

Final Programmatic Report for the Parashant Floristic Study
By
Duane Atwood
October 30, 2000

As indicated in the May progress report the initial Vascular Plant List for the study area was completed February 25, 2000. Development of this list was based on work completed on October 12-22, 1999, February 11-12, 2000, February 14-19, 2000, and February 21-25, 2000. Research on these dates involved a review of plant specimens housed in the Bureau of Land Management Arizona Strip Field Office herbarium in Saint George, Utah, the Lake Mead NRA herbarium in Las Vegas, Nevada, and my field record books of collections within the study area from 1969-1999. specimens studied at the Lake Mead National Recreation Area herbarium in early April 2000. Four field trips were taken to the study area during April and May, and 2 fall trips in September and October. resulting in collection of over 1200 voucher specimens from the study area. Due to the very dry season no attempt was made to make summer collections.

One-hundred and one person days were spent in the field collecting plant specimens. An additional 32 person days were required for plant identifications, label preparation, curation of specimens and report preparation. Four professional botanists contributed field time to the study, Dr. Larry Higgins, Dr. Stan Welsh, Professor Blaine Furniss and myself. I was present during all field work with the exception of some collecting made by Dr. Higgins. The dates and contributed services for this work are documented below. A set of pertinent voucher specimens were given to the BLM Field Office in St. George, Utah

Of special interest were voucher specimens collected for the following taxa endemic to the area: *Penstemon distans*, *Astragalus lengitinosus* var. *trumbullensis* (a new taxon in press), *Phacelia perityloides* var. *laxiflora*, *Phacelia petrosa* (a new species in press, the type from Andrus Canyon), *Townsendia smithii* (endemic to Black Rock Mountain), *Astragalus toanus* var. *scidulus* (endemic to the study area) and a new variety of *Brickellia microphylla*. Specific location data for each of the collections are included in the enclosed Annotated list of Vascular Plants.

Other unique species collected at the extreme northern limits of their range were: *Bernardia incana*, *Hedeoma oblongifolia* (*Mock-pennyroyal*), *Fraxinus cuspidata* (flowering ash), *Peteria thompsonae* (a species first collected by Mrs. Thompson, the sister of John Wesley Powell), *Maurandya antirrhiniflora* (a rarish plant in the Scrophulariaceae family), *Aloysia wrightii* (a unique shrub in the Verbenaceae family), *Parthenium incanum* (an interesting shrub in the sunflower family), *Crossosoma bigelovii* (a rare and interesting shrub), *Astragalus preusii* var. *laxiflora* (a loco weed with much of its habitat in the study area), *Ptelea trifoliata* var. *pallida*, a purple flowered phase of what appears to be *Astragalus eremiticus*, which after further study, may deserve some taxonomic recognition, and a species of *Sphaeralcea* (possibly a new taxon).

The following plant collections are the first for the area based on collections reviewed to date: *Setaria macrostachya*, *Bothriochloa lagurioides*, *Ceanothus greggii*, *Tamarix chinensis*, *Fraxinus cuspidata*, *Lathyrus graminifolius*, *Mirabilis multiflora*, *Dyssodia papposa*, *Filago californica*, *Pectocarya setosa*, *Euphorbia polycarpa*, *Prosopis glandulosa*, *Rumex crispus*,

Gnaphalium palustre, *Muhlenbergia racemosa*, *Yucca schidigera*, *Sphaeralcea* sp., *Gaura gracilis*, *Erigeron lobatus*, *Hedeoma nanum*, *Perityle emoryi*, *Selaginella underwoodii*, *Hofmeisteria pluriseta*, *Eschscholtzia minutiflora*, *Langloisia setosissima*, *Aloysia wrightii*, *Tragia stylosa*, *Stipa lettermanii*, *Bromus carinatus*, *Hymenopappus filifolius* var. *megaacephalus*, *Philadelphus microphyllus*, *Mimulus rubellus*, *Mimulus bigelovii*, *Penstemon angustifolia*, *Microsteris gracilis*, *Verbena wrightii*, *Anthirrhinum kingii*, *Thysanocarpus laciniatus*, *Euphorbia serpyllifolia*, *Ambrosia confertiflora*, *Cassia bauhenioides*, *Boerhaavia spicata*, *Amaranthus fimbriatus*, *Panicum hirticaule*, *Proboscidea parviflora*, *Trichachne californica*, *Aristida turnipes* var. *hamulosa*, *Portulaca oleracea*, *Fraxinus dipetala*, *Heliopsis parvifolia*, *Setaria glauca*, *Amaranthus californicus*, *Cirsium rothrockii*, *Euphorbia vermiculata*, *Amaranthus torreyi*, *Euphorbia polycarpa* var. *hispida* ?, *Cucurbita palmata*, *Lobelia cardinalis*, *Solanum nigrum*, *Veronica americana*, *Cyperus odoratus*, *Plantago major*, *Cirsium virginensis*, *Pluchea camphorata*, *Tamarisk aphylla*, *Cyperus erythrorhizoa*, and *Petunia parviflora*.

CONTRIBUTED GOODS AND SERVICES

Items	Dates	Units/hours	Price Per Unit/Hourly Rate	Value
1 botanist	10/12-22/99	40 hours	\$38.00	\$1520.00
3 botanists	2/11-12/00	48 hours	\$38.00	\$1824.00
1 students	2/14-19/00	48 hours	\$13.00	\$ 624.00
1 students	2/21-25/00	40 hours	\$13.00	\$ 520.00
2 botanists	4/5-6/00	60 hours	\$38.00	\$ 2280.00
3 botanists	4/18-25/00	289 hours	\$38.00	\$10982.00
2 botanists	5/1/00	24 hours	\$38.00	\$ 912.00
1 botanist	5/10-11/00	30 hours	\$38.00	1140.00
1 botanist	9/18-22	80 hours	\$38.00	3040.00
2 botanists	10/10-15/00	150 hours	\$38.00	\$ 5700.00
Subtotal for field work				\$ 28542.00

Items	Dates	Units/hours	Price Per Unit/Hourly Rate	Value
2 botanists	10/17-20/00	64 hour	\$38.00	\$ 2432.00
2 botanists	10/23-27	80 hour	38.00	\$ 3040.00
1 students	10/17-20/00	32 hours	\$13.00	\$ 416.00
2 students	10/16-21/00	80 hours	\$13.00	\$ 1040.00
Subtotal for plant identification and curation of specimens				\$ 6928.00
	Total	\$ 35470.00		

In addition to the above contributions I provided a 4x4 truck in which we traveled approximately 7000 miles at 10 miles per gallon, the use of 2 ATV's (and gasoline), an enclosed trailer, camping and other field equipment. Per diem costs @ \$31.00 per day for each person was \$2325.00. Curation supplies for paper, glue and file folders cost \$575.

Attached is the Annotated Checklist of Vascular Plants known for the area based on research conducted in the year 2000.

Sincerely,

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