

BioBlitz Final Report:

Evaluating the diversity of endophytic fungi associated with perennial plants of Saguaro National Park

A. Elizabeth Arnold

Associate Professor and Curator
Robert L. Gilbertson Mycological Herbarium
School of Plant Sciences
The University of Arizona
1140 E. South Campus Drive, Forbes 303
Tucson, AZ, 85721

Arnold@ag.arizona.edu
520.626.1035
www.arnoldlab.net

In collaboration with:

MM Nandi Devan, undergraduate researcher
Margaret Wilch, teacher, Tucson High Magnet School
Kayla Arendt, technical assistant
Brett Baxter, undergraduate researcher
Lauren Dominick, undergraduate researcher
Susan Furr, K-12 educator;
Chan Jung, undergraduate researcher;
Nicholas Massimo, technical assistant;
Adrian Ramirez, undergraduate researcher;
Jakob Riddle, undergraduate researcher;
Dustin Sandberg, MS student;
Cole Steen, technical assistant;
Jana U'Ren, postdoctoral researcher

Report includes two tables and one figure.

I. Overview

Fungal endophytes comprise one of the most diverse and ecologically important groups of plant-symbiotic microbes, yet the scale of their diversity, host affiliations, and taxonomic composition in the Sonoran Desert have not been studied in detail. We proposed a taxonomic inventory of fungal endophytes inhabiting four common plant species in the Tucson Mountain District of Saguaro National Park. This effort provides a first insight into the richness, host specificity and local distributions of endophytes in SNP and will contribute to an ongoing regional study of the same host species in sites outside the Park.

Our research activities consisted of field collections for isolating endophytes from 118 individual host plants along three transects in the King Canyon Trail area and four transects near the Red Hills Visitor Center; characterization of community-, host, and soil characteristics for each collection; isolation of endophytic fungi on two media and under two incubation temperatures; preparation of vouchers of each strain for deposition in a permanent biodiversity collection; identification of each strain using morphological and molecular analyses; and analyses to test core research questions outlined in our proposal.

Our research efforts yielded 451 fungal isolates from common perennial plants (*Larrea tridentata*, *Parkinsonia microphylla*, *Simmondsia chinensis*, and where possible, *Phoradendron californicum* and *Olneya tesota*). We detected at least 191 species of endophytes. Strikingly, 131 of these species were detected only once, revealing the exceptionally high and previously unappreciated richness of endophytes in the Park. At least five classes of fungi were found (Ascomycota: Dothideomycetes, Eurotiomycetes, Pezizomycetes, and Sordariomycetes; Mucoromycotina (incertae sedis)). Dothideomycetes were especially common, with special prevalence both in terms of abundance and species richness by the dothideomycete genera *Aureobasidium*, *Phoma*, and *Preussia*. Approximately half of the common endophyte species (i.e., those collected at least twice) were isolated from only one host species, and approximately half were found in only one collection area (King Canyon or Red Hills). The most common species were isolated on both media and at both incubation temperatures and under diverse environmental conditions (defined here by slope and aspect) but communities differed markedly between stems and leaves. Together, these findings reveal an exceptionally high richness of endophytic fungi in some of the most common plant species in SNP and provide us with a basis for guidelines that can be applied for future surveys in the area.

All aspects of our research engaged members of the public and were interwoven with outreach activities. We developed new educational materials for BioBlitz, including videos, brochures, handbooks, and field guides. We engaged members of the public in field sampling and endophyte isolation during BioBlitz (October 2011) and worked with >120 students from Tucson High Magnet School in a semester-long workshop on endophyte diversity (February-May 2012), which included field surveys, laboratory work, and classroom presentations.

II. Background

One of the most profound insights of the past century is that no organism exists in the absence of microbes¹. From the bacterial microflora associated with the digestive systems of mammals to the mycorrhizal fungi that enhance nutrient uptake and water-use efficiency in plants, microorganisms play critical but often overlooked roles in the biological interrelationships of all ecosystems².

In the hot deserts of the American southwest, plants cope with aridity, high temperatures, solar irradiation, nutrient-poor soils, and other physiological and ecological challenges with well-documented morphological and biochemical adaptations. Less well explored, however, are the intimate associations of such plants with microbes, which may confer thermotolerance, drought resistance, and other important benefits that enhance primary productivity. Whereas root-symbiotic fungi and bacteria have received some attention from biologists in arid lands³, the biotically rich deserts of southeastern Arizona also harbor a trove of unexplored biodiversity in the above-ground tissues of plants: ***fungal endophytes***.

Fungal endophytes are microscopic fungi that occur within apparently healthy tissues of living plants. Known from every plant species examined to date, endophytes form symbioses with plants in terrestrial communities ranging from Arctic tundra to tropical rainforests and hot deserts⁴. Although long overlooked because of their cryptic occurrence in symptomless leaves and stems, endophytes are increasingly recognized for their ecological importance, especially in extreme environments. The few species studied to date play key roles in regulating their hosts' tolerance of heat stress, drought, soil salinity, herbivory, and disease, suggesting both short-term and evolutionary impacts on plants' physiological and ecological traits^{4,5}. Moreover, endophytes produce a tremendous diversity of metabolites of interest in medicinal drug discovery, biofuels, bioremediation, industrial applications, and biological control⁶.

Estimated to include more than a million species worldwide – ca. 99% of which have yet to be discovered and described -- endophytes comprise the most prevalent but least-studied group of plant-symbionts on earth. Preliminary studies have shown that they are common in iconic plants of the Sonoran Desert, where they form intimate but understudied symbioses with foliage of species such as creosote and jojoba. Early work suggests that the taxonomic composition of endophyte communities in these plants is unique, with a high prevalence of previously unknown but physiologically important species. However, the scale of endophyte diversity in Sonoran Desert plants, the host- and geographic distributions of these fungi, and their ecological roles have not yet been studied in detail.

The over-arching goal of this project was to conduct a taxonomic inventory of endophytes in above-ground tissues of focal plant species in SNP, with a high degree of involvement by citizen scientists, student researchers, and pre-college students from area schools. We conducted our field surveys in October 2011 (BioBlitz) and in February 2012 (with four classes comprising >120 students from Tucson Magnet High School). Our sampling was designed to allow us not only to inventory the endophyte communities of our focal areas of the Park, but to:

- (1) assess the utility of different media and incubation temperatures for capturing endophyte diversity, thereby providing a basis for developing guidelines for the laboratory aspect of future surveys;
- (2) compare communities among sites, host species, tissue types, environmental conditions, and seasons, thereby providing a basis for developing guidelines for the field aspect of future surveys; and
- (3) place our findings into a broader context of regional surveys that were conducted with the same methods, providing us with a basis for describing the novelty and distinctiveness of endophyte species in Saguaro National Park.

III. Overview of methods

1. Sample collection. We focused on three common plant species: creosote (*Larrea tridentata*), jojoba (*Simmondsia chinensis*), and foothills palo verde (*Parkinsonia microphylla*). Where possible, we also surveyed ironwood (*Olneya tesota*) and desert mistletoe (*Phoradenron californicum*). A high diversity of endophytes can be obtained from small amounts of leaf- and twig tissue, such that sampling was minimally destructive to the plants and aesthetic of SNP.

In collaboration with Park staff, we identified study areas in two regions of the Park that contained plant assemblages and spatial distributions of individual plants that were ideal for our research: King Canyon Trail and south of the Red Hills Visitor Center. Samples were collected three 100m transects in each region in October 2011. In February 2012 we repeated our surveys and added one additional transect along the Nature Trail near the Red Hills Visitor Center. In each region, one transect comprised one of three different aspects: a north-facing (protected) slope, a south- or west-facing (exposed) slope, and a flat, exposed area. Each transect consisted of three clusters (each ca. 10m in diameter) spaced ca. 30m apart. In each cluster, three individual branches (each ca. 10 cm long) were collected from one individual of each host species. Individuals were mapped using GPS and plant diversity of the area was assessed

with assistance from the UA Herbarium. Survey details, organized by each host individual, are shown in Table 1.

During BioBlitz and the high school workshop, teams of citizen scientists (one per transect) assessed the physiographic and ecological characteristics of each sampling cluster, recording coordinates, elevation, slope, aspect, soil type, percent cover of perennials, identity of proximate plants, and soil pH. Volunteer researchers gained experience regarding field methods and an understanding of the rationale for our sampling design and replication structure. To facilitate this effort we prepared data sheets, field guides, and a field manual, provided an overview of plant species diversity and community composition for each team, and provided notebooks for the high school students to record their observations and the characteristics by which each plant species could be identified.

2. Tissue processing for endophyte isolation. Branches were placed in Ziploc bags and transported to the field-laboratory in the Science Tent (BioBlitz) or University of Arizona teaching labs (high school workshop) for processing. For the former we developed two full 'mobile lab units' including laminar flow hoods, sterilization supplies, field equipment, and all materials needed to handle the plant material under sterile conditions at BioBlitz, and opened our research efforts to the public, Park staff, and members of the press.

Leaves and stems were rinsed in clean water to eliminate surface debris and then surface-sterilized by sequential immersion in 95% ethanol (10 sec), 10% Clorox bleach (i.e., 0.53% NaOCl-; 2 minutes), and 70% ethanol (2 minutes) to remove microbes from tissue surfaces⁷. Leaves and stems were cut into approximately 2mm² pieces under a sterile hood and 96 pieces of each tissue type per individual were placed individually into 1.5mL tubes containing (1) malt extract agar or (2) cornmeal agar, for a total of 192 leaf- and 192 stem pieces/host. For hosts with minute or absent leaves (*Parkinsonia* and *Phoradendron*), we sampled only stem material. Half of the samples from each host and tissue type were incubated at room temperature and half at 30.3°C (average temperature of Tucson in July) at the University of Arizona. Overall, we processed 22,656 tissue segments.

As fungi emerged in culture, we recorded isolation frequency (percent of tissue segments yielding an endophyte) for each tissue type, medium, temperature, host, cluster, transect, and set. Emergent fungi were vouchered, accessioned into the permanent endophyte collection of the Gilbertson Mycological Herbarium at the University of Arizona, and identified.

3. Identification of endophytes. Endophytes that sporulated in culture were identified using existing taxonomic keys. However, because few endophytes sporulated *in vitro* and we anticipated a high prevalence of novel species, we extracted total genomic DNA from each strain and used the polymerase chain reaction (PCR) to amplify a fast-evolving marker typically used in fungal systematics at the species level (nuclear ribosomal internal transcribed spacer and an adjacent portion of the ribosomal large subunit, for a total of 1000 base pairs per sequence)^{7,8}. PCR methods followed ref. 8, with primers ITS1F and LR3 proving successful for amplification from most fungal strains.

PCR products were verified by gel electrophoresis, cleaned using ExoSap, and sequenced bidirectionally at the University of Arizona Genetics Core with matching funds from another source. DNA sequences were assembled in *phred* and *phrap* with orchestration by Mesquite, and then manually verified and edited in Sequencher^{8,9}. Taxonomic placement was determined using a combination of bioinformatics queries of the NIH/NCBI GenBank database and phylogenetic analysis. Overall, we identified a total of 451 strains, comprising our entire collection.

4. Statistical methods. Taxonomic placement was qualified by statistical assessment of BLAST matches in GenBank, with e-values (the probability of matching based on chance alone) equal to or indistinguishable from zero and maxID and maxCoverage approaching 100%. Further support was obtained from bootstrap and posterior probability values from phylogenetic analyses for individual taxa following ref. 9. Taxonomy was estimated at the most precise level for which confidence was high. Novelty of the fungi obtained here led us to not identify all fungi to the species level, but the majority are identified to the genus level (ca. 89% of strains).

Community structure was assessed using nonsingleton species only. Isolation frequency was assessed using t-tests or ANOVA and multiple regression, as appropriate, for partitions of the data based relevant for estimating effects of host species, environmental characteristics, tissue type, incubation temperature, and growth medium. Comparisons with regional datasets were conducted by de novo assembly of OTU for regional datasets augmented by BioBlitz records in Sequencher following ref. 7.

5. Development of outreach materials/outreach activities To adapt our standard survey methods for the public, our team prepared and field-tested a series of sampling protocols designed to ensure high-quality data collection by citizen scientists. To translate our work for the public, we developed a full-color brochure highlighting endophyte biology; our rationale for studying them; our goals for BioBlitz; and our research pipeline. To introduce citizen scientists more fully to endophyte biology, to highlight the specific goals and projected outcomes of each project component, and to provide our public teams with a take-home document about their experience, we developed a 15-page handbook with color photographs for all participants. To assist citizen scientists in evaluating plant diversity in our sample sites, we assembled full-color field guides highlighting some of the key plants at each of our pre-scouted sites. Members of our lab filmed a series of short videos to introduce viewers to our lab at the UA and to the processes of endophyte isolation, DNA extraction, PCR, sequencing, sequence editing, and bioinformatics analysis. Each video starred one of an ethnically diverse set of undergraduates and highlights many of our BioBlitz team members. Recognizing the ways in which the public increasingly connects with social media, we created an Arnold Lab page on Facebook on which we posted photographs and updates of our progress. Finally, I served as a 'featured scientist' for public interviews at the final unveiling of the species count and conclusion of BioBlitz 2011.

IV. Results

1. Taxonomic inventory and species richness. Results of our surveys are shown in Table 2, which provides taxonomic placement for 451 endophytes obtained from focal perennial plants at two sites in the Tucson Mountain district of Saguaro National Park.

Overall we obtained approximately 191 species, of which 131 were isolated only once. The high prevalence of singletons (ca. 68.6% of species) is reflected in the lack of an asymptote in the species accumulation curve inferred from these data (Fig. 1). Comparison of observed species richness with estimated richness based on a bootstrap estimation suggests that overall, ca. 78% of expected species were recovered by our sampling effort.

Our sampling recovered at least 49 genera, most of which represent the fungal phylum Ascomycota. One strain of non-ascomycetous fungi was obtained (*Rhizopus*), representing the Mucoromycotina. Within the Ascomycota, phylogenetic richness was very high: four classes of filamentous Ascomycota were found, including members of the Dothideomycetes, Eurotiomycetes, Pezizomycetes, and Sordariomycetes. Within the Dothideomycetes, the genera *Aureobasidium*, *Phoma*, and *Preussia* were especially species-rich and abundant (Table 2).

Overall our sampling reveals that the most common species of endophytes were widespread among host species, localities, and sampling periods, and were captured with approximately equal frequency using different incubation methods. However, our data also demonstrate the importance of sampling extensively on each of these axes for capturing rare species, and thus for capturing the overall species richness of endophytes in SNP. For example, the majority of the most common species (those found ≥ 7 times) were found in at least two species. However, approximately half of the nonsingleton species (i.e., those collected at least twice) were isolated from only one host species. Similarly, the majority of the most common species were found in both sampling areas (King Canyon or Red Hills). However, approximately half of the nonsingleton species were found in only one collection area. The most common species were found in both October and February, but several species were found in only one sampling period (e.g., *Phoma* sp. 2, *Penicillium biourgeianum*, *Penicillium oxalicum*). The most common species were isolated on both media and at both incubation temperatures, but about half of nonsingletons were found on one medium or at only one incubation temperature (Table 2).

Our work also provides insight into the relative importance of exposure (defined in our work by slope and aspect) and tissue type. The vast majority of common species (89%) and 60% of nonsingletons were present in multiple sites that differed in slope and aspect, suggesting that the environmental characteristics that may correlate with exposure and drainage are not major drivers of endophyte community structure.

Finally, we found that although most of the common species (57%) were found in both leaves and stems, several common species were unique to stems (e.g., *Phoma* sp. 1 and sp. 2, *Aureobasidium* sp. 2, *Penicillium biourgeianum*, and *Sydowia* sp. 1). Overall, ca. 60% of nonsingletons were found in only one tissue type.

2. Isolation frequency. Overall, isolation frequency was relatively low (ca. 1% of tissue pieces yielded an endophyte in culture). However, the intensity and breadth of our sampling was sufficient to obtain 451 isolates and provided a basis for assessing patterns of infection as a function of hosts, sites, environmental factors, seasons, tissue types, and sampling methods.

For hosts from which both stems and leaves were sampled, isolation frequency was ca. 3.8 times greater from stems than from leaves. Because only stems were sampled from *Parkinsonia*, the dataset was divided into two partitions (stems and leaves). Data for each tissue type were analyzed separately (for leaves, *Larrea* and *Simmondsia* were included; for stems, all host species were included).

Analyses of stems only revealed a significant effect of site (King Canyon > Red Hills,) and sampling month (October > February). Isolation of endophytes from stem tissue did not differ among species, as a function of growth medium, incubation temperature, or aspect of the sampling location. Analyses of leaves were generally congruent with results from stems, except that no site effect was observed. Isolation frequency from leaves of *Larrea* and *Simmondsia* was similar, and we observed no effect of site, growth medium incubation temperature, or aspect.

3. Regional comparisons. To evaluate the novelty of endophytes from the Park relative to fungi known to date, we compared our sequence data against (1) a public database that contains all available sequence data for fungi (GenBank, through the National Center for Biotechnology Information); and (2) our database of sequence data for ca. 600 endophytes representing our regional sampling for related projects. That regional-scale effort includes various sites across southeastern Arizona, including other areas of the Tucson Mountains (e.g., Yetman Trail area).

Very few genotypes were a perfect match for previously sequenced fungi available through GenBank: only 30 were 100% matches over their entire lengths for previously sequenced fungi; that is, >80% of the genotypes we found have not been sequenced before. Moreover, our regional comparison with our own database revealed that only 48 of 191 species had been found previously in our regional surveys. Thus, our sampling of only 451 endophytes from SNP turned up almost >140 species that are novel relative to previous surveys in the region and currently available sequences of fungi worldwide.

V. Perspectives

Our work provides the first evaluation of fungal endophyte diversity in common plants at Saguaro National Park. Although cryptic in nature, endophytes are of interest because many play important roles in mitigating abiotic stress and enhancing plant resistance to pests. Often these traits can be transferred among host species by cross-inoculation for applications in crop development and protection. Moreover, endophytes produce numerous novel metabolites of use in industry, pharmaceutical development, agriculture, and biofuels development. More fundamentally, endophytes are an unexplored trove of biological diversity -- one that helps us to understand the species richness, biological importance, and hidden resources of wild lands, and one that can be used to introduce the public to the concept of undiscovered but exciting microbial diversity.

Our work reveals a remarkably high diversity of endophytes in Saguaro National Park and shows that these fungi comprise many novel taxa relative to previous work in the region and at a global scale.

Although overall isolation frequency was low, a large sampling effort yielded sufficient isolates to explore the distributions of endophytes across sites, hosts, environmental conditions, and other factors. Our work suggests the following recommendations for further studies to capture the overall richness of endophytic fungi in the Park:

1. Including additional host species, as many rare strains were found in only one host.
2. Including additional sampling sites, as many rare strains were found in only one site.
3. Sampling at multiple timepoints throughout the year, as many rare strains were found in only one sampling period.
4. Using multiple media and incubation conditions, as many rare strains were found under only one set of cultivation approaches.
5. Surveying stems and leaves of plants, rather than just one tissue type, and expanding to include root endophytes.

Implementing these methods (rather than using a more narrow sampling approach) will likely capture the most common species while also capturing the rarer and phylogenetically more interesting species as well. We anticipate that further studies using culture-free methods to capture recalcitrant fungi -- those that may be difficult or impossible to isolate in culture -- will underscore the uniqueness and high diversity of endophytic symbionts in plants of Saguaro National Park.

VI. Acknowledgments

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VII. Literature cited

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Tables

Appended as Excel files.

Table 1:

SNP 01	<i>Parkinsonia</i>	21-Oct-15	Kings Canyon Trail	North	1	32.252	-	111.151	1058
SNP 02	<i>Parkinsonia</i>	21-Oct-15	Kings Canyon Trail	North	2	32.252	-	111.151	1052
SNP 03	<i>Parkinsonia</i>	21-Oct-15	Kings Canyon Trail	North	3	32.253	-	111.151	1036
SNP 04	<i>Parkinsonia</i>	22-Oct-15	Red Hills VC	Flat	3	32.252	-	111.186	811
SNP 05	<i>Parkinsonia</i>	22-Oct-15	Red Hills VC	Flat	1	32.252	-	111.186	799
SNP 06	<i>Phoradendron</i>	22-Oct-15	Red Hills VC	Flat	1	32.252	-	111.186	799
SNP 07	<i>Parkinsonia</i>	22-Oct-15	Red Hills VC	Flat	2	32.252	-	111.186	805
SNP 08	<i>Parkinsonia</i>	23-Oct-15	Red Hills VC	North	1	32.252	-	111.186	799
SNP 09	<i>Parkinsonia</i>	23-Oct-15	Red Hills VC	North	2	32.252	-	111.184	836
SNP 10	<i>Parkinsonia</i>	23-Oct-15	Red Hills VC	North	3	32.252	-	111.184	836
SNP 11	<i>Parkinsonia</i>	22-Oct-15	Red Hills VC	SW	1	32.251	-	111.185	830
SNP 12	<i>Parkinsonia</i>	22-Oct-15	Red Hills VC	SW	2	32.251	-	111.184	832
SNP 13	<i>Parkinsonia</i>	22-Oct-15	Red Hills VC	SW	3	32.250	-	111.184	832
SNP 14	<i>Parkinsonia</i>	28-Oct-15	Kings Canyon Trail	SW	1	32.255	-	111.151	1044
SNP 15	<i>Parkinsonia</i>	28-Oct-15	Kings Canyon Trail	SW	2	32.255	-	111.151	1043
SNP 16	<i>Parkinsonia</i>	28-Oct-15	Kings Canyon Trail	SW	3	32.255	-	111.151	1036
SNP 17	<i>Parkinsonia</i>	28-Oct-15	Kings Canyon Trail	Flat	1	32.254	-	111.152	1003
SNP 18	<i>Parkinsonia</i>	28-Oct-15	Kings Canyon Trail	Flat	2	32.254	-	111.152	994
SNP 19	<i>Parkinsonia</i>	28-Oct-15	Kings Canyon Trail	Flat	3	32.254	-	111.152	991
SNP 20	<i>Phoradendron</i>	28-Oct-15	Kings Canyon Trail	Flat	1	32.254	-	111.152	1003
SNP 21	<i>Larrea</i>	21-Oct-15	Kings Canyon Trail	North	1	32.252	-	111.151	1058
SNP 22	<i>Simmondsia</i>	21-Oct-15	Kings Canyon Trail	North	1	32.252	-	111.151	1058
SNP 23	<i>Larrea</i>	21-Oct-15	Kings Canyon Trail	North	2	32.252	-	111.151	1052
SNP 24	<i>Simmondsia</i>	21-Oct-15	Kings Canyon Trail	North	2	32.252	-	111.151	1052
SNP	<i>Larrea</i>	21-Oct-15	Kings Canyon	North	3	32.253	-		1036

25			Trail				111.151	
SNP 26	<i>Simmondsia</i>	21-Oct-15	Kings Canyon Trail	North	3	32.253	- 111.151	1036
SNP 27	<i>Larrea</i>	22-Oct-15	Red Hills VC	Flat	3	32.252	- 111.186	811
SNP 28	<i>Simmondsia</i>	22-Oct-15	Red Hills VC	Flat	3	32.252	- 111.186	811
SNP 29	<i>Larrea</i>	22-Oct-15	Red Hills VC	Flat	1	32.252	- 111.186	799
SNP 30	<i>Simmondsia</i>	22-Oct-15	Red Hills VC	Flat	1	32.252	- 111.186	799
SNP 31	<i>Larrea</i>	22-Oct-15	Red Hills VC	Flat	2	32.252	- 111.186	805
SNP 32	<i>Simmondsia</i>	22-Oct-15	Red Hills VC	Flat	2	32.252	- 111.186	805
SNP 33	<i>Larrea</i>	23-Oct-15	Red Hills VC	North	1	32.252	- 111.186	799
SNP 34	<i>Simmondsia</i>	23-Oct-15	Red Hills VC	North	1	32.252	- 111.186	799
SNP 35	<i>Larrea</i>	23-Oct-15	Red Hills VC	North	2	32.252	- 111.184	836
SNP 36	<i>Simmondsia</i>	23-Oct-15	Red Hills VC	North	2	32.252	- 111.184	830
SNP 37	<i>Larrea</i>	23-Oct-15	Red Hills VC	North	3	32.252	- 111.184	836
SNP 38	<i>Simmondsia</i>	23-Oct-15	Red Hills VC	North	3	32.252	- 111.184	836
SNP 39	<i>Larrea</i>	22-Oct-15	Red Hills VC	SW	1	32.251	- 111.185	830
SNP 40	<i>Simmondsia</i>	22-Oct-15	Red Hills VC	SW	1	32.251	- 111.185	830
SNP 41	<i>Larrea</i>	22-Oct-15	Red Hills VC	SW	2	32.251	- 111.184	832
SNP 42	<i>Simmondsia</i>	22-Oct-15	Red Hills VC	SW	2	32.251	- 111.184	832
SNP 43	<i>Larrea</i>	22-Oct-15	Red Hills VC	SW	3	32.250	- 111.184	832
SNP 44	<i>Simmondsia</i>	22-Oct-15	Red Hills VC	SW	3	32.250	- 111.184	832
SNP 45	<i>Larrea</i>	28-Oct-15	Kings Canyon Trail	SW	1	32.255	- 111.151	1044
SNP 46	<i>Simmondsia</i>	28-Oct-15	Kings Canyon Trail	SW	1	32.255	- 111.151	1044
SNP 47	<i>Larrea</i>	28-Oct-15	Kings Canyon Trail	SW	2	32.255	- 111.151	1043
SNP 48	<i>Simmondsia</i>	28-Oct-15	Kings Canyon Trail	SW	2	32.255	- 111.151	1043
SNP 49	<i>Larrea</i>	28-Oct-15	Kings Canyon Trail	SW	3	32.255	- 111.151	1036
SNP 50	<i>Simmondsia</i>	28-Oct-15	Kings Canyon Trail	SW	3	32.255	- 111.151	1036
SNP 51	<i>Simmondsia</i>	28-Oct-15	Kings Canyon Trail	Flat	1	32.254	- 111.152	1003
SNP 52	<i>Larrea</i>	28-Oct-15	Kings Canyon Trail	Flat	2	32.254	- 111.152	994

SNP 53	<i>Simmondsia</i>	28-Oct-15	Kings Canyon Trail	Flat	2	32.254	-	111.152	994
SNP 54	<i>Simmondsia</i>	28-Oct-15	Kings Canyon Trail	Flat	3	32.254	-	111.152	991
SNP 55	<i>Parkinsonia</i>	14-Feb-16	Red Hills VC	North	1	32.252	-	111.186	799
SNP 56	<i>Larrea</i>	14-Feb-16	Red Hills VC	North	1	32.252	-	111.186	799
SNP 57	<i>Simmondsia</i>	14-Feb-16	Red Hills VC	North	1	32.252	-	111.186	799
SNP 58	<i>Parkinsonia</i>	14-Feb-16	Red Hills VC	North	2	32.252	-	111.184	836
SNP 59	<i>Larrea</i>	14-Feb-16	Red Hills VC	North	2	32.252	-	111.184	836
SNP 60	<i>Simmondsia</i>	14-Feb-16	Red Hills VC	North	2	32.252	-	111.184	836
SNP 61	<i>Parkinsonia</i>	14-Feb-16	Red Hills VC	North	3	32.252	-	111.184	836
SNP 62	<i>Larrea</i>	14-Feb-16	Red Hills VC	North	3	32.252	-	111.184	836
SNP 63	<i>Simmondsia</i>	14-Feb-16	Red Hills VC	North	3	32.252	-	111.184	836
SNP 64	<i>Parkinsonia</i>	15-Feb-16	Red Hills VC	SW	1	32.251	-	111.185	830
SNP 65	<i>Simmondsia</i>	15-Feb-16	Red Hills VC	SW	1	32.251	-	111.185	830
SNP 66	<i>Larrea</i>	15-Feb-16	Red Hills VC	SW	1	32.251	-	111.185	830
SNP 67	<i>Parkinsonia</i>	15-Feb-16	Red Hills VC	SW	3	32.250	-	111.184	832
SNP 68	<i>Larrea</i>	15-Feb-16	Red Hills VC	SW	3	32.250	-	111.184	832
SNP 69	<i>Simmondsia</i>	15-Feb-16	Red Hills VC	SW	3	32.250	-	111.184	832
SNP 70	<i>Larrea</i>	15-Feb-16	Red Hills VC	SW	2	32.251	-	111.184	832
SNP 71	<i>Parkinsonia</i>	15-Feb-16	Red Hills VC	SW	2	32.251	-	111.184	832
SNP 72	<i>Simmondsia</i>	15-Feb-16	Red Hills VC	SW	2	32.251	-	111.184	832
SNP 73	<i>Larrea</i>	16-Feb-16	Red Hills VC	Flat	1	32.252	-	111.186	799
SNP 74	<i>Parkinsonia</i>	16-Feb-16	Red Hills VC	Flat	1	32.252	-	111.186	799
SNP 75	<i>Simmondsia</i>	16-Feb-16	Red Hills VC	Flat	1	32.252	-	111.186	799
SNP 76	<i>Phoradendron</i>	16-Feb-16	Red Hills VC	Flat	1	32.252	-	111.186	799
SNP 77	<i>Parkinsonia</i>	16-Feb-16	Red Hills VC	Flat	2	32.252	-	111.186	805
SNP 78	<i>Larrea</i>	16-Feb-16	Red Hills VC	Flat	2	32.252	-	111.186	805
SNP 79	<i>Simmondsia</i>	16-Feb-16	Red Hills VC	Flat	2	32.252	-	111.186	805
SNP	<i>Parkinsonia</i>	16-Feb-	Red Hills VC	Flat	3	32.252	-		811

80		16					111.186	
SNP 81	<i>Larrea</i>	16-Feb-16	Red Hills VC	Flat	3	32.252	- 111.186	811
SNP 82	<i>Simmondsia</i>	16-Feb-16	Red Hills VC	Flat	3	32.252	- 111.186	811
SNP 83	<i>Larrea</i>	17-Feb-16	Red Hills VC	Flat	1	32.263	- 111.211	729
SNP 84	<i>Parkinsonia</i>	17-Feb-16	Red Hills VC	Flat	1	32.263	- 111.211	729
SNP 85	<i>Phoradendron</i>	17-Feb-16	Red Hills VC	Flat	1	32.263	- 111.211	729
SNP 86	<i>Olneya</i>	17-Feb-16	Red Hills VC	Flat	1	32.263	- 111.211	729
SNP 87	<i>Parkinsonia</i>	17-Feb-16	Red Hills VC	Flat	2	32.263	- 111.212	733
SNP 88	<i>Olneya</i>	17-Feb-16	Red Hills VC	Flat	2	32.263	- 111.212	733
SNP 89	<i>Larrea</i>	17-Feb-16	Red Hills VC	Flat	2	32.263	- 111.212	733
SNP 90	<i>Larrea</i>	17-Feb-16	Red Hills VC	Flat	3	32.262	- 111.213	732
SNP 91	<i>Olneya</i>	17-Feb-16	Red Hills VC	Flat	3	32.262	- 111.213	732
SNP 92	<i>Phoradendron</i>	17-Feb-16	Red Hills VC	Flat	3	32.262	- 111.213	732
SNP 93	<i>Parkinsonia</i>	17-Feb-16	Red Hills VC	Flat	3	32.262	- 111.213	732
SNP 94	<i>Larrea</i>	21-Feb-16	Kings Canyon Trail	North	1	32.252	- 111.151	1058
SNP 95	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	North	1	32.252	- 111.151	1058
SNP 96	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	North	1	32.252	- 111.151	1058
SNP 97	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	North	2	32.252	- 111.151	1052
SNP 98	<i>Larrea</i>	21-Feb-16	Kings Canyon Trail	North	2	32.252	- 111.151	1052
SNP 99	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	North	2	32.252	- 111.151	1052
SNP 100	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	North	3	32.253	- 111.151	1036
SNP 101	<i>Larrea</i>	21-Feb-16	Kings Canyon Trail	North	3	32.253	- 111.151	1036
SNP 102	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	North	3	32.253	- 111.151	1036
SNP 103	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	Flat	1	32.254	- 111.152	1003
SNP 104	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	Flat	1	32.254	- 111.152	1003
SNP 105	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	Flat	2	32.254	- 111.152	994
SNP 106	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	Flat	2	32.254	- 111.152	994
SNP 107	<i>Larrea</i>	21-Feb-16	Kings Canyon Trail	Flat	2	32.254	- 111.152	994

SNP 108	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	Flat	3	32.254	-	111.152	991
SNP 109	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	Flat	3	32.254	-	111.152	991
SNP 110	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	SW	1	32.255	-	111.151	1044
SNP 111	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	SW	1	32.255	-	111.151	1044
SNP 112	<i>Larrea</i>	21-Feb-16	Kings Canyon Trail	SW	1	32.255	-	111.151	1044
SNP 113	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	SW	2	32.255	-	111.151	1043
SNP 114	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	SW	2	32.255	-	111.151	1043
SNP 115	<i>Larrea</i>	21-Feb-16	Kings Canyon Trail	SW	2	32.255	-	111.151	1043
SNP 116	<i>Simmondsia</i>	21-Feb-16	Kings Canyon Trail	SW	3	32.255	-	111.151	1036
SNP 117	<i>Parkinsonia</i>	21-Feb-16	Kings Canyon Trail	SW	3	32.255	-	111.151	1036
SNP 118	<i>Larrea</i>	21-Feb-16	Kings Canyon Trail	SW	3	32.255	-	111.151	1036

Table 2:

<i>Isolate</i>	<i>Host genus</i>	<i>Host species</i>	<i>Transclect set</i>	<i>Aspect</i>	<i>Cluster</i>	<i>Month</i>	<i>Tissue</i>	<i>Medium</i>	<i>Incubation</i>	<i>Isolation date</i>	<i>Taxonomy</i>	<i>OTU</i>	<i>S</i>
SNP 023	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	October	Leaf	MEA	22°C	05-Jan-12	Achaetomium sp. 1	0111	CO TO
SNP 406	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	SW	RHVC SW-3	February	Stem	CMA	29°C	THM S Students	Alternaria sp. 1	0017	AA TO GA CA
SNP 117	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-1	October	Leaf	CMA	22°C	20-Jan-12	Alternaria sp. 1	0017	AT CO G AC
SNP 372	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	SW	RHVC SW-3	February	Stem	CMA	29°C	THM S Students	Alternaria sp. 1	0017	AT CO G AC
SNP 355	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	SW	RHVC SW-3	February	Stem	CMA	29°C	THM S Students	Alternaria sp. 1	0017	AT CO G AC
SNP 354	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	SW	RHVC SW-3	February	Stem	CMA	29°C	THM S Students	Alternaria sp. 1	0017	AT GA TO C C
SNP 049	<i>Phoradendron</i>	<i>californicum</i>	King Canyon	Flat	KCF-1	October	Stem	CMA	22°C	11-Jan-12	Alternaria sp. 1	0017	C AT GA

SNP 421	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-3	February	Stem	CMA	22°C	21-Feb-12	<i>Alternaria</i> sp. 1	0017	GA CA CO GA
SNP 036	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	MEA	22°C	05-Jan-12	<i>Alternaria</i> sp. 2	0148	GA TO CA GA
SNP 319	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-3	February	Stem	MEA	29°C	6-Mar-12	<i>Anthostomella</i> sp. 1	0131	GA TO CA GA
SNP 190	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-3	October	Stem	MEA	29°C	27-Jan-12	<i>Anthostomella</i> sp. 2	0098	TO GA CA GA
SNP 100	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	CMA	22°C	20-Jan-12	<i>Ascochyta</i> sp. 1	0009	AT GA CO GA
SNP 101	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	CMA	22°C	20-Jan-12	<i>Ascochyta</i> sp. 1	0009	TO AT CA CA AO
SNP 270	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-1	February	Stem	MEA	22°C	6-Mar-12	<i>Ascochyta</i> sp. 2	0019	AT CA GA TT
SNP 129	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	MEA	29°C	21-Jan-12	<i>Ascochyta</i> sp. 2	0019	AT GA AO CA AO
SNP 130	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	CMA	29°C	21-Jan-12	<i>Ascochyta</i> sp. 3	0020	GA GA CO AO GA
SNP 285	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-2	February	Stem	CMA	22°C	6-Mar-12	<i>Ascochyta</i> sp. 3	0020	GA GA CO AO GA
SNP 315	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	CMA	29°C	6-Mar-12	<i>Ascochyta</i> sp. 3	0020	TA TT GA CO TO
SNP 317	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Leaf	CMA	29°C	6-Mar-12	<i>Ascochyta</i> sp. 3	0020	TA TT GA CO TO
SNP 316	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-3	February	Stem	MEA	29°C	6-Mar-12	<i>Ascochyta</i> sp. 4	ND	TO CA
SNP 119	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-1	October	Leaf	CMA	22°C	20-Jan-12	<i>Ascomycota</i> sp. 1	0008	TO AT CA CA AO
SNP 016	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Leaf	MEA	22°C	05-Jan-12	<i>Ascomycota</i> sp. 10	0091	TT CA
SNP 021	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-1	October	Leaf	MEA	22°C	05-Jan-12	<i>Ascomycota</i> sp. 11	0104	CA TA CO GA CO

SNP 321	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-3	October	Leaf	CMA	29°C	6-Mar-12	Ascomycota sp. 12	0133	AG TT GA
SNP 337	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-3	February	Stem	CMA	22°C	THM S Students	Ascomycota sp. 13	0138	GT GA TT TO GA
SNP 348	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-2	February	Stem	MEA	22°C	THM S Students	Ascomycota sp. 14	0142	AT CC AC CC GT
SNP 391	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	29°C	THM S Students	Ascomycota sp. 15	0155	TC AT CA TA CC
SNP 398	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-1	February	Stem	CMA	22°C	THM S Students	Ascomycota sp. 16	0156	TT AT GA AA AC
SNP 461	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW -3	October	Stem	CMA	29°C	29-Oct-11	Ascomycota sp. 17	0174	AG AT GT GT GA
SNP 221	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	CMA	29°C	27-Jan-12	Ascomycota sp. 2	0012	AT GT GA TT AA
SNP 260	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-2	October	Leaf	MEA	22°C	6-Mar-12	Ascomycota sp. 2	0012	AT GA GT TT AA
SNP 105	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-1	October	Stem	CMA	22°C	20-Jan-12	Ascomycota sp. 2	0012	CC CC CA GT AC
SNP 011	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Leaf	MEA	22°C	05-Jan-12	Ascomycota sp. 3	0068	AT GT GA GT AC
SNP 015	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	October	Stem	MEA	22°C	05-Jan-12	Ascomycota sp. 4	0089	GT GT GA TT AA
SNP 199	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-2	October	Stem	MEA	29°C	27-Jan-12	Ascomycota sp. 5	0101	GT TO AC CA
SNP 214	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Stem	MEA	29°C	27-Jan-12	Ascomycota sp. 6	0105	TT TT CC AC GT
SNP 211	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW -3	October	Stem	MEA	29°C	27-Jan-12	Ascomycota sp. 7	0034	AT TO CC TO AA
SNP 392	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	February	Stem	MEA	29°C	THM S Students	Ascomycota sp. 7	0034	AT AT GT AC CA

SNP 166	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Leaf	MEA	29°C	27-Jan-12	Ascomycota sp. 8	0093	TT TO G CA
SNP 459	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-3	October	Leaf	CMA	29°C	29-Oct-11	Ascomycota sp. 9	0173	AT G AA G
SNP 074	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-2	October	Stem	CMA	22°C	11-Jan-12	Aspergillus sp. 1	0028	CO G G AA AC
SNP 174	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-1	October	Leaf	CMA	29°C	27-Jan-12	Aspergillus sp. 1	0028	CO CO TO G G G
SNP 450	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-3	February	Stem	MEA	29°C	22-Feb-12	Aspergillus sp. 1	0028	CO CO TO G G G
SNP 069	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-3	October	Stem	CMA	22°C	11-Jan-12	Aspergillus sp. 1	0028	G TO G AA CO
SNP 085	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-1	October	Leaf	CMA	22°C	11-Jan-	Aspergillus sp. 1	0028	TO TO G

			on							12			
SNP 185	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	North	KCN-1	October	Stem	CMA	29°C	27-Jan-12	<i>Aspergillus</i> sp. 1	0028	TA TT CO TO GA G
SNP 390	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	North	RHVC N-2	February	Stem	CMA	29°C	THM S Students	<i>Aspergillus</i> sp. 1	0028	TA TT CO TO GA G
SNP 001	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-3	October	Leaf	MEA	22°C	05-Jan-12	<i>Aspergillus</i> sp. 2	0061	CO TT GO G
SNP 003	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	MEA	22°C	05-Jan-12	<i>Aureobasidium</i> sp. 1	0001	AA GO CA TT GO TA
SNP 077	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-3	October	Stem	CMA	22°C	11-Jan-12	<i>Aureobasidium</i> sp. 1	0001	AA AA AA GO GA
SNP 318 a	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	29°C	6-Mar-12	<i>Aureobasidium</i> sp. 1	0001	AA C GO GO TA G
SNP 322	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	CMA	29°C	6-Mar-12	<i>Aureobasidium</i> sp. 1	0001	GA AA C TT GA CO
SNP 138	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-2	October	Stem	CMA	29°C	21-Jan-12	<i>Aureobasidium</i> sp. 1	0001	GO TT CO GO CA CO
SNP 380	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-1	February	Stem	CMA	29°C	THM S Students	<i>Aureobasidium</i> sp. 1	0001	TO GO AA C AA
SNP 373	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-2	February	Stem	CMA	29°C	THM S Students	<i>Aureobasidium</i> sp. 1	0001	TO TO AA TT C
SNP 318 b	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	29°C	6-Mar-12	<i>Aureobasidium</i> sp. 1	0001	TO TO AA TT C
SNP 128	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	MEA	29°C	21-Jan-12	<i>Aureobasidium</i> sp. 10	0078	TO C GO GO CA C
SNP 313	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	CMA	29°C	6-Mar-12	<i>Aureobasidium</i> sp. 11	0130	GA TO GO CA AA G
SNP 387	<i>Phoradendron</i>	<i>californicum</i>	Red Hills	Flat	RHVC F-1	February	Stem	CMA	29°C	THM S	<i>Aureobasidium</i> sp. 12	0153	TA TO GO

			VC							Stude nts			GC CA CO
SNP 051	<i>Phorade ndron</i>	<i>californi cum</i>	King Cany on	Flat	KCF-1	Octo ber	Ste m	MEA	22°C	11- Jan- 12	Aureobasidi um sp. 13	01 79	GC TO GC CA CO
SNP 055	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-2	Octo ber	Ste m	MEA	22°C	11- Jan- 12	Aureobasidi um sp. 14	01 80	AG AT AG GC GC
SNP 082	<i>Simmon dsia</i>	<i>chinens is</i>	Red Hills VC	Flat	RHVC F-2	Octo ber	Ste m	CMA	22°C	11- Jan- 12	Aureobasidi um sp. 15	01 86	GC CO GC TT TT
SNP 375 b	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Aureobasidi um sp. 16	00 55	TA CO AG AT GC
SNP 375 a	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Aureobasidi um sp. 16	00 55	TT TO TA AA CO GC
SNP 312	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Flat	KCF-1	Febru ary	Ste m	MEA	29°C	6- Mar- 12	Aureobasidi um sp. 2	00 30	AG TO TO CO CO
SNP 244	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-2	Octo ber	Ste m	CMA	29°C	27- Jan- 12	Aureobasidi um sp. 2	00 30	AA TO AG
SNP 302	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Flat	KCF-1	Febru ary	Ste m	CMA	29°C	6- Mar- 12	Aureobasidi um sp. 2	00 30	AG GC AG
SNP 465	<i>Simmon dsia</i>	<i>chinens is</i>	Red Hills VC	SW	RHVC SW-3	Febru ary	Ste m	MEA	29°C	14- Feb- 12	Aureobasidi um sp. 2	00 30	AG GC AG TO CA AG
SNP 204	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-2	Octo ber	Ste m	CMA	29°C	27- Jan- 12	Aureobasidi um sp. 2	00 30	CA CO GC AT GC GC
SNP 180	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Nort h	KCN-1	Octo ber	Ste m	CMA	29°C	27- Jan- 12	Aureobasidi um sp. 2	00 30	CO AT CO TO GC AG
SNP 460	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Flat	KCF-1	Febru ary	Ste m	CMA	29°C	21- Feb- 12	Aureobasidi um sp. 2	00 30	GC TO CO GC AG GC
SNP 222	<i>Simmon dsia</i>	<i>chinens is</i>	Red Hills VC	Nort h	RHVC N-1	Octo ber	Ste m	MEA	29°C	27- Jan- 12	Aureobasidi um sp. 2	00 30	GC TO CO GC AG GC
SNP 050	<i>Phorade ndron</i>	<i>californi cum</i>	King Cany on	Flat	KCF-1	Octo ber	Ste m	CMA	22°C	11- Jan- 12	Aureobasidi um sp. 2	00 30	GC TO CO GC

SNP 304	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	29°C	6-Mar-12	Aureobasidium sp. 2	0030	AG GT TC CC GG AA GG
SNP 307	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	29°C	6-Mar-12	Aureobasidium sp. 2	0030	GG TT CC GG CA CC
SNP 410	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-1	February	Stem	CMA	29°C	THM S Students	Aureobasidium sp. 2	0030	TT TC AC TT CT
SNP 076	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-3	October	Stem	CMA	22°C	11-Jan-12	Aureobasidium sp. 3	0035	AG GA TT GG GG
SNP 219	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	SW	RHVC SW-2	October	Stem	CMA	29°C	27-Jan-12	Aureobasidium sp. 3	0035	CT GG TT CC TA GG
SNP 396	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-2	February	Stem	CMA	22°C	THM S Students	Aureobasidium sp. 3	0035	TA TC AC CC GG
SNP 283	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	6-Mar-12	Aureobasidium sp. 3	0035	TT TC AC CT AA
SNP 277	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	6-Mar-12	Aureobasidium sp. 4	0041	AG CT AC TC AT GT
SNP 411	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	22°C	THM S Students	Aureobasidium sp. 4	0041	GG TC CC CC AC
SNP 289	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	CMA	22°C	6-Mar-12	Aureobasidium sp. 4	0041	TA TT CT
SNP 299	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	29°C	6-Mar-12	Aureobasidium sp. 5	0042	CT AA CT
SNP 290	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	6-Mar-12	Aureobasidium sp. 5	0042	TA TT CT
SNP 096	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	CMA	22°C	11-Jan-12	Aureobasidium sp. 6	0191	GG TT CC CC AC
SNP 386a	<i>Phoradendron</i>	<i>californicum</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	29°C	THM S Students	Aureobasidium sp. 7	0003	AT GT CC TT GG
SNP	<i>Larrea</i>	<i>tridentata</i>	Red	Flat	RHVC	February	Stem	MEA	29°C	THM	Aureobasidium	00	CC TC

382		<i>ta</i>	Hills VC		F-1	ary	m			S Stude nts	um sp. 7	03	GO CO G
SNP 386 b	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	29°C	THM S Stude nts	Aureobasidi um sp. 7	00 03	TT GA AG GO AA
SNP 362	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	29°C	THM S Stude nts	Aureobasidi um sp. 8	00 44	CT AA TO GT CA
SNP 329	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Aureobasidi um sp. 8	00 44	GO AA AG GT AT
SNP 345 b	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Aureobasidi um sp. 8	00 44	TA TO GO GA CA
SNP 345 a	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Aureobasidi um sp. 8	00 44	TT CT GO GA CA
SNP 127	<i>Phorade ndron</i>	<i>californi cum</i>	King Cany on	Flat	KCF-1	Octo ber	Ste m	CMA	29°C	21- Jan- 12	Aureobasidi um sp. 9	00 77	AT TO CO TO CA CO
SNP 013	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Flat	RHVC F-3	Octo ber	Leaf	MEA	22°C	05- Jan- 12	Bipolaris sp. 1	00 79	TT CO CT CO AG
SNP 134	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Nort h	RHVC N-1	Octo ber	Ste m	MEA	29°C	21- Jan- 12	Biscogniauxi a sp. 1	00 82	TO TO CO AA TO CO
SNP 102	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC S/W-1	Octo ber	Ste m	CMA	22°C	20- Jan- 12	Botryosphae ria sp. 1	00 65	AT GT NR TT CO
SNP 349	<i>Parkins onia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-3	Febru ary	Ste m	MEA	22°C	THM S Stude nts	Botryosphae ria sp. 2	01 43	CT GT GA CO GO
SNP 455	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Nort h	RHVC N-2	Octo ber	Ste m	MEA	22°C	25- Oct- 11	Botryosphae ria sp. 3	00 21	CO CO GA TO GA TO
SNP 133	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Flat	RHVC F-1	Octo ber	Ste m	MEA	29°C	21- Jan- 12	Botryosphae ria sp. 3	00 21	GO TT AG AG AA GO
SNP 417	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	S/W	KCSW -1	Febru ary	Ste m	MEA	22°C	22- Feb- 12	Botryosphae ria sp. 4	00 27	AT GO AG CO AG GA

SNP 403	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-3	February	Stem	CMA	29°C	THM S Students	<i>Botryosphaeria</i> sp. 4	0027	GA AT AC AA CO GO
SNP 297	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-1	October	Stem	CMA	29°C	6-Mar-12	<i>Botryosphaeria</i> sp. 4	0027	GA TO AC CO TT GO
SNP 169	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	October	Stem	MEA	29°C	27-Jan-12	<i>Botryosphaeria</i> sp. 4	0027	TT CA GO G AA
SNP 007	<i>Larrea</i>	<i>tridentata</i>	King Canyon	Flat	KCF-2	October	Leaf	MEA	22°C	05-Jan-12	<i>Botryosphaeria</i> sp. 5	0062	CA TO GO CO AC TO
SNP 131	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-2	October	Stem	MEA	29°C	21-Jan-12	<i>Botryosphaeria</i> sp. 6	0080	GA TT AC GO AC
SNP 333	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	22°C	THM S Students	<i>Botryosphaeria</i> sp. 7	0136	CO GO CA AA TO
SNP 444	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	February	Stem	MEA	29°C	21-Feb-12	<i>Botryosphaeria</i> sp. 8	0169	AT TO GO CO AC
SNP 286	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	6-Mar-12	<i>Camarosporium</i> sp. 1	0042	TO TO
SNP 026	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	MEA	22°C	05-Jan-12	<i>Camarosporium</i> sp. 2	0123	GA TO CO GO AA
SNP 336	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	S/W	RHVC SW-1	February	Stem	MEA	22°C	THM S Students	<i>Capnodiales</i> sp. 1	0137	AC TT TA GO GO
SNP 163	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-3	October	Leaf	CMA	29°C	27-Jan-12	<i>Cercophora</i> sp. 1	0092	GA CO CO TT AC GO
SNP 120	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW -3	October	Stem	CMA	22°C	20-Jan-12	<i>Chaetomiaceae</i> sp. 1	0072	GA AT GO AA AA
SNP 409	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	February	Stem	CMA	29°C	THM S Students	<i>Chaetomium</i> sp. 1	0051	TO CO GO GO GO
SNP 405	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	February	Stem	CMA	29°C	THM S Students	<i>Chaetomium</i> sp. 1	0051	TT AC AA AC AC
SNP	<i>Larrea</i>	<i>tridentata</i>	King	North	KCN-2	February	Stem	CMA	29°C	21-	<i>Chaetomium</i>	01	GA GO

438		ta	Canyon	h		ary	m			Feb-12	sp. 10	66	GT TT AC
SNP 047	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	Flat	KCF-1	October	Stem	MEA	22°C	05-Jan-12	Chaetomium sp. 11	0177	TT CO GO GA
SNP 259	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-3	October	Stem	CMA	22°C	6-Mar-12	Chaetomium sp. 2	0122	AT AT AC TA GA
SNP 366	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	CMA	29°C	THM S Students	Chaetomium sp. 2	0150	TT AA CA AA AC
SNP 032	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-3	October	Leaf	MEA	22°C	05-Jan-12	Chaetomium sp. 3	0132	AT TO TO C CA GO
SNP 340	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	February	Stem	CMA	22°C	THM S Students	Chaetomium sp. 4	0140	AA TO CA TA GA
SNP 126	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	Flat	KCF-2	October	Stem	MEA	29°C	21-Jan-12	Chaetomium sp. 5	0076	AT AC TO GA GO
SNP 175	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Leaf	MEA	29°C	27-Jan-12	Chaetomium sp. 6	0096	GA AT GT TO TO GO
SNP 310	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	29°C	6-Mar-12	Chaetomium sp. 7	0129	GA GO AC GA AA CO
SNP 139	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-1	October	Stem	MEA	29°C	27-Jan-12	Chaetomium sp. 8	0084	AA TO CO C TT CO
SNP 367	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-1	February	Stem	CMA	29°C	THM S Students	Chaetomium sp. 9	0151	TT GO GO GT CO CO
SNP 111	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	CMA	22°C	20-Jan-12	Cladosporium sp. 1	0014	AT CO TO CO TT
SNP 070	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	CMA	22°C	11-Jan-12	Cladosporium sp. 1	0014	TO TO GT
SNP 093	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	CMA	22°C	11-Jan-12	Cladosporium sp. 2	0189	AT CO TO CO TT
SNP 089	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	CMA	22°C	11-Jan-12	Cladosporium sp. 3	0188	AC TA RR MM

SNP 394	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	CMA	22°C	THM S Students	<i>Coniozyma</i> sp. 1	0037	AA GA G CA G
SNP 274	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	Flat	KCF-2	February	Stem	CMA	22°C	6-Mar-12	<i>Coniozyma</i> sp. 1	0037	AT TO GO TT TO TA
SNP 086	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	Flat	KCF-3	October	Stem	CMA	22°C	11-Jan-12	<i>Coniozyma</i> sp. 1	0037	CO G AA GA TO
SNP 265	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	North	KCN-2	February	Stem	MEA	22°C	6-Mar-12	<i>Coniozyma</i> sp. 1	0037	C TO AC
SNP 054	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	Flat	KCF-3	October	Stem	MEA	22°C	11-Jan-12	<i>Coniozyma</i> sp. 1	0037	G GA GA G GA CO
SNP 056	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	North	KCN-1	October	Stem	MEA	22°C	11-Jan-12	<i>Coniozyma</i> sp. 1	0037	G AA TO
SNP 463	<i>Larrea</i>	<i>tridentata</i>	King Canyon	SW	KCSW-2	February	Stem	CMA	29°C	22-Feb-12	<i>Cylindrosporium</i> sp. 1	0046	AT AO CO C AT GO
SNP 346	<i>Phoradendron</i>	<i>californicum</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	CMA	22°C	THM S Students	<i>Cylindrosporium</i> sp. 1	0046	TA AA GO TO AO GO
SNP 195	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	SW	KCSW-2	October	Stem	CMA	29°C	27-Jan-12	<i>Cylindrosporium</i> sp. 2	0100	AT GA GO CO CO GO
SNP 452	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	February	Stem	CMA	22°C	THM S Students	<i>Cylindrosporium</i> sp. 3	0171	AO AO AO CO AA
SNP 225	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-1	October	Stem	CMA	29°C	27-Jan-12	<i>Delitschia</i> sp. 1	0108	AO GO TO
SNP 441	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	North	KCN-3	February	Stem	MEA	29°C	21-Feb-12	<i>Didymosphaeria</i> sp. 1	0168	TA CO GA AO AT
SNP 347	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	MEA	22°C	THM S Students	<i>Dothideomyces</i> sp. 1	0141	GA G CO GO CA GO
SNP 094	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	Flat	KCF-1	October	Stem	CMA	22°C	11-Jan-12	<i>Dothideomyces</i> sp. 11089	0190	AZ AO C G
SNP 361	<i>Larrea</i>	<i>tridentata</i>	Red Hills	Flat	RHVC F-3	February	Stem	CMA	22°C	THM S	<i>Dothideomyces</i> sp. 2	0149	TT C TO

			VC							Stude nts			C C T
SNP 235	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	S/W	KCSW -3	Octo ber	Ste m	MEA	29°C	27- Jan- 12	Dothideomy cetes sp. 3	01 15	AT GA CO G A
SNP 148	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Nort h	KCN-2	Octo ber	Ste m	CMA	29°C	27- Jan- 12	Eremomyce s sp. 1	00 87	TO AT
SNP 331	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC SW-1	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Eurotium amstelodami	01 34	TT AA G G AA
SNP 159	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC SW-3	Octo ber	Leaf	CMA	22°C	27- Jan- 12	Geopyxis sp. 1	00 08	AA TO TO
SNP 006	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	S/W	KCSW -2	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Geopyxis sp. 1	00 08	AA CO G AA GA AO
SNP 027	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Nort h	RHVC N-2	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Geopyxis sp. 1	00 08	AA CO G AA GA AO
SNP 271	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	S/W	KCSW -2	Febru ary	Ste m	MEA	22°C	6- Mar- 12	Geopyxis sp. 1	00 08	AT C GA AO AO G
SNP 359	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC SW-3	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Geopyxis sp. 1	00 08	G AO G C AT
SNP 107	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	S/W	KCSW -3	Octo ber	Ste m	CMA	22°C	20- Jan- 12	Geopyxis sp. 2	00 66	GA C GA CA AO TO
SNP 108	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	S/W	KCSW -2	Octo ber	Ste m	CMA	22°C	20- Jan- 12	Geopyxis sp. 3	00 67	AT C GA AO AO G
SNP 118	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Nort h	RHVC N-1	Octo ber	Ste m	CMA	22°C	20- Jan- 12	Geopyxis sp. 4	00 71	AT C GA AO AO G
SNP 238	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	S/W	KCSW -1	Octo ber	Ste m	CMA	22°C	27- Jan- 12	Geopyxis sp. 5	01 16	AT C GA AO AO G
SNP 040	<i>Simmon dsia</i>	<i>chinens is</i>	Red Hills VC	Flat	RHVC F-3	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Geopyxis sp. 6	01 57	AA AA G AO AT AT
SNP 125	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills	S/W	RHVC SW-3	Octo ber	Ste m	MEA	29°C	21- Jan-	Immersiella sp. 1	00 56	AA TO TO

			VC							12			CO TO
SNP 197	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC S/W-1	Octo ber	Ste m	MEA	29°C	27- Jan- 12	Immersiella sp. 1	00 56	AT GA C GA AT
SNP 464	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	S/W	KCSW -1	Febru ary	Ste m	CMA	22°C	22- Feb- 12	Kabatiella microsticta	01 76	GA AT GA GA G
SNP 251	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-1	Octo ber	Ste m	CMA	29°C	27- Jan- 12	Lasiosphaeri aceae sp. 1	01 20	AT CA CO TO TT
SNP 393	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-3	Febru ary	Ste m	MEA	29°C	THM S Stude nts	Lecythophor a sp. 1	00 48	CO GA C GA TO
SNP 369	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-3	Febru ary	Ste m	MEA	29°C	THM S Stude nts	Lecythophor a sp. 1	00 48	GA CO GA GA GA
SNP 083	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	S/W	KCSW -3	Octo ber	Ste m	CMA	22°C	11- Jan- 12	Lecythopohr a sp. 2	01 87	AO TT TO
SNP 291	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-1	Febru ary	Ste m	MEA	22°C	6- Mar- 12	Microdiplodi a sp. 1	00 43	TA AT CA TT GA TA
SNP 071	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11- Jan- 12	Microdiplodi a sp. 1	00 43	TO AO TO
SNP 048	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-1	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Nigrospora sp. 1	01 78	GA TO GA CO AT
SNP 431	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Febru ary	Ste m	CMA	22°C	22- Feb- 12	Ochroclados porium sp. 1	01 62	AT CA C TA TO AT
SNP 352	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC S/W-2	Febru ary	Leaf	MEA	29°C	THM S Stude nts	Paecilomyce s sp. 1	00 58	TT G G C AT TO
SNP 399	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Flat	RHVC F-2	Febru ary	Leaf	CMA	22°C	THM S Stude nts	Paecilomyce s sp. 1	00 58	TT G G C AT TO
SNP 062	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11- Jan- 12	Penicillium biourgeianu m	00 54	C TO CO
SNP 046	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Penicillium biourgeianu m	00 54	GA GA CA CO TA GA
SNP	<i>Parkinso</i>	<i>microp</i>	King	Flat	KCF-3	Octo	Ste	CMA	22°C	11-	Penicillium	00	TO

072	<i>nia</i>	<i>hylla</i>	Cany on			ber	m			Jan-12	biourgeianu m	54	AA TC
SNP 060	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11-Jan-12	Penicillium biourgeianu m	00 54	TT AG G' G' GA
SNP 065	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11-Jan-12	Penicillium biourgeianu m	00 54	TT AG G' G' GA AA
SNP 088	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11-Jan-12	Penicillium biourgeianu m	00 54	TT CA TC G' AG
SNP 092	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11-Jan-12	Penicillium biourgeianu m	00 60	CG G' G' GA AG
SNP 059	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11-Jan-12	Penicillium biourgeianu m	00 60	G' TC GA G'
SNP 453	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Nort h	RHVC N-3	Febru ary	Ste m	CMA	29°C	THM S Stude nts	Penicillium citrinum	00 52	TA AT G' G' TT
SNP 407	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Nort h	RHVC N-2	Febru ary	Leaf	MEA	29°C	THM S Stude nts	Penicillium citrinum	00 52	TT AA AG G' TT
SNP 168	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC SW-2	Octo ber	Ste m	CMA	29°C	27-Jan-12	Penicillium glabrum	00 24	TT GA AT TC GA G'
SNP 146	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC SW-2	Octo ber	Ste m	CMA	29°C	27-Jan-12	Penicillium glabrum	00 24	TT GA AT TC GA G'
SNP 171	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC SW-2	Octo ber	Ste m	CMA	29°C	27-Jan-12	Penicillium glabrum	00 24	TT GA AT TC GA G'
SNP 064	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC SW-1	Octo ber	Ste m	CMA	22°C	11-Jan-12	Penicillium oxalicum	00 15	AT G' CG C' CG G'
SNP 162	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	29°C	27-Jan-12	Penicillium oxalicum	00 15	AT G' CG C' CG G'
SNP 068	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC SW-1	Octo ber	Ste m	CMA	22°C	11-Jan-12	Penicillium oxalicum	00 15	AT TC G' TT G'
SNP 112	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	20-Jan-12	Penicillium oxalicum	00 15	CG G' G' AT

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SNP 061	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-3	October	Stem	CMA	22°C	11-Jan-12	Penicillium oxalicum	0015	GA GC TO CT CO
SNP 079	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-3	October	Leaf	CMA	22°C	11-Jan-12	Penicillium oxalicum	0015	GA CO GC GA AO GA
SNP 087	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	SW	KCSW-3	October	Stem	CMA	22°C	11-Jan-12	Penicillium oxalicum	0015	AA AA AT
SNP 327	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	SW	RHVC SW-3	October	Stem	CMA	29°C	6-Mar-12	Penicillium oxalicum	0015	TO AA TT TT CO
SNP 231	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	SW	RHVC SW-2	October	Stem	CMA	29°C	27-Jan-12	Penicillium sp. 1	0113	AT GA GC GA CO
SNP 234	<i>Larrea</i>	<i>tridentata</i>	King Canyon	SW	KCSW-1	October	Stem	CMA	29°C	27-Jan-12	Petriella sp. 1	0114	AT AO CA GC CT GA
SNP 152	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	North	RHVC N-3	October	Stem	CMA	29°C	27-Jan-12	Pezizomycetes sp. 1	0011	AA GA TA
SNP 104	<i>Larrea</i>	<i>tridentata</i>	King Canyon	SW	KCSW-1	October	Stem	CMA	22°C	20-Jan-12	Pezizomycetes sp. 1	0011	AO AO AT AO AO
SNP 233	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	October	Stem	CMA	29°C	27-Jan-12	Pezizomycetes sp. 1	0011	AO CO CT CT CT
SNP 022	<i>Larrea</i>	<i>tridentata</i>	King Canyon	SW	KCSW-3	October	Leaf	MEA	22°C	05-Jan-12	Pezizomycetes sp. 1	0011	TA AO CO GC AO
SNP 153	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-3	October	Stem	CMA	29°C	27-Jan-12	Pezizomycetes sp. 10	0090	GA AA AT CO AA
SNP 075	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-1	October	Stem	CMA	22°C	11-Jan-12	Pezizomycetes sp. 11	0183	GA TT TT TO GA TO
SNP 078	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-2	October	Stem	CMA	22°C	11-Jan-12	Pezizomycetes sp. 12	0184	GA CA CO TT GA
SNP 016	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Leaf	MEA	22°C	05-Jan-12	Pezizomycetes sp. 13	ND	CA CA
SNP 028	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	October	Leaf	MEA	22°C	05-Jan-12	Pezizomycetes sp. 2	0016	AA AA TT TA GA

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SNP 115	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-1	October	Stem	MEA	22°C	20-Jan-12	Pezizomycetes sp. 2	0016	TTGAAGGAG
SNP 436	<i>Larrea</i>	<i>tesota</i>	King Canyon	North	KCN-3	February	Stem	CMA	29°C	21-Feb-12	Pezizomycetes sp. 3	0025	AAAGCCGAC
SNP 155	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-1	October	Stem	CMA	22°C	27-Jan-12	Pezizomycetes sp. 3	0025	TAACCTTTCC
SNP 161	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-2	October	Stem	MEA	29°C	27-Jan-12	Pezizomycetes sp. 3	0025	TAACCTTTCC
SNP 178	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-3	October	Stem	MEA	29°C	27-Jan-12	Pezizomycetes sp. 4	0097	TAACCTTTCC
SNP 241	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	MEA	29°C	27-Jan-12	Pezizomycetes sp. 5	0023	AAAGTTAAAC
SNP 416	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-2	February	Stem	CMA	22°C	21-Feb-12	Pezizomycetes sp. 5	0023	ATATGGGAA
SNP 207	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-3	October	Stem	MEA	29°C	27-Jan-12	Pezizomycetes sp. 5	0023	GTGATATTA
SNP 193	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-1	October	Stem	MEA	29°C	27-Jan-12	Pezizomycetes sp. 5	0023	GTGATATTA
SNP 143	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-3	October	Stem	CMA	22°C	27-Jan-12	Pezizomycetes sp. 5	0023	TTATGATCC
SNP 097	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	CMA	22°C	20-Jan-12	Pezizomycetes sp. 6	0053	AAATCTG
SNP 422	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-1	February	Stem	CMA	22°C	20-Feb-12	Pezizomycetes sp. 6	0053	TAATGATCC
SNP 090	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-3	October	Stem	CMA	22°C	11-Jan-12	Pezizomycetes sp. 6	0053	TAACCTATCC
SNP 137	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-1	October	Stem	MEA	29°C	21-Jan-12	Pezizomycetes sp. 7	0083	GTGATGAA

SNP 149	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-2	October	Stem	MEA	29°C	27-Jan-12	Pezizomycetes sp. 7	0088	GT TA CA GC AC CT TT
SNP 113	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	S/W	KCSW-3	October	Stem	CMA	22°C	20-Jan-12	Pezizomycetes sp. 8	0069	AT AT AT AT TC TT
SNP 123	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	North	RHVC N-3	October	Stem	MEA	29°C	21-Jan-12	Pezizomycetes sp. 9	0074	TC CT AT CT
SNP 272	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-2	February	Stem	MEA	22°C	6-Mar-12	Phoma sp. 1	0038	AT TT GT TC GT
SNP 298	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-3	February	Stem	MEA	29°C	6-Mar-12	Phoma sp. 1	0038	AT TT GT TC GT
SNP 268	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	6-Mar-12	Phoma sp. 1	0038	AT TT GT TC GT
SNP 381	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	CMA	29°C	THM S Students	Phoma sp. 1	0038	CA GC CC CT GA
SNP 316	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-3	February	Stem	MEA	29°C	6-Mar-12	Phoma sp. 1	0038	CT TA CT
SNP 058	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-1	October	Stem	CMA	22°C	11-Jan-12	Phoma sp. 1	0038	CT AC CT
SNP 385	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	CMA	29°C	THM S Students	Phoma sp. 1	0038	GT TC AC AC GT
SNP 293	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-3	February	Stem	MEA	22°C	6-Mar-12	Phoma sp. 1	0038	TA GT CC GC AT
SNP 425	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-3	February	Stem	MEA	22°C	22-Feb-12	Phoma sp. 1	0038	TA GT CC GC AT
SNP 280	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-3	February	Stem	MEA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GT CC GC AT
SNP 300	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-3	February	Stem	CMA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GT CC GC AT
SNP 305	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-3	February	Stem	CMA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GT CC GC AT

SNP 306	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Febru ary	Ste m	CMA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 308	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	S/W	KCSW -1	Febru ary	Ste m	CMA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 311	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Febru ary	Ste m	CMA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 424	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Febru ary	Ste m	MEA	22°C	22-Feb-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 427	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Febru ary	Ste m	MEA	22°C	22-Feb-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 430	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Febru ary	Ste m	MEA	22°C	22-Feb-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 063	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Nort h	KCN-1	Octo ber	Ste m	CMA	22°C	11-Jan-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 066	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Nort h	KCN-1	Octo ber	Ste m	CMA	22°C	11-Jan-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 053	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	S/W	KCSW -2	Octo ber	Ste m	MEA	22°C	11-Jan-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 278	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Nort h	KCN-3	Febru ary	Ste m	MEA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 294	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Febru ary	Ste m	CMA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 279	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-2	Febru ary	Ste m	MEA	29°C	6-Mar-12	Phoma sp. 1	0038	TA GA CO GE AT
SNP 448	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-2	Febru ary	Ste m	CMA	29°C	21-Feb-12	Phoma sp. 10	0170	TA GA CO GE AT
SNP 344	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	22°C	THM S Stude nts	Phoma sp. 2	0045	TA GA CO GE AT
SNP 357	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	22°C	THM S Stude nts	Phoma sp. 2	0045	TA GA CO GE AT
SNP 384	<i>Olneya</i>	<i>tesota</i>	Red Hills	Flat	RHVC F-1	Febru ary	Ste m	MEA	29°C	THM S	Phoma sp. 2	0045	TA GA CO GE AT

			VC							Stude nts			CO TO
SNP 338	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	22°C	THM S Stude nts	Phoma sp. 2	00 45	AT TO AC CO TO
SNP 401	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Phoma sp. 2	00 45	AT TO AC CO TO
SNP 328	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	22°C	THM S Stude nts	Phoma sp. 2	00 45	CO TT GO TT CO
SNP 335	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	22°C	THM S Stude nts	Phoma sp. 2	00 45	TA CA GT TT AA
SNP 350	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	29°C	THM S Stude nts	Phoma sp. 2	00 45	TA TA CO CO AT
SNP 404	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	29°C	THM S Stude nts	Phoma sp. 2	00 45	TA TA CO CO AT
SNP 389	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-2	Febru ary	Ste m	CMA	29°C	THM S Stude nts	Phoma sp. 2	00 45	TA AT AA AA TO
SNP 414	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-2	Febru ary	Ste m	MEA	29°C	THM S Stude nts	Phoma sp. 3	00 59	AC GO AC AC TO
SNP 383	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	29°C	THM S Stude nts	Phoma sp. 3	00 59	TA CA GT TT AA
SNP 122	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	Nort h	RHVC N-3	Octo ber	Ste m	MEA	29°C	21- Jan- 12	Phoma sp. 4	00 73	AT TT GA TO G
SNP 202	<i>Phorade ndron</i>	<i>californi cum</i>	King Cany on	Flat	KCF-1	Octo ber	Ste m	CMA	29°C	27- Jan- 12	Phoma sp. 5	01 02	AT GO AC CA AC
SNP 339	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	22°C	THM S Stude nts	Phoma sp. 6	01 39	GO TO CA C GO
SNP 035	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Flat	KCF-2	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Phoma sp. 7	01 44	AT GT CO AA GO
SNP 351	<i>Olneya</i>	<i>tesota</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	29°C	THM S Stude	Phoma sp. 8	01 45	TA TA CO CO

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SNP 358	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	22°C	THM S Students	Phoma sp. 9	01 47	TA TO C ⁺ TT CO
SNP 116	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-3	October	Stem	CMA	22°C	20-Jan-12	Podospora sp. 1	00 70	GA CO
SNP 368 b	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	MEA	29°C	THM S Students	Preussia sp. 1	00 02	CO TO CO GO CA
SNP 368 a	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	MEA	29°C	THM S Students	Preussia sp. 1	00 02	C ⁺ GO GO G ⁺ C ⁺
SNP 206	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW -3	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 10	00 57	AT G ⁺ CO GO AA
SNP 363	<i>Phoradendron</i>	<i>californicum</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	CMA	29°C	THM S Students	Preussia sp. 10	00 57	TT AT TO AA GO
SNP 008	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW -1	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 11	00 63	TA TO CO GO AA
SNP 017	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 12	00 94	TT TT CO CO G ⁺
SNP 255	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-1	October	Stem	CMA	29°C	27-Jan-12	Preussia sp. 13	01 21	AT GA G ⁺ AC
SNP 284	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	S/W	KCSW -3	February	Stem	MEA	22°C	6-Mar-12	Preussia sp. 14	01 25	GA G ⁺ TO AA GO
SNP 301	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	29°C	6-Mar-12	Preussia sp. 15	01 27	TA TT TO TO G ⁺
SNP 309	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW -2	February	Stem	CMA	29°C	6-Mar-12	Preussia sp. 16	01 28	TA GO GO C ⁺ G ⁺
SNP 039	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-1	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 17	01 54	TA GO AC TO
SNP 408	<i>Phoradendron</i>	<i>californicum</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	CMA	29°C	THM S Students	Preussia sp. 18	01 58	AT TT TA GO C ⁺
SNP 440	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-3	February	Stem	CMA	29°C	21-Feb-12	Preussia sp. 19	01 67	TA GO C ⁺ G ⁺

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SNP 257	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-3	October	Leaf	CMA	22°C	27-Jan-12	Preussia sp. 2	00 04	AT GA GC AC
SNP 267	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	S/W	KCSW -2	February	Stem	MEA	22°C	6-Mar-12	Preussia sp. 2	00 04	AT GA GC AC
SNP 019	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-3	October	Leaf	MEA	22°C	05-Jan-12	Preussia sp. 2	00 04	AT AT TO GC
SNP 371	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	MEA	29°C	THM S Students	Preussia sp. 2	00 04	GA GC CO GC TT
SNP 415	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	29°C	THM S Students	Preussia sp. 2	00 04	TA GC GC TT AA
SNP 323	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	CMA	29°C	6-Mar-12	Preussia sp. 2	00 04	TA GC GC TT AA
SNP 412 a	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	29°C	THM S Students	Preussia sp. 2	00 04	TA GC GC TT AA
SNP 412 b	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	29°C	THM S Students	Preussia sp. 2	00 04	TA GC GC TT AA
SNP 320	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW -1	February	Leaf	CMA	29°C	6-Mar-12	Preussia sp. 2	00 04	TA GC GC TT AA
SNP 154	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-1	October	Leaf	CMA	22°C	27-Jan-12	Preussia sp. 2	00 04	TA GC GC TT AA
SNP 242	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-3	October	Stem	CMA	29°C	27-Jan-12	Preussia sp. 2	00 04	TA GC GC TT AA
SNP 454	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	October	Leaf	MEA	22°C	31-Oct-11	Preussia sp. 2	00 04	TA GC GC TT AA
SNP 220	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-3	October	Leaf	CMA	22°C	27-Jan-12	Preussia sp. 2	00 04	TT TO GC C GC
SNP 341	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	22°C	THM S Students	Preussia sp. 2	00 04	TT TT GC TT CO
SNP 374	<i>Larrea</i>	<i>tridentata</i>	Red Hills	Flat	RHVC F-2	February	Stem	MEA	29°C	THM S	Preussia sp. 2	00 04	TT TT GC TT

			VC							Stude nts			CO
SNP 057	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Nort h	KCN-1	Octo ber	Ste m	CMA	22°C	11- Jan- 12	Preussia sp. 20	01 81	AT GA GT AO
SNP 073	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11- Jan- 12	Preussia sp. 21	01 82	GA GT TO AA GO
SNP 081	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	S/W	KCSW -1	Octo ber	Leaf	CMA	22°C	11- Jan- 12	Preussia sp. 22	01 85	AO GT GA CT AO
SNP 252	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	MEA	29°C	27- Jan- 12	Preussia sp. 23	00 10	AT GT TO CO TO
SNP 084	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Flat	KCF-3	Octo ber	Ste m	CMA	22°C	11- Jan- 12	Preussia sp. 23	00 10	AT GT TO CO TO
SNP 103	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-2	Octo ber	Ste m	CMA	22°C	20- Jan- 12	Preussia sp. 23	00 10	AT GT TO CO TO
SNP 136	<i>Simmon dsia</i>	<i>chinens is</i>	Red Hills VC	S/W	RHVC SW-2	Octo ber	Ste m	CMA	29°C	21- Jan- 12	Preussia sp. 23	00 10	AT GT TO CO TO
SNP 334	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Flat	RHVC F-3	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Preussia sp. 23	00 10	AT GT TO CO TO
SNP 446	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	Flat	KCF-3	Febru ary	Ste m	MEA	29°C	22- Feb- 12	Preussia sp. 23	00 10	CA GA GT TT AA
SNP 044	<i>Parkinso nia</i>	<i>microp hylla</i>	King Cany on	S/W	KCSW -3	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Preussia sp. 23	00 10	GA TO TT TO GT
SNP 439	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Nort h	KCN-3	Febru ary	Leaf	MEA	29°C	21- Feb- 12	Preussia sp. 23	00 10	GA TO CT CO AO
SNP 295	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Nort h	KCN-2	Febru ary	Ste m	MEA	29°C	6- Mar- 12	Preussia sp. 23	00 10	TA TT CO GA TT
SNP 303	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	S/W	KCSW -2	Febru ary	Ste m	CMA	29°C	6- Mar- 12	Preussia sp. 23	00 10	TA TT CO GA TT
SNP 433	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	S/W	KCSW -3	Febru ary	Ste m	MEA	22°C	22- Feb- 12	Preussia sp. 23	00 10	TA TT CO GA TT
SNP 447	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Nort h	KCN-2	Febru ary	Ste m	CMA	29°C	21- Feb- 12	Preussia sp. 23	00 10	TT AT CT TO AA

SNP 186	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-2	October	Leaf	MEA	29°C	27-Jan-12	Preussia sp. 23	0010	TT AT C TO AA
SNP 314	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-1	February	Stem	CMA	29°C	6-Mar-12	Preussia sp. 23	0010	TT AT C TO AA
SNP 432	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-2	February	Stem	MEA	22°C	22-Feb-12	Preussia sp. 23	0010	TT AT C TO AA
SNP 296	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-2	February	Leaf	MEA	29°C	6-Mar-12	Preussia sp. 23	0010	TT AT C TO AA
SNP 248	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-2	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 24	0036	GA TT CO TO AT
SNP 458	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-1	October	Stem	MEA	22°C	31-Oct-11	Preussia sp. 24	0036	TA GO C CO CO
SNP 343	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-3	February	Stem	MEA	22°C	THM S Students	Preussia sp. 24	0036	TA GO CO AC G
SNP 326	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-2	October	Stem	MEA	29°C	6-Mar-12	Preussia sp. 24	0036	TT TO CO AA TO
SNP 400	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	MEA	22°C	THM S Students	Preussia sp. 25	0050	TA TT CO GA TT
SNP 426	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-2	February	Stem	MEA	22°C	22-Feb-12	Preussia sp. 25	0050	TT AT C TO AA
SNP 025	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-3	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 26	0119	CA GA GO C GA
SNP 420	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-2	February	Leaf	CMA	22°C	22-Feb-12	Preussia sp. 27	0161	TA TO TA CO G
SNP 437	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-3	February	Stem	MEA	29°C	21-Feb-12	Preussia sp. 28	0165	GO TT GO AC AA
SNP 208	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-3	October	Stem	CMA	22°C	27-Jan-12	Preussia sp. 29	0103	GO GA GO TO CA
SNP 106	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	October	Stem	CMA	22°C	20-Jan-12	Preussia sp. 3	0007	AT GA GA G AC
SNP 114	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-1	October	Stem	CMA	22°C	20-Jan-	Preussia sp. 3	0007	AT GA GA

			on							12			G
SNP 150	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-3	October	Leaf	CMA	29°C	27-Jan-12	Preussia sp. 3	00 07	AT GA G AC
SNP 191	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-1	October	Leaf	MEA	29°C	27-Jan-12	Preussia sp. 3	00 07	AT GA G AC
SNP 203	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-3	October	Leaf	MEA	29°C	27-Jan-12	Preussia sp. 3	00 07	AT GA G AC
SNP 258	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-2	October	Stem	MEA	22°C	6-Mar-12	Preussia sp. 3	00 07	AT GA G AC
SNP 269	<i>Larrea</i>	<i>tridentata</i>	King Canyon	Flat	KCF-2	February	Stem	MEA	22°C	6-Mar-12	Preussia sp. 3	00 07	AT GA G AC
SNP 229	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-3	October	Leaf	MEA	22°C	27-Jan-12	Preussia sp. 3	00 07	AT GA G AC
SNP 261	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-3	October	Stem	MEA	22°C	6-Mar-12	Preussia sp. 3	00 07	AT GA G AC
SNP 041	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	S/W	RHVC SW-3	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 3	00 07	AT GA G AC
SNP 156	<i>Phoradendron</i>	<i>californicum</i>	King Canyon	Flat	KCF-1	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 3	00 07	AT GA G AC
SNP 466	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-2	February	Stem	CMA	22°C	15-Feb-12	Preussia sp. 3	00 07	AT AT TO G
SNP 005	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-3	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 3	00 07	AT AT TO G
SNP 020	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	October	Leaf	MEA	22°C	05-Jan-12	Preussia sp. 3	00 07	AT AT TO G
SNP 098	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-1	October	Leaf	CMA	22°C	20-Jan-12	Preussia sp. 3	00 07	CA AA AT TT CO
SNP 376	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-2	February	Stem	MEA	29°C	THM S Students	Preussia sp. 3	00 07	TA G G TT AA
SNP 379	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	29°C	THM S Students	Preussia sp. 3	00 07	TA G G TT AA

SNP 184	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-2	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 3	00 07	TA GO TT AA
SNP 239	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	North	RHVC N-2	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 3	00 07	TA GO GO TT AA
SNP 275	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	6-Mar-12	Preussia sp. 3	00 07	TA GO GO TT AA
SNP 442	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-1	February	Stem	MEA	29°C	20-Feb-12	Preussia sp. 3	00 07	TT TO GO C G
SNP 167	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-2	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 3	00 07	TT TO GO C G
SNP 188	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Stem	CMA	29°C	27-Jan-12	Preussia sp. 3	00 07	TT TO GO C G
SNP 395	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	22°C	THM S Students	Preussia sp. 3	00 07	TT TO GO C G
SNP 151	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	SW	KCSW -1	October	Leaf	CMA	22°C	27-Jan-12	Preussia sp. 3	00 07	TT TO GO C G
SNP 282	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	SW	KCSW -1	February	Stem	MEA	22°C	6-Mar-12	Preussia sp. 3	00 07	TT TO GO C G
SNP 370	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	MEA	29°C	THM S Students	Preussia sp. 3	00 07	TT TO GO C G
SNP 018	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-3	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 3	00 07	TT GO TA GO G
SNP 223	<i>Larrea</i>	<i>tridentata</i>	King Canyon	SW	KCSW -1	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 30	01 07	GO CA CO CO AO
SNP 254	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Stem	MEA	22°C	27-Jan-12	Preussia sp. 4	00 13	AT GO GO AO CA
SNP 121	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	North	RHVC N-1	October	Stem	MEA	29°C	21-Jan-12	Preussia sp. 4	00 13	AT GO GO AO CA
SNP 110	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-1	October	Stem	CMA	22°C	20-Jan-12	Preussia sp. 4	00 13	AT GO GO AO CA
SNP 212	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills	Flat	RHVC F-2	October	Stem	CMA	22°C	27-Jan-	Preussia sp. 4	00 13	AT GO GO

			VC							12			AC
SNP 034	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 5	0018	AT TO G AA G
SNP 236	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	S/W	RHVC S/W-3	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 5	0018	AT TO G AA G
SNP 224	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-1	October	Leaf	CMA	29°C	27-Jan-12	Preussia sp. 5	0018	AT TO G AA G
SNP 012	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 5	0018	AT TO G AA G
SNP 198	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 5	0018	AT TO G AA G
SNP 165	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-1	October	Stem	CMA	29°C	27-Jan-12	Preussia sp. 5	0018	AT TO G AA G
SNP 428	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-1	February	Leaf	CMA	22°C	22-Feb-12	Preussia sp. 5	0018	AT TO G AA G
SNP 147	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 5	0018	AT TO G AA G
SNP 213	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-3	October	Stem	CMA	29°C	27-Jan-12	Preussia sp. 5	0018	AT TO G AA G
SNP 330	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	MEA	22°C	THM S Students	Preussia sp. 5	0018	AT TO G AA G
SNP 160	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	North	RHVC N-2	October	Stem	CMA	29°C	27-Jan-12	Preussia sp. 6	0026	AT TO G AA G
SNP 266	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-2	February	Stem	MEA	22°C	6-Mar-12	Preussia sp. 6	0026	AT TO G AA G
SNP 031	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	S/W	RHVC S/W-2	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 6	0026	AT TO G AA G
SNP 243	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	CMA	22°C	27-Jan-12	Preussia sp. 6	0026	AT TO G AA G
SNP 030	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-1	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 6	0026	AT TO G AA G
SNP	<i>Parkinsonia</i>	<i>microp</i>	King	Flat	KCF-3	October	Stem	MEA	22°C	05-	Preussia sp.	00	AT TO G AA G

045	<i>nia</i>	<i>hylla</i>	Canyon			ber	m			Jan-12	6	26	C
SNP 067	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC SW-3	October	Stem	CMA	22°C	11-Jan-12	Preussia sp. 6	00 26	CA AA C C G
SNP 043	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	North	RHVC N-3	October	Stem	MEA	22°C	05-Jan-12	Preussia sp. 6	00 26	GA G G TT C
SNP 182	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	S/W	KCSW -3	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 6	00 26	TA TG G G AA
SNP 164	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-3	October	Leaf	MEA	29°C	27-Jan-12	Preussia sp. 6	00 26	TA TG G G AA
SNP 419	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	21-Feb-12	Preussia sp. 6	00 26	TT TG TG TG AA
SNP 423	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-3	February	Stem	CMA	22°C	21-Feb-12	Preussia sp. 7	00 31	TA TG G G AA
SNP 187	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-1	October	Stem	CMA	22°C	27-Jan-12	Preussia sp. 7	00 31	TA TG G G AA
SNP 232	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-2	October	Leaf	CMA	29°C	27-Jan-12	Preussia sp. 7	00 31	TT TG G AA CA
SNP 245	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	North	RHVC N-3	October	Stem	MEA	22°C	27-Jan-12	Preussia sp. 8	00 32	AT G G G AA
SNP 194	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-3	October	Leaf	CMA	29°C	27-Jan-12	Preussia sp. 8	00 32	AT G G G AA
SNP 201	<i>Parkinsonia</i>	<i>microp hylla</i>	King Canyon	S/W	KCSW -3	October	Stem	MEA	29°C	27-Jan-12	Preussia sp. 9	00 33	AT TG G TG AA
SNP 210	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC SW-3	October	Stem	CMA	29°C	27-Jan-12	Preussia sp. 9	00 33	AT TG G TG AA
SNP 091	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-1	October	Stem	CMA	22°C	11-Jan-12	Preussia sp. 9	00 33	TA TG G C G
SNP 325	<i>Parkinsonia</i>	<i>microp hylla</i>	Red Hills VC	North	RHVC N-3	October	Stem	CMA	29°C	6-Mar-12	Preussia sp. 9	00 33	TA TG AT TT C
SNP 429	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW -1	February	Leaf	CMA	22°C	22-Feb-12	Preussia sp. 9	00 33	TA TG AT TT C

SNP 332	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-2	February	Stem	MEA	22°C	THM S Students	<i>Pseudotaeniolina</i> sp. 1	0135	TT AA C T G A
SNP 009	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	MEA	22°C	05-Jan-12	<i>Pyrenochaetopsis</i> sp. 1	0064	AT CA C G AT CA
SNP 249	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-3	October	Stem	MEA	22°C	27-Jan-12	<i>Retroconis</i> sp. 1	0118	AT GA AC GA AA
SNP 435	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-2	February	Stem	CMA	29°C	22-Feb-12	<i>Retroconis</i> sp. 2	0164	GA TC CC CC AC AT
SNP 216	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	North	KCN-1	October	Leaf	CMA	22°C	27-Jan-12	<i>Rhizopus</i> sp. 1	0106	AA CA GA CC GA GA
SNP 246	<i>Phoradendron</i>	<i>californicum</i>	King Canyon	Flat	KCF-1	October	Stem	CMA	22°C	27-Jan-12	<i>Saccharata</i> sp. 1	0117	CT AT AA GT TT
SNP 262	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	S/W	RHVC SW-2	October	Stem	MEA	22°C	6-Mar-12	<i>Saccharata</i> sp. 2	0124	TA GA CC GA AC TA
SNP 462	<i>Phoradendron</i>	<i>californicum</i>	King Canyon	Flat	KCF-1	October	Stem	CMA	22°C	31-Oct-11	<i>Saccharata</i> sp. 3	0175	TT GA CC GA AC TA
SNP 144	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-1	October	Stem	CMA	22°C	27-Jan-12	<i>Sarcinomyces</i> sp. 1	0085	GA GA GA CA GA CA
SNP 228	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-2	October	Stem	CMA	22°C	27-Jan-12	<i>Sarcinomyces</i> sp. 2	0110	AA GA TA GA GA
SNP 353	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	Flat	RHVC F-3	February	Stem	CMA	22°C	THM S Students	<i>Sarcinomyces</i> sp. 3	0146	TT TC CA AT AC
SNP 042	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	S/W	KCSW-2	October	Stem	MEA	22°C	05-Jan-12	<i>Sarcinomyces</i> sp. 4	0160	AA AA CC AA CT
SNP 176	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC SW-1	October	Stem	MEA	29°C	27-Jan-12	<i>Sordariaceae</i> sp. 1	0029	GA CT TC TC TC
SNP 037	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	Flat	RHVC F-3	October	Stem	MEA	22°C	05-Jan-12	<i>Sordariaceae</i> sp. 1	0029	GT TA AC

SNP 230	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-3	October	Stem	MEA	29°C	27-Jan-12	Sordariaceae sp. 2	0112	AT TO CA TT CO TO
SNP 418	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	21-Feb-12	Sordariaceae sp. 3	0159	GO TO GO AC AT CO
SNP 080	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-2	October	Stem	CMA	22°C	11-Jan-12	Sordariomycetes sp. 1	0005	AC TO GO TA AC
SNP 109	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	North	RHVC N-3	October	Stem	CMA	22°C	20-Jan-12	Sordariomycetes sp. 1	0005	AT AT GO GO AC
SNP 263	<i>Parkinsonia</i>	<i>microphylla</i>	Red Hills VC	S/W	RHVC S/W-3	October	Stem	MEA	22°C	6-Mar-12	Sordariomycetes sp. 1	0005	AT AT GO GO AC
SNP 264	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-3	October	Stem	MEA	22°C	6-Mar-12	Sordariomycetes sp. 1	0005	AT AT GO GO AC
SNP 052	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	North	KCN-1	October	Stem	MEA	22°C	11-Jan-12	Sordariomycetes sp. 1	0005	AT GO GO TO GO
SNP 010	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-2	October	Stem	MEA	22°C	05-Jan-12	Sordariomycetes sp. 1	0005	AT GO GO TO GO
SNP 002	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	MEA	22°C	05-Jan-12	Sordariomycetes sp. 1	0005	AT GO GO TO GO
SNP 183	<i>Larrea</i>	<i>tridentata</i>	King Canyon	Flat	KCF-2	October	Leaf	MEA	29°C	27-Jan-12	Sordariomycetes sp. 1	0005	AT GO GO TO GO
SNP 038	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW-3	October	Stem	MEA	22°C	05-Jan-12	Sordariomycetes sp. 1	0005	AT GO GO TO GO
SNP 024	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-1	October	Stem	MEA	22°C	05-Jan-12	Sordariomycetes sp. 1	0005	GO CO AC AC GO
SNP 457	<i>Larrea</i>	<i>tridentata</i>	King Canyon	S/W	KCSW-2	October	Stem	MEA	22°C	29-Oct-11	Sordariomycetes sp. 1	0005	TA AC C TT GO
SNP 240	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	North	RHVC N-2	October	Leaf	MEA	22°C	27-Jan-12	Sordariomycetes sp. 1	0005	TA AC C TT GO
SNP 449	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	CMA	29°C	21-Feb-12	Sordariomycetes sp. 1	0005	TT CA GO C TO
SNP	<i>Larrea</i>	<i>tridentata</i>	Red	S/W	RHVC	October	Stem	CMA	22°C	27-	Sordariomycetes sp. 1	00	TT CA

140		<i>ta</i>	Hills VC		S/W-1	ber	m			Jan-12	etes sp. 1	05	GC
SNP 172	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC S/W-1	Octo ber	Ste m	CMA	29°C	27-Jan-12	Sordariomyc etes sp. 10	00 95	AT
SNP 456	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	S/W	KCSW -3	Octo ber	Leaf	MEA	22°C	29-Oct-11	Sordariomyc etes sp. 11	01 72	GC
SNP 192	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-3	Octo ber	Ste m	MEA	29°C	27-Jan-12	Sordariomyc etes sp. 2	00 99	AT
SNP 226	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC S/W-3	Octo ber	Ste m	CMA	22°C	27-Jan-12	Sordariomyc etes sp. 3	01 09	AT
SNP 434	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC S/W-3	Febru ary	Ste m	CMA	29°C	THM S Stude nts	Sordariomyc etes sp. 4	01 63	AT
SNP 360	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	CMA	22°C	THM S Stude nts	Sordariomyc etes sp. 5	00 47	TA
SNP 402	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	22°C	THM S Stude nts	Sordariomyc etes sp. 5	00 47	TT
SNP 378	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	Flat	RHVC F-3	Febru ary	Ste m	CMA	29°C	THM S Stude nts	Sordariomyc etes sp. 6	00 49	AG
SNP 413	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC S/W-1	Febru ary	Ste m	CMA	29°C	THM S Stude nts	Sordariomyc etes sp. 6	00 49	AG
SNP 377	<i>Phorade ndron</i>	<i>californi cum</i>	Red Hills VC	Flat	RHVC F-1	Febru ary	Ste m	MEA	29°C	THM S Stude nts	Sordariomyc etes sp. 7	01 52	AG
SNP 132	<i>Simmon dsia</i>	<i>chinens is</i>	King Cany on	Nort h	KCN-3	Octo ber	Leaf	MEA	29°C	21-Jan-12	Sordariomyc etes sp. 8	00 81	AT
SNP 145	<i>Simmon dsia</i>	<i>chinens is</i>	Red Hills VC	S/W	RHVC S/W-2	Octo ber	Ste m	CMA	29°C	27-Jan-12	Sordariomyc etes sp. 9	00 86	TT
SNP 215	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	Nort h	RHVC N-1	Octo ber	Ste m	MEA	29°C	27-Jan-12	Sporomiella sp. 1	00 22	AT
SNP 014	<i>Larrea</i>	<i>tridenta ta</i>	Red Hills VC	S/W	RHVC S/W-1	Octo ber	Ste m	MEA	22°C	05-Jan-12	Sporomiella sp. 1	00 22	AT

SNP 099	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	S/W	RHVC S/W-1	October	Stem	CMA	22°C	20-Jan-12	Sporomiella sp. 1	0022	AT TT CO AG
SNP 342	<i>Larrea</i>	<i>tridentata</i>	Red Hills VC	Flat	RHVC F-1	February	Stem	CMA	22°C	THM S Students	Sporomiella sp. 1	0022	CO TA AG GT CT
SNP 135	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-1	October	Stem	MEA	29°C	21-Jan-12	Sporomiella sp. 1	0022	GO GT GO TT AA
SNP 451	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW -3	February	Stem	MEA	29°C	22-Feb-12	Sporomiella sp. 1	0022	TA GO AG AO TO
SNP 445	<i>Parkinsonia</i>	<i>microphylla</i>	King Canyon	Flat	KCF-2	February	Stem	MEA	29°C	21-Feb-12	Sporomiella sp. 1	0022	TO GO AT GO CO
SNP 443	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	S/W	KCSW -2	February	Leaf	MEA	29°C	22-Feb-12	Sporomiella sp. 1	0022	TT TO CA CA TT
SNP 256	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-3	October	Stem	CMA	29°C	27-Jan-12	Sporomiella sp. 1	0022	TT TA CA GO CO
SNP 273	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	6-Mar-12	Sydowia sp. 1	0039	CT AA CT
SNP 281	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-2	February	Stem	MEA	22°C	6-Mar-12	Sydowia sp. 1	0039	GA TO CO GO AG GT
SNP 397	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-3	February	Stem	CMA	22°C	THM S Students	Sydowia sp. 1	0039	GO TO CO CT TO
SNP 365	<i>Simmondsia</i>	<i>chinensis</i>	Red Hills VC	North	RHVC N-1	February	Stem	MEA	29°C	THM S Students	Sydowia sp. 1	0040	GO TO CO CT TO
SNP 288	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	CMA	22°C	6-Mar-12	Sydowia sp. 1	0040	GO TT CO GO CA
SNP 276	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	MEA	22°C	6-Mar-12	Sydowia sp. 1	0040	GO GO CO TT TT
SNP 095	<i>Larrea</i>	<i>tridentata</i>	King Canyon	North	KCN-2	October	Stem	CMA	22°C	11-Jan-12	Sydowia sp. 1	0040	TO CA GO CO GO
SNP 287	<i>Simmondsia</i>	<i>chinensis</i>	King Canyon	Flat	KCF-1	February	Stem	CMA	22°C	6-Mar-12	Sydowia sp. 1	0042	TO CO CT
SNP	<i>Larrea</i>	<i>tridentata</i>	King	North	KCN-2	October	Stem	MEA	29°C	27-	Truncatella	00	AG TT

205		<i>ta</i>	Cany on	h		ber	m			Jan- 12	sp. 1	06	G
SNP 237	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-2	Octo ber	Ste m	CMA	29°C	27- Jan- 12	Truncatella sp. 1	00 06	AT GA AA AC TC GG
SNP 004	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-2	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Truncatella sp. 1	00 06	TA CT CT TA AC GG
SNP 177	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-2	Octo ber	Ste m	MEA	29°C	27- Jan- 12	Truncatella sp. 1	00 06	TA CT CT TA AC GG
SNP 029	<i>Larrea</i>	<i>tridenta ta</i>	King Cany on	Nort h	KCN-2	Octo ber	Ste m	MEA	22°C	05- Jan- 12	Truncatella sp. 2	01 26	AA CC AA CC AA
SNP 124	<i>Parkinso nia</i>	<i>microp hylla</i>	Red Hills VC	S/W	RHVC S/W-1	Octo ber	Ste m	MEA	29°C	21- Jan- 12	Xylariaceae sp. 1	00 75	TT CT TT TC GA GG

Figure legend

Fig. 1. High species richness of endophytes. Species accumulation curve for endophytic fungi obtained from common perennial plants at Saguaro National Park through the 2011 BioBlitz and 2012 workshop with high school students (black line); 95% confidence interval around observed species richness, inferred using 50 randomizations of sample order (red line); and total estimated species richness, inferred using a bootstrap estimator (grey line).