0	12
S. Rel. Freq. in HII E	0.11	0.11	0.11	0.11	0.00	0.63
No. Total HII Elite Count	0	0	2	2	0	16
No. Total # HII E Samples	4	4	4	4	4	4
N. Total # Samples w/item	0	0	1	1	0	2
N. Rel.Frequency in HII E	0.00	0.00	0.25	0.25	0.00	0.50
HIII E						
S. Total HIII Elite Count	0	0	0	6	1	39
S. Total # HIII E Samples	46	46	46	46	46	46
S. Total # w/item present	0	0	0	1	1	13
S Rel.Frequency in HIII E	0.00	0.00	0.00	0.02	0.02	0.28
N. Total HIII Elite Count	1	0	0	0	0	31
N. Total # HIII E Samples	5	5	5	5	5	5
N. Total # w/item present	1	0	0	0	0	2
N. Rel.Frequency in HIII E	0.20	0.00	0.00	0.00	0.00	0.40

Appendix C
Frequency Data from North and South Knolls

	Comp	Carex	Seeds Euphor	Salvia	Umbell
HII E					
So. Total HII Elite Count	3	0	0	0	0
So. Total # HII E Samples	19	19	19	19	19
S. Total # Samples w/item	2	0	0	0	0
S. Rel. Freq. in HII E	0.11	0.00	0.00	0.00	0.00
No. Total HII Elite Count					
No. Total # HII E Samples	4	4	4	4	4
N. Total # Samples w/item	0	1	1	0	0
N. Rel.Frequency in HII E	0.00	0.25	0.25	0.00	0.00
HIII E					
S. Total HIII Elite Count	3	0	0	0	0
S. Total # HIII E Samples	46	46	46	46	46
S. Total # w/item present	2	0	0	0	0
S Rel.Frequency in HIII E	0.04	0.00	0.00	0.00	0.00
N. Total HIII Elite Count					
N. Total # HIII E Samples	5	5	5	5	5
N. Total # w/item present	1	0	0	1	1
N. Rel.Frequency in HIII E	0.20	0.00	0.00	0.20	0.20

Appendix C
Frequency Data from North and South Knolls

	Phaseq	Lupin	Legumes		Total
			Lr Un	Sm Un	
HII E					
So. Total HII Elite Count	0	1	3	9	13
So. Total # HII E Samples	19	19	19	19	19
S. Total # Samples w/item	0	1	3	6	10
S. Rel. Freq. in HII E	0.00	0.05	0.16	0.32	0.53
No. Total HII Elite Count					
No. Total HII Elite Count	0	0	1	2	3
No. Total # HII E Samples	4	4	4	4	4
N. Total # Samples w/item	0	0	1	1	2
N. Rel.Frequency in HII E	0.00	0.00	0.25	0.25	0.50
HIII E					
S. Total HIII Elite Count	1	2	10	26	39
S. Total # HIII E Samples	46	46	46	46	46
S. Total # w/item present	1	2	7	9	16
S Rel.Frequency in HIII E	0.02	0.04	0.15	0.20	0.35
N. Total HIII Elite Count					
N. Total HIII Elite Count	0	1	1	3	5
N. Total # HIII E Samples	5	5	5	5	5
N. Total # w/item present	0	1	1	2	3
N. Rel.Frequency in HIII E	0.00	0.20	0.20	0.40	0.60

Appendix C
Frequency Data from North and South Knolls

	Tubers				Total
	Sola	Ullu	Oca	Unsp	
HII E					
So. Total HII Elite Count	0	0	0	4	4
So. Total # HII E Samples	19	19	19	19	19
S. Total # Samples w/item	0	0	0	2	2
S. Rel. Freq. in HII E	0.00	0.00	0.00	0.11	0.11
No. Total HII Elite Count	0	0	0	5	5
No. Total # HII E Samples	4	4	4	4	4
N. Total # Samples w/item	0	0	0	2	2
N. Rel.Frequency in HII E	0.00	0.00	0.00	0.50	0.50
HIII E					
S. Total HIII Elite Count	0	4	3	229	236
S. Total # HIII E Samples	46	46	46	46	46
S. Total # w/item present	0	1	1	21	21
S Rel.Frequency in HIII E	0.00	0.02	0.02	0.46	0.46
N. Total HIII Elite Count	0	0	0	66	66
N. Total # HIII E Samples	5	5	5	5	5
N. Total # w/item present	0	0	0	5	5
N. Rel.Frequency in HIII E	0.00	0.00	0.00	1.00	1.00

Appendix C
Frequency Data from North and South Knolls

	Grass			Total
	Pgac	Node	Stalk	
HII E				
So. Total HII Elite Count	243	2	3	248
So. Total # HII E Samples	19	19	19	19
S. Total # Samples w/item	16	1	1	18
S. Rel. Freq. in HII E	0.84	0.05	0.05	0.94
No. Total HII Elite Count	26	0	0	26
No. Total # HII E Samples	4	4	4	4
N. Total # Samples w/item	4	0	0	4
N. Rel.Frequency in HII E	1.00	0.00	0.00	1.00
HIII E				
S. Total HIII Elite Count	99	5	4	108
S. Total # HIII E Samples	46	46	46	46
S. Total # w/item present	26	2	1	27
S Rel.Frequency in HIII E	0.57	0.04	0.02	0.59
N. Total HIII Elite Count	44	0	0	44
N. Total # HIII E Samples	5	5	5	5
N. Total # w/item present	4	0	0	4
N. Rel.Frequency in HIII E	0.80	0.00	0.00	0.80

Appendix C
Frequency Data from North and South Knolls

	Lumps	Fr Nodes	Other Rind	Misc Twig	Gourd	Dung
HII E						
So. Total HII Elite Count	376	1	4	0	1	17
So. Total # HII E Samples	19	19	19	19	19	19
S. Total # Samples w/item	15	1	2	0	1	5
S. Rel. Freq. in HII E	0.79	0.05	0.11	0.00	0.05	0.26
No. Total HII Elite Count						
No. Total HII Elite Count	63	0	0	0	0	16
No. Total # HII E Samples	4	4	4	4	4	4
N. Total # Samples w/item	4	0	0	0	0	1
N. Rel.Frequency in HII E	1.00	0.00	0.00	0.00	0.00	0.25
HIII E						
S. Total HIII Elite Count	5,163	0	0	2	0	0
S. Total # HIII E Samples	46	46	46	46	46	46
S. Total # w/item present	39	0	0	2	0	0
S Rel.Frequency in HIII E	0.85	0.00	0.00	0.04	0.02	0.02
N. Total HIII Elite Count						
N. Total HIII Elite Count	33	0	0	0	2	2
N. Total # HIII E Samples	5	5	5	5	5	5
N. Total # w/item present	3	0	0	0	1	1
N. Rel.Frequency in HIII E	0.60	0.00	0.00	0.00	0.20	0.20