

Thomas K. Todsens Field Books — 1967-1981

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One of New Mexico's many exceptional amateur botanists was Thomas Kamp Todsens (1918-2010; see The New Mexico Botanist 53: 1-3, 2011.). A few years ago, two of his field books were given to me by his son, Andy, with the expectation that the information therein might be of interest to New Mexico botanists.

The first book, a 4 x 8 inch reporter-style notebook with top-coil binding, is titled on the front cover, "Botanizing Notebook, T.K. Todsens, 1968." The notebook is apparently missing one or more initial pages, but the second intact page has an unambiguous date of 16 September 1967. Recording ends slightly more than one year later on 28 September 1968. Notes are recorded on only one side of each page. This notebook will be referred to as FB67-68.

The second book is a 4.5 x 7.25 inch hard-cover Transit Book (the cover barely attached by a few threads) with 17 preliminary printed pages of "Improved Tables and Information." It is missing the first six pages of notes (snipped out of the notebook), and begins with notes from 15 September 1968, and ends on 26 July 1981. Notes are recorded on both sides of each page. This book will be referred to as FB68-81.

To help in searching localities, the pages of the field books are indexed by county (United States) or state (Mexico):

FB67-68

Arizona

Cochise Co.: 23

New Mexico

Bernalillo Co.: 19

Dona Ana Co.: 2, 3, 4, 5, 6, 7, 9, 11, 12, 18

Grant Co.: 1, 13, 14, 17, 21

Hidalgo Co.: 2, 16

Lincoln Co.: 15, 20, 21

Los Alamos Co.: 19

Otero Co.: 14, 15

Sierra Co.: 3, 14, 17

Taos Co.: 19

Texas

El Paso Co.: 6

FB68-81

Arizona

Cochise Co.: 16, 18, 48, 80, 83, 99

New Mexico

Catron Co.: 24, 44

Colfax Co.: 44

Dona Ana Co.: 1, 2, 4, 8, 10, 12, 14, 22, 24, 28, 30, 34, 36, 38, 40, 42, 46, 48, 50, 52, 62, 64, 68, 70, 72, 74, 76, 78, 86, 88, 89, 93, 94, 95, 96, 97, 100, 102

Grant Co.: 12, 14, 16, 26, 28, 38, 40, 42, 44, 50, 74, 81, 85

Guadalupe Co.: 44

Hidalgo Co.: 2, 6, 50, 52, 76, 87, 88, 100, 104

Lincoln Co.: 20, 22, 30, 50

Luna Co.: 60, 84

McKinley Co.: 32

Otero Co.: 16, 18, 20, 22, 26, 30, 34, 36, 48, 60, 62, 74, 141

San Juan Co.: 68

San Miguel Co.: 24, 26

Sierra Co.: 26, 28, 34, 42, 44, 46, 52, 64, 89, 98, 103, 105, 106, 107

Socorro Co.: 72, 78

Taos Co.: 48

Torrance Co.: 42

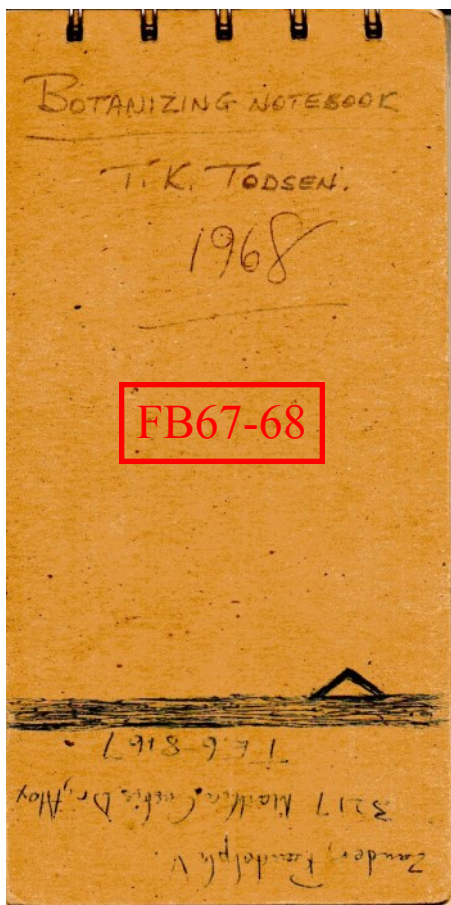
Utah

San Juan Co.: 32

Mexico

Sonora: 54, 58, 60

Each page of the field books that contained notes was scanned, and are reproduced on the following pages. A page number was added in the upper corner (left or right), to reference the list of counties.



1
Spiranthes parasitica? ~~Found~~ plants w/ leaves in
 Mogollons found by Alan Campbell 1 Sep 67
 Plants ~~and~~ w/ leaves and dried
 flower stalks found in several
 locations on north side of Signal
 Peak, Pinos Altos Mtns ⁹ Sep 67
 by Todsén & Johnson, always
 near Gambel oaks in lower elev. (6000')
 and aspen in higher elev. Malaxis
 Ehrenbergii in similar locations.
 On 15 Oct leaves mostly faded,
 some gone completely, some still
 fresh. Plants w/ leaves collected
 23 Sept 67. Plants checked 2 Dec 67
 by Johnson - no leaves seen

2
 TRIP TO ORGAN MTS 16-17 Sep 67
 FOUND ON ORGAN PEAK 17 SEP
 A BRIGHT RED *SCROPHULARIA*,
 APPARENTLY NOT PREVIOUSLY
 REPORTED. (I HAD FOUND THIS AT
 ROCK HOUSE SPRING ON 4 JUL 65 AND
 TAKEN A PHOTO)
 TRIP TO SOUTH END OF PELONCILLO
 MTS 7-8 OCT 67.
 1. AT HEAD OF SIDE CANYON OF
 GUADELOUPE CANYON - POTAMOGETON
SPECIES, PROBABLY ILLINOENSIS
 IN RANCH TANK ALONG WITH
 LEMNA SP.
 IN GUADELOUPE CANYON, ON N. MEX
 SIDE *SAGERETIA WRIGHTII*?

3
 7-8 Oct 67
IPOMOEA BARBATESEPALA (IN
 FRUIT) AND *SICYOSPERMA GRACILE*
 IN FLOWER AND FRUIT (IS THIS
 REFERABLE TO *SICYOS GLABER*?)
 24 Sep 67 - NE of Monticello - *Tetradlea*
Coulteri in bloom - *Cowania* in bloom
 17 March 68 - Mouth of Soledad Canyon
Anemone ~~lepto~~ *sphaenophylla*
Mimulus rubellus
Eschscholtzia mexicana
Corydalis aurea
Gomphrena pauciflora
Echinocactus intertextus
 all in bloom

4
 23 Mar 68
 - Mouth of Soledad Canyon
Linaria texana
Gilia
 - Aikenbach Canyon
Carpodactis bigelovii
 14 Apr 68
 East of Aguirre Spring - in bloom
Anemone sphaenophylla
Lupinus concinnus
Astragalus sp.
 3 other members of *Rhithymocarpus*
Urgandia speciosa
Pentstemon sp.
Lesquerella sp.

5
 14 Apr (cont)
Fendlera rupicola
Mimulus sp.
Echinocereus triglochidiatus
Echinocereus intertextus
Castilleja sp.
Cirsium sp.
Corydalis aurea
 Friday, 26 Apr 68
 With Andy walked from Aguirre
 Spring Road up Indian Hollow to
 NW base of Sugarloaf. Altitude
 5300' to 6750'.
Delphinium virens - 5300' - just beginning
Castilleja 5700'
Astragalus 5300'



Rice Hills
Aster tagetinus *Melanophyllum*
Aster tanacetifolius *Aphelandra squarrosa*
Gratiola plicatilis *Sphaeralcea* s.p.
Ladium Spruysii
Thelypodium megacarpum

15

- Karr Canyon 23 June 68
Cratogeomys wislizeni
Lonicera arizonensis
Ambrosia
Jamesia americana
- Bluff Springs See 17, T17S, R12E
Habenaria ~~Habenaria~~? *Spiraea*?
Linum (blue)
Dodecatheon
- 1st canyon to east above mouth of
~~Upper~~ canyon See 13, T17S, R12E
Cratogeomys maculata (incl
albica according to Andy)
Goodenia oblongifolia (w/lt in
bloom - w/ lat years from spike)
- Sena Blanche Ski Basin, N Fork
of Rio Grande 105°48'W, 33°24'N
Habenaria saccata? *hyperborea*?
Calypso bulbosa (incl partial
albica (very late!))
white violets *Viola canadensis*
Ribes ~~mauve~~?
- Springtime Canyon Campground to San
Mateo Spring 7 July 1968
Cratogeomys maculata in aspen
grove at the Spring See 23, T8S, R2W
Madroenia parviflora (*cordata* synonym)
Cassiopeja sp.
Potentilla sp.
Potentilla *pinifolia*
Potentilla *parviflora*

13

2 June 68 Sect 10, T16S, R13W Grant County
Lower slopes of Signal Peak - Pines 11063
Spiranthes parviflora - just beginning
Corallorhiza innata - just beginning
Corallorhiza striata - fruit again starting
All within 20 feet of creek bed
Suaeda aculeata
Camping area just down stream of 2 June
W. Fork of Gila - 5 June
Corallorhiza innata Sect 11, T12S, R14W
Lonicera dumosa Catron County
W. Fork of Gila - just upstream from junction of
White Rocks Canyon 2 June 68 Sect 11
Corallorhiza striata T12S, R14W
Catron County
Little Bear Canyon - steep N-facing slope -
Sect 11, T12S, R14W, Catron County
Agave chrysantha 6 June 68
Adiantum - just beginning

16
7. Jul 68
Gilia aggregata
Anagallis sp.
~~Taraxacum~~ Achillea sp.
Paeonia Lithospermum
Sisyrinchium sp.
Mentzelia sp. Helodiscus demossii
Clematis sp. Curculionidae on pedicel
@ 9000
Geranium sp. eremophilum
Orbanche ludoviciana
~~Stellaria~~ sp. ? Arenaria fendleri
2 different peas —
Hesperis sp.
Hymenopappus variatus
14 Jul 68
Wislizenia refracta - along Highway 101
Indian Creek, Animes Mtns
Bouvardia glaberrima
Zauschneria latifolia ✓
Asclepias quadrifida ✓
Lotus ✓
Oralis Grayii ✓
Larrea tridentata
Bouteloua eriopoda ✓
Nerada (2 sp.) ✓
Agave schottii ✓
Agave palmieri ✓

Sec. 16 T6S, R9W
 June 68 - Wright's Cabin Canyon, Grant County
 same location as the above. *Corallorhiza* *Wisteriana* *Flowering* *fructing*
Spiranthes parviflora
 June 68 Sec. 21, T6S, R9W Sierra Co.
 Canyon on east slope of Black Range
 1/2 mi. below Gunny Pass
Spiranthes parviflora just beginning
Corallorhiza Wisteriana *Flowering*
 9 June 68
 — Blue Springs, Saccharine
Corallorhiza striata
Hebe sp. -- not yet in bloom
Ribes mesoleucum
Potentilla fruticosa
Aquilegia scopulorum
Chamaenerion
 — Small canyon on S. slope of Black Range 1/2 mi. N
 of Ketchikan Canyon turnoff
Corallorhiza Wisteriana (abundant)
 — Silver Spring Canyon at Reservation boundary
Corallorhiza striata
Corallorhiza Wisteriana
 June 68 Sec. 21, T7S, R9W
 above on east slope of Black Range
S. Parviflora about 1/2 in. thru
 flowering - leaves just starting up
C. Wisteriana in fruit
Lonicera arizonica
Antennaria *apricina*

17

21 Jul 68
Wright's Cabin Canyon
Heliconia sparsiflora var brevifolia (Cordyl.)
Scrophularia montana
Along Creek Trail from Emery Pass to Hillbuck
* Penstemon (Petrahydes) - Cross "O" Mts - E slope
Penstemon pinnatifidus - open rocky faces
Penstemon barbatus
Pedicularis grayi orangeblossom - Hillbuck Pk
Delphinium macrophyllum - " "
Corallorhiza innulata - " "
Oxalis
Oxalis grayi - $\frac{1}{2}$ mi S of Hillbuck Pk. Beyond
Philadelphus
Holodiscus dumosus
Heuchera just S of Hillbuck Pk. Beyond
Heuchera vesicularis Cross "O" Mts - E slope
Viola canadensis E slopes
~~Scrophularia~~
Patentilla hippiana - open areas
Draba heisteriaana var Bhumeri
Astragalus
Cercocarpus



18

21 July 68

Aquilegia

Erigeron

Lotus

Sambucus

Arose "O" Mtn

27 July 68 Organ pipe south from

San Augustin Pass

Hesperis matronalis

Aster arandensis?

Phacelia

Phlox sp.

Penstemon barbatus

Castilleja integrifolia

Verbena wrightii

Salvia viridiflora (Carpinus folia)

Talinum

Stanleya wrightii

Phlox sp.

Galium wrightii

Mirabilis multiflora

Tradescantia

Conocarpus breviflorus (montane subsp. flous)

Moussonia antiochiensis (Zollingeria)

Viguiera multiflora?

Carlinia lineariifolia

Physalis

Lepidium eastwoodiae

19

Los Alamos Ski Area 3 Aug 68

(Pajarito Mtn)

Goodera oblongifolia, in spike, just beginning

Cratogeomys musculata - long in fruit

Cratogeomys wisteriana - fruit and spent

Zygadenus Actaea in fruit

Castilleja Gilia aggregata

Campanula Penstemon barbatus

Aster Oenothera

Geranium

Pteris

Taos Ski Basin 4 Aug 68

Aquilegia caerulea

Habenaria sacrata

Sandia Mtn 5 Aug 68

Santia Crest

Wuchereria pulchella

Penstemon (3 sp.)

Aster

Delphinium superciliosum

Pedicularis Groenlandica

Anemone

Potentilla

Castilleja

Sarcobatus montana?

20

Sacramento Mtns 11 Aug 1968

Telephone Canyon

Goodera oblongifolia, just beginning to bloom

Cratogeomys musculata, still blooming

Habenaria sparsiflora var. brevifolia, in spike

Habenaria sparsiflora, mostly in fruit

Mimulus

Penstemon

Geranium

Cirsium villosum

Tradescantia

Campanula

Mimulus latifolius

Thymus radialis

Potentilla

Yucca

Pumila

Rio Pecos

Delphinium

Gilia aggregata, scarlet pink forms

Nelson Canyon

Cratogeomys musculata still blooming

Silver Spring Canyon

Cirsium villosum

Cratogeomys striata in fruit

Habenaria sparsiflora var. brevifolia

Malaxis Elvenbergii

Spiranthes parviflora, in leaf w/ tubers

Mentha

Aster

Gaura

Penstemon

Potentilla

Allium

21

11 Aug 68

Silver Spring Canyon, cont.

Grass Creek @ Devil's Backbone, Black Range

68-1 Scrophularia neomexicana

most in fruit - still a few blooms -

68-2 Sicyopterus ampelophyllus - mostly

in fruit

68-3 Delphinium columbianum?

Stevia microphylla

68-4

22

Orchids in the Herbarium @

Southwestern Research Station in

Pinal, Arizona

1. Malaxis Elvenbergii, Long Park, Chiricahua

Mtns, 9,325', 12 Aug 59

2. Cratogeomys musculata, SE slope of Fly Peak

on Summit Trail, Chiricahua Mtns, 12 Jun 58

3. Cratogeomys striata, Greenhouse trail, Chiricahua

Mtns, 7800', in fruit, 13 Aug 65

4. C. striata, W slope Fly Peak, Chiricahua,

9,000', 19 June 58

5. C. wisteriana, E. Turkey Creek, Chiricahua

6500', 3 May 65

6. Goodera oblongifolia, betw S Fork of

Middle Fork of Cave Creek and Anita Park,

Chiricahua, 8,000', 12 Aug 65

23

Cave Creek 28 Sept 68

@ 6000', 1/2 mi above Herb Martyr

Malaxis Souleii

Lobelia cardinalis at Little Dam

Higher up ~~Southern~~ trail to

Chiricahua Peak

Stevia serrata

Mimulus latifolius

Silene laciniata



FB68-81

¹
Rincon Hills - 15~~th~~ Sept 1968*Gaillardia pinnatifida**Baibeya multiradiata**Perezia Wrightii**Trixis californica**Nadia?**Sphaeralcea*



2	Date	Location	Tentative iden	Identification	Remarks	3
1	26 Jan 69	1 mi. SE of Mahoney Trestleman Mtns	Thamnosma	texana	Infert and most leaves gnab - SW face of stratum among rocks Juta top @ 5200'	
2	26 Jan 69	"	Baccharis	sarothroides		
3	2 Feb 69	Mouth of Long Canyon Organ Mtns	Sedum	griffithsii		
4	2 Feb 69	"	Phoradendron	belleanum	Specimen to MSW dubium	
5	9 Feb 69	Bishop's Cap	Thamnosma	texana	Will be in bloom in abt 2 wks - on S slope in crevices	
6	9 Feb 69	"	Agave			
7	9 Feb 69	"	Agave	lechuguilla	Common on S-facing slopes	
8	9 Feb 69	"	Notholaena	sinuata var. coccineus	Common	
9	16 Feb 69	"	Thamnosma	texana	Initial blooming - one fruit already	
10	23 Feb 69	SW of Claydale Rd on Johnson Ranch	Anemone	Tuberosa	On limestone hill w/ Vasqueletia and cactillo	
11	23 Feb 69	Johnson's Lower Ranch Guadalupe Canyon	Senecio salignus	DC.	New for New Mexico?	
12	23 Feb 69	Palmcillo Mtns	Arctostaphylos	gungens	Continues on down Guadalupe Canyon into Arizona. Just beginning	
13	23 Feb 69	Palmcillo Mtns	Small Brassicaceae	Thlaspi fendleri	Also in bloom above Portal along Cave Creek.	
14	1 Mar 69	Shelburn Hills	Dysodia buckeri			
15	1 Mar 69	"	Polygala			
16	9 Mar 69	SE end of Organ Mtns Canyon just W of Long Canyon	Glossopetalum	(Forsellia) spinescens		
17	"	"	Mimulus	rabellus	Annual	
18	"	"	Mimulus		Perennial	
19	"	"	Pellaea	Wrightiana		

4	Date	Location	Identification	Remarks	5
0	28 Mar 69	Shelburn Hills	Erigeron	caespitosus	limestone - windy canyon
1	"	"	Galium	proliferum	
2	"	"	Dysodia	acerosa	Just beginning,
3	"	"	Draba		
4	"	Shelburn Hills Fossil Canyon	Astragalus		
5	"	Shelburn Hills	Bahia	absinthifolia	This is suffrutescent species to be cropped by deer or cattle.
6	"	"	Polygala	scoparioides?	Just beginning
7	"	"	Stegandrium	barbatum	(Both seen the same.)
8	"	"	Streptanthus	validus	
9	"	"	Brassicaceae	erizonicus	Common
10	"	"	Sphenoclea		
11	"	"	Dysodia	acerosa	Just beginning,
12	30 Mar 69	Organ Mtns above Agua Spring	Myosurus	capulatus	Scap. erect
13	"	"	Androsace	probably intermedia	" " along w/ preceding
14	"	"	Corydalis	occidentalis	
15	"	"	Ribes	septanthum	
16	"	"	Erigeron	nudi florus	
17	"	"	Cerastium	texanum	
18	"	"	Taraxacum	officinale	
19	"	Slope below Agua Spring	Lotus		
20	"	"	Astragalus		
21	"	in Agua Spring Rd	Gilia	sinuata (inconspicua)	
22	"	Slope below Agua Spring	Umbelliferae		
23	"	"			



6		Seas 7, 15, 16, 17 T 345, R 21 W and Seas 11, 12, 14 T 345, R 22 W	7	
4 Apr 69	Guadalupe Pass and Canyon	Dichelostemma	pulechellum	Rocky hillides is short petalled.
"	"	Plagiobothrys	arizonicus	
42 "	"	Aster	hirtifolius - arenosus	
43 "	"	Erigeron		
44 "	"	Gomphrena	caespitosa	
45 "	"	Linum	lewisi	
46 "	"	Corydalis	aurca	
47 "	"	Astragalus		
48 "	"	Malacothrix		
48A "	"	Lupinus	hachucanus?	
49 "	"	Ceanothus	Greggii	
50 S Apr 69	Seas 2 + Sead T 345, R 22 W	Rhus	microphylla	
50A "	"	Dryopteris	rumicatum	
51 "	"	3		
52 "	"	Radix	cicatarium	
52A "	"	Senecio	caliginus	
53 "	"	Lupinus	concoloratus?	
53A "	"	Phacelia	arizonica	
54 "	"	Phacelia	microantha	
55 "	"	Phacelia	affinis or albicantis	
55A "	"	Meibomia		
56 "	"	Descurainia		
57 "	"	Thysanocarpus	suplectens	
58 "	"	(Composite)	monensis	
59 "	"	Senecio	humistratus	Solitary sessile flowers abundant
59A "	"	Lotus		

8		SE 1/4, T 345, R 31 E	9	
60 S Apr 69	Vangelia Hill, Ariz	Plantago		
61 "	"	Gilia	Eriastrum diffusum	
62 "	"	Thamnosma	texana	
63 "	"	Gomphrena		
64 "	"	Helianthus		not in bloom - single straight central, 5-7 radial, tubular not proad
65 "	"	Umbelliferae	sp	
66 "	"	Brassicaceae		
67 "	"	Lesquerella	Fendleri	
68 "	"	Linum	puberulum	
69 "	"	Allium	macrophyllum (deserticola)	
69A "	"	Dalea	pogonantha	
70 20 Apr 69	Bishop's Cap	Thamnosma	texana	
71 "	"	Aster	microphylla	
71A "	"	Epilobium	tenipetala	
72 "	"	Tagia	neptalophia	
73 "	"	Dalea	wrightii	
74 "	"	Lesquerella	purpurea	
75 "	"	Senecio	longilobus	
76 "	"	Lappula	texana	
77 "	"	Cryptantha		
78 "	"	Phacelia	intermedia?	
79 "	"	Dioscorea		
80 "	"	Euphorbia	(Chenopodiaceae) Fendleri macrophylla?	



10				11
#				
7-81	26 Apr 69	Qui S. Hwy, 80 on Rio Grande levee	<i>Aphelostegia humilis</i>	This would be ^{in W & S} "romesii" s.s.
7-82	"	"	<i>Gaura parviflora</i>	Common all along river
7-83	"	on Rio Grande	<i>Anagallis</i>	
7-84	"	on Rio Grande	<i>Heliotropium xerophilum</i>	
7-85	27 Apr 69	Mesilla Bird Refuge on Organ Mts	<i>Tragia stylaris</i>	Among rocks, along w/ Comandra
7-86	"	"	<i>Tragia nepetaefolia</i>	Bare hillside
7-87	"	"	<i>Camelina pallida</i>	Same place as last year.
7-88	"	Hillside above Organ, N.M.	<i>Nolina texana</i> var. compacta	Sec 1, T22S, R3E
7-89	"	Indian Hollow	<i>Cirsium neomexicanum?</i>	Organ Mts type local
7-90	"	"	<i>Penstemon fendleri</i>	Sec 20, T22S, R4E
7-91	"	"	<i>Delphinium virescens</i> var. <i>Wootmi</i>	Sec 20, T22S, R4E
7-92	"	"	<i>Verbena wrightii</i>	Sec 32, T22S, R4E
7-93	"	Agave Spring Road, Indian T-3	<i>Verbena ambrosiifolia</i>	Here purple, dries purple
7-94	"	"	<i>Convolvulus incanus</i>	Blue purple, dries blue
7-95	"	"	<i>Dioscorea acerosa</i>	Sec 5, T22S, R4E
7-96	"	" and Indian Hollow	<i>Aster areolaris</i> = <i>hirtifolius</i>	Sec 5, T22S, R4E
7-97	"	"	<i>Lotus rigida</i> <i>nummularia?</i> hybrid?	This is the early spring to with glandular upper leaf surface
7-98	"	"	<i>Lupinus concinnus</i> (K & P)	<i>micranthus</i> in W & S
7-99	"	"	<i>Erigeron</i>	
7-100	"	"	<i>Thlaspi fendleri</i>	Variable - flower color - leaf and shape - capsule sinus
7-101	"	"	<i>Lepidium medium</i>	Sec 1, T22S, R4E

12				13
Date	Locality			
27 Apr 69	Indian Hollow	<i>Galium aparine</i>		Sec 33, T22S, R4E
3	"	<i>Galium microphyllum</i>		Hooked hairs on fruit
4	"	<i>Euphorbia albomarginata</i>		> 5 leaves in whorl
5	"	<i>Gilia sinensis</i> (inconspectus)		Sec 29, T22S, R4E
6	"	<i>Malacothrix fendleri</i>		
7	"	<i>Calycosorus wrightii</i>		
8	"	<i>Evolvulus pilosus</i>		Sec 17, T22S, R4E
9	"	<i>Microseris linearifolia</i>		Sec 17, T22S, R4E
10	"	<i>Aplopappus spinulosus</i>		Sec 17, T22S, R4E
11	"	<i>Covillea integrifolia</i>		NE 1/4, Sec 29, T22S, R4E
12	"	<i>Mentzelia albicaulis</i> (var. <i>parviflora?</i>)		
13	"	<i>Astragalus humistratus</i> var. <i>sonora</i>		
4 May 69	Mimbres River near Stone Giants	<i>Hybanthus verticillatus</i>		
"	"	<i>Comandra strigosa</i>		
"	"	<i>Allionia</i> X <i>Oxybaphus linearis</i>		
"	"	<i>Veronica angustifolia</i>		
"	"	<i>Hymenoxis meionisii</i>		
"	"	<i>Dalea jamesii</i>		
"	"	<i>Aster arizonicus</i>		
"	"	<i>Prunus emarginata</i> var. <i>crenulata</i>		



14				15
9-122	4 May 69	Gallinas Creek, W. Black Range - along Highway	Quercus	reticulata
9-123	"	"	Viola	canadensis
9-124	"	"	Viola	nepheophylla
9-125	"	"	Draba	mogelloniana
9-126	"	"	Brassicaceae Capsella	hirsuta-pastoris
9-127	"	"	Galium	microphyllum?
9-128	"	"	Artemisia?	Stellaria jamesiana
9-129	"	"	Astragalus	coloratus
9-130	"	"	Lupinus	
9-131	"	"	Senecio	wootoni (microdentatus)
9-132	"	"	Veronica	Valeriana acutiloba var ovata
9-133	"	S. Pichel Creek, 1/2 mi W. of Kingston	Smilacina	stellata
9-134	"	Highway near Cold Draw	Sophora	sericea
9-135	16 May 69	Aguirre Springs Rd	Eriogonum	diffusum
9-136	"	Hill above Organ	Phlox	rupestris
9-137	"	"	Dalea	jamesii
9-138	"	Aguirre Springs Rd	Sida	procumbens
9-139	"	Hill above Organ	Baccharis	plerosoides
9-140	"	"	Nolina	texana
9-141	17 May 69	Highway 70	Peganum	hormela
				In fruit from near San Antonio to Alamogordo

16				17
9-142	17 May 69	Highway 70 near MARI	Psilostrophe	puberula tagetina
9-143	"	Highway 70 - White Sands Mts	Hymenopappus	arenosus
9-144	"	"	Ceanothus	pallida?
9-145	"	"	Brassicaceae	
9-146	"	"	Polianthes	incana
9-147	30 May 69	Trail to Ash Spring	Conoclinium	mexicana
9-148	"	Near Little Dam	Tragia	stylaris
9-149	"	"	Euphorbia	chamaejasme
9-150	"	"	Ceanothus	pallida
9-151	"	"	Dalea	wislizenii
9-152	"	"	Samolus	vagus
9-153	"	Trail to Ash Spring	Senecio	neomexicanus
9-154	"	Paradise, Ariz	Haplopappus	spinulosus
9-155	"	South Fork Campground	Acacia	angustissima
9-156	"	Quincy Saddle Road at East Turkey Creek	Ceanothus	integerrimus
9-157	"	East Turkey Creek	Galium	Aparine
9-158	"	"	Mimulus	guttatus
9-159	"	"	Heuchera	parvifolia var. arizonica?
9-160	"	"	Corallorhiza	wisteriana
9-161	"	"	Senecio	neomexicanus
				Most specimens dried - This is quite late out



18	Date	Location	Identification	Specimen	Remarks	19
62	30 May 69	Rustler Park	Coralorrhiza	striata	Just beginning	Chicalmas
63	"	"	Spiranthes	parasitica	One to two weeks early	
64	"	"	Senecio	wootoni		
65	"	"	Lupinus			
66	"	"	Thermopsis	pinetorum		
67	31 May 69	Sw. Res. Sta.	Baccharis	pterocarpoides	5 locations from 7800' to	
68	"	Onion Saddle to Rustler Park	Spiranthes	parasitica	8500', lower ones in bloom now.	
69	"	Onion Saddle	Ancient Monardella	complanata forma Blumeri	On SW white pine	
70	"	Redo Pital and Paradise	Euphorbia			
71	"	"	Theloxys			
72	8 June 69	Schofield Canyon, 1 mi from Rio Pecos	Coralorrhiza	striata alba	Found by TAT -- w. facing slope in heavy bluff -- NW 1/4 Sec 13, R12E, T16S	
73	"	Rio Pecos Canyon	"	"		
74	"	"	Phlox	alba?	North facing limestone faces	
75	14 June 69	Sec 22, R12E, T16S	Lupinus	stans phylla	Finished	
76	"	Silver Spring Canyon	Coralorrhiza	Wisteriana	Lower flowers fruited	
77	"	"	"	striata	In bag	
78	"	"	Dodecatheon	radicatum	At edge of bog	
79	"	"	Senecio		" " " "	
80	"	"	Erigeron	nauseosus	" " " "	
81	"	Sec 22, R12E, T16S	Spiranthes	parasitica	Just beginning	
82	"	Sixteen Springs Canyon	Senecio			

20	Date	Location	Identification	Specimen	Remarks	21
83	15 Jun 69	Sec. Mt. 3	Coralorrhiza	obtusata		
84	"	"	Mimulus	guttatus		
85	"	"	Ranunculus	repens		
86	"	Benson E. and Rd	Callispermum	maculatum var. flavida	NW 1/4 Sec 36, R12E, T16S	
87	"	C. Canyon	Oenothera	torreyana		
88	"	Highway 78 near Anderson	Phacelia	alba		
89	"	Cerro Canyon	Achillea	canadensis		
90	"	"	Sedum	serotinum		
91	"	Rio Pecos - Big Bend Canyon	Phacelia	hydrophyllum occidentale		
92	"	"	Cercocarpus	alpinum		
93	"	"	Rubus	novae-angliae		
94	"	"	Cornus	stolonifera		
95	"	"	Hemerocallis	wootoni		
96	"	Sec. Mt. 3 Canyon Rd	Cercocarpus	alpinum		
97	"	Sw. Res. Station	Cercocarpus	alpinum		
98	"	Capitan Gap Rd	Verbena	umbellifolia		
99	"	"	Verbena	peruviana		
100	"	"	Oenothera	torreyana		
101	"	"	Polygala			
102	"	"	Gentiana			
103	"	"	Pentstemon	teneriorides?		



22					23
203A	"	"	<i>Thelaspium</i>	<i>longipes</i>	
04 15 Jun 69	"	apt. on Gap Rd	<i>phurales</i>	<i>ligula pedata</i>	
205	"	Hwy 70, near Nido	<i>Nema</i>	<i>versicolor</i>	
206	"	"	Composite	<i>Centaurea Parris</i>	
207	"	Sap in Silver Springs Canyon, 2 mi. N. of Nido	<i>Koigia</i>	<i>biflora</i>	
208	"	"	<i>Habenaria</i>	<i>spicata</i>	
207 17 Jun 69	"	Oregon Peak	<i>Ucheliifer</i>	<i>wallflower</i>	
208	"	"	<i>Westrum</i>		All the way from the ridge to Fillmore Spring
209	"	Rockhouse Sprng	<i>Salvia</i>	<i>remosa</i>	
210	"	Near Harrows	<i>Lycopodium</i>	<i>Arenaria confusa</i>	
211	"	"	<i>Galium</i>		
212	"	"	<i>Lesquerella</i>	<i>purgosa</i>	
213	"	"	<i>Phybalis</i>	<i>hederacifolia</i>	
214	"	Fillmore Canyon just below Mining Camp	<i>Madia</i>	<i>occidentalis</i> var <i>scopulorum</i>	Blue and pink forms in same clump
215	"	Fillmore Sprng	<i>Aquilegia</i>	<i>chrysanthus</i>	
216	"	"	<i>Stachys</i>	<i>colinae</i>	
217	"	N. of J. Calaveras	<i>Composite</i>		
218	"	"	<i>Lotus</i>		
219 13 July 69	"	Fillmore Canyon 1 mi. N. of Hwy 80	<i>Talinum</i>	<i>angustissimum</i>	
220	"	1.9-2.1 mi S of Hwy 80	<i>Eriogonum</i>	<i>exaltatum</i> (Crucellianum)	Along Rio Grande w. bank
221 27 July 69	"	Hwy 70 on mesa east	<i>Dyssodia</i>		

24					25
22 27 Jul 69	"	SE 1/4 Sec 18, R4E, T22S Canyon just north of Big	<i>Agrostis</i>	<i>cane 6000'</i>	Very loose racemes, one-sided N facing cliffs
23	"	"	<i>Chrysopsis</i>		
224	"	"	<i>Gutierrezia</i>		
225	"	"	<i>Bahia</i>		
226	"	"	<i>Polygala</i>		
227	"	"	<i>Erysimum</i>	sp.	Western wallflower
228	"	"	<i>Penstemon</i>	<i>linearisoides</i>	
229	"	"	<i>Penstemon</i>	<i>barbatus</i>	
230 3 Aug 69	"	14 mi S of US 66 on the Quemado Road	<i>Penstemon</i>	<i>barbatus</i>	
231	"	"	<i>Penstemon</i>	<i>ambiguus</i>	
232	"	"	<i>Penstemon</i>		
233	"	"	<i>Portulacacae</i>		
234	"	"	<i>Antlericum</i>	<i>torreyi</i>	
235 4 Aug 69	"	betw. Pecos & Tularosa Along Pecos R.	<i>Arenaria</i>	<i>obtusiloba</i>	On N. facing shaded cliff
236	"	"	<i>Ratibida</i>	<i>columnaris</i>	
237	"	"	<i>Philadelphus</i>		
238	"	"	<i>Cestiva</i>		
239	"	"	<i>Rudbeckia</i>	<i>laciniata</i>	
240	"	"	<i>Senecio</i>		
241	"	"	<i>Eriogon</i>		
242	"	"	<i>Aster</i>		



26					27
242A	4 Aug 69	As below	Corallorhiza: striata	in fruit	
243	4 Aug 69	Along Pecos R below	Eupatorium?		
244	"	Glacier	Heimia (Chia?)		
245	10 Aug 69	Roadside just below	Tetradymia: Ptilifolia	Not in flower (past flowering)	
246	"	"	Aster: scutellaria		
247	"	"	Lupinus	staurophylla	
249	"	"	Solidago		
250	17 Aug 69	Huerfania Canyon	Solidago		
251	"	"	Machaonia		
252	"	"	Erigeron		
253	"	"	Erigeron		
254	"	Roadside near Nelson Canyon	Eupatorium: rostratum		
255	"	"	Scrophularia: montana		
256	24 Aug 69	Middle Pecos above Kingston	Astragalus: tephrodes?	Very common	
257	"	"	Senecio		
258	"	"	Ipomoea		
259	"	"	Bidens		
260	"	Wright's Cabin Canyon	Scrophularia		
267	"	Gallinas Creek	Scrophularia: macrocarpa		
268	"	"	Anthriscum: torreyi		
269	"	"	Aster Erigeron: platyphyllus		
270	"	"	Erigeron: macrocarpa		

28					29
271	24 Aug 69	Gallinas Creek	Euphorbia		
272	"	"	Euphorbia		
273	"	"	Chenopodium		
274	"	"	Pink		
275	"	"	Erigeron	neomexicanus	
276	"	"	Xanthoxylum	Wrightii	
277	"	Roadside betw Gallinas and Caballo	Asclepias	brachystephana	
278	"	Middle Pecos SW of Pecos	Petalostemon	gundlachii	
279	31 Aug 69	Portal Ariz	Pectis	Filipes	
280	15 Sep 69	S Fork of Gila Creek	Malva	Souleii	
281	"	"			
282	6 Sep 69	Wet Canyon Gorge	Scrophularia	parviflora	
283	12 Sep 69	Pecos River, Ariz	Scrophularia	laevis	
284	"	"	Galinsoga	semicalva	
285	"	"	Senecio	McDougalii	
286	13 Sep 69	The Narrows, Fillmore Canyon	Perityle	complanata	
287	"	"	Sedum		
288	"	"	Allium	cernuum	
289	"	"	Phacelia		
290	"	Fillmore Spring	Aster	oxiloba	

Rotated by hail, much insect damage
a few good specimens.



30				31
91	13 Sep 69	Fillmore Spring	Bidens	bigelovii?
92	"	Hillside above Fillmore falls	Gilia	brachysiphon
93	"	Flat near LaQuorra	Pectis	pneustata
94	21 Sept	Cloudcroft	Bidens	tenniseeta
95	"	Bohr's Well, Toiyabe Nat. Mon.	Sartwellia	Flaveriae
96	"	Thruway 70	Aster	(Machseranthus)
97	"	Nogal Canyon near Bent, NM	"	"
98	"	"	Rosa	stellata
99	"	"	Fraxinus	velutina
100	"	"	Dalea	
101	"	"	Polygala	alba
102	"	"	Chrysothamnus	
103	"	"	Eupatorium	herbaceum
104	"	"	Phacelia	
105	"	"	Meibomia	
106	"	"	Demuthia	
107	"	"	Composite	
108	"	"	Solidago	
109	"	"	Salvia	
110	27 Sept 69	Roadside betw Grants & Chinle, Ariz	Eriogonum	aurum

32				33
111	27 Sept 69	McCartey, near Gallup	Coreopsis	cordifolia
112	"	"	Agastache	pellidiflora
113	"	"	Aster	radialis & agutolius
114	"	"	Aster	commutatus var. crassulus
115	"	"	Allium	Geyeri
116	28 Sept 69	Red Wash, 15 mi w of Shiprock	Eriogonum	heptophyllum
117	29 Sept 69	"	Chamaelirium	
118	"	"	Gilia?	
119	"	Monument Valley near Bluff, UT	Eriogonum	corymbosum, a var. — Cat Comb Ridge, U
120	"	Comb Ridge	Aster	
121	"	"	Algonemopsis	paucaflorus
122	"	"	Cordylanthus	



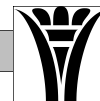
34	1 Nov 71				35
51		Panda Creek Ex 2 mi. W of Hillsboro	Saponaria	officinale	
52		Grey Eagle Mine - Forks Panda Creek, Black Range	Agastache	cons. or rufescens	
53		"	Senecio	neomexicanus?	
54		"	Erigeron	macrantha?	
55		"	Valeriana	arizonica	
56		"	Penstemon	torreyi?	
57		"	Astragalus	(trophobas?)	
58		"	Achillea	lanulosa	
59		"	"	borealis	
60		"	Erigeron		
72	Feb	✓	Eschscholtzia mexicana	in bloom near Parker Well just east and south of intersection of Hwy 70 and WSMR	
73	Feb		near 300K Stand - Eschscholtzia mexicana, Mentzelia (pauciflora?), Lathyrus sp., Astragalus (W. mi. Draba parva), 2 Cryptanthus, Erodium, Lupinus cyni	Gilia, 2 Descurainias, Oenothera, other Brassicaeae, Trachypogon Linaria texana	
74	Feb		rocks near mouth of Soledad Canyon - Eschscholtzia mexicana, Echinocactus	intertextus, Acaena tuberosa, Gilia sp., Malacothrix, Erigeron, Descurainia, Lepidium, Draba, Mimus rubellus, Oenothera	

36	1 Feb - Soledad Canyon cont - Androsace				37
201	2 Feb	near 500K at WSMR	EUCRYPTA MI	GRANTIA	41 March
202		WSMR	ASTRAGALUS	SP.	
203	1 Mar	500K stand	STREPTANTHUS		$106^{\circ}28'17''W$ $= 32^{\circ}20'34''N$
204	3 Mar	500K stand	PHACELIA		
205	"	"	LATHYRUS		
206	"	"	CEUCISFE		
207	9 Mar	1/2 mi S of Bear Canyon E slope of San Andres	Oenothera	chamaerioides	Limestone hillside @ 4000
208	"	"	Camissonia		
209	"	"	Lupinus	concinus	"
210	"	"	Phacelia		"
211	"	"	Dyssodia	pentachryta	"
212	"	"	Malacothrix	tenax	"
213	"	"	Collocasia	yellow	"
214	16 Mar	San Andres Mts Mouth of Bear Canyon	Calycoses	wrightii	"
215	"	"	Ratibida	neomexicana	"
			also in bloom	Echinocereus triglochidiatus, Dalea, Draba, Descurainia, Nerisynnia, Oenothera, Cryptantha	(Tecoma stans - not in bloom)
214	16 Mar	San Andres Mts Mouth of Bear Canyon	EUCRYPTA	MICRANTHUS	
215	"	"	OENOTHERA	CITRANAEERIOIDES	
			Also Descurainia, Gilia, CRY	COLLEA, ALLIONIA	



38					39
1972	San Augustine Pass	Astragalus	humistratus var sonora		
16 Mar	USNM Main Base	Machaeranthera	tanacetifolia	4300-4400'	
216	18 Mar	Oenothera	chamaejasinoides	Almost done	
217	"	Euryptera	micrantha	4500'	" "
218	"	Hedeoma		4500'	
219	"	Brassicaceae		4500'	At base of east facing limestone cliffs under rocks
220	"	Chenopod		4500'	"
221	"	Astragalus	nuttallianus	? 4300'	
222	"	Eriogonum	rotundifolium	4300'	
223	"	Erigeron		4500'	
224	"	Eriogonum	texanum	4300'	
225	"	Polygala		4500'	
226	"	Gallium		4500'	
227	"	Stenandrium	barbatum	4300-4500'	
Also in bloom - Descurainia, Streptanthus, Lepidium (Draba post), Ephedra, Dalea formosa, Echinocereus triglochidiatus, Viguiera, Melampodium, 2 Phacelias, Nerispenia, Yucca baccata, Sphaeralces, Dysodia, Hibiscus,					
228	19 Mar	McSherry-Mimbres	Lupinus	Grunt Co.	See 22 T19S, R10W 5800'
229	"	"	Astragalus	nuttallianus?	Rocky S facing hillside
230	"	"	Astragalus	tephros	"

40	7L			41
2231	19 Mar	Mimbres R - Grunt Co.	<i>Phacelia arizonica?</i>	See 6, T20S, R10W 5100'
2232	"	"	<i>Townsendia</i>	"
2233	"	"	<i>Hybanthus verticillatus</i>	"
2234	"	"	Barro <i>Lithospermum incisum</i>	"
2235	21 Mar	Emi Sol Bear Canyon	<i>Salvia leucygi</i>	
2236	"	"	<i>Erigeron</i>	
Following on 24 March South Slope of Black Mountain at S end of San Andres				
Mtus @ 5500 - in bloom <i>Melampodium</i> , <i>Nolina texana</i> , <i>Eschscholtzia</i> , <i>Allium microphyllum</i>				
2237			<i>Aster arenosus</i>	
2238			<i>Erigeron</i>	
2239			<i>Erigeron</i>	
2240			<i>Ruellia fendleri</i>	
2241			<i>Lotus</i>	
2242			<i>Astragalus humistratus sonora</i>	
2243			<i>Lupinus concinnus</i>	
2244			<i>Lathyrus?</i>	
2245			<i>Haplopappus</i>	
Also in bloom <i>Oenothera chamaejasinoides</i> , <i>Rhoeo microphylla</i> , <i>Baileya</i> , <i>Sphaeralcea</i> , <i>Gilia</i> , <i>Verbena wrightii</i> ,				



42					43
246	13 Apr 72	Mile Post 8 - NM 42 8 m. S. of Willard Roadside - Hwy	Astragalus	pictiformis	Scattered along roadside
247	9 Apr 72	54 - not Corizaco Gila R. valley	Astragalus	chunistratus? nuttallianus?	
248	6 May 72	5 mi S of Cliff Gila R. valley	Sophora	nuttalliana?	
249	"	about Cliff at W Fork of Gila R.	Lupinus	coccineus?	
250	"	"	Penstemon	pseudospectabilis?	
251	"	"	Astragalus		
252	"	"	Abronia		
252 A	14 May 72	Guyon 3.7 mi E of Kingston	Anisacanthus	resinosa or tessellata	
253	17 Jun 72	Santhuyatun Pass + South	Petalostemon	caudatum	
254	"	"	Engelmannia	pinetifida	
"	"	"	Apodanthera?		
"	"	"	Melampyrum	leucanthum	
"	"	"	Astragalus	humistratus	
"	"	"	Castilleja		
"	"	"	Phaseolus	angustissimus	
"	"	"	Verbesina	escheloides	
✓	18 Jun 72	Blade Mtn 5400' - 5500'	Fendlerella	utahensis (in bloom)	
✓	"	" 5500'	Choisya dumosa	(not in bloom)	
✓	"	" 5500'	Petrophytum	crispitum (not in bloom)	
✓	55	" 5400' - 5500'	Perityle	staurophylla	Mostly thru blooming

44					45
256	18 Jun 72	NW 1/4 Sec 5 RSE, T21S. Blade Mtn 5400' - 5500'	Mortonia	scabrella (in bloom)	
"	"	5500'	Forsellia	spinosas (late bloom)	
257	"	5400'	Castilleja	(scarlet & pale pink forms)	
258	"	5500'	Polygala	rimulicola - new to N Mex	***
258 A	"	5400'	Mentzelia	scabra (in bloom)	
259	"	5400'	Tecoma	stans (in bloom)	
260	"	"	Galium		
"	"	"	Trixis		
"	"	"	Rhus	choriophylla	
"	"	"	Nicotiana	trigonophylla	
"	"	"	Maurandium		
261	"	5300'	Zexmenia	brevifolia - new location	to N Mex ***
"	"	"	Eriogonum		
262	24 Jun 72	Scillet Shoshone Knob Canyon	Perityle	staurophylla	No flowers - hundreds of plants - 1000's - 1-3
"	"	"	Thelypodium	wrightii	Just beginning to bloom
"	"	"	Cirsium	ochrocentrum	
263	"	"	Coudalia		
264	"	"	Oenothera		
"	"	"	Forsellia		
"	"	"	Mentzelia		
✓	"	"	Hibiscus	deundatus	



46				47
5	24 Jan 72	Scillet Skeletal Knob Canyon	Galium	Rothrockii = Wrightii
6	"	"	Stephanomeria	?
7	24 June 72	Rhodes Canyon 11 mi w/ of Road 7	Perityle	stauraphylla
8	"	"	Hedeoma	
9	23 Jun 72	East facing cliffs 1 mi West Long Canyon	Perityle	carnea
10	"	East side Panoche	Phyllanthus?	
11	"	"	Polygala	
12	21 Jun 72	Seehorn mouth of Lead Group Canyon	Polygala	uscradenia
13	29 Jun 72	North Slope - Pinos Hites Mtns	Malaxis	Soulei (uscradenia)
14	"	"	habacantha	pictorum
15	30 Jul 72	Wright Cabin Campground - Black Range	Sisyrinchium	arizonicum
16	13 Aug 72	Lead Group Canyon San Andres	Perityle	stauraphylla
17	14 Aug 72	Pecos Mtn. just S. of Santa Rosa	Asclepias	incornata
"	"	"	Eustoma	
"	"	"	Limnium	
18	15 Aug 72	1/2 hr 84 just S of Rangeloville	Liatris	
"	"	Roadside - 10 mi E. of Maxwell	Ipomoea or Cuscuta	
"	"	"	Dalea	jamesii
"	"	"	Tournefortia	
"	"	"	Melampodium	

One plant of about 100
ft. tall, flowers 2 w/1, 1 w/2,
1 w/3, all others none.
In canyon bottom.
5500'
This is almost at the level of the water!

On limestone hill - east foot
of San Andres Mtns.

NW 1/4, Sec 5, R4E, T18S.

48				49
18	16 Aug 72	in box Twining - Roadside Springdale - 1 mi above Twining (S)	Habenaria	hyperborea var.
19	25 Aug 72	San Andres - S slope of Black Mtn	Habenaria	
20	"	"	Perityle	stauraphylla
21	"	"	Matronia	scabrella
22	"	"	Fendlerella	atahensis
23	2 Sep 72	S Fork - Cave Creek Chiricahua	Perityle	cochiseensis
24	"	"	Scrophularia	parviflora
25	"	"	Mimulus	rubellus
26	"	"	Aquilegia	
27	26 Aug 72	Silver Spring Canyon Lead Group Canyon	Habenaria	speciosa var. brevifolia
28	11 Sep 72	Foot of San Andres Maple Camp - S Fork of Lead Creek, Chiricahua	Polygala	uscradenia alba
29	"	"	Brachystigma	wrightii
30	"	"	Perityle	sp. cochiseensis
31	14 Oct 72	Shaw Mtn, San Andres	Perityle	stauraphylla
32	"	"	Salvia	humboldtii
33	"	"	Perezia	wrightii
34	14 Oct 72	Johnson Park Canyon San Andres	Perityle	stauraphylla
35	15 Oct 72	North slope - Salinas Park	Ribes	leptanthum
36	"	"	Cosmos	parviflorus
37	"	"	Notholaena	bigelovii
38	"	"	Sedum	

- Late -

- Past -

Lat 32° 29' 45" N
Long 106° 29' 12" W
Past blooming - achene gone
On NW facing limestone.

Two plants

East facing cliffs or
overhangs - chrysolite?
SW 1/4, Sec 5, R4E, T18S.
5750 - 6000'

NW 1/4, Sec 5, R4E, T18S

Upward glaucous black fruit
glandular petioles, fruit & leaves



50				51
89 15 Oct 72	South slope - Sabins Peak	Perityle d.	stamophylla var. homophylla	Above Sweetwater Spring SE 1/4 Sec 7, R5E, T12S, S 6250'
90 28 Oct 72	Bear Canyon	"	"	
91 "	" "	"	"	
"	" "	"	"	
92 23 Sep 72	Ash Canyon North	Pellaea microphylla	Fendleri	Up canyon where limestone is at bottom of canyon NE cliff high above mouth of canyon on N4E cliffs high on south side of canyon Cliff above Mark's Mt, Organ Pipe (Gehrig Mt) above Pipe Creek Mt, above Elev 5800', SE 1/4, Sec 7, R4E, T2N on E limestone cliff.
93 19 Nov 72	Lost Man Canyon	Perityle stans	argylla	
94 24 Sep 72	Dead Man Canyon	"	"	
95 22 Oct 72	Bull Pasture Trail Hio Mtns. AZ.	Perityle sp	nov (ajacensis)	
96 19 Nov 72	Quartzite Mtn San Andres	Perityle	stamophylla	
97 28 Jan 73	Foot hills, NE of San Antonio Pk	Astragalus	melissimus	Early bloom 5500'
98 17 Jun 73	Animas Creek near Green's Ranch	Mimulus	floribundus	At edge of ponds & stream 5000'
99 "	" "	Limosella	aquatica pubiflora	" "
100 24 Jun 73	Above 3 Rivers Campground	Penstemon	cardinalis ssp cardinalis	On granite cliffs 7500'
101 "	" "	Valeriana	texana	" "
102 "	" "	Corallorhiza	striata	Under pine-spruce- oak 8000'
103 "	" "	Hieracium	fendleri	Pine-oak 7500'
104 4 Jul 73	Limit N of Radium Springs	Astragalus	flexuosus	On juniper 6000'
105 26 Aug 73	S slope of Mount Palmatino Mtns	Ceanothus	repens	Ballast of railroad near siding 4300'
106 3 Sep 73	Guadalupe Canyon	Porophyllum	crooksii	Among granite boulders 5100'
			macrocephalum *new to NM	In sandy canyon bottom 4400'

52				53
105 3 Sep 73	Guadalupe Canyon	Dalea	pogonathera?	In sandy creek bottom 4400'
106 "	" "	Maehria	argentina?	" " " " "
107 "	" "	Gnaphalium	chihuense?	" " " " "
108 "	" "	Agastache	wrightii?	At base of cliffs 4400'
109 "	" "	Silene	"	" " " " "
110 "	" "	Erigeron	neomexicanus?	" " " " "
111 "	" "	Maurandya	"	Under shrubs & trees "
112 "	" "	Sagittaria	wrightii?	Thickets @ base of cliffs "
113 "	" "	Rivina	humilis	In sandy bottom 4400'
114 "	" "	Condalia?	"	At base of cliffs "
115 "	East slope Palmito Mtns along Rd 63	Gilia	multiflora	6000'
116 "	" "	Hedera	hyssopifolia	"
117 "	" "	Linum	neomexicanum	"
118 "	Guadalupe Canyon	Cucurbit	"	Under oaks 4400'
119 "	East slope Palmito Mtns along Rd 63	Allium	kunthii?	5500' 6000'
120 "	" "	Cirsium	ridgwayi? arizonicum?	" 6000'
121 "	" "	Morandya	austromontana	" 6000'
122 "	" "	Agastache	breviflora	" 6000'
123 "	" "	Eryngium	"	In seeping areas " 6000'
124 9 Sep 73	South Oscura Mtns	Chenopodium	downlandii?	Canyon bottom 6000'
125 "	" "	Maehria	aguiifolius?	" " "



54

Cajon Bonito, NE Sonora, 30 Apr

Plants seen in bloom

*Mimulus guttatus**Senecio salignus**Rhus radicans**Tillandsia recurvata**Prosopis juliflora**Anisacanthus thurberi**Epipactis gigantea**Asplenium chrysanthum**Rhynchos betulaefolia*1001 *Mimulus cardinalis* ca \$500 in deep narrow box1002 *Astragalus humistratus* var *sonora*?1003 *Gnaphalium*1004 *Eriogonum* by stream*Conoclinium mexicanum* 1 May

2 May, Cajon Bonito

*Astragalus allochrous**Lupinus concinnus**Samolus floribundus*Trip w/ Vince Roth, SWS;
Dr Chas (Chuck) McMoran, Sierra Vista
Gail Monson, Sept. AZ-Son Desert Museum

55

Tillandsia recurvata, in fruit.

at Ranch San Antonio in foothills of San Luis Mts.

56

Cajon Bonito, cont.

*Pansterium parryi**Astragalus* sp.*Nicotiana**Stavia*?*Tetramerium hispidum*Leafless verbena-like *Elythria**Scutellaria**Eschscholzia mexicana*

57



- 58 Cajon Bonito 30 Sept and 2 May 1974 59
- 1001 *Mimulus cardinalis* - at base of cliffs in box canyon immediately above creek.
- 1002 *Astragalus* sp. - in sandy areas of creek bottom
- 1003 *Greenthread* sp. - in soil pockets below waterfall in side canyon
- 1004 *Erigeron* - in moist edge of creek
- 1005 *Tetramerium hispidum* - crevices of rhyolite cliffs and in rhyolite spalling below cliffs.
- 1006 Composite sandy creek bottom
- 1007 *Microseris*? moist edge of creek
- 1008 *Maurandya antirrhinifolia* common in soil pockets and below cliffs - usually shaded.
- 1010 } all in moist edge of creek
- 1011 }
- 1012 }
- 1013 *Erigeron* Sandy creek bottom - spreading by underground rhizomes
- 1014 *Vicia leucophylla* Sandy creek bottom under cottonwood.
- 1019 *Samolus floribundus* Wet edge of creek
- 1015 *Astragalus* Sandy rocky creek bottom.
- 1016 *Scutellaria* Shade & gravelly side areas under oaks.
- 1017 *Penstemon parryi* Sandy creek bottom - occasional

- 60 Cajon Bonito 61
- 017 *Stevia* { side canyon near waterfall
- 018 *Nicotiana* { beside cove.
- 019 *Mimulus* Below waterfall
- 020 *Elytaria imbricata* Crevice in rhyolite cliff.
- 021 *Pegannum harmala* 11 May 74 I 10 roadside 1 1/2 mi E of Gary bypass - Hidalgo Co.,
- 022 *Elytaria imbricata* crevices in rhyolite Guadalupe Canyon 1 mi below Jackson's Ranch 11 May 74
- 023 *Pedicularis pseudo-purpurea* gravelly base of cliffs
- 024 *Hypochaeris verticillata* loam in canyon bottom
- 025 *Comandra pallida* at base of oak.
- 026 *Astragalus* sandy loam bottom
- 027 *Briellia venosa*.
- 028 *P.*
- 028 *Samolus cuneatus* Dog Canyon 4 July 74
- Saw *Perityle* everywhere on Black Mtn. at Dog Canyon
- Petrophytum cespitosum* on both Black Mtn. & Dog Canyon
- Polygala* on Black Mtn. apparently not *rimulicola* says Tom Wendt.
- July 74 - Big Hatchet Mtn., Socb, NISW, T 315. - Extremely dry - getting better.
- 029 - *Perityle lemmoi*, cliffs on n. slopes of Big Hatchet Peak
- Petrophytum cespitosum* in great masses
- Tom Wendt collected *Polygala twissleyi* at 5500' and at 7000'
- Quercus undulata* everywhere



62 magnificamporum 63

9141 - *Spiranthes* (~~terrestris~~) (*magnificamporum*) - 14 Sep 74 - in bog on west side of US 85 about 1 mile south of the railroad overpass just south of Isleta - elevation 1500 meters - about 50 plants seen
SE 1/4, Sec 27, T8N, R2E

9 Sep 74 Next deep canyon S of Dig Canyon - *Lobelia cardinalis*, *Aster*, *Parityle stamophylla*, *Samolus cuneatus*, all in bloom - Plants of *Epipactis* in fruit - Peculiar

Apr 75 ✓ Center canyon, east side of Coal Mtn, San Andres
✓ In bloom - *Obispa dumosa* (small), *Fendlera rupicola*, *Fendlera utahensis*, *Eschscholzia maxima*, *Lesquerella*, *Verigremia*, *Astragalus*, *Catalpa*, *Lupinus*, *Lotus* sp., *Phacelia*, *Thymus texana*, *Anemone tuberosa*, *Delphinium virescens*, *Gilia sinuata*, *Triptanthus*, *Rhizoglossa neomexicana*, *Oenothera*, *Rhus*, *Ephedra*, *Verbena ambrosiifolia*, *Verbena Wrightii*, *Nema hispida*, *Mimulus*, *Livaria* ^{var. hirsuta} *consociata*, *Lepidium*, *Stropharia*, *Phacelia* (4 kinds), *Montezulia*, *Cryptantha*, *Lappula*, *Erodium*

Apr 75 North side Summer Fork Mtn - *Sisymbrium irio*, *Astragalus*, *Triptanthus*, *Lesquerella*, *Rhus*, *Euphorbia*, *Mimulus*, *Thelypodium Wrightii*, *Thelypodium longifolium*, *Nema exigua*, *Corydalis*

64 65

3 Apr 75 - *Croton*, *Dryas*, *Antennaria*, *Dryas*, *Antennaria*, *Astragalus*, *Humifusus*, *Strophanthus*, *Linanthus*, *Bigelovii*, *Gilia sinuata*, *Chamaelirium*, *Phacelia*

MAY 75

55241 *Psathyrotes scaposa* - side of railroad cut on NE side of Cerro Materos (Mt. Christo Rey) - Send of Dona Ana County - Elev ^{1200 m} 1200 m. - limestone gravels.

MAY 75 - Shalam hills

55251 *Tetraslea coalteri* - NE facing hillside in limestone crevice

55252 *Polygala microdonia* - SE limestone hillside

55253 *Eriogonum* - NE facing hillside in grasses

55254 *Hebeoma usna* - " " " "

6 May 75 - San Andres Mtns near El Chodo Canyon R2E T13S

55261 ✓ *Talinum brevifolium* - Sec 4 on rocky hillside (limestone) 6700'

55262 ✓ *Rosa stellata* - all over.

55263 ✓ *Phlox* *usna* - all over

55264 ✓ *Astragalus pictiformis* - Sec 4 - flat pastureland @ 6600'

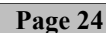
55265 ✓ *Eriogonum aratum*

55266 ✓ *Eriogonum trichosperum*



66	67
26 May 75 (cont)	
✓ 55267 <i>Erolia</i> <i>glauca</i> <i>glauca</i> var. <i>angustifolia</i>	open flat meadows - Sect 6700'
✓ 55268 <i>Lycium pallidum</i>	- Open canyon bottoms & ridges - Sec 4, Sec 9 6600'-7200'
✓ 55269 <i>Salvia henryi</i>	- Canyon bottoms - Sec 4, Sec 9 6800'-7200'
✓ 552610 <i>Allium</i>	- not yet in bloom - Sec 4, Sec 9, Sec 10
✓ 552611 <i>Limnolobos</i> <i>Pseudocymopterus montana</i>	
✓ 552612 <i>Castilleja integra</i>	hillsides Sec 4, Sec 9
✓ 552613 <i>Oenothera</i> <i>occidentale</i>	Ridge under Pinyon-Juniper Sec 10 7400'
✓ 552614 <i>Scutellaria</i>	Canyon bottom in wash Sec 4 6600'
✓ 552615 <i>Hedeoma</i>	Ridge among limestone Sec 9 7300'
✓ 552616 <i>Hymenoxys</i>	Meadows, hillsides & ridges Sec 4, Sec 9, Sec 10
✓ 552617 <i>Hoffmannseggia</i> <i>glauca</i> <i>glauca</i>	open Meadows Sec 4 6600'
	rostrate, no stems
✓ 552618 <i>Penstemon</i> probably <i>versicolor</i>	or <i>leptomeria</i> Sec 9 ^{Eastern} Cliff face @ 7300'

68	69
16 May 75	
Mesa 5 mi S of Bloom	field beside Hwy 49
<i>Gilia</i>	
<i>Gilia</i> <i>phlox</i>	
<i>Frankia</i> <i>tridentata</i>	
<i>Castilleja</i> <i>linearifolia</i> ?	
<i>Streptanthus</i> <i>longirostris</i> ?	
<i>Amelanchier</i> <i>italica</i> ?	
<i>Astragalus</i> <i>onchocarpus</i> (<i>amphioxys</i> ?)	
23 May 75	
Glen Canyon Dam	
<i>Lupinus</i>	
<i>Oenothera</i>	
<i>Astragalus</i> <i>amphioxys</i> ?	
22 Jun 75	
<i>Peganum</i> <i>harmala</i> - 1.8 mi. W. of	Las Cruces Airport entrance on shoulder
of old highway - these are	the first plants I have seen in D.A. County ^{except}
three plants only.	at eastern border
<i>Alyx</i> in bloom along road	
<i>Linum</i> <i>aristatum</i> , <i>Gilia</i> <i>longifolia</i>	<i>a</i> , <i>Dalea</i> <i>pogonathera</i> , <i>Baileya</i> <i>multiradiata</i>
<i>Nema</i> <i>hispida</i> , <i>Viguiera</i> , <i>Senecio</i>	<i>longifolia</i> ,



71

Sep 15 - Long Canyon Box just above Falls
Peristyle cornuta and Peristyle coronata
occurrence I have seen. Silene
plankii mostly finished blooming.

962 - *Perityle coronopifolia* - on cliffs & boulders

264 - Composite or amaranth - rock crevice - *Tresine heterophylla*?

165- *Machceranthra*

966 - Composite

67- *Agastache cana* - cliffs above ^{you} long Canyon west side @ 6800' NW 1/4, Sub

968 - *Perityle cernua* - " " " " " " " " " "

only a half dozen plants seen - also many more *Silene plantaginifolia*

2610 Bidens - upper Long Canyon bottom

9611 *Talinopsis frutescens* ✓ 2nd Canyon west of Long Canyon - NW 1/4, Sec 7, T24S, R4E - 5500'

73

19 Oct 75

North San Andres Peak

SW $\frac{1}{4}$ of SW $\frac{1}{4}$ Sec 21, R4E T18S

elev 6900 - 7000' (i.e. ca 2100m)

510.9! *Petrophutem caespitosum*

10192 *Pinaropappus parvus*

10193 *Croton perennans*

10194 *Ostrea kneri*

10195 *Peitole stamophylla*

10196 ? Borae?

10197 Phacelia

10198 Mint - growing appressed to cliffs! = *Silvia summe*

12 Aug 76

- NORTH OF MOCKINGBIRD GAP

~~PSYCHOTROPES~~ PSYLOSTROPHE

Linum

Oenothera runcinata?

- RANGE ROAD 8, 16 MI. W OF OSCURO,
SOUTH FOOTHILLS OF OSCURO MTS

VERBENA

- MALPAIS SPRING

EUSTOMA

ALLIENROLES

Limonium

SANDRUS

ZANNICHELLA?

- CA 1 MI S OF MALPAIS SPRING ALONG
ROADSIDE (RANGE ROAD 9)

FRANKENIA



74 75

3 January 1976

601031 *Pentstemon stans* Eng. Scott. Canyon 4800 ft NE 1/4, Sec 29, T19S, R11E

601032 " " Grapevine Canyon 4800 ft SE 1/4, Sec 29, T19S, R11E

21 Aug 76

- Benison Canyon - between two lower springs just above junction of Rio Pecos - sedge beds of *Carex orthoceras* (either *maculata* or *viridula*) and plants of *Plectanthera brevifolia*.
- At junction of Forest Roads 433 and 437 in Sec. 11, R12E, T19S at abt 9300 ft under spruce; plants of *Goodyera* not in bloom. In same area in cotton spruce - *Zigadenus elegans* (760821-1)
- On Forest Rd 64 just north of junction with Russia Canyon Road
- *Cirsium palchellum* (760821-2)

3 June 76

- Akela overpass on I-10 and near Tupper on I-25 - *Pentstemon ambiguus*
- State Highway 90, Black Range, 2 mi E of Emory Pass - *Chrysothrix mexicana*
- 1 mi E of Emory Pass - *Spiranthes parviflora*, *Carex orthoceras*, *Antennaria sp.*
- Along Highway 90 from Galinas Creek to Grey Eagle Mine - *Robinia neomexicana*

76 77

27 Mar 77

Small rocky hill NE of Rough and Ready Gap - *Brickellia coulteri*, *Allium macrostachyum*, *Eriogonum microanthum*, *Erigeron* sp., *Linaria texana*, *Boragin*, *Townsendia* sp., *Phacelia* sp., *Malvastrum* sp., *Ribes* sp., *Gilia* sp.

28 May 77

Indian Creek *Lonicera dumosa*, *Symphoricarpos* sp., *Erigeron* sp., *Echinocereus triglochidiatus* - bluish phase,

On Animas Peak *Senecio wooteni*, *Senecio* sp., *Artemisia* ~~tridactyla~~ ^{*var. menziesii?*}, *Lonicera arizonica*, *Robinia neomexicana*, *Antennaria* ^{*arida*} sp., *Thermopsis?*, *Aspen*, *Cottoneaster* sp., *Heuchera glomerata*

Everything terribly dry!

5 Jun 77

✓ NE side of Black Mountain, San Andres, SW 1/4 Sec 32, T20S, R5E 1500 m.

✓ On vertical strictly N facing cliff, 40 plants of *Polygala rumboldii* var. *sauvasterensis*

✓ In canyon bottoms in rock crevices, *Pentstemon alamosensis*, 4 different canyons, already in fruit,

✓ few plants @ any location

✓ *Texmenia* just beginning to bloom

✓ *Phlox* like Ash Canyon and Dog Canyon more like *Ernestii* than *Mearnsii*, already mostly bloomed. In three of 4 canyons



78

5 Jan 77 (continued)

- ✓ *Perityle stansophylla stansophylla* in full bloom, quite a bit in each canyon.
- ✓ Cast. Neja ca 8 dm tall in arroyo.

21 Aug 77 Most plants collected were in a narrow steep canyon on the north face of North Organ Needle from 7000 - 8000'.
 Evergreens mostly Doug fir, ^{other trees} mostly Gambel oak and *Acacia grandidentata*. Soil was deep although there was little moisture lower down. Bare rock showed *Bimela*, *Silene laciniata*, *Sedum*, *Selaginella*, *Pericoma candelata*, *Urtica*, *Scrophularia laevis* (this canyon had the largest population I've seen - none heavy, but scattered up and down the canyon).
 Other things in bloom - *Oxalis*, *Heuchera leptanthera*, *Machanostema*, *Arenaria*.
 Canyon is in SE 1/4, Sec 31 and SW 1/4, Sec 32, R 4E, T 22S

79

80

4 Sep 77

Hike to Winn Falls from Herb Martz Campground

Just above campground on open southeast facing hillside with oak -
Milla biflora -

Brachyotum -

On way up - *Salvia lemnii*,
Stachys coccinea, ~~Pa~~

Tridactylon sp was in pocket on open seep face, south east facing.

At Falls - *Pinus pappas*?, *Eriogonum*,
Adiantum pedatum, *Mimulus cardinalis*, *Pericoma candelata*,
Eupatorium, *Brickellia*,
Rubus, *Veratrum*, *Cornus stolonifera*,
Aquilegia triterminalis, *Thalictrum* sp.,
Heuchera sanguinea, another
Heuchera sp.

81

3 June 78

Walked up Little Creek from the Grila. A steady 2 hrs to the Little Creek Box seep area. *Pentstemon pseudospectabilis* in bloom all along. In seep 50-100 *Cyp. calceolus* var *pubescens* (dwarf form) in bloom. Also in bloom *Viola nephrophylla* var. *arizonica*, *Succisa quercus-pumilus*? *Rubus parviflorus*, *Aquilegia chrysantha*. Saw an *Ag. triterminalis* beside stream. *Platanthera* in seep so thick in places no grass was growing - but not in bloom yet. Things were really dry though the stream was running nicely.

11 Jun 78

Went up to Little Creek again to look for my lost lens. Went the mesa route. Very dry. A few *Pentstemon barbatus* and an *Eriogonum*. 3 hrs to seep because



82

I went around west side of hill and came down above box so had to climb back out. Eup. alcesolus almost gone. Plectanthera sparsiflora (some huge plants) now with half spikes in bloom. Zigadenus virens with flower stalks up but not developed. Viola nephrophylla, Aquilegia chrysantha, Rubus parviflorus still blooming. Artemisia californicum just beginning as was Saxifraga arguta. 2 hrs to go back along east side of hill. Temp. in high 90's. Mimulus guttatus, watercress, also in bloom at seep.

83

16 Jun 78
Erythrina flabelliformis in Texas Canyon
 Walked up above Mife Hi Ranch in Ramsey Canyon, Hueco Mts.
Philadelphus microphyllus var. striamineus?
Bouvardia glaberrima
 Noted Arbutus arizonica past bloom
Perityle coronopifolia not in bloom
Hexalepis!! almost in bloom
 just below cliff that have golden eagle nest.
 17 Jun 78 Up Ramsey Canyon onto Forest Service land.
Lilium Perryi in Box canyon
Habenaria limosa along stream just beginning
Corallorhiza albertiana on Forest land long past (in fruit)

84

18 Jun - Went up Carr Canyon (next south of Ramsey) Erythrina flabelliformis along road. Jatropha macrocarpa also under oaks. Went up to granite cliff top - only Perityle coronopifolia. Aquilegia chrysantha past bloom. Penstemon barbatus var. blooming. Dalea oridalis? also. Everything very dry.

14 Jun 78 - Up east side of Cook's Range to see Arizona cypress stand. No Perityle on east facing limestone cliffs. On way up saw Penstemon ramosus and Hymenoxys quinquesquamata, both characteristic of SE AZ and further showing the affinity

85

of Cook's Range with AZ.
 Also in bloom Hymenopappus radiatus
Ptelea in fruit

2 Jul 78
Pegannum hirsutum also recorded
 S. in east of Arroyo in Hidalgo County

18 Jul 78 - Gibraltar Wilderness & River
Lythrum californicum
Epilobium sp. Houstonia
Ranunculus - 2 sp.
Agrostis rupestris
Mentha spicata
Pomella vulgaris
Pellaea limifolia
Lorbeer pulchella?
Perityle coronopifolia
Aralia Engelmanniana



86

21 Jul 78 Rough & Ready Hills
Escobaria Schottii var *undivata* has
 a ~~seed~~ fruit, not yet ripe. Check again
 in August. Also saw the following:
Mentzelia scabra var *scabra*
Zinnia grandiflora
Perezia wrightii
Trixis
Stephanomeria
Hottelmannia

Found *Penstemon lanceolatus* Benth.
 in Gray's & Under Keweenaw. Apparently
 currently accepted epithet is
Penstemon Crosswhitei = *P. lanceolatus* Benth.
 = *P. pauciflorus* Greene
 See Crosswhite, Sida 11, 266. 1966.

87

29-30 Jul 78

Went to SW Corner to check
 on *Hexaletris* in Animas Mts w/
 Andy. Given wrangle by Mrs Burris
 so didn't take time to get in. Went
 to Green Ranch and west on Green
 property to Sec 8, R 21W, T 33S.
 Walked toward Guadalupe Spring across
 into what would be Sec 12, R 22W, T 33S.
 In Sec 12 collected *Pitcairnia nodosa* in
 tank. Also collected 4 thorns in Sec 7
 including what appears to be *Chailanthes*
wrightii. Also in Sec 7, *Penstemon*
linearisoides. Very little in bloom.
 Crossed Hermimo Trail & camped
 on Cottonwood Creek @ Miller Spring.
 Walked up right fork South past
 Silvertip Mine into N. Mex. Everything
 dry but just starting a little.
 Then went to Rosewood Hills on

88

Guadalupe Canyon Road (AZ, Sec 1,
 R 31E, T 24S). Found
Amorcania, *Polygala twedyi*,
P. macrantha, *Amariscus conularis*,
Mammillaria sp. in bloom.
 New *Haydeni*-like *Mammillaria* not
 in bloom - Andy found 4 more.
Jatropha microcarpa also in bloom,
 subsoil moist.

3 Aug 78 Plants seen above HTA
 @ South end of San Andres at Bear
 Peak. *Juniperus deppeana* & *monosperma*,
Berberis, *Pinus edulis*, *Quercus*,
Coryphantha (*Escobaria*?), *Mammillaria* sp.,
Echinocactus intertextus & *Wislizeni*,
Echinocereus triglochidiatus & *chloranthus*,
Opuntia (*Cholla* & prickly pear),
Heliconia, *Fendlerella*, *Strophandria*,
Eriogonum (two species, at least)

89

Mimosa, *Arceuthobium*?, *Chorizanthe*,
Garrya, *Trixis*, *Croton*, *Euphorbia*,
Hedeoma, *Salvia*, *Condalia*?

Everything extremely dry - most
 forbs and grasses brown & withered.
 Perennials & shrubs primarily green
 things.

14 Aug Rhodes Canyon
 Mtn due S of Harkin Ranch
 38793.2 Miles

Rhodes Canyon Range Camp 38872.1
 Noted in bloom along Rhodes Canyon
 Road *Zinnia grandiflora*, *Psilostrophe aggregata*,
Opuntia aggregata, *Cirsium* sp.,
 On sheer N.E. cliff face @ 7400' in
 Sec 34, R 2E, T 25S - *Petrophytum coccineum*,
Perityle staurophylla, white Mustard,
 on whole mountainside down to road



90

was *Scutellaria tessellata* (Cresins?) - also, particularly under pines was *Thymoxys* sp. - noted on mountainside *Thymoxys radiatus*, a few *Ipomopsis aggregata*, *Senecio* sp., *Polygala* sp., *Galium* sp., By road *Penstemon jamesii*, *Houstonia* sp. in shaded narrow draw at 6800 ft on NE slope, a suffrutescent mint or figwort I never saw before. Also on slope 2 sp *Chrysothamnus*, *Solidago* sp., *Brickellia* sp., *Aster* sp.

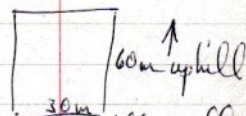
This is the new *Hedeoma* habitat - north facing gypsaceous limestone slope w/ pinyon, juniper, scrub oak, *Ceanothus greggii*, ca 6800 in Sec. 34, T12S, R2E. Returned to location 18 Aug 78 - found on single hill - not on 5 similar hills

91

close by - may be up higher - since some already in seed apparently blooms at least as early as July & possibly in May - probably related to rainfall.

Obtained a *Castilleja* on same hillside

4 Sep - returned to location, very few blooms - saw a hummingbird at the site but not at the flowers. Again surveyed site. Plants cut off sharply on all four sides. Site probably abt this



Went to next hill south - no plants.

In meadow by Rhodes Canyon Rd @ fork *Salvia submissa* ^{reflexa}, *Euphorbia dentata* ^{var. dentata}, *Sauritalia aberti*. Among rocks under cave shelter near mouth

92

of Cottonwood Canyon - *Polygala scoparioides*

Along Range Road 7 south of crystal beds - *Solidago*

Also in meadow near Red House Spring, Berlandiera

Elyrata ^{var. tyrona} in Rhodes Canyon bottom *Petalostemon canescens* ^{var. oligophyllum} *Stephanomeria pauciflora*

15 Oct 78 - returned to *Hedeoma* site to gather seed. Found 12 seed in ca 100 calyces, one had two, the others one. Apparently seed set very poor. Calyx leathery, tough, with no room for developing seed which may limit number that develop. No blooms at this time.

Went to side of Gyp Hills - found *Santverillia florival*, a *Hedeoma* probably same, *Montezelia* (perennis?)

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24 Nov 78 Long Canyon

Found many plants of *Perityle cernua* in next small canyon west of Long Canyon Box - only on strictly east and north vertical cliffs or below overhangs. Water running in Long Canyon intersected above Box and west falls - also in canyon west of Box where there was *Mimulus* in bloom plus *Bresleria* ^{hot & sooph}. Found *Perityle coronopifolia* widespread & still a few blooms, *Agastache cuneata* in Box w/ a few blooms, *Perezia Wrightii* still blooming, several *Eriogonum*, many *Mammillaria guayanae* in fruit, *Erythronium* still blooming, *Lepidium montanum* var. on cliff in Box. *Nicotiana* growing and blooming. *Phacelia* (Copei?) blooming. *Brickellia venosa* (var. wooteni?) *Thymoxys* sp. Other composites.



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4 Mar 79 - Next hill S of Quartzite Mtn,
San Andres - small stream in bottom
between two hills - very little in bloom -
Corydalis aurea, *Streptanthus* sp.,
Draba cuneifolia var *cuneifolia*,
Thymosma texana, *Phacelia carulea*,
Thlas microphylla, *Ephedra*,
Lesquerella, *Cryptantha* sp.,
Astragalus nuttallianus, *Discaria*
sp.
- noted *Eschscholtzia mexicana*
in bloom nr. Organ (also *Astragalus*
molissimus)

9 Mar 79 - Sec 17, T20S, R3E
1 1/2 mi E of Taylor Well at
WSMR Boundary *Selenia dissecta*
in large numbers

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28 Mar 79 - Mesa north of Goat
Mtn - *Oenothera albiculis*, *Oenothera*
chamanisoides, *Draba cuneifolia*,
Gilia flavocincta or *maculata*,
Discaria sp.,
Nama hispida, *Galium proliferum*,
Astragalus nuttallianus, *Linum* sp.,
bigelovii

East foothills of Goat Mtn, all
of above plus *Lepidium*
Eschscholtzia mexicana, *Erodium*
texanum (past blooming), *Echinocereus*
triglochidiatus (just beginning),
Discaria ^{portulacastrum}, *Calycoglossum* sp. (just starting),
Malacothrix fendleri, *Dalea formosa*
micrantha, *Phacelia carulea*,
Lupinus caninus, *Lotus* sp., *Vicia* sp.,
Astragalus nuttallianus, *Hedera nana*

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13 Apr 79 - Went out by Taylor Well to
Ash Canyon. *Selenia dissecta* scattered
from WSMR boundary to Middle Well.
At Middle Well, *Townsendia* and
Gilia (*Eriastrum*?). On hillside,
east facing, above Ash Canyon,
Astragalus castetteri and *Castilleja*
sessilis flora beginning. On west
facing hillside above springs, *Anemone*
tuberosa still with a few blooms.
Fendlera rupicola just beginning.
Agave chrysantha just starting.
Eriogonum, *Heuchera*, *Lesquerella*
goodingii, *Draba* through
Lepidium sp. beginning. There
are three Arizona cypress at
Ash Canyon spring, the largest
about 15" dbh. *Choisya*
just starting. There ~~are~~ is lots of
water this year. The maiden hair

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fern is starting to come back from
the bad freeze two years ago.
Streptanthus all over.
Malacothrix sinuata and *Chickadee*
villosa also. *Philadelphus*
eruefii not yet in bloom. *Eriogonum*
just starting out.

6/3/79 - Went into Organ - Achenbach
to Soledad to North Canyons &
return - In bloom *Asclepias speciosa*,
Verbena wrightii (much), *Eriogonum* sp.,
Dalea greggii, *Delphinium virgescens*,
Gomphrena sp., *Haplopappus spinulosus*
var., *Penstemon fendleri* (last),
Penstemon linarioides (early), *Eschscholtzia*
mexicana (late), *Polygala Tweedii*,
Oenothera organensis (North Canyons),
Malacothrix sp., *Stellaria media* sp.,
Antennaria sp., *Sphaeralcea* sp., *Evolvulus*
sp., *Acacia* sp., *Mimulus guttatus*,



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- looked for agaves in North Canyon but didn't find them. -

10 Jun 79 Salinas Pk
Rosa stellata, Erysimum,
Linum lewisii, Linum australe,
Hymenopappus radiatus Fendleria,
Ptelea, Escobaria sp. Echinocereus
triglochiliifolius, Asclepias sp.
Heliotropis, Haplopappus spinulosus
Cylindropuntia aculeata, Nolana texana,
Mertensia eucalyptus, Pilostrophe
bicolor, Hymenoxys, Penstemon
Echinocereus horridulus (C. v. b.)
Salvia henryi, Philadelphus
Zinnia grandiflora, Thalictrum
Achillea, Salvia leucantha, - Presite
Sedum sp. leucanthum, Cirsium
Gnaphalium?, Corydalis aurea aurea
Macherauthera fenzlana, Salvia
Phyllanthus polygonoides, Eriogonum modestum

Senecio neomex. var. neomex. canus
kleckera novomexicana
occidentale
Oreocarya integrifolia jamesii
Castilleja integrifolia
3 Jul 79
Hexaletris spicata - 3 bloom spikes
in bud up lat arroyo to of SWRS
in Chiricahua - picked one
week later another knocked over
and withered on 29 July third
spike also starting to dry up w/o
blooming - the almost 2" of rain
the first part of June probably
caused spikes - lack of later rain
caused lack of blooming
27 Jul 79 - in to E side of San
Andres Peak from SW 30 station
Everything dry though a few seep areas
on broad granite flats & verticals:
Lithium californicum in some seeps.
Taliopsis frutescens found in foothill
Perityle staurophylla high on rocky cliff
Perezia wrightii, Castilleja lanata, Gouania erecta
angustifolia, Echinocereus, Macherauthera, Echinocereus

100 mostly Brushy Canyon
30 July 79 - spent two hours at
BioResearch Ranch looking for Hexaletris
no luck - very little in bloom (Erysimum,
Mimandrea auriculiflora, Yucca schottii,
Lesquerella purpurea?
Picked up Selaginella rupicola on
ridge between Ranch Hq and Brushy
Canyon.

20 Aug 79
WSMR Range Rd 7 at Rd to SW 30
Eriogonum rotundifolium, Ipomopsis
longiflora, Lapidium virginianum var
medium
Canyon just south of Skillet Knob
Perityle staurophylla var. humiflora still in bloom
Salvia pinguifolia just beginning
Cirsium perennans, Polarisia septentrionalis
Lesquerella purpurea just beginning
Montezelia multiflora Nutt. Gray
Cnvolvulus inermis, Steudanum
pauiflorum

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Thelypodium wrightii, Comelina erecta
on angustifolia, Alysicia wrightii just
beginning to bloom, Eriogonum shortianum
Eriogonum jamesii, Detorhiza villosa
Galium rothrockii, Fendlerella, Belia ^{palatensis?}
Viguiera arctifolia

Still just north of Bear Canyon
Lanaria gracilis, Macherauthera tomentosa
Macherauthera scabrella (Haplopappus
spinulosus ssp. scabrella), Paronychia jamesii
Purshia inermis, Froelichia arizonica,
Dalea nana var. nana (actually seems
intermediate betw. nana & cernuascens),
Fendlerella utahensis, Croton pottsii
(Eriogonum), Euphorbia fendleri
var. chaetoclyx, Aphrostegia ramosissima
Notholaena sinuata var. cochiseensis, Tecoma
stans,



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29 Aug 79

Jornada Buena Road
Cesalpinia Jamesii, *Dalea*
aurca?, *Kalstroemia parviflora*,
Palafoxia, *Gaillardia Dittmaria*,
Psilostrophe, *Zinnia grandiflora*,
Lepidium virginicum var *medium*,
Croton, *Baileya*,

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30 Aug 79

Engle Gate - Buck Canyon
Orobanchaceae multi flora, *Hedeoma*
drummondii, *Gilia rigidula* acro-
Solanum rostratum, *Cestilleja integrifolia*,
Polygala alba, *Psilostrophe*, *Viguiera*
panopsis aggregata, *Salvia incisa*,
Asclepias subverticillata,
Chamaesaracha concolor, *Sphaeralcea*

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2 Sep 79

Hillside above (north) of Hg. ^{Ranch} ~~Brown~~
Stachys coccinea, *Trichostema arizonicum*,
Hedeoma oblongifolium, *Penstemon*
linarioides, *Elytaria intricata*,
Tradescantia pinetorum, *Polygala*
tweedyi, *Stephanomeria pauciflora*,
Cyperus rotundus, *Chenopodium Fendleri*,
Croton corymbulosus (all over)

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10 Jun 81

Lv LC 0615 80455

Ar Endot Rd 500 104580610

Collected *Erigeron* n. sp. on S-facing
 rhyolite cliffs in Sec 28, T11S R10W,
 just above bed of Diamond Creek.
~~Probably~~ probably < 100 plants.
 Cliffs are tall, white to pink w/
 columns.



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30 June 81
 Rhodas Canyon Trail - 81288.55
 Granite Gap - 81264.0
 R.C. Page Camp - 81275.3
 Collected buds of Hedeoma
tacheni at type locality.
 Collected buds of the undescribed
 var. humiflora of Perityle stenosphylla
 at Granite Gap (the 1st locality
 that the variety was found along
 w/ a voucher specimen.
 Went to Three Rivers Campground
 and walked up Three Rivers
 Trail past 1st two crossings.
 Returned because of threatening
 rain - got soaked. Collected
Tolemium filicinum and
Achillea borealis? or laevis?

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26 Jul 81
 Lv LC 0800 81800
 @ Hwy 52 - 81878.8
 Winston 81989.2
 Chloride Creek 913.2
 Collected Melilotis, Plantago major,
 composite, Geranium eremophilum.
 At 913.3 collected Phacelia rupestris
Mimida eustomaitana and a small
 mustard.
 At 913.4 and 913.55 collected
Mammillaria heideri, mustard, composite.
 Inside canyon at 913.7 collected
Senecio, Eupatorium, Thalictrum
leideri.
 At ~~916~~ 916 in wet area collected
Epilobium adnuncium and Rorippa
sphaerocarpa?
 Winston 81923.7
 Las Cruces 1600 - 82033.4.

Botany is the natural science that transmits the knowledge of plants.

— Linnaeus