“WHAT IS BEST FOR THEIR LITTLE PART OF THE WORLD”:

INTEGRATING ETHNOBIOLOGY WITH K-12 SCIENCE EDUCATION

by

CAROLINE ELAINE WEATHERS

(Under the Direction of O. Brent Berlin)

ABSTRACT

The effect of written free list survey type and age on ethnobiological survey response was tested in St. George, SC (US). The research was designed to empower K-12 science teachers with methods to incorporate local ethnobiological knowledge into standards-driven science education. Analysis of quantitative data related to total responses at the folk specific and folk generic levels indicate that age is a statistically-relevant factor to consider when recruiting participants for similar research. Survey type (general free lists versus specific free lists) is marginally important; specific free lists produced a larger number of responses at both the folk specific and folk generic levels, but the difference was not statistically significant. Because of the ease of sorting and analysis through the use of readily-available software (Microsoft Excel), the methods outlined in the research can be employed by K-12 science teachers to create classroom materials and three-dimensional learning environments that will make science more relevant for young students.

INDEX WORDS: Ethnobotany, Ethnobiology, Local Ecological Knowledge, Education, Curriculum Development, Pedagogy

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DEDICATION

This thesis is dedicated to the residents of St. George, SC, who made this research possible and who have worked to share important ecological knowledge with future generations. I also dedicate this thesis to my husband, Matthew Williams, for his love and support; to my parents, Pete and Margie Weathers, for their help throughout the process; and to my brother, Dr. Danny Weathers, for his statistical enthusiasm.

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CHAPTER 1: ETHNOBIOLOGY AND EDUCATION

This research investigates the effects of age and survey structure on responses to free lists that K-12 science teachers can employ for gathering ethnobiological (specifically, ethnobotanical) information in their local communities. The study contributes to ethnobiological (and other anthropological) methodology by examining written free lists, commonly employed in the United States, as a means of gathering data related to local environmental knowledge. The results will help teachers in the US by providing the most efficient means of rapidly assessing local ethnobiological knowledge for use in classroom instruction, a technique that many researchers cite will increase the relevancy of science in students' lives.

FOUNDATIONS OF ETHNOBOTANY AND ETHNOBIOLOGY

Plants have played a major role in determining the trajectories of modern culture, serving as the material basis of human culture (in terms of food, clothing, construction material, medicine, etc.) (Balick and Cox 1997). For practical, applied reasons of ecological and human health, ethnobotany is an important discipline that is often defined as studies concerning plants that describe local people's interactions with their floral environment (Martin 1995; Cotton 1996). As a field of study, ethnobotany was born out of the coalescence of rather disparate field reports (Davis 1995), an effort on behalf of chemists, botanists and ethnographers to combine their skills in order to represent plant use among "primitive and aboriginal people" (Harshberger

1896). “Traditional” or “indigenous” peoples continue to form the core of ethnobotanical research (see Burchard 1992, Cotton 1996, Johns et al. 1999, and Somnasang et al. 2000 for examples of such studies), but recent work has attempted to focus the lens on Western culture (Cavender 2006; Medin et al. 1997).

Although basic plant inventories are important to ethnobotany, they can become “eclectic to the point of inutility” (Davis 1995: 40). Richard Evans Schultes, one of the discipline’s most prolific researchers of the past century, was trained in botany and intended to compile a list of useful plants among the Kiowa Indians for his senior thesis. His study of useful plants among the Kiowa Indians is especially interesting not for its accounts of plant use but for its attempt to trace the acquisition of plant knowledge among the migratory Kiowa. Archaeoethnobotany (Minnis 2003; Newsom and Pearsall 2003) and historical ethnobotany (Carney 2003) use a number of sophisticated methods that explain plant and human migration, changes in human subsistence through time, and the coadaptational relationships between plants and humans within varying cultural, ideological and ecological contexts.

Studies of contemporary cultures in ethnobotanical research often fall into the general field of cognitive ethnobiology. After Berlin, Breedlove and Raven (1973) published nine universal principles of ethnobiological classification (based largely on the observation of perceptual discontinuities at the folk generic level), a number of researchers countered this intellectualist view by arguing on behalf of the utilitarian aspect of folk taxonomic systems. Hunn (1982), for example, advocates the measurement of each folk taxon’s “activity signature” in order to detect the local practical significance of particular plants. Despite differing theoretical positions, both intellectualists and utilitarians agree that scientific taxonomy is important as a grid for cross-cultural comparisons (Hunn 1975; Berlin, Breedlove and Raven 1973; Medin and Atran 1999).

Since the 1970s and 1980s, intermediate positions and revisions of cognitive theories of ethnobiology have emerged. Berlin (1992) revises the universal principles of ethnobiological classification and distinguishes classification principles from nomenclatural ones. The stance that natural systems are not comprehensive (capable of identifying all plant species) is also slightly revised; although there may not be a specific name for each plant in a given folk system, ethnotaxonomists are able to relate an unknown plant to a named one on the basis of natural affinities (for example, an unknown or unnamed plant "X" may be related to a known plant during interviews) (Berlin 2004). Hunn (1999) argues on behalf of four possible factors affecting folk taxonomies: perceptual salience, cultural salience, ecological salience and size. Medin et al. (1997) find that among taxonomists, landscapers and park maintenance workers, there is relative privileging of the folk genus category but that goal-derived (utilitarian) categories are of importance (albeit varying) among the three groups. In Western societies, especially, specific activities related to plant use may create varying hierarchical structures in terms of folk taxonomies. In other cases, plants may be classified in the same way, but justification for these folk classifications may vary based on occupational expertise (Medin et al. 1997).

Other interesting work in the area of cognitive ethnobotany concerns total plant knowledge and ethnoecology. Ellen (1999) argues that plant knowledge may not always be reflected in the local lexicon; personal, unshared (and uncodified) experience with plants, for example, may be more common in foraging groups than among horticulturalists, explaining the apparent discrepancies in plant knowledge between the two subsistence systems. Shepard et al.

(2001) extend ethnobotanical research into the field of ethnoecology, studying how plants are used as indicators of locally defined habitats—information that may have implications for conservation.

There is a relatively scarce amount of literature that focuses on the effects of age and modernization/globalization on plant knowledge, especially in the United States. In one study in El Salvador, grandparents were found to be the most important source of ethnobotanical information among children aged 11-18 (Yates and Ramirez-Sosa 2004). Cavender's (2006) research utilizes a utilitarian approach to ethnobotanical research. He uses the responses of his informants in order to organize plants of the southern Appalachians according to their abilities to fight or prevent specific illnesses. According to the research, with the exception of two processed plant foods (cider vinegar and whiskey), most of the formerly well-used plants have fallen into disfavor with the introduction of other medications (Cavender 2006). Research in Brazil found that, when informants were broken into age cohorts of 10 years, there was a gradual (if erratic) rise in medicinal plant knowledge, but that this knowledge almost doubled between the oldest two cohorts (61-70 years old and 71-80 years old); the research cites the lack of "practical benefit or intellectual interest" among the younger of these two cohorts for this marked discrepancy (Voeks 2007).

INTEGRATING ETHNOBIOLOGY INTO K-12 SCIENCE CURRICULUM

During the past decade, several educational researchers, anthropologists, and life scientists have called for the inclusion of local (indigenous) knowledge and multicultural science education in the K-12 curriculum of US schools (Cobern and Loving 2001; Cockrell et al. 1997;

Corsiglia and Snively 2001; Esprivalo and Forney 2001; Harrell and Forney 2001; Irzik 2001; Keating 1997; Kimmerer 2002; Lara-Alecio et al. 2001; Lindemann-Matthies 2006; Lewis and Aikenhead 2001; Ortiz de Montellano 2001; Reed 2003; Shepardson et al. 2007; Siegel 2002; Snively and Corsiglia 2001; Stanley and Brickhouse 2001). There is debate over what can be perceived as "local" or "indigenous" knowledge, as well as how it should be incorporated into the Western scientific paradigm (Snively and Corsiglia 2001; Stanley and Brickhouse 2001; Cobern and Loving 2001); Ortiz de Montellano's (2001) pointed critique of any such inclusion is that teachers will not know the difference between valid cultural views on science and poorly-documented examples (or untruths) that misinform students and waste limited instructional time. However, there is a general consensus that multicultural views on science, if presented accurately (and with well-researched examples) within the Western scientific investigative framework, will encourage students from diverse backgrounds and enrich science education programs across the country.

Education researchers, at the same time, have been focusing on the most effective methods for improving students' ecological attitudes and awareness of the human impact on the environment. Based on a large-scale survey of K-12 students in eight states, Shepardson et al. (2007) found that a significant number of students viewed the environment as exclusive of humans and human impact, especially in suburban and rural areas. According to the research (Sheparson et al. 2007: 343),

> The dominance of Mental Model 1 (exclusion of humans) across grade levels suggests that environmental science education has little impact on students' conceptualization of the environment because the environment includes interactions between humans and natural systems.

The researchers suggest two methods to increase student understanding of the impact and inclusiveness of humans in the environment: (1) interdisciplinary environmental education, and

(2) a curriculum that focuses on the local environment and then expands to other environments. Interdisciplinary learning, such as including ethnobotany research projects in social studies classes (Harrell and Forney 2001), helps students make connections between scientific and cultural studies and can increase awareness of their participation in the local environment. A more radical approach to science education that does not treat environmental issues as a "natural" phenomenon but instead brings attention to their cultural roots can prepare students to be actively involved in their local communities (Hodson 2003). Investigative methods of teaching, where students observe and report on species between their homes and school, significantly increased student understanding of the local environment and was a highly-favored means of learning among students in Switzerland (Lindemann-Mathies 2006). Knowledge gathered from class projects on (local) ethnoscientific knowledge can be applied to the school grounds in the form of gardens and landscaping, creating a "three-dimensional textbook" (Taylor 1993) and improving environmental attitudes (Waliczek and Zajicek 1999).

This research provides an avenue for teachers to incorporate local environmental knowledge into standards-based instruction by testing a method for a rapid assessment of ethnobotanical (or other ethnobiological) knowledge. Teachers do not determine relevant standards (see Appendix A for a list of specific SC state standards that could be integrated with local ethnobiological knowledge), but they can creatively teach the curriculum as long as key concepts (listed in support documents) are covered for PASS (Palmetto Assessment of State Standards) testing. South Carolina currently has eleven schools that participate in the Environment as an Integrating Concept (EIC) program, which models interdisciplinary learning on an understanding of the local environment (Falco 2004). Teachers in this program, as well as those who are interested in improving their students' abilities to observe and understand their own impact on the environment, will be served well by a quick assessment of local environmental knowledge that may increase the relevancy of science education to students' lives.

CHAPTER 2: RESEARCH SITE AND OBJECTIVES

ST. GEORGE, SOUTH CAROLINA

The research was conducted in and around St. George, South Carolina (population 2,092; U.S. Census Bureau 2000), located in Dorchester County:

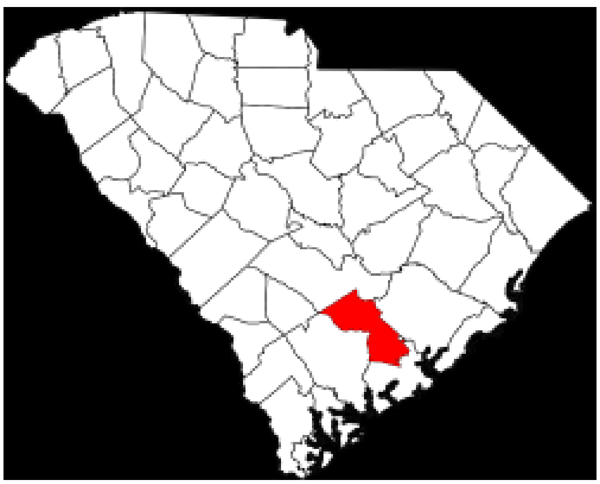

Figure 1: Dorchester County, South Carolina[1]

Educational census data for the area is as follows (U.S. Census Bureau 2000):

Table 1: Educational Census Data, St. George, SC

	#	%
Total population (age 25 and older)	1,338	100%
Less than 9th grade	163	12.2%
9th to 12th grade (no diploma)	249	18.6%
High school graduate	440	32.9%
Some college, no degree	248	18.5%
Associate degree	76	5.7%
Bachelor's degree	119	8.9%
Graduate or professional degree	43	3.2%

[1] http://commons.wikimedia. org/wiki/Image:Map_of_South_Carolina_highlighting_Dorchester_County.svg

One hundred percent of the population of St. George is considered rural. In 96.7% of St. George households, English is the only language spoken. The median household income in 2000 was $24,651, with 17% of St. George households earning less than $10,000 per year (U.S. Census Bureau, Census 2000).

St. George Middle School (grades 6-8; school population: 345 students) was the center of recruitment for parents, grandparents, guardians and other community members interested in participating in this research. This Title I school has failed to meet standardized test requirements set by the federal and state governments for three consecutive years. According to school data, 79% of SGMS students receive free lunch. In a 2007-2008 survey of 7th grade students (in my classes), 76% identified themselves as black, 20% as white, 3% as Native American, and 1% as Latino. All of these students speak English as a first language.

Based on St. George census data and preliminary data from a school-wide survey (conducted by SGMS), very few of the students' parents and guardians have completed a college degree. Because of high levels of low-income students and the low percentage of parents/guardians who have completed college degrees, many students enter school without prerequisite knowledge and early educational experiences. Several parents have informally expressed hesitancy in helping 7th-graders with science research projects, math homework, and writing assignments because of their own lack of familiarity with the subject matter.[2]

A secondary purpose of the research is to increase community involvement in students' intellectual development. Participation was limited to family members/guardians who have lived in Dorchester County for the majority of their lives and are over the age of 25. These participants were asked to sign consent forms before completing the introductory survey and any

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[2] This information has been gathered during my experience as a teacher at St. George Middle School from Fall 2007-Fall 2008.

requisite interviews. The research had full support of SGMS's administration. Hopefully, participation will provide a discussion point between students and other family members when the research is applied in the classroom during a ecological unit that is required in the 7th grade.

OBJECTIVES AND HYPOTHESES

This research tests two rapid assessment free listing methods that evaluate local ethnobiological knowledge, gathered from parents, grandparents, guardians, and other community members in St. George. The research also investigates the effect of age on the level of response. This particular research is ethnobotanical in nature, but other areas of ethnobiology could be tested or applied in the same ways. The most effective method will aid other teachers interested in increasing community involvement in schools and gathering information to assess local environmental knowledge, which can be used as a foundation for classroom instruction (specifically in the sciences). The four sets of data (two survey types and two age groups) were tested for saliency and analyzed for survey-related and age-related differences in response, specifically using folk specific and folk generic taxonomical analysis (Berlin 1992). Survey types and age groups were also analyzed for differences in folk generic saliency. The short-term outcome of the research is a simple, effective method for eliciting the largest number of responses related to local ethnobiological knowledge in as little time as possible—an important factor for teachers. The long-term, applied outcome of the research will be two-fold: a greater potential for increased awareness of the local environment (with humans as a part of this environment) by students (Shepardson et al. 2007); and the opportunity to create classroom materials and three-dimensional learning environments using named, local plants that may provide habitat or food for local animals (Taylor 1993; Walieczek and Zajicek 1999).

OBJECTIVE ONE: FREE LIST SURVEY DESIGN

Objective One was to understand the relationship between free listing survey type (generalized versus specific/focused) and survey response. Free listing is a "deceptively simple but powerful technique" for gathering a relatively large amount of data in a short amount of time (Bernard 2002: 282). Usually, free lists ask informants to name all of X that you can (all of the pets that you can think of, for example). When completing very broadly framed free lists, however, participants often forget to list items in a domain (Brewer 2002). Quinlan (2005: 223) writes:

> Omissions are, in my experience, most likely if the free list prompt is broad. Free list data are ranked so that the order in which people list items reveals psychological or cultural preeminence of items given a certain prompt. The more focused the prompt, the more complete the free list will be for that subject, whereas vague, general prompts result in broad, scattered lists of questionable utility.

Based on Quinlan's argument, it appears that it would be worthwhile to create smaller focused free lists rather than a broader free list (such as simply naming all plants found in the area).

In order to gather information as quickly as possible, teachers would want to administer a free list survey that would elicit the highest level of response. By analyzing broad and focused written (rather than orally administered) free lists, the research can determine which method will provide science teachers with the highest level of response for inclusion of local ethnobiological knowledge in the science classroom. The analysis examines total plant responses among broad and focused free lists; because folk genera are the privileged ethnotaxonomic class (Berlin 1992), the data will also be analyzed based on this classification group. The first objective leads to the following hypotheses:

H1: Free lists that include four smaller domains will elicit more total responses than those that include only one broad domain.

H2: Free lists that include four smaller domains will elicit more folk genera than those that include only one broad domain.

OBJECTIVE TWO: AGE OF INFORMANTS

Objective Two was to evaluate the effect of informant age on (a) survey response and (b) the most important influences on ethnobotanical knowledge. As stated previously, there is a paucity of literature related to the effects of age and modernization on ethnobotanical/ ethnobiological knowledge, especially in the United States. Among studies that have been conducted internationally during the last ten years, researchers have responded to a perceived erosion of ethnobiological knowledge by negatively correlating formal education and medicinal plant identification (Voeks and Leony 2005). It has also been noted that medicinal properties of local plants were once important but are now relied on to a much lesser degree as a result of the increasing availability of over-the-counter medicines (Cavender 2006). It is unknown from current research whether knowledge among individuals is lost or was never initially acquired.

Age appears to affect the acquisition of plant knowledge (Voeks 2007), and this research examines the effects of generational differences on ethnobotanical knowledge. The sample was pre-stratified to ensure consistencies in survey responses among two age cohorts (Bernard 2002): 25-50 years old and over 50 years old. Because formal education in other countries is correlated with a loss of knowledge about local plants, the research proposes that the younger age cohort—which is hypothesized will list fewer total plants and folk genera—will also cite school as their most important source of information about plants, while older participants will name more plants and cite experience over formal education as the source of this knowledge:

H3: Participants over the age of 50 will record more total responses than those aged 25-50.

H4: Participants over the age of 50 will record more folk genera than those aged 25-50.

H5: Participants aged 25-to-50 will cite school as the place where they learned the most about plants, while participants over age 50 will cite personal experience as their most important source of information about plants.

CHAPTER 3: METHODS AND ANALYSIS

PHASE ONE: DEMOGRAPHIC SURVEY AND PLANT FREE LISTS

Data collection for this research began in August 2008 and continued until early-October 2008. Distributed surveys included two parts: (1) a generalized, open-ended survey form that included demographic information (name, age, sex, occupation) and questions phrased to provide data on where ethnobotanical information had been learned and why it is important for children to know; and (2) (a) a general free list survey related to plant knowledge or (b) a group of four specific/focused free list surveys related to plant knowledge [see Appendix B: Questionnaire and Appendix C: Free List Survey Type (A and B)]. Participants were selected from lists of parents, guardians, and grandparents of students at St. George Middle School as well as by requesting participation from community members who were met at churches or other community events (including an annual primitive camp meeting where family members gather for socializing and church services). Because all informants speak English as a primary language, the research was conducted independently, without the help of an assistant. Informants were assured of the their anonymity and encouraged to take as much time as necessary with the surveys.

Two variables—survey type and age—combined to form four classes of informants (Figure 2). These classes included the following: informants between 25-50 years old who participated in Survey A (generalized survey); informants over 50 years of age who participated in Survey A (generalized survey); informants between 25-50 years old who participated in Survey B (specific/focused survey); and informants over 50 years of age who participated in Survey B (specific/focused survey). See Figure 2 for a summary of these classes.

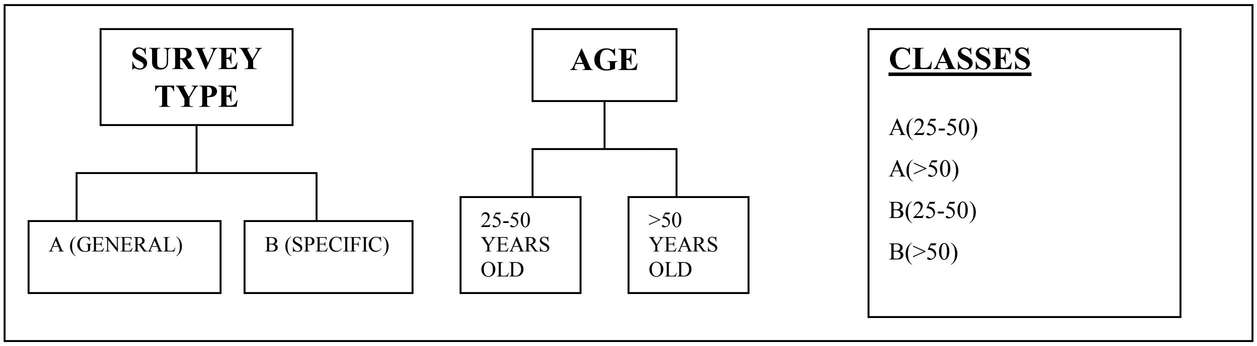


Figure 2: Classes of Informants by Survey Type and Age

Initial survey participant forms were sent to potential informants to determine how informants would be divided according to age. Because of the length of and time involved with surveys, fifteen participants from each class were selected to participate in the research. Of these sixty total informants, nine from each class returned fully completed surveys. (Several surveys were only partially completed, either a result of survey structure or lack of interest on the participants' part.) All participants agreed to participate on their own accord and signed appropriately worded consent forms (IRB approval obtained April 2008).

Because all participation was written (rather than oral), recording devices were not necessary. Open-ended responses concerning demographic information, acquisition of plant knowledge, and the perceived importance of local plant knowledge in formal education were typed for subsequent coding according to common themes. This data provided evidence for **Hypothesis 5**.

The remaining data was in the form of either a general free list (Survey A) or four focused free list questions (Survey B). This research tests the response rates of two free listing techniques noted by Quinlan (2005). Free lists inquire participants about a cultural domain, which can be broad or specific. In the US, written free lists are preferred because of their privacy and because they move at the interviewees pace (Quinlan 2005). Certain supplementary techniques, such as reading the listed items back to the participant or using the listed items as semantic clues to elicit further response, can maximize the length of free lists (Brewer 2002). However, these methods only work if the survey is administered orally, and the benefit of written free lists for teachers is that they can be sent home by students and returned through the mail, eliminating the need for extensive phone conversations or in-person interviews. A solution to this dilemma may be to test the use of written prompts that could be included within the written survey.

The free lists were all related to knowledge about plants that grow in the St. George, SC, area. Survey A included the following broad question:

What are all of the plants that grow in and around St. George?

The free list also included prompts for information about how the plants are used, whether the plants could be identified, whether the plants were wild or cultivated, and what types (folk life form) of plants were being listed. The use, identification, wild/cultivated, and folk life form columns were purely for applied purposes (in the classroom), while the actual plant list was used to test **Hypotheses 1, 2, 3,** and **4.**

Participants receiving Survey B were asked to respond to four focused free lists about local plants. Respondents were asked to keep the larger, general question about local plants in mind while they answered the following specific free lists:

1: What are all of the plants that grow in yards and gardens in and around St. George?

2: What are all of the plants that grow in forests in and around St. George?

3: What are all of the plants that farmers grow in and around St. George?

4: What are all of the plants that you have grown?

The last specific free list, while highly personal, is included because of Quinlan's (2005) observation that free lists are "largely personal and egocentric" (220). This question served as a prompt to recall information that had not yet been listed.

PHASE TWO: FREE LIST SURVEY RESPONSE ANALYSIS

After nine surveys were returned from each informant class (for a total of 36 surveys), data was independently entered for each participant in order to assess:

- total and average numbers of responses;
- total and average numbers of folk genera; and
- total number of *different* folk genera.

The survey types and age groups were each analyzed as a whole for these factors. A visual representation of the top six most salient folk genera in each larger category (survey type and age) was created in order to determine if survey type or age could potentially skew or misrepresent a culture's overall ethnobotanical knowledge.

Physically identifying folk genera and species from written interviews is a difficult task. There are often synonymous common names for a given plant. Fortunately for this research, the dilemma of synonyms is most evident in cultures influenced by multiple languages (Quinlan 2005), and the vast majority of residents in the area speak English as their only language. While some evidence of the affect of vernaculars on ethnobiological nomenclature surfaced [for example, *althea* and *rose of Sharon* (*Hibiscus syriacus*) or *cow-itch* and *trumpet vine* (*Campsis* *radicans*)], the use of local plant guides (Mitchell 1999; Porcher and Rayner 2001) and experts in the field of local plant naming and use[3] aided against confusion related to plant naming.

Free lists for the participants were entered into Microsoft Excel and sorted alphabetically based on total plant responses. This allowed a comparison of responses that eliminated any repeated folk species/genera. The lists were consolidated for the four informant classes [A(25-50); A(>50); B(25-50); and B(>50)] as well as the two larger variable classes (Survey A and Survey B; 25-50 years old and >50 years old). These larger lists provided an opportunity to sort the data according to total number of plants listed (alphabetical) and folk genera (alphabetical). Each larger list (informant classes and overall variables) was quantitatively examined for the following information:

- total and average numbers of plant free lists for each participant (example, butter bean)
- total and average numbers of folk genera for each participant (example, bean)
- number of *different* folk genera for each variable (example, bean and oak)

Using Microsoft Excel worksheets and on-line statistical software, t-tests were used to analyze statistical differences between the survey types and age groups. An initial F-test was also employed to determine if there was any statistical interaction between the two variables in the experiment.

The research intentionally limits analysis to readily available software that teachers would have at their disposal. Although manually quantifying the total numbers of folk genera for a list of nearly 700 plants [such as B (>50)] is tedious, it allows researchers to review plant

[3] Cheryl James, MA Landscape Architecture, UGA (Verdant Enterprises, a local landscaping firm specializing in native plants of the SC Lowcountry); Vaughan Spearman, BS Forestry, UGA (SC Forestry Commission); and Shawn Jadnicek (Clemson Extension; specializing in environmental education and native plant use)

lists in detail and correct entries so that they are recorded to sort with specific genera.[4] Teachers employing a similar technique to gather information about local plants could limit survey responses to ten or fifteen plants in order to avoid excessive or overly repetitive plant lists.

PHASE THREE: ACQUISISTION OF PLANT KNOWLEDGE

In order to test for inter-generational differences in acquisition of plant knowledge, participants were asked to respond to an open-ended question about where/how they had learned about local plants. This data was not analyzed for all classes of informants; it was limited to each larger age group (25-50 and >50). Informants' responses were entered, and simple content analysis (Bernard 2002) was used to codify and determine if there were age-related differences in how local people are acquiring plant knowledge. Two basic profile matrices (Bernard 2002) are included in Appendix H, detailing the comparison of the age cohorts.

[4] Listing a named plant as BEAN, SOY rather than SOYBEAN groups this entry with other beans for effective quantification of folk genera, eliminating the need to create a separate column for folk genera in the Microsoft Excel spreadsheet.

CHAPTER 4: RESULTS

The research clearly demonstrates that age affects the level of ethnobotanical knowledge among people in St. George, SC, and the type of survey appears to marginally affect rates of response. A brief F-test analysis reveals similar differences in age group response across both surveys; thus, there is no interaction between variables that might complicate t-test results. A statistical analysis of survey types (general versus specific/focused) did not show a significant difference between average responses on Survey A and Survey B; however, the total numbers of responses and the numbers of folk genera were higher among Survey B respondents, and the most salient folk genera were different for the two surveys. A comparison between the average numbers of responses from the two age groups (25-50 and >50) shows a significant difference, and there was also an intergenerational difference in terms of the most salient folk genera. A detailed analysis of these findings is presented below.

OBJECTIVE ONE: FREE LIST SURVEY DESIGN

Objective One was to determine the effects of two written free list formats on survey response. Because both surveys were administered to the same number of people (18 for each survey), both raw numerical and statistical results are presented. Survey A (general) produced a total of 843 responses, for an average of 46.9 folk species/genera listed. Survey B (specific/focused) produced a total of 1131 responses, for an average of 62.8 folk species/genera listed. These means were not different at the 0.05 level of significance (degrees of freedom=34;

t-value=-1.39; p-value=0.09). However, with a larger sample size, the results may reveal significant differences between the two surveys, especially among participants over 50 years old (see Appendices D and E).

The total and average numbers of folk genera listed for each survey type were also compared according to raw data and statistical analysis. Participants taking Survey A listed 261 different folk genera, and participants taking Survey B listed 285 different folk genera. This indicates that Survey B may prompt respondents to recognize a larger variety of plant life. However, Survey A participants listed an average of 43.2 different folk genera, and Survey B participants listed an average of 54.2 different folk genera. [See Appendices C and D for further data analysis.] Given the sample size (18 participants per survey), these means did not produce statistically significant results (degrees of freedom=34; t-value=-1.17; p-value=0.12). (See Table 2.)

Table 2: Responses for Survey Types (A and B)

SURVEY TYPE	TOTAL # PLANTS LISTED	AVERAGE # PLANTS LISTED	TOTAL FOLK GENERA LISTED	AVERAGE FOLK GENERA LISTED	TOTAL DIFFERENT FOLK GENERA LISTED
A	843	46.9	777	43.2	261
B	1131	62.8	975	54.2	285

Interestingly, the most salient folk generic listed for both types of surveys was “bean”. (including—in addition to the folk generic “beans”—the following folk species: boil, bountiful, butter, green, Kentucky wonder, Roma string, running bush, running butter, snap, soy, straight, string, and willow). This folk generic term characterizes two scientific genera—*Glycine* and *Phaeseolus*. The survey types diverge after “bean” however; Survey A follows with “corn”, “oak”, “squash”, “pine” and “pepper”, respectively, while Survey B follows with “oak”, “squash”, “pine”, “corn”, and “tomato”. The inclusion of larger numbers of “squash” (including African, butternut, yellow, zucchini and pumpkin) and “tomato” (including cherry, heirloom, Marion, roma and Rutgers) responses may result from prompting participants to enter the names of plants found in gardens (Part 1), found on farms (Part 3), or that the person may have grown (Part 4); however, respondents also reported that they grew peppers in gardens, which were found on Survey A’s most salient list. For a list of the most common folk generic terms listed for each category, please see Appendix F (which includes the frequency with which the most common folk genera and their inclusive species were listed on Surveys A and B). For a list of all other folk species and genera listed on each survey type, see Appendix G.

OBJECTIVE TWO: AGE OF INFORMANTS

Objective Two was to investigate the relationship between the age of informants and their responses to the surveys. As stated previously, an F-test analysis did not reveal any interaction between the two variables; there were similar differences in the responses from both age cohorts across both surveys. Informants aged 25-50 (median age= 39.3) listed a total of 781 responses, for an average of 43.4 per informant. Informants over 50 (median age= 64.3) listed a total of 1,193 responses, for an average of 66.3 per informant. These mean values were found to be significantly different at the 0.05 level of significance (degrees of freedom=34; t-value=-2.06; p-value=0.02). The research reveals that ethnobotanical knowledge is positively correlated with the age of informants.

A quantitative analysis of total numbers of folk genera listed among respondents aged 25-50 finds that 217 different folk genera were listed, while informants over age 50 responded with 300 different folk genera. Further analysis reveals that respondents aged 25-50 provided an average of 39.1 folk genera per survey, while those over age 50 demonstrated knowledge of an average of 58.3 folk genera. These means were also statistically significant at the 0.05 level of significance (degrees of freedom=34; t-value=-2.13; p-value=0.02). The wide variety of plant knowledge exhibited by participants over 50 and the subsequent statistical analysis of average numbers of folk genera listed reinforces the statistical differences between the age groups in terms of total number of responses. (See Table 3.)

Table 3: Responses for Age Cohorts (25-50 and >50)

AGE COHORT	TOTAL # PLANTS LISTED	AVERAGE # PLANTS LISTED	TOTAL FOLK GENERA LISTED	AVERAGE FOLK GENERA LISTED	TOTAL DIFFERENT FOLK GENERA LISTED
25-50 (median age=39.3)	781	43.4	703	39.1	217
OVER 50 (median age=64.3)	1,193	66.3	1,049	58.3	300

In addition, there was variation among the most salient folk genera listed by each age cohort: those aged 25-50 were most likely to list “oak”, “bean”, “pine”, “corn”, “squash”, and “pecan” (in this order), while participants over 50 were most likely to list “bean”, “squash”, “pea”, “oak”, “pepper” or “corn”. These discrepancies could be a result of changing landscapes, rates of plant knowledge acquisition in the local community, a shift away from local subsistence economies during the past few decades, or an interest in gardening plants later in life. As with survey type, for a list of the most common folk generic terms listed for each age group, please see Appendix F. For a list of all folk species and genera listed by each age group, see Appendix G.

The age cohorts were also analyzed to determine intergenerational differences in ethnobotanical knowledge acquisition. One of the open-ended questions included in both survey types was, "How did you learn about plants in St. George?" Answers were coded according to the following major categories: family, friends/neighbors, school, books, gardening, other experience (including hunting, fishing, playing in the woods, and living in the country), and Clemson extension agents. Table 4 (and Appendix H) demonstrates differences and similarities among respondents in each age cohort.

Table 4: Intergenerational Differences in Ethnobotanical Knowledge Acquisition

AGE	FAMILY	FRIENDS/ NEIGHBORS	SCHOOL	BOOKS	GARDENING	OTHER EXPERIENCES	CLEMSON EXTENSION
25-50	13 (41%)	4 (12.5%)	4 (12.5%)	4 (12.5%)	4 (12.5%)	3 (9%)	0 (0%)
>50	13 (34%)	1 (3%)	3 (8%)	6 (16%)	8 (21%)	6 (16%)	1 (3%)

Informants in the 25-50 age cohort were slightly more likely to cite school as an influencing factor in ethnobotanical knowledge acquisition, but family was the guiding source for local plant knowledge in this cohort. Gardening and other experience (such as fishing and hunting) play the greatest role among those older than 50 (comprising 37% of total responses from this cohort). Family is also very important for those older than 50 (34% of total responses). Friends and neighbors, on the other hand, play a greater role in learning about local plants among those aged 25-50. These discrepancies may be a function of age-related activities; one participant over age 50 noted that she did not begin gardening until after she retired, and three participants over age 50 wrote that they were members of local garden clubs.

CHAPTER 5: DISCUSSION

CONTRIBUTIONS TO ETHNOBIOLOGY

The research provides an important contribution to ethnobiological studies—especially those in the United States—by providing a free listing format that is conducive for written (rather than oral) surveys and is capable of producing a relatively large amount of statistically relevant data in a short period of time. Because the research methods employ minimal technology, anthropologists interested in comparative ethnobiology could use similar surveys to compile and compare large amounts of information across the United States. The lack of contemporary ethnobotanical literature that focuses on US populations provides ample opportunity for interested researchers.

Survey A and Survey B are not statistically different in terms of numbers of responses; however, a larger sample size may ultimately provide increasing support for differences in how free lists are designed. The raw data demonstrates that the dividing a free list into sub-categories as suggested by Quinlan (2005) produces a larger number of total responses, even if the difference is not statistically significant. Survey A, which presented a general question about local plant knowledge, produced an average of 46.9 total responses across both age groups; Survey B, which divided the question into four sub-categories and included a question related to personal involvement with local plant species, produced an average of 62.8 total responses across both age groups. Among the four groups (see Appendices A and B), participants over age 50 who took Survey B produced the largest total numbers of responses; the average list length among this sub-cohort was 77.7 plants. Ethnobiologists employing written free list techniques would be wise to consider this data when designing surveys.

On the other hand, the research reveals significant statistical differences between the two age cohorts who submitted surveys. Voeks and Leony (2005) report that in Brazil, processes of modernization appear to be eroding knowledge related to medicinal plant value. Likewise, Cavender (2006) reveals a decline in the use of plants for medicinal purposes in southern Appalachia (United States). This research demonstrates a strong difference in plant knowledge between those aged 25-50 and those older than 50 in terms of total plants listed, total folk genera listed, and the number of *different* genera listed by each age cohort. The research does not probe the underlying causes of more responses from those older than 50, but participants in this age cohort were more likely to use books to gather plant knowledge, and their experiences with gardening, hunting, and fishing appear to positively affect their rate of response.

When conducting ethnobiological research in the US among three different groups of specialists (taxonomists, landscape workers, and parks maintenance personnel), Medin et al. (1997) found that although the folk generic level is psychologically privileged, there are differences in how people arrive at the genus level of classification (for example, landscape workers sorted trees based on utilitarian characteristics, while taxonomists sorted according to morphological features). Similarly in this research (although not explicitly tested), a farming participant sorted plants according to vegetables versus fruits, for example, while a forester participant sorted plants according to scientific taxonomy. The farmer listed oaks that were important shade trees on his farm, including “blackjack”, “water”, and “white”, while the forester listed “cherrybark”, “chestnut”, “laurel”, “live”, “pin”, “post”, “sawtooth”, “southern red”, “swamp chestnut”, “water”, and “willow”. These differences in folk specific knowledge did not affect similarities in folk generic knowledge. Limited analysis of the most salient genera in each major variable category reveal some differences, but “bean”, “oak”, “pine”, “corn”, “pecan”, “pepper”, “squash”, and “tomato” were among the top ten genera for all four categories. Participants over age 50 represented most of the folk genera expressed by those aged 25-50; people over age 50 were capable of adding to this list because of greater noted personal experience with plants. One interesting difference among age groups for the category of folk generic was “pea”, which was listed 23 times by those over age 50 and only 8 times by those aged 25-50. Ultimately, however, these informants are a part of a larger US sub-culture with similar knowledge of folk genera, despite varying levels of response.

APPLICATIONS IN THE CLASSROOM

From personal experience as a public school teacher, demands on time and overwhelming responsibilities often undermine a teacher’s ability to think and instruct outside of the box. Prescribed methods are simple and timesaving. Instructional creativity is highly encouraged at SGMS, but there is very little structured time to develop new methods of teaching. However, the goal of environmental science education is a greater awareness of human involvement in the environment (Hodson 2003; Shepardson et al. 2007), and research shows that environmental exposure increases environmental awareness (Ewert et al. 2005; Lindemann-Matthies 2006; Wallczek and Zajicek 1999). It follows that tying state indicators to local environmental knowledge would be one of the most effective ways of developing students well-versed in environmental science. Teachers can use these simple surveys to develop their own class projects that incorporate ethnobiological knowledge with relevant state standards. A list of important ecological standards for South Carolina public schools can be found in Appendix A.

The first four hypotheses helped illuminate the most effective methods for science teachers (or interested ones from other disciplines) to rapidly assess and contribute local environmental knowledge to the classroom curriculum. Questioning techniques and the age of participants may affect the amount and quality of data produced. According to this research, teachers would gather the most information using informants over age 50. Because teachers have a limited amount of time to conduct any sort of community assessment, the more efficient a questionnaire, the higher its value. Depending on the time a teacher wants to devote to learning about local environmental knowledge, he or she could distribute a few different sub-surveys about a particular ethnobiological category (plants, animals, mushrooms, etc.); these could be assigned as homework, ensuring community involvement in the educational process. The teacher could compile the data in Excel format, and students could spend time practicing inquiry skills by analyzing the overall data as a group project. Over time, more in-depth interviews with those who are identified as key informants can improve the teacher's own understanding of the local environment.

There are several applications of this research that may be beneficial to increase the relevancy of scientific knowledge in students' lives. For example, in SC, 6^{th} graders in are required to understand and apply scientific taxonomy. Studies like this can provide information about folk taxonomies that would allow students to grasp difficult Latin taxonomies on an ethnotaxonomical level, using language that makes sense to them. Similar research, limited to ten responses and assigned as a class project, could also explore local plant and animal knowledge as a springboard for ecological studies in food webs or habitat types. Teachers could also accompany discussions about human ecology with class sets of wild plant cards (such as Figures 3 and 4). These cards would use information gathered from the research to instruct students about human adaptation to the local environment, collaborating with history teachers to reinforce studies about Native Americans, colonialism, or SC state history. The cards could include vivid descriptions and illustrations so that the natural learning process is satisfied for the intended audience (Hunn 2006), even in areas where students may not be able to go outside (especially urban settings).

(http://www.floridata.com)

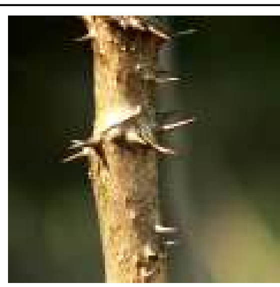
RED BAY

Persea borbonia

Lauraceae

Aromatic native **red bay** has been used as a substitute for bay laurel leaves to flavor meats and soups.

Figure 3: Wild Plant Card—Red Bay



(http://en.wikipedia.org/wiki/Aralia_spinosa)

DEVIL'S WALKING CANE

Aralia spinosa

Araliaceae

Devil's walking cane is endowed with dangerous thorns, but this evil-looking native plant provides food for local birds. The young leaves can also be gathered and cooked before the tree's thorns harden.

Figure 4: Wild Plant Card—Devil's Walking Cane

If teachers conduct local ethnobiological research, they can also apply it by creating three-dimensional learning environments that provide active ecological learning spaces (Taylor 1993). Barren school yards can be enhanced with the inclusion of ethnobotanically important species that provide habitat for local animal species (Taylor 1993), and students can determine which species should be included through the use of teacher-created free list surveys designed to maximize participant response. Students could administer the surveys as a class project, and relevant plants could be sorted among the compiled data. The relevancy would be decided by the teachers in conjunction with the students; for example, plants could be sorted to create a garden that included only wild, edible or medicinal plants.

Research into garden-enhanced nutrition curriculum advocates the encouragement on behalf of administrators of a wide variety of fruits and vegetables in garden programs (Morris and Zidenberg-Cherr 2002). The inclusion of wild plant foods into a school landscape could introduce a discussion of antioxidants and other phytochemicals that have nutritional and medicinal value. A three-dimensional learning environment based on teacher-directed ethnobiological research has the potential to improve students' environmental attitudes by providing a chance for direct interaction with nature (Waliczek and Zajicek 1999). In addition, since most students do not walk to school and cannot experience or identify native species on the way to school (Lindemann-Matthies 2006), a garden-based learning environment can provide an opportunity for students who ride the bus to investigate nature once they get to the school yard, increasing appreciation for native species and their roles in humans' lives. Table 5 includes a number of interesting wild, locally important species in St. George, SC, which might be included in an ethnobiologically-enhanced learning environment.

Table 5: Research-Derived Folk Species/Genera for a 3-D Learning Environment

FOLK SPECIFIC/ FOLK GENERIC NAME	SCIENTIFIC NAME	NAMED FOLK LIFE FORM	NAMED USE
Artichokes (Jerusalem)	*Helianthus tuberosus* (ASTERACEAE)	"plant"	medicine and food
Blackberry	*Rubus fruticosus* (ROSACEAE)	"vine"/ "bush"	food
Blueberry	*Vaccinium* spp. (ERICACEAE)	"fruit"/ "bush"	food
Cherry Tree	*Prunus serotina* (ROSACEAE)	"tree"	medicine and food
Cypress	*Taxodium distichum* (CUPRESSACEAE)	"tree"	medicine
Dandelion	*Taraxacum officinale* (ASTERACEAE)	"plant"/ "flower"	medicine and food
Grape (Muscadine)	*Vitis rotundifolia* (VITACEAE)	"vine"	food
Honeysuckle	*Lonicera periclymenum* (CAPRIFOLIACEAE)	"vine"	food
Plum Tree	*Prunus americana* (ROSACEAE)	"fruit"/ "tree"	food
Pokeweed	*Phytolacca americana* (PHYTOLACCACEAE)	"plant"	medicine
Sassafras	*Sassafras albidum* (LAURACEAE)	"root"/ "bush"	medicine
St. John's Wort	*Hypericum perforatum* (CLUSIACEAE)	"plant"	medicine

The most important issue is for teachers to begin this process, using similar research (however abbreviated) to identify aspects of the local environment that can be incorporated into standards-driven instruction. This approach to education will focus curricular emphasis on the local environment; an appreciation of the local can be expanded to an understanding of the global (Shepardson et al. 2007). Proper teacher-directed research methods will help overcome Ortiz de Montellano's (2001) deserved concern that traditional ecological knowledge may be improperly presented to students, since the teacher will gather information that can be analyzed for folk specific and folk generic results. At the same time, if surveys include a few focused questions, are limited in scope (no more than ten responses for each focused question), and target knowledgeable populations (especially those over age 50), ethnobiological free lists can provide a quick, interesting, creative way to involve the local community in K-12 education, regardless of participants' educational background.

CHAPTER 6: CONCLUSIONS

According to this research, age significantly affects the length of response to a written ethnobiological free list, while embedding specific/focused questions in the survey rather than a single, generalized question appears to marginally affect total and average folk specific and folk generic responses. These findings could positively influence the potential for scientifically-reliable, local ethnobiological knowledge to be integrated with standards-driven K-12 science education. By introducing an abbreviated survey similar to this one as a class project, students' time would be most profitably spent interviewing community members over age 50. However, as the saliency charts in the Appendices section show, solely interviewing those over age 50 may misrepresent total local ethnobiological knowledge. Also, although those over age 50 knew significantly more about plants than those in the 25-50 year old cohort across both surveys, participants aged 25-50 who took the focused survey (Survey B) only listed an average of 6.9 plants less than those over age 50 who took the generalized survey (Survey A).

The research could have benefited from increased participation in all variable groups in order to clarify the data, especially between survey types. There were 36 total participants, equally divided among age and survey type. Also, the survey could have been restructured to only ask for plant lists (folk generic and folk specific information), but the additional columns of information were included in potential classroom applications. These columns (especially *use of plants*) increase the relevancy of the information to students' lives.

In the general questionnaire, participants were asked about the importance of learning about local plants as part of a student's general education. The data were not formally analyzed, but responses may direct future research. One respondent noted, "Everyone should know what type of plants that are in their area because they will know what is best for their little part of the world." Another informant stated, "Gardening teaches children to be creative and self-sufficient…Knowledge brings appreciation." In fact, eight informants noted that self-sufficiency (especially in growing their own food) is an important reason to learn about local plants as a part of the education process. And, as one participant stated, learning about plants "opens our minds to a much larger world that is all around us." Additional research should formally investigate public attitude toward the inclusion of local ethnobiological knowledge into the K-12 scientific curriculum in order to determine how this information will best be applied in the school setting.

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APPENDICES

APPENDIX A: RELEVANT STATE STANDARDS

Grade 1

1-2.3 Classify plants according to their characteristics (including what specific type of environment they live in, whether they have edible parts, and what particular kinds of physical traits they have).

Grade 3

3-2.4 Explain how changes in the habitats of plants and animals affect their survival.

Grade 4

4-2.1 Classify organisms into major groups (including plants or animals, flowering or nonflowering plants, and vertebrates [fish, amphibians, reptiles, birds, and mammals] or invertebrates) according to their physical characteristics.

4-2.2 Explain how the characteristics of distinct environments (including swamps, rivers and streams, tropical rain forests, deserts, and the polar regions) influence the variety of organisms in each.

4-2.3 Explain how humans and other animals use their senses and sensory organs to detect signals from the environment and how their behaviors are influenced by these signals.

4-2.5 Explain how an organism's patterns of behavior are related to its environment (including the kinds and the number of other organisms present, the availability of food and other resources, and the physical characteristics of the environment).

4-2.6 Explain how organisms cause changes in their environment.

Grade 5

5-2.2 Summarize the composition of an ecosystem, considering both biotic factors (including populations to the level of microorganisms and communities) and abiotic factors.

5-2.3 Compare the characteristics of different ecosystems (including estuaries/salt marshes, oceans, lakes and ponds, forests, and grasslands).

Grade 6

6-2.1 Recognize the hierarchical structure of the classification (taxonomy) of organisms (including the seven major levels or categories of living things—namely, kingdom, phylum, class, order, family, genus, and species).

Grade 7

Standard 7-4: The student will demonstrate an understanding of how organisms interact with and respond to the biotic and abiotic components of their environment. (Earth Science, Life Science)

Indicators

7-4.1 Summarize the characteristics of the levels of organization within ecosystems (including populations, communities, habitats, niches, and biomes).

7-4.3 Explain the interaction among changes in the environment due to natural hazards (including landslides, wildfires, and floods), changes in populations, and limiting factors (including climate and the availability of food and water, space, and shelter).

7-4.6 Classify resources as renewable or nonrenewable and explain the implications of their depletion and the importance of conservation.

APPENDIX B: QUESTIONNAIRE [GENERAL (OPEN-ENDED)]

GENERAL SURVEY:

1. Name____
2. Age__________________
3. Date of Birth____________
4. Sex ___________
5. How long have you lived in or around St. George (including Grover, Harleyville, Reevesville, Rosinville, Dorchester, or other communities)?____________
6. Where have you lived during this time?____
7. What is/was your occupation?_______________________________________
8. How did you learn about plants and animals in St. George? (For example, from brothers or sisters, parents, grandparents, or other family members? Through hunting, fishing, or gardening? In school? From books?) Please use the space below to explain your answer.
   Do you think that it is important for children in St. George to learn about plants and animals that live in this area? Why or why not?

APPENDIX C: FREE LIST SURVEYS (A AND B)

SURVEY A (GENERAL): What plants are found in and around St. George?

Name of Plant	Are there uses for this plant? (Is it a food, an old-timey medicine, a good landscaping plant, etc.?)	Could you identify this plant? (Yes or No)	Is the plant wild or cultivated (do people grow it)?	What type of plant is it? (For example: grass, tree, bush, flower, vegetable, fruit, etc.)
1.				
2.				
Etc…				

SURVEY B (SPECIFIC):

1. What plants are found in **yards** and **gardens** in and around St. George?

Name of Plant	Are there uses for this plant? (Is it a food, an old-timey medicine, a good landscaping plant, etc.?)	Could you identify this plant? (Yes or No)	Is the plant wild or cultivated (do people grow it)?	What type of plant is it? (For example: grass, tree, bush, flower, vegetable, fruit, etc.)
1.				
2.				
Etc…				

2. What plants are found in **fields** and **forests** in and around St. George?

Name of Plant	Are there uses for this plant? (Is it a food, an old-timey medicine, a good landscaping plant, etc.?)	Could you identify this plant? (Yes or No)	Is the plant wild or cultivated (do people grow it)?	What type of plant is it? (For example: grass, tree, bush, flower, vegetable, fruit, etc.)
1.				
2.				
Etc…				

3. What plants are found on **farms** in and around St. George?

Name of Plant	Are there uses for this plant? (Is it a food, an old-timey medicine, a good landscaping plant, etc.?)	Could you identify this plant? (Yes or No)	Is the plant wild or cultivated (do people grow it)?	What type of plant is it? (For example: grass, tree, bush, flower, vegetable, fruit, etc.)
1.				
2.				
Etc…				

4. What are plants that **you have grown or planted**?

Name of Plant	Are there uses for this plant? (Is it a food, an old-timey medicine, a good landscaping plant, etc.?)	Could you identify this plant? (Yes or No)	Is the plant wild or cultivated (do people grow it)?	What type of plant is it? (For example: grass, tree, bush, flower, vegetable, fruit, etc.)
1.				
2.				
Etc…				

APPENDIX D: FREE LIST STATISTICS (25- 50 YEARS OLD)

SURVEY A:

RESPONDENT	# RESPONSES	# FOLK GENERA
1A	4	4
2A	50	44
6A	40	39
7A	65	63
10A	38	38
11A	37	37
12A	15	15
14A	24	24
15A	76	65

A=general survey

B=specific survey

= survey

Average # Responses= 38.8
Total # Responses= 349

Average # Folk Genera= 36.6
Total # Folk Genera= 329

SURVEY B:

RESPONDENT	# RESPONSES	# FOLK GENERA
1B	62	54
2B	101	82
4B	55	54
8B	17	17
10B	41	39
11B	40	40
12B	61	35
13B	27	26
14B	28	27

Average # Responses= 48.0
Total # Responses= 432

Average # Folk Genera= 41.6
Total # Folk Genera= 374

APPENDIX E: FREE LIST STATISTICS (OVER 50 YEARS OLD)

SURVEY A:

RESPONDENT	# RESPONSES	# FOLK GENERA
18A	15	15
19A	10	10
21A	137	123
22A	12	12
23A	58	56
25A	34	34
27A	114	87
28A	68	66
29A	46	45

A=general survey

B=specific survey

= survey

Average # Responses= 54.9 Average # Folk Genera= 49.8
Total # Responses= 494 Total # Folk Genera= 448

SURVEY B:

RESPONDENT	# RESPONSES	# FOLK GENERA
17B	41	40
18B	81	66
21B	24	22
24B	110	93
25B	64	62
26B	53	49
27B	105	80
28B	94	85
29B	127	104

Average # Responses= 77.7 Average # Folk Genera= 66.8
Total # Responses= 699 Total # Folk Genera= 601

APPENDIX F: MOST SALIENT FOLK GENERA (INCL. FOLK SPECIES)

BEAN:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
FABACEAE (genera vary)	BEAN	2	2	3	1
Glycine max	SOY BEAN	6	12	7	11
Phaseolus lunatus	BUTTER BEAN; BOUNTIFUL BEAN; RUNNING BUSH; RUNNING BUTTER	6	11	6	11
Phaseolus vulgaris	BEAN (INCLUDING BOIL, GREEN, STRAIGHT, STRING, KENTUCKY WONDER, WILLOW)	8	16	10	14
	TOTAL BEAN=	***22***	***41***	***26***	***37***

CORN:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
Zea mays	CORN; FIELD CORN (INCL. INDIAN)	11	17	14	14
Zea mays var. saccharata	CORN (INCLUDING CAROLINA SWEET; SILVER QUEEN; SWEET; WHITE; YELLOW; YELLOW SWEET)	7	3	4	6
	TOTAL CORN=	***18***	***20***	***18***	***20***

OAK:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
Quercus spp.	OAK	12	13	14	11
Quercus acutissima	SAWTOOTH OAK	1	0	1	0
Quercus alba	WHITE OAK	1	3	1	3
Quercus falcata	SPANISH OAK; SOUTHERN RED OAK	1	4	3	2
Quercus laurifolia	LAUREL OAK	0	1	1	0
Quercus marilandica	BLACK JACK OAK	1	0	0	1
Quercus michauxii	SWAMP CHESTNUT OAK	0	1	1	0
Quercus nigra	WATER OAK	1	3	2	2
Quercus pagoda	CHERRYBARK OAK	0	1	1	0
Quercus palustris	PIN OAK	0	2	2	0
Quercus phellos	WILLOW OAK	0	1	1	0
Quercus prinus	CHESTNUT OAK	0	1	1	0
Quercus stellata	POST OAK	0	2	1	1
Quercus virginiana	LIVE OAK	1	3	2	2
	TOTAL OAK=	***18***	***35***	***31***	***22***

PEA:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
FABACEAE (genera vary)	PEA	3	1	3	1
Pisum sativum var. macrocarpon ser. cv.	SUGAR PEA; SWEET PEA; GREEN PEA	4	6	1	9
Vigna unguiculata	PEA (INCLUDING BLACK EYE, COW, CROWDER, FIELD, AND PINKEYE)	6	11	4	13
	TOTAL PEA=	***13***	***18***	***8***	***23***

PECAN:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
Carya illinoinensis	PECAN; PECAN TREE	13	14	15	12
	TOTAL PECAN=	***13***	***14***	***15***	***12***

PEPPER:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
Capsicum annuum	PEPPER	1	5	1	5
Capsicum annuum (varieties)	BANANA PEPPER	3	2	2	3
	BELL PEPPER; GREEN PEPPER	6	4	5	5
	HOT PEPPER	3	3	2	4
	PIMENTO PEPPER	1	1	0	2
	YELLOW PEPPER	2	0	1	1
	TOTAL PEPPER=	***16***	***15***	***11***	***20***

PINE:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
Pinus spp.	PINE	14	14	14	14
Pinus echinata	SHORTLEAF PINE	1	1	1	1
Pinus elliottii	SLASH PINE	0	1	1	0
Pinus glabra	SPRUCE PINE	0	1	1	0
Pinus palustris	LONGLEAF PINE	1	2	2	1
Pinus serotina	POND PINE	0	1	1	0
Pinus strobus	WHITE PINE	0	1	1	0
Pinus taeda	LOBLOLLY PINE	0	2	2	0
	TOTAL PINE=	***16***	***23***	***23***	***16***

SQUASH:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
Cucurbita maxima	PUMPKIN; PUMPKIN SQUASH	5	2	4	3
Cucurbita moschata	BUTTERNUT; AFRICAN SQUASH	0	2	0	2
Cucurbita pepo var.	SUMMER SQUASH (INCLUDING YELLOW, CROOK NECK, ZUCCHINI)	13	19	12	20
	TOTAL SQUASH=	***18***	***23***	***16***	***25***

TOMATO:

SCIENTIFIC NAME	FOLK GENERIC (INCLUDING FOLK SPECIES)	SURVEY A	SURVEY B	< 50	> 50
Solanum lycopersicum	TOMATO (INCL. CHERRY, HEIRLOOM, MARION, ROMA AND RUTGERS)	10	19	12	17
	TOTAL TOMATO=	***10***	***19***	***12***	***17***

APPENDIX G: SALIENCY (BY SCIENTIFIC NAME)

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Abelmoschus esculentus; Hibiscus esculentus	OKRA	5	10	7	8
Acer spp.	MAPLE	10	9	5	14
Acer palmatum	JAPANESE MAPLE	3	2	3	2
Acer rubrum	RED MAPLE	0	1	1	0
Acer saccharum	SUGAR MAPLE	1	1	1	1
Achillea millefolium	YARROW	1	0	0	1
Acuba japonica	ACUBA JAPONICA; JAPONICA	1	2	1	2
Aesculus glabra	BUCKEYE	1	3	2	2
Albizia julibrissin	SILK TREE	0	1	1	0
Ageratum spp.	AGERATUM	1	0	0	1
Alcea spp.	HOLLYHOCK	1	1	0	2
Allium sativum	GARLIC	3	3	4	2
Allium schoenoprasum	CHIVES	0	1	1	0
Allium spp.	ONION	6	9	3	12
Aloe vera	ALOE	0	3	1	2
Amaranthus retroflexus	PIGWEED	0	1	0	1
Ambrosia artemisiifolia	RAGWEED	2	1	2	1
Amelanchier obovalis	JUNEBERRY	1	0	1	0
Ananas comosus	PINEAPPLE	1	0	1	0
Andropogon spp.	BROOM STRAW	0	1	0	1
Andropogon glomeratus	STRAW PLANT	1	0	1	0
Anemone spp.	ANEMONE	1	0	0	1
Antennaria margaritaceum	LIFE-EVERLASTING	1	0	1	0
Antirrhinum majus	SNAPDRAGON	1	0	1	0
Aquilegia canadensis	EASTERN CANADENSIS	0	1	1	0
Arachis hypogaea	PEANUT; PEANUT PLANT	10	16	12	14
Aralia spinosa	DEVIL'S WALKING STICK/CANE	1	0	0	1
Asarum canadense	GINGER ROOT	1	2	1	2
Asparagus densiflorus	ASPARAGUS FERN	1	1	0	2
Asparagus officinalis	ASPARAGUS	1	3	0	4
Aspidistra elatior	CAST IRON PLANT; IRON PLANT	0	2	0	2
Aster spp.	ASTER	1	1	0	2
Astilbe spp.	ASTILBE	1	0	0	1
Avena sativa	OAT	2	5	2	5
Baccharis halimifolia	SEA MERCKLE (myrtle)	0	1	0	1
Begonia spp.	BEGONIA	3	3	1	5
Berberis spp.	BARBERRY	1	0	0	1
Beta vulgaris	BEET	3	5	2	6
Betula nigra	RIVER BIRCH; BIRCH	3	7	4	6
Bracteantha bracteata	STRAWFLOWER	0	1	0	1
Brassica juncea	MUSTARD GREENS	5	4	3	6

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Brassica napobrassica	RUTABAGA	2	3	1	4
Brassica oleracea Acephala Group	COLLARD; COLLARD GREENS; GEORGIA COLLARDS	10	9	8	11
Brassica oleracea Capitata Group	CABBAGE	9	8	9	8
Brassica oleracea Italica Group	BROCOLLI	1	3	1	3
Brassica rapa var. rapa	TURNIP; TURNIP GREENS	7	5	4	8
Buddleja davidii	BUTTERFLY BUSH	0	1	1	0
Buxus sempervirens	BOXWOOD; BUXUS	2	5	3	4
Caladium bicolor	CALADIUM	1	1	1	1
Calendula spp.	MARIGOLD	3	5	1	7
Calluna vulgaris	HEATHER	1	0	1	0
Calycanthus floridus var. laevigatus	SWEET SHRUB	1	0	0	1
Camellia japonica	CAMELLIA	3	5	2	6
Camellia sinensis	TEA; GREEN TEA	1	1	1	1
Camellia x Susanqua	SUSANQUA	0	2	0	2
Campsis radicans	TRUMPET VINE; COW ITCH VINE	2	6	2	6
Canna spp.	AMARYLLIS	1	1	1	1
Canna spp.	CANNA LILY	0	1	0	1
Cannabis sativa	HEMP; MARIJUANA	0	2	1	1
Capsicum annuum	PEPPER	1	5	1	5
Capsicum annuum (varieties)	BANANA PEPPER	3	2	2	3
	BELL PEPPER; GREEN PEPPER	6	4	5	5
	HOT PEPPER	3	3	2	4
	PIMENTO PEPPER	1	1	0	2
	YELLOW PEPPER	2	0	1	1
Carpinus caroliniana	IRONWOOD TREE	0	2	1	1
Carya aquatica	WATER HICKORY	0	1	1	0
Carya glabra	PIGNUT HICKORY	0	1	1	0
Carya illinoinensis	PECAN; PECAN TREE	13	14	15	12
Carya spp.	HICKORY; HICKORY NUT	3	6	2	7
Carya tomentosa	MOCKERNUT HICKORY	0	1	1	0
Castanea mollissima	CHESTNUT	0	1	0	1
Castanea pumila	CHINQUAPIN TREE	0	1	0	1
Catalpa bignonioides	CATALPA; CATAWBA; SOUTHERN CATALPA	0	3	2	1
Cedrus libani	CEDAR OF LEBANON	0	1	1	0
Cedrus spp.	CEDAR	6	5	3	8
Celtis laevigata	SUGARBERRY	0	1	1	0
Cenchrus echinatus	STICKERS	0	1	1	1
Cercis canadensis	REDBUD	1	2	1	2
Cercis siliquastrum	JUDAS TREE	1	0	1	0
Chionanthus virginicus	GRANDADDY GRAYBEARD	1	0	0	1
Chrysanthemum spp.	CHRYSANTHEMUM	2	0	0	2

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Chrysanthemum spp.	MUMS	2	5	5	2
Cirsium horridulum	THISTLES	0	1	0	1
Citrullus lanatus	WATERMELON	7	15	11	11
Citrus × paradisi	GRAPEFRUIT	1	1	0	2
Citrus aurantifolia	LIME	1	1	2	0
Citrus limon	LEMON	3	0	1	2
Citrus reticulata	TANGERINE	1	1	0	2
Citrus sinensis	ORANGE	4	0	1	3
Clematis spp.	CLEMATIS; CLEMATIS VINE	2	1	0	3
Coleus blumei	COLEUS	1	1	0	2
Colocasia esculenta	ELEPHANT EAR; ELEPHANT PLANT	3	4	3	4
Coreopsis spp.	COREOPSIS	1	0	0	1
Coreopsis verticillata	MOONBEAN COREOPSIS	0	1	0	1
Cornus florida	DOGWOOD (INCLUDING PINK, RED, WHITE, FLOWERING)	11	13	8	16
Cortaderia selloana	PAMPAS GRASS	0	2	2	0
Cotinus coggygria	PURPLE SMOKE TREE	1	0	0	1
Crataegus phaenopyrum	WASHINGTON HAWTHORNE	1	0	1	0
Crocus spp.	CROCUS	2	0	0	2
Cucumis melo	CANTALOUPE/HONEY DEW/ MUSHMELON	7	10	6	11
Cucumis sativus	CUCUMBER	10	13	9	14
Cucurbita maxima	PUMPKIN; PUMPKIN SQUASH	5	2	4	3
Cucurbita moschata	BUTTERNUT; AFRICAN SQUASH	0	2	0	2
Cucurbita pepo var.	SQUASH (YELLOW, CROOK NECK, ZUCCHINI)	13	19	12	20
Cuppressus arizoonica var. glabra 'Carolina Sapphire'	CAROLINA SAPPHIRE PINE	0	1	1	0
Cupressocyparis leylandii	LEYLAND CYPRESS	0	2	2	0
Cycas revolute	SAGO PALM	0	3	2	1
Cydonia oblonga	QUINCE	1	2	1	2
Cynodon spp.	COASTAL GRASS; BERMUDA GRASS	3	3	1	5
Cyperus spp.	NUT GRASS	1	0	0	1
Dahlia spp.	DAHLIA	2	0	0	2
Daphne spp.	DAPHNEY	0	1	1	0
Daucus carota	QUEEN ANNE'S LACE	0	1	0	1
Daucus carota subsp. sativus	CARROT	3	6	4	5
Dianthus barbatus	SWEET WILLIAM	1	0	0	1
Dianthus spp.	DIANTHUS	1	1	0	2

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Digitalis purpurea	FOXGLOVE	1	0	0	1
Diospyros virginiana	PERSIMMON; WILD PERSIMMON	5	3	3	5
Echinacea purpurea	PURPLE CONEFLOWER; ECHINACEA	0	2	1	1
Eremochloa ophiuroides	CENTIPEDE GRASS	4	4	2	6
Eriobotrya japonica	LOQUAT	1	1	1	1
Eucalyptus spp.	EUCALYPTUS	3	3	4	2
Euonymus spp.	EUONYMUS	2	0	1	1
Fagus gradifolia	AMERICAN BEECH	0	1	1	0
Fatsia japonica	FATSIA JAPONICA	1	1	0	2
Feijoa sellowiana; Acca sellowiana	PINEAPPLE GUAVA	1	0	1	0
Ferula assafoetida	ASAFETIDA	1	0	1	0
Ficus carica	FIG	11	9	9	11
Foeniculum vulgare	FENNEL	2	3	1	4
Forsythia spp.	FORSYTHIA	1	0	0	1
Fortunella spp.	KUMQUAT	1	1	1	1
Fragaria × ananassa	STRAWBERRY	7	9	9	7
Fragaria virginiana	STRAWBERRY-WILD	1	1	1	1
Fraxinus spp.	ASH TREE	0	3	1	2
Fraxinus americana	WHITE ASH	0	1	1	0
Fraxinus pennsylvanica	GREEN ASH	0	1	1	0
Gardenia spp.	GARDENIA	3	6	3	6
Gaultheria procumbens	WINTERGREEN	0	1	0	1
Gaylussacia frondosa	HUCKLEBERRY; WILD HUCKLEBERRY	1	3	0	4
Gelsemium rankanii	SWAMP JESSAMINE	0	1	0	1
Gelsemium sempervirens	CAROLINA JESSAMINE YELLOW JESSAMINE	5	4	3	6
Geranium spp.	GERANIUM	4	0	1	3
Gerbera jamesonii	GERBER DAISY	0	1	0	1
Gladiolus spp.	GLADIOLA	3	0	1	2
Gleditsia triacanthos	HONEY LOCUST	0	1	1	0
Gossypium hirsutum	COTTON	9	15	13	11
Graptopetalum paraguayense	GHOST PLANT	0	1	0	1
Gypsophylla paniculata	GYPSOPHILLA	0	1	0	1
Hedera spp.	IVY	5	5	4	6
Hedera canariensis	ALGERIAN IVY	0	1	1	0
Hedera helix	ENGLISH IVY	0	1	1	0
Helianthus annuus	SUNFLOWER	9	10	8	11
Helianthus tuberosus	ARTICHOKE; JERUSALEM ARTICHOKE	1	2	1	2
Hemerocallis spp.	DAY LILY	2	6	3	5
Hemerocallis spp.	GLORIOUS LILY	0	1	1	0

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Hemerocallis spp.	STAR OF DAVID LILY	1	0	0	1
Heuchera micrantha	HUECHERA	1	0	0	1
Hibiscus spp.	HIBISCUS	2	2	1	3
Hibiscus moscheutos	MALLOW	0	1	0	1
Hibiscus mutabilis	CONFEDERATE ROSE	1	1	2	0
Hibiscus syriacus	ROSE OF SHARON; ALTHEA	0	4	1	3
Hordeum vulgare	BARLEY	1	3	0	4
Hosta spp.	HOSTA	0	2	2	0
Hyacinthus spp.	HYACINTH	1	0	0	1
Hydrangea spp.	HYDRANGEA	2	6	3	5
Hydrangea quercifolia	OAKLEAF HYDRANGEA	0	1	0	1
Hymenocallis caroliniana	SPIDER LILY	1	1	1	1
Hypericum perforatum	ST. JOHN'S WORT	0	1	0	1
Iberis umbellata	CANDY TUFT	1	0	0	1
Ilex spp.	HOLLY	7	8	4	11
Ilex burfidi	DWARF BURFIDI	0	1	0	1
Ilex cornuta 'Burfordii'	BURFORDI HOLLY	0	1	0	1
Ilex crenata	CONVEXA HOLLY; SKY PENCIL HOLLY	0	2	0	2
Ilex opaca	CLARISSA HOLLY; AMERICAN HOLLY; WILD HOLLY	1	3	2	2
Ilex vomitoria	YAUPON HOLLY	1	1	1	1
Ilex x attenuata 'Savannah'	SAVANNAH HOLLY	0	1	0	1
Impatiens spp.	IMPATIENS	1	2	0	3
Imperator cylindrical	JAPANESE BLOOD GRASS	0	1	0	1
Indigofera tinctoria	INDIGO	1	1	1	1
Ipomoea spp.	MORNING GLORY (INCL. BLUE)	3	4	2	5
Ipomoea alba	MOONFLOWER	0	1	0	1
Ipomoea batatas	SWEET POTATO; YAM	6	8	5	9
Ipomoea quamoclit	CYPRESS VINE	0	1	0	1
Iris spp.	IRIS	3	6	4	5
Iris versicolor	BLUE IRIS	0	1	0	1
Juglans nigra	WALNUT; BLACK WALNUT	2	6	2	6
Juniperus virginiana	EASTERN RED CEDAR	0	1	1	0
Lactuca sativa	LETTUCE	1	6	2	5
Lagenaria siceraria	ORNAMENTAL GOURD	1	4	1	4
Lagerstroemia spp.	CREPE MYRTLE	8	15	11	12
Lantana spp.	LANTANA	3	5	4	4

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Lavendula spp.	LAVENDAR	0	1	0	1
Leersia virginica	WHITE GRASS	1	0	1	0
Leucanthemum x superbum	SHASTA DAISY	0	1	0	1
Leucanthemum x superbum 'Becky'	BECKY SHASTA	0	1	0	1
Ligustrum vulgare	LIGUSTRUM; PRIVET	1	1	2	0
Lilium spp.	ORIENTAL LILY	0	1	0	1
Lilium spp.	TIGER LILY	0	1	0	1
Linum usitatissimum	FLAX	0	1	0	1
Liquidambar styraciflua	GUM; GUM TREE; SWEET GUM; GUM BALL	8	11	11	8
Liriodendron tulipifera	TULIP TREE	2	2	2	2
Liriope spicata	BORDER GRASS; LIRIOPE GRASS; MONKEY GRASS	3	7	4	6
Lobelia cardinalis	CARDINAL	0	1	0	1
Lolium spp.	RYE GRASS	3	1	1	3
Lomandra longifolia	BREEZE GRASS	0	1	0	1
Lonicera japonica	HONEYSUCKLE	6	4	6	4
Lorapetalum spp.	LORAPETALUM	3	4	3	4
Lorapetalum chinense var. rubrum	BURGANDY CHINESE FRINGEFLOWER	0	1	0	1
Lunaria annua	MONEY TREE	0	1	1	0
Lupinus diffusus	BLUE LUPINE	0	1	0	1
Magnolia spp.	WILD MAGNOLIA	0	1	1	0
Magnolia grandiflora	MAGNOLIA; SOUTHERN MAGNOLIA	10	12	11	11
Magnolia liliflora	JAPANESE MAGNOLIA	0	1	0	1
Magnolia stellata	STAR MAGNOLIA	0	1	0	1
Magnolia virginica	SWEET BAY TREE	0	1	0	1
Malus angustifolia	(SOUTHERN) CRAB APPLE	2	4	1	5
Malus spp.	FLOWERING APPLE	0	1	0	1
Malus domestica	APPLE	11	7	7	11
Mangifera spp.	MANGO	1	0	1	0
Medicago sativa	ALFALFA	1	0	1	0
Melia azedarach	CHINABERRY	2	2	1	3
Melochia corchorifolia	CHOCOLATE WEED	0	1	0	1
Mentha spp.	MINT; TEA MINT	2	4	2	4
Mentha x piperita	PEPPERMINT	0	1	0	1
Michelia figo	BANANA SHRUB	1	0	0	1
Mimosa spp.	MIMOSA	2	2	3	1
Mina lobata	FIRECRACKER VINE	1	0	0	1
Mirabilis nyctaginea	FOUR O'CLOCK	3	1	0	4
Miscanthus sinensis	ADAGIO GRASS; ZEBRA GRASS	0	2	0	2
Monarda spp.	MONARDA	1	0	0	1
Morus spp.	MULBERRY	1	2	1	2
Morus rubra	RED MULBERRY	0	1	1	0

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Musa spp.	BANANA	5	1	3	3
Myosotis spp.	FORGET-ME-NOT	1	0	0	1
Myrica cerifera	WAX MYRTLE; MYRTLE BUSH; SWEET MYRTLE	1	4	1	4
Nandina domestica	NANDINA; COMPACTA	2	6	2	6
Narcissus spp.	NARCISSUS	1	0	0	1
Narcissus spp.	DAFFODIL	5	1	1	5
Narcissus tazetla 'Paper White'	PAPERWHITE	0	2	1	1
Nepeta cataria	CATNIP	1	0	0	1
Nephrolepis exaltat 'Bostoniensis'	BOSTON FERN	0	1	0	1
Nerium oleander	OLEANDER	3	0	0	3
Nicotiana tabacum	TOBACCO	5	11	7	9
Nymphaea spp.	LILY PADS; WATER LILY	3	1	3	1
Nyssa biflora	TUPELO GUM; TUPELO	0	3	1	2
Nyssa sylvatica	BLACK GUM	0	2	1	1
Ocimum basilicum	BASIL	2	1	1	2
Olyssum spp.	OLYSSUM	0	1	0	1
Opuntia spp.	PEAR CACTUS; PRICKLY PEAR	1	1	0	2
Oryza glaberrima	RICE	1	1	2	0
Osmanthus spp.	TEA OLIVE	3	2	1	4
Panax quinquefolius	GINSENG	1	0	0	1
Panicum miliaceum	MILLET WEED	1	2	1	2
Parthenocissus quinquefolia	VIRGINIA CREEPER	0	2	0	2
Passiflora spp.	BLUE EYE SUSIE; PASSION VINE; PASSIONFRUIT	1	2	1	2
Paulonia spp.	PAULONIA	0	1	0	1
Pennisetum setaceum	PURPLE FOUNTAIN GRASS	0	1	0	1
Pentas spp.	PENTAS	0	1	0	1
Persea borbonia	BAY; BAY LAUREL; BITTER BAY	2	3	1	4
Petroselinum crispum	PARSLEY	1	1	0	2
Petunia x hybrida	PETUNIA	4	1	1	4
Glycine max	SOY BEAN	6	12	7	11
Phaseolus lunatus	BUTTER BEAN; BOUNTIFUL BEAN; RUNNING BUSH; RUNNING BUTTER	6	11	6	11
Phaseolus vulgaris	BEAN (INCL. BOIL, GREEN,STRAIGHT, STRING, KENTUCKY WONDER, WILLOW)	8	16	10	14
Philadelphus spp.	MOCK ORANGE	1	0	0	1
Phlox spp.	PHLOX	1	1	0	2
Phlox subulata	THRIFT	1	0	0	1
Phoradendron serotinum	MISTLETOE	1	1	0	1
Photinia spp.	PHOTINIA	0	1	0	1
Photinia fraseri	RED TIP	1	1	0	2

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Phragmites australis	REED	0	1	0	1
Phytolacca americana	POKEWEED	0	1	0	1
Picea pungens	BLUE SPRUCE TREE	1	0	1	0
Pinus spp.	PINE	14	14	14	14
Pinus echinata	SHORTLEAF PINE	1	1	1	1
Pinus elliottii	SLASH PINE	0	1	1	0
Pinus glabra	SPRUCE PINE	0	1	1	0
Pinus palustris	LONGLEAF PINE	1	2	2	1
Pinus serotina	POND PINE	0	1	1	0
Pinus strobus	WHITE PINE	*0*	1	1	0
Pinus taeda	LOBLOLLY PINE	*0*	2	2	0
Pisum sativum var. macrocarpon ser. cv.	SUGAR PEA; SWEET PEA; GREEN PEA	4	6	1	9
Vigna unguiculata	PEA (INCLUDING BLACKEYE, COW, CROWDER, FIELD, AND PINK EYE)	6	11	4	13
Plantago lanceolata	PLANTAIN	0	1	0	1
Platanus occidentalis	SYCAMORE; AMERICAN SYCAMORE	3	3	3	3
Podophyllum peltatum	MAYAPPLE	0	1	0	1
Populus deltoids	COTTONWOOD	0	1	1	0
Portulaca spp.	PORTULACA	0	1	0	1
Portulaca grandiflora	MOSS ROSE	2	0	1	1
Primula vulgaris	PRIMROSE	2	0	0	2
Prunus spp.	ORNAMENTAL CHERRY	1	0	0	1
Prunus spp.*(?)*	MARIA PLUM	1	0	0	1
Prunus angustifolia or Prunus umbellata	PLUM; WILD PLUM	9	8	9	8
Prunus cerasifera	PURPLE PLUM	1	0	0	1
Prunus persica	PEACH	10	9	9	10
Prunus serotina	CHERRY; WILD CHERRY; BLACK CHERRY	4	5	5	4
Psidium guajava	GUAVA TREE	0	1	1	0
Pueraria lobata	KUDZU	2	2	1	3
Pyracantha spp.	PYRACANTHA	1	0	0	1
Pyracantha coccinea	FIRETHORN	0	1	1	0
Pyrus spp.	PEAR	14	6	9	11
Pyrus calleryana	BRADFORD PEAR; ORNAMENTAL PEAR	3	6	5	4
Quercus spp.	OAK	12	13	14	11
Quercus acutissima	SAWTOOTH OAK	1	0	1	0
Quercus alba	WHITE OAK	1	3	1	3
Quercus falcata	SPANISH OAK; SOUTHERN RED OAK	1	4	3	2
Quercus laurifolia	LAUREL OAK	0	1	1	0
Quercus marilandica	BLACK JACK OAK	1	0	0	1
Quercus michauxii	SWAMP CHESTNUT	0	1	1	0

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Quercus nigra	WATER OAK	1	3	2	2
Quercus pagoda	CHERRYBARK OAK	0	1	1	0
Quercus palustris	PIN OAK	0	2	2	0
Quercus phellos	WILLOW OAK	0	1	1	0
Quercus prinus	CHESTNUT OAK	0	1	1	0
Quercus stellata	POST OAK	0	2	1	1
Quercus virginiana	LIVE OAK	1	3	2	2
Ranunculus aris	BUTTERCUP	1	1	1	1
Raphanus sativus	RADISH	2	9	2	9
Raphiolepsis spp.	RAPHIOLEPSIS	0	1	0	1
Raphiolepis indica	INDIAN HAWTHORNE	1	0	0	1
Rhododendron spp.	AZALEA	7	8	5	10
Ricinus communis	CASTOR BEAN	0	1	0	1
Robinia pseudoacacia	BLACK LOCUST	0	1	0	1
Rosa spp.	ROSE (INCLUDING WILD ROSE)	14	14	13	15
Rosa banksiae	LADYBANKS ROSE	1	0	1	0
Rosmarinus officinalis	ROSEMARY	3	3	3	3
Rubus fruticosus	BLACKBERRY	4	9	7	6
Rubus spp.	RASPBERRY	3	1	2	2
Rudbeckia hirta	BLACKEYED SUSAN	2	1	0	3
Ruellia brittoniana	MEXICAN PETUNIA	0	1	0	1
Rumex acetosa	SORREL	0	1	1	0
Sabal minor	DWARF PALMETTO	1	1	1	1
Sabal palmetto	PALMETTO TREE	1	1	1	1
Saccharum spp.	SUGAR; CANE; SUGAR CANE; MOLASSES	5	8	7	6
Salix spp.	PUSSY WILLOW	1	0	0	1
Salix × sepulcralis	WILLOW; WEEPING WILLOW	8	4	8	4
Salvia spp.	SALVIA	1	1	1	1
Salvia officinalis	SAGE	1	1	0	2
Sapium sebiferum	POPCORN TREE; CHINESE TALLOW	2	3	3	2
Sarracenia flava	PITCHER PLANT	1	0	0	1
Sassafras albidum	SASSAFRAS; SASSAFRAS ROOT	4	4	3	5
Scabiosa spp.	SCABIOSA	1	0	0	1
Scutellaria sp.	SKULLCAP	0	1	1	0
Secale cereale	RYE	2	3	2	3
Sedum spp.	SEDUM	1	0	0	1
Setaria spp.	FOX TAIL	0	1	1	0
Smilax spp.	BRIAR BERRY; PRICKY BUSH; SMILAX; GREENBRIAR	3	5	3	5
Solanum carolinense	BULL THISTLE; BURNING NETTLE	1	1	0	2
Solanum lycopersicum	TOMATO (CHERRY, HEIRLOOM, MARION, ROMA RUTGERS)	10	19	12	17

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Solanum melongena	EGGPLANT	4	3	3	4
Solanum tuberosum	POTATO (IRISH, WHITE, RED YELLOW)	10	13	6	17
Solidago altissima	GOLDENROD	1	2	0	3
Sorghum spp.	SORGHUM	0	1	0	1
Spathiphyllum spp.	PEACE LILY	1	0	1	0
Spinacia oleracea	SPINACH	0	1	0	1
Spirea spp.	SPIREA	1	2	1	2
Stachys byzantina	LAMB'S EAR	2	1	2	1
Stenotaphrum secundatum	CHARLESTON GRASS	1	3	0	4
Syringa spp.	LILAC	0	1	0	1
Taraxacum officinale	DANDELION	5	2	3	4
Taxodium distichum	BALD CYPRESS	0	2	2	0
Taxus spp.	YEWS	1	0	0	1
Thelypteris kunthii	SUN FERN	1	0	0	1
Thymus vulgaris	THYME	2	0	0	2
Tillandsia usneoides	GRAY MOSS; SPANISH MOSS	3	2	3	2
Toxicodendron pubescens	POISON OAK	3	5	5	3
Toxicodendron radicans	POISON IVY	3	9	6	6
Trachelospermum jasminoides	CONFEDERATE JESSAMINE/ JASMINE	2	1	1	2
Tradescantia spp.	SPIDERWORT	1	0	0	1
Trifolium spp.	CLOVER (INCL. GEORGIA AND WILD)	1	4	1	4
Triticum spp.	WHEAT	3	7	4	6
Tropaeolum spp.	NASTURTIUM	0	2	0	2
Tulipa spp.	TULIP	7	3	4	6
Typha domingensis	CATTAIL	1	1	1	1
Ulmus spp.	ELM	1	2	1	2
Ulmus alata	WINGED ELM	0	1	1	0
Ulmus americana	AMERICAN ELM	0	1	1	0
Ulmus fulva	SLIPPERY ELM	0	1	1	0
Uniola paniculata	SEA OATS	0	1	1	0
Vaccinium spp.	BLUEBERRY	11	10	7	14
Vaccinium darrowii	HIGHBUSH BLUEBERRY	0	1	1	0
Verbascum thapsus	MULLEIN	1	1	1	1
Verbena spp.	VERBENA	3	1	0	4
Vibernum spp.	VIBERNUM	1	0	0	1
Vinca spp.	VINCA; PERIWINKLE	2	2	1	3
Vinca major	VINCA MAJOR	0	1	1	0
Vinca minor	VINCA MINOR	0	1	1	0
Viola spp.	VIOLET (INCL. WILD)	1	3	0	4
Viola tricolor hortensis	PANSY	3	5	1	7
Vitis labrusca	PURPLE GRAPES	0	1	1	0

SCIENTIFIC NAME	PLANT	SURVEY A	SURVEY B	UNDER 50	OVER 50
Vitis rotundifolia	BULLET VINE; MUSCADINE	9	12	10	11
Weigela spp.	WEIGELIA	1	0	0	1
Wisteria sinensis	WISTERIA	1	1	1	1
Xanthium strumarium	COCKLEBERRY	0	1	0	1
Yucca spp.	YUCCA	2	1	2	1
Zea mays	CORN; FIELD CORN (INCL. INDIAN)	11	17	14	14
Zea mays var. saccharata	CORN (INCLUDING CAROLINA SWEET; SILVER QUEEN; SWEET; WHITE; YELLOW; YELLOW SWEET)	7	3	4	6
Zephyranthes atamasco	EASTER LILY	2	3	0	5
Zinnia x hybrida	ZINNIA	3	4	2	5
Amaryllidaceae(genera vary)	LILY	3	2	4	1
Aracaceae (genera vary)	PALM	1	3	2	2
Asteraceae (genera vary)	DAISY	6	7	5	8
Cactaceae (genera vary)	CACTUS	1	2	3	0
Cupressaceae (genera vary)	CYPRESS	4	6	3	7
Cupressaceae (genera vary)	JUNIPER	0	1	0	1
Fabaceae (genera vary)	BEAN	2	2	3	1
Fabaceae (genera vary)	PEA	3	1	3	1
Gramineae (Poaceae)	GRASS (INCL. ORNAMENTAL GRASS)	0	5	2	3
Papavaraceae (genera vary)	POPPY	1	1	1	1
Poaceae or Bambusoideae (genera vary)	BAMBOO-CANE	1	0	1	0
[unknown species]	BRAY BUSH TREES	1	0	0	1
PHYLUM BRYOPHYTA (families and genera vary)	MOSS (ON GROUND)	1	0	0	1
PHYLUM PTERIDOPHYTA [poss. *Nephrolepis exaltata; Polypodium polypodioides*)	FERN; WILD FERN	6	11	8	9
KINGDOM FUNGI	MUSHROOM	1	2	1	2
KINGDOM FUNGI	FUNGI	1	0	0	1
KINGDOM PROTISTA	ALGAE	1	0	0	1
VAR SPP.	EVERGREEN	2	0	2	0
VAR SPP.	FIR	1	0	0	1
VAR SPP.	HEDGE	1	1	0	2
VAR SPP.	LICHEN	1	1	0	1
VAR SPP.	PERENNIALS	0	1	1	0
VAR SPP.	WILDFLOWERS	0	2	1	1

APPENDIX H: INTERGENERATIONAL DIFFERENCES IN ETHNOBOTANICAL KNOWLEDGE ACQUISITION

AGE 25-50 (MEAN AGE = 39.3)

RESPONDENT	AGE	FAMILY	FRIENDS	SCHOOL	BOOKS	GARDENING	OTHER EXPERIENCE	CLEMSON EXTENSION
1A	32	X						
2A	48	X			X	X		
6A	44	X						
7A	36	X	X		X			
10A	38		X					
11A	46	X						
12A	34	X		X				
14A	44							
15A	28	X						
1B	39	X				X		
2B	48		X					
4B	40	X						
8B	36			X				
10B	33	X	X	X	X			
11B	48						X	
12B	38	X		X	X	X	X	
13B	40	X				X	X	
14B	36	X						

AGE >50 (MEAN AGE = 64.3)

RESPONDENT	AGE	FAMILY	FRIENDS	SCHOOL	BOOKS	GARDENING	OTHER EXPERIENCE	CLEMSON EXTENSION
18A	63	X						
19A	53					X		
21A	53	X			X			
22A	56	X						
23A	61						X	
25A	54	X				X		
28A	72				X	X		
27A	65	X						
29A	67	X						
17B	70							
18B	67	X	X		X	X	X	
21B	76	X		X				
24B	64	X			X	X	X	
25B	53				X		X	
26B	56	X				X		
27B	63	X		X		X	X	
28B	88	X					X	
29B	76	X		X	X	X		X