

The New Mexico Botanist

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Thomas K. Todsens Field Books — 1967-1981

Kelly W. Allred

2015 Jordan Road, Las Cruces, NM 88001 kallred@nmsu.edu

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.

Botanice est Scientia Naturalis quae Vegetabilium cognitiorem tradit.

— *Linnaeus*

BOTANIZING NOTEBOOK

T. K. TODSEN.

1968

FB67-68

7-18-971
 10/11/67 10/11/67
 10/11/67 10/11/67

3 7-8 Oct 67
 IPOMOEA BARBATISEPALA (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 ~~sp~~ sphaerophylla
 Mimulus rubellus
 Eschscholzia mexicana
 Corydalis aurea
 Comprehensivus
 Echinocactus texensis
 all in bloom

1 Spiranthes parviflora? ~~sp~~
~~Found~~ plants w/ leaves in
 Mass. often found by Allen Campbell 18 Sp?
 Plants ~~with~~ w/ leaves and dried
 flower stalks found in several
 locations on north side of Signal
 Peak, Pecos Altos Mtns ⁹ ~~sp~~ 67
 by Todsens Johnson, always
 near Grand Lake in limestone Creek
 and aspen in higher elev. Malaxis
 Shoenbergii in similar locations.
 On 15 Oct leaves mostly fresh,
 some gone completely, some still
 fresh. Plants w/ leaves collected
 23 Sept 67. Plants checked 2 Dec 67
 by Johnson the leaves were

4 23 Oct

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 63 AND
 TAKEN A PHOTO)

TRIP TO SOUTH END OF PELONCILLO
 MTS 7-8 OCT 67.

1. AT HEAD OF SIDE CANYON OF
 GUADELOUPE CANYON - POTANOGETON
 SPECIES, PROBABLY ILLINOENSIS
 IN RANCH TANK ALONG WITH
 LEMNA SP.
 IN GUADELOUPE CANYON, ON N. MEX
 SIDE SAGERETIA WRIGHTII?

5

Friday, 26 Apr 68

With Andy walked from Aguirre
 Spring Road up Indian Hollow to
 NW base of Sugarloaf. Altitude
 5300' to 6750'.

Delphinium virescens - 5300' just beginning

Castilleja 5700'
 Astragalus 5300'

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FB68-81

1
Rincon Hills - 15 Sept 1968*Gaillardia pinnatifida**Baileya multiradiata**Perezia Wrightii**Trixis californica*

Madraria?

Sphaeralcea



2	Date	Location	Tentative Idea	Identification	Remarks
1	26 Jan 64	1 mi. SE of Mahoney Trestlehouse Mt. Texas	Thomomus	terreus	Infertile and most leaves pink - surface of surrounding rocks flora top @ 5200'
2	26 Jan 64	"	Baccharis	serotendens	
3	2 Feb 64	Mouth of Long Canyon Cajon de las	Sidaea	griffithii	Specimen to Herb. dubium
4	2 Feb 64	"	Phoradendron	leucocarpum	will be in bloom in abt 2 wks on S slope morning
5	7 Feb 64	Bishops Cap	Thomomus	terreus	
6	7 Feb 64	"	Agave		Common in subsoil crevices
7	7 Feb 64	"	Agave	schottii	Common
8	7 Feb 64	"	Notholaena	monticola	Initial blooming - one fruit dried.
9	16 Feb 64	"	Thomomus	terreus	Common above hill / vegetation and cacti
10	23 Feb 64	San. E. of El Capitan Rd on Johnson Ranch	Artemisia	Tuberous	Common
1	23 Feb 64	Johnson Ranch Crescenta Canyon	Sarcocolla	salicina	New Sp. New Mexico?
2	23 Feb 64	Palmville Mts	Astragalus small Brassicaceae	pusillus filipes fenderi	Native in San Geronimo Canyon into Arizona. Just beginning also in bloom above Pikes along Cave Creek.
3	23 Feb 64	Palmville Mts	Dioscorea	barbieri	
4	1 Mar 64	Shelton Hills	Polygonum		
5	1 Mar 64	Site of Johnson's Cajon just W of Long Canyon	Glossopetalum	Fossilis (spinosus)	
6	"	"	Alnus	rubra	Abundant
7	"	"	Alnus		Common
8	"	"	Pellaea	wrightiana	

4	Date	Location	Tentative Idea	Identification	Remarks
0	28 Mar 64	Shelton Hills	Eriogon	caespitosus	Common - rocky crevices
1	"	"	Grass	puberulum	
2	"	"	Dioscorea	acerosa	Just beginning.
3	"	"	Dioscorea		
4	"	Shelton H. Mts Small Canyon	Astragalus		
5	"	Shelton Hills	Berberis	obovatifolia	This is sufficient to appear to be completely dead or with just beginning.
6	"	"	Polygonum	scoparioides?	Just beginning
7	"	"	Stemodia	barbieri	(Both seen the same)
8	"	"	Stemodia	validus	
9	"	"	Stemodia	viridiflora	Common
10	"	"	Siphocampylus	puberulus	Just beginning
1	30 Mar 64	Organ Mts above Aguine Spring	Mycosurus	capitatus	Large area
2	"	"	Achroasac	occidentalis	" " along / preceding
3	"	"	Corydalis	occidentalis	
4	"	"	Pibes	epithymum	
5	"	"	Eriogon	radiatum	
6	"	"	Ceratium	texanum	
7	"	"	Taxodium	ottomobla	
8	"	Slope below Aguine Spg	Lotus		
9	"	"	Astragalus		
10	"	Slope below Aguine Spg	Gilia	sinuata (in eripiana)	
11	"	"	Umbelliferae		



		Sec 7, 15, 16, 17 T 345, R 214		
6		and Sec 11, 12, 14 T 345, R 220		
6	4 Apr 69	Guadalupe Pass and Canyon	<i>Dichelostemma</i>	<i>pubellum</i>
7	"	"	<i>Phacelictis</i>	<i>coarctata</i>
12	"	"	<i>Aster</i>	<i>viridifolius - arvensis</i>
43	"	"	<i>Eriogonum</i>	
44	"	"	<i>Gnaphalium</i>	<i>capitatum</i>
45	"	"	<i>Linum</i>	<i>lewisii</i>
46	"	"	<i>Corydalis</i>	<i>aurca</i>
47	"	"	<i>Astragalus</i>	
48	"	"	<i>Yucca</i>	
49	"	"	<i>Lupinus</i>	<i>humboldtii</i>
50	SA 11 69	Sec 24 beach T 345, R 220	<i>Ceanothus</i>	<i>Greggii</i>
51	"	"	<i>Dryopteris</i>	<i>multicaulis</i>
52	"	"	<i>Zadachnia</i>	<i>clavatum</i>
53	"	"	<i>Lupinus</i>	<i>arvensis</i>
54	"	"	<i>Phacelia</i>	<i>arizonica</i>
55	"	"	<i>Encypta</i>	<i>microcaltha</i>
56	"	"	<i>Mentzelia</i>	<i>affinis or albicantis</i>
57	"	"	<i>Desmodium</i>	
58	"	"	<i>Thysanopsis</i>	<i>simplex</i>
59	"	"	<i>Semiothisa</i>	<i>monensis</i>
59A	"	"	<i>lotus</i>	<i>hemistriatus</i>

Rocky hillside in desert park called.

Thysanopsis simplex
lotus

Solitary, sessile flowers
imund

		Sec 16 T 245, R 312		
8				
60	SA 11 69	Vegetation	<i>Plantago</i>	
61	"	"	<i>Gilia</i>	
62	"	"	<i>Thermopsis</i>	<i>texana</i>
63	"	"	<i>Gnaphalium</i>	
64	"	"	<i>Manisuris</i>	sp
65	"	"	<i>Umbelliferae</i>	
66	"	"	<i>Brassicaceae</i>	
67	"	"	<i>Linum</i>	<i>pubellum</i>
68	"	"	<i>Allium</i>	<i>microbotryon (dunstroki)</i>
69	"	"	<i>Daliscia</i>	<i>serotina</i>
70	30 Apr 69	Bishop's Cap	<i>Thermopsis</i>	<i>texana</i>
71	"	"	<i>Azorella</i>	<i>microbotryon</i>
72	"	"	<i>Thymus</i>	<i>arvensis</i>
73	"	"	<i>Daliscia</i>	<i>virgata</i>
74	"	"	<i>Lesquerella</i>	<i>purpurea</i>
75	"	"	<i>Sedum</i>	<i>longibotus</i>
76	"	"	<i>Lappula</i>	<i>texana</i>
77	"	"	<i>Cryptantha</i>	
78	"	"	<i>Phacelia</i>	<i>virgata</i>
79	"	"	<i>Daliscia</i>	
80	"	"	<i>Euphorbia</i>	<i>virgata</i>

not in 68 - sample straight
central, S-7-tracks, tubular not present



10

7-81	26 Apr 69	San Diego, CA	<i>Aphelandra</i>	<i>humilis</i>	San Diego, CA
7-82	"	"	<i>Grass</i>	<i>peruviana</i>	Common in area
7-83	"	San Diego, CA	<i>Amorpha</i>	<i>canadensis</i>	"
7-84	"	San Diego, CA	<i>Heliotropium</i>	<i>peruvianum</i>	"
7-85	27 Apr 69	Indian Wells, CA	<i>Tragia</i>	<i>stylaris</i>	Among rocks along road
7-86	"	"	<i>Tragia</i>	<i>repens</i>	Low hillsides
7-87	"	"	<i>Cimelia</i>	<i>pallida</i>	Same place as last year
7-88	"	Highway 101, San Diego, CA	<i>Nolina</i>	<i>texana</i>	San Diego, CA
7-89	"	Indian Wells, CA	<i>Cirsium</i>	<i>neomexicanum</i>	"
7-90	"	"	<i>Penstemon</i>	<i>faulkneri</i>	"
7-91	"	"	<i>Delphinium</i>	<i>viridiflorum</i>	"
7-92	"	"	<i>Verbena</i>	<i>wrightii</i>	"
7-93	"	Highway 101, San Diego, CA	<i>Verbena</i>	<i>amblyophylla</i>	Blue-purple flowers
7-94	"	"	<i>Verbena</i>	<i>amblyophylla</i>	"
7-95	"	"	<i>Dioscorea</i>	<i>acerosa</i>	"
7-96	"	Indian Wells, CA	<i>Aster</i>	<i>areolaris</i>	with glabrous upper leaves
7-97	"	"	<i>Lonicera</i>	<i>rigida</i>	"
7-98	"	"	<i>Lupinus</i>	<i>coronatus</i>	(KOP)
7-99	"	"	<i>Erythronium</i>		"
7-100	"	"	<i>Thlaspi</i>	<i>faulkneri</i>	"
7-101	"	"	<i>Lepidium</i>	<i>medium</i>	"

11

12 Data	27 Apr 69	Indian Wells, CA	<i>Galium</i>	<i>aparinum</i>	Hooked leaves in fruit > 5 keels in bud
3	"	"	<i>Galium</i>	<i>microphyllum</i>	"
4	"	"	<i>Euphorbia</i>	<i>sibomarginata</i>	"
5	"	"	<i>Cordia</i>	<i>alliodora</i>	"
6	"	"	<i>Malacothrix</i>	<i>faulkneri</i>	"
7	"	"	<i>Calycotome</i>	<i>wrightii</i>	"
8	"	Highway 101, San Diego, CA	<i>Evolvulus</i>	<i>pilosus</i>	"
9	"	"	<i>Microrhus</i>	<i>linearifolia</i>	"
0	"	"	<i>Aplopappus</i>	<i>triflorus</i>	"
1	"	Indian Wells, CA	<i>Cassipourea</i>	<i>virginiana</i>	"
2	"	"	<i>Mentzelia</i>	<i>albicaulis</i>	(var. <i>peruviana</i> ?)
3	"	"	<i>Aster</i>	<i>humistratus</i>	var. <i>serotinus</i>
4	May 69	Highway 101, San Diego, CA	<i>Hybanthus</i>	<i>verticillatus</i>	"
5	"	"	<i>Diarrhena</i>	<i>strigosus</i>	"
6	"	"	<i>Chenopodium</i>	<i>virginicum</i>	"
7	"	"	<i>Veronica</i>	<i>hercynica</i>	"
8	"	"	<i>Hymenocallis</i>	<i>melanocaulis</i>	"
9	"	"	<i>Dalea</i>	<i>gambelii</i>	"
0	"	"	<i>Aster</i>	<i>oblongifolius</i>	"
1	"	Highway 101, San Diego, CA	<i>Prunus</i>	<i>virginiana</i>	"



14

15

9-122	2 May 69	Goldman Creek, Pinal Co. AZ	Quercus	reticulata	
9-123	"	"	Viola	canadensis	
9-124	"	"	Viola	nephrophylla	
9-125	"	"	Dalea	neglecta	
9-126	"	"	Capsella	hirsuta-purpurea	But the bent leaves are white, not purple.
4-27	"	"	Galium	microphyllum?	
9-128	"	"	Astragalus	Stellaria geminiflora	
9-129	"	"	Astragalus	coloratus	
9-130	"	"	Lupinus		
9-131	"	"	Senecio	ooxeris (microdentatus)	
9-132	"	"	Senecio	velutinus acutiloba var. gratin	
4-133	"	3 Rock Creek Lim w. of Kingman	Simulium	stellata	
9-134	"	Hayward Field Dist	Sophora	serotina	
9-135	16 Dec 69	Agave Springs Rd	Eragrostis	sp. affinis	
9-136	"	W. of Kingman	Phlox	missa	
9-137	"	"	Dalea	missa	
1-138	"	Hayward Sp. Rd	Sida	procumbens	
1-139	"	W. of Kingman	Baccharis	stolonoides	
1-140	"	"	Nolana	texana	
1-141	17 Dec 70	"	Pegonium	missa	In fruit from near Kingman store for to Alamogordo

16

17

1-142	17 May 69	Hay 70 near MTR	P. leucophloea	probably tagetana	
1-143	"	Hay 70 - white buds black!	Hydrocorymbos	arvensis	
1-144	"	"	C. missa	pollinosa?	Same as 1-143, but the leaves are green
1-145	"	"			
1-146	"	"	Polimnia	missa	
1-147	30 May 69	Trail to Lake Spring	Conoclinium	missa	
1-148	"	Near Little Dam	Tridax	stylata	
1-149	"	"	Euphorbia	missa - la	
1-150	"	"	Conoclinium	palida	
1-151	"	"	Dalea	wislizenii	
1-152	"	"	Sonchus	missa	
1-153	"	Trail to Lake Spring	Senecio	missa	
1-154	"	Paradise, Ariz	Hydrocorymbos	sp. missa	
1-155	"	South Fork Longwood	Acacia	angustissima	
1-156	"	Cave Saddle Road at First Turkey Creek	Ceanothus	integerrimus	
1-157	"	East Turkey Creek	Galium	Aparine	
1-158	"	"	Mimulus	guttatus	
1-159	"	"	Heuchera	parvifolia var. (missa?)	most specimens dried - This is quite late
1-160	"	"	Corallorhiza	missa	
1-161	"	"	Senecio	missa	

22
203A

23

		<i>Thalassiparus</i>	<i>longipennis</i>	
			pacificus	
			S.	
207	17 July 67	Orange Peak	Umbellifer	Westifera
207	17 July 67	Orange Peak	Umbellifer	Westifera
208	"	"	"	"
209	"	Rock House spring	<i>Salsola</i>	<i>truncata</i>
210	"	Near Barren	<i>Leptochloa</i>	"
211	"	"	<i>Galium</i>	"
212	"	"	<i>Lesquerella</i>	<i>purpurea</i>
213	"	"	<i>Phacelia</i>	<i>heterophylla</i>
214	"	Elmer Canyon just below Mt. King	<i>Trichostema</i>	<i>occidentalis</i> var <i>occidentalis</i>
215	"	Willow spring	<i>Aquilegia</i>	<i>hypoclypea</i>
216	"	"	<i>Staphylea</i>	"
217	"	North of Calaveras	<i>Caryophyllus</i>	"
218	"	"	"	"
219	13 July 67	Fossil Canyon 1 mi. S of Hwy 20	<i>Talinum</i>	<i>virginianum</i>
220	"	1.9-2.1 mi S of Hwy 20	<i>Eriogonum</i>	<i>erectum</i> (Crassifolium)
221	27 July 67	Hwy 10 on road east	<i>Lycopodium</i>	"

All the seeds from the ridge to

See under *Leptochloa* in

Along Rio Grande in bank

24

25

122	27 July 67	SE of San Juan Pass	<i>Aquilegia</i>	<i>canadensis</i>	<i>virginianum</i> occurs one side N. of Hwy 20
123	"	"	<i>Chrysoopsis</i>	"	
124	"	"	<i>Gutierrezia</i>	"	
125	"	"	<i>Baccharis</i>	"	
126	"	"	<i>Ptilopodium</i>	"	
127	"	"	<i>Eriogonum</i>	<i>repens</i>	Western side of bank
128	"	"	<i>Poa trivittata</i>	"	
129	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
130	3 Aug 67	4th S. of Lugo on to Grande Bend	<i>Poa trivittata</i>	<i>trivittata</i>	
131	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
132	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
133	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
134	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
135	4 Aug 67	4th S. of Lugo on to Grande Bend	<i>Aster</i>	<i>trivittatus</i>	
136	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
137	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
138	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
139	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
140	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
141	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
142	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
143	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
144	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
145	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
146	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
147	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
148	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
149	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
150	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
151	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
152	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
153	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
154	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
155	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
156	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
157	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
158	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
159	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
160	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
161	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
162	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
163	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
164	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
165	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
166	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
167	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
168	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
169	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
170	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
171	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
172	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
173	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
174	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
175	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
176	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
177	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
178	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
179	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
180	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
181	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
182	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
183	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
184	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
185	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
186	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
187	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
188	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
189	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
190	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
191	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
192	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
193	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
194	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
195	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
196	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
197	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
198	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
199	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	
200	"	"	<i>Poa trivittata</i>	<i>trivittata</i>	



26	24 Aug 67	at Gering	Callitriche	in fruit	27
254	4 Aug 67	Amelanchier Plant	Eupatorium		
255	"	same as 254	Keckia		
256	"	at Gering	Trifolium		
257	10 Aug 67	Palouse meadow	Trifolium	Not in flower (spat flowering)	

Stenophylla

256	24 Aug 67	Madia capsule Kingston	Astragalus	ephebra?	very common
257	"	"	Senecio		
258	"	"	Ipomoea		
259	"	"	Bidens		
260	"	Wright's Gobioides	Scirpus		
267	"	Gobias Creek	Scirpus	miscanthus	
268	"	"	Anthemum	terrestris	
269	"	"	Erigeron	Erigeron platyphylus	
270	"	"	Erigeron	acris	

28

29

271	24 Aug 67	Gobias Creek	Euphorbia		
272	"	"	Euphorbia		
273	"	"	Chenopodium		
274	"	"	Trifolium		
275	"	"	Erigeron	acris	
276	"	"	Anthemum	terrestris	
277	"	Rocky area next to road	Aster	acris	
278	"	Madia Plant	Petalostemon	caeruleum	
279	3 Aug 67	Palouse St.	Trifolium	terrestris	
280	1 Sep 67	SE of Gering	Malva	officinalis	
281	"	"	"	"	
282	6 Sep 67	at Gering	Scrophularia	perfoliata	
283	12 Sep 67	Palouse St.	Scrophularia	perfoliata	at Gering with many other species
284	"	"	Scrophularia	perfoliata	
285	"	"	Scrophularia	perfoliata	
286	13 Sep 67	Palouse St.	Scrophularia	perfoliata	
287	"	"	Scrophularia	perfoliata	
288	"	"	Scrophularia	perfoliata	
289	"	"	Scrophularia	perfoliata	
290	"	"	Scrophularia	perfoliata	
291	"	Palouse St.	Scrophularia	perfoliata	



30

291	13 Sept 67	Filmers Spring	Bidens	hygida?
292	"	Hillside above Filmers Falls	Gilia	brevicaulis
293	"	Flat near Kalousek	Poa	nutans
294	21 Sept	Cloudburst	Bidens	tenmisata
295	"	Birds nest, Felsenstein	Santverllia	florosa
296	"	Hwy. 70 North Canyon near Birt's Mill	Aster	(sachalinensis)
297	"	"	"	"
298	"	"	Rosa	stellata
299	"	"	Fraxinus	velutina
300	"	"	Dalea	
301	"	"	Polygala	alba
302	"	"	Chrysothamnus	
303	"	"	Eupatorium	herbaceum
304	"	"	Phacelia	
305	"	"	Montipha	
306	"	"	Leontodon	
307	"	"	Compositae	
308	"	"	Solidago	
309	"	"	Salvia	
310	27 Sept 67	Redoubt Lake Grassland, Alaska	Eriogonum	diversum

31

32

11	27 Sept 67	McCallum, near Gallop	Coreopsis	condensata
12	"	"	Agrostis	pellidiflora
13	"	"	Aster	radialis & agrostoides
14	"	"	Aster	cruciatifolius var. crassifolius
15	"	"	Allium	Geyeri
116	28 Sept 67	Red Wash 15 mi west Skelaprock	Eriogonum	heptaphyllum
117	29 Sept 67	"	Chamaenerion	
118	"	"	Gilia?	
119	"	Monument Valley near Birt's Mt.	Eriogonum	corymbosum, a. var. — Cat Comb Ridge, Li
120	"	Comb Ridge	Aster	
121	"	"	Alnus	paniculata
122	"	"	Cordylanthus	

33



34
1 Nov 71

151	Panola Creek Bx x 2 mi. W of Hillsboro	Sapnaria
—	"	Agastache
52	Gregg Exp. Mine - Fork Panola Creek, Black Range	Senecio
53	"	Erigeron
54	"	Valeriana
155	"	Penstemon
156	"	Astragalus
57	"	Trichilia
58	"	"
159	"	Erigeron

officinale
cons. ~~ovary~~
neomexicanus?
macrantha?
arizonica
torreyi?
(Tephrosia?)
lanulosa
borealis

972 ✓

Feb - Eschscholtzia mexicana in bloom
intersection of Hwy. 70 and US 80
Feb - near 300K Stand - Eschschol-
tzia mexicana, Astragalus ^{sp. mi}
habitus sp., ~~Drosera~~
2 Cryptanthus, ~~Drosera~~
Lepidium, Lupinus concin-
Feb - rocks near mouth of Solida
intertextus, Arum tuberosum, Galia
Descurainia, Lepidium, Draba

near Parker Well just east and south of
access road. Also near 100K stand of a 80K.
ziana mexicana, Mentzelia (paviflora?),
Gilia, 2 Descurainias, Conothera,
other Brassicaceae, ~~Trichilia~~ Linaria texana
mus up but not in bloom yet
Canyon - Eschscholtzia mexicana, Echinocactus
sp., Malacothrix, Erigeron,
scirpi, Mimulus rubellus, Conothera

36

7 Feb - Solida Canyon cut - Androsace
20 Feb 2201 Zottler ^{brag}
at WSMR
2202 USMR
203 1 Mar 500K stand WSUR
204 3 Mar 500K stand
205 " " "
206 " " "
207 9 Mar 1/2 mi S of Bear Canyon
E slope of San Andres
208 " " "
209 " " "
210 " " "
211 " " "
212 " " "
213 " " "
214 16 Mar Mouth of Bear Canyon
215 " " "

Linaria texana, Cryptantha,
EUCRYPTA MICRANTHA
ASTRAGALUS sp.
STREPTANTHUS
PRACELIA
LATHYRUS
CEUCIIFE
Camissonia chamaericioides
Lupinus concinnus
Phacelia
Dyssodia pentachrysa
Malacothrix fendleri
Calycoscorhis wrightii
Ratibidium neomexicana
also in bloom Echinocactus triflorus, Dalea, Draba,
Descurainia, Nerisyrenia, Conothera, Cryptantha (Teema stems - not in bloom)
EUCRYPTA MICRANTHA
DEUOTHEBA CALIFANNAERICOIDES
Also Descurainia, Galia, CRY, COLEOCYBA, ALLICARIA

41 March
= 106° 28' 17" W
= 32° 20' 34" N

Limestone hillsides @ 4000



42				43	
.246	9 Apr 72	Mile Post 8 - NM 62 8 m S of Willard Roadside - Hwy	Astragalus	pictiformis	Scattered along roadside
.247	9 Apr 72	54 - n of Carrizozo S. of P. valley	Astragalus	Chimistras?) natalianus?	
.248	6 May 72	54 - n of Carrizozo S. of P. valley	Sophora	nataliana?	
.249	"	about 11.5 mi. n of Carrizozo	Lupinus	coccineus	
.250	"	"	Penstemon	pseudospectabilis?	
.251	"	"	Astragalus		
.252	"	"	Abronia		
.252 A	14 May 72	Canyon 3 mi E of Kington	Anisacanthus	resinosus or tessellatus	
.253	17 Jun 72	San Juan m. Post 2.4	Tetralostemon	caudatum	
.254	"	"	Engelmannia	pinnatifida	
"	"	"	Apocynthes?		
"	"	"	Melampodium	leucanthum	
"	"	"	Astragalus	lunifolius	
"	"	"	Cort. Meja		
"	"	"	Phaseolus	angustissimus	
"	"	"	Verbesina	rubricoides	
✓	18 Jun 72	Black Mtn 5500-5500'	Fendlerella	utahensis (in bloom)	
/	"	" 5500'	Choisya lumsa	(not in bloom)	
/	"	" 5500'	Petrophytum	crepitosum (not in bloom)	
.255	"	" 5400-5500'	Perityle	staurophylla	Mostly thru blooming

44		New Sec 5 R5E, T21S.		45	
.256	18 Jun 72	Black Mtn 5400-5500'	Mortonia	scabrella (in bloom)	
"	"	5500'	Forselsia	spinosa (late bloom)	
.257	"	5400'	Cortilleja	(scarlet & pale pink forms)	
.258	"	5500'	Polygala	rimulicola	new to NMex **
.258 A	"	5400'	Mentzelia	scabra (in bloom)	
.259	"	5400'	Tecoma	stans (in bloom)	
.260	"	"	Galium		
"	"	"	Trixis		
"	"	"	Rhus	choriophylla	
"	"	"	Nicotiana	trigandphylla	
/	"	"	Maurandya		
.261	"	5300'	Zexmenia	brevifolia	to N Mex. - occ. - **
"	"	"	Eriogonum		
.262	24 Jun 72	Scillet Kodi Canyon	Perityle	staurophylla	Many flowers - hundreds of plants - 50-100
"	"	"	Thelypodium	wrightii	Just beginning to bloom
"	"	"	Cirsium	occidentale	
.263	"	"	Coudalia		
.264	"	"	Oenothera		
"	"	"	Forselsia		
/	"	"	Mentzelia		
/	"	"	Hibiscus	denudatus	

46

5 24 Jun 72 Scillet
Skeletal Knob Canyon Galium Rothrockii = Wrightii
16 " " " Stephaemisia ?

7 24 June 72 Rhodes Canyon
11 mi w/ of Road 7 Perityle staurphylla
8 " " " Hedeoma

One plant of about 100
has red flowers, 2 w/1, 1 w/2,
1 w/3, all others none.
In canyon bottom.

23

2 21 Jul 72 See above - mouth
of Fleg Camp Canyon Polygala usaradenia
13 29 Jul 72 North Slope of
Hijos Mtns Malva's Salsola (Cuscutoides?)

On limestone hill - out beds
of San Andres Mtns.

14 " " " Tribesantia pectorum
5 30 Jul 72 w/ Mt Cabin
Campground - Black Range Sisymbrium arizonicum

NE 1/4, Sec 9, R 5E, T 15S.

16 13 Aug 72 San Andres (J)
Perityle staurphylla
17 14 Aug 72 S. of Santa Rosa Asclepias incurvata

" " " Eustoma
" " " Limonium
15 Aug 72 84 just S
of Romeville Liatris
" " " Ipomoea or Convolvulus
" " " Dalea juarezi
" " " Tournefortia
" " " Melampodium

48

18 16 Aug 72 in box
winning - Pecos
Spring - 1 mi. Halimolobos hyperborea var.

- Late -

19 2 Aug 72 above winning (S)
San Andres - S slope Perityle staurphylla Lat 32° 27' 45" N
of Black Mtn long 106° 27' 12" W Past blooming - achenes gone.
On N. side of limestone E.

- Past -

" " " Matronia scabra

" " " Fendlerella utahensis

20 Sep 72 Fork - Cove Creek Perityle cochiseensis

21 " " " Scrophularia parviflora

22 " " " Mimulus rubellus

" " " Aquilegia

23 26 Aug 72 Silver Spring Canyon Halimolobos speciosa var. brevifolia

✓ 8 Aug 72 Falls of San Andres Polygala usaradenia abba

Two plants

24 11 Sep 72 at base of Black Mtn Brachystemum Wrightii

East facing cliff or
overhang - dolomite?
SW 1/4, Sec 9, R 5E, T 15S.
5700 - 6000'

25 " " " Perityle sp. cochiseensis

26 14 Oct 72 Sharp Mtn, San
Andres Perityle staurphylla

27 " " " Salvia amygdali

28 " " " Perezia wrightii

NW 1/4, Sec 5, R 5E, T 15S

29 14 Oct 72 Johnson Park Canyon Perityle staurphylla mesoleium?

Upward facing dolomite block with
glauconitic pebbles, with 1000's

30 15 Oct 72 North slope
- San Andres Ribes leptanthum

31 " " " Cosmos parviflorus

32 " " " Mochlosanthus bigelovii

33 " " " Sedum

49



54

Cajon Bonito, NE Sonora, 30 Apr

Plants seen in bloom

- Mimulus guttatus
- Senecio salignus
- Rhus radialis
- Tillandsia recurvata
- Prosopis juliflora
- Anisacanthus thurberi
- Epipactis gigantea
- Achillea chrysantha
- Rhus glabra

1001 Mimulus cardinalis ca \$500 in deep narrow box

1002 Astragalus humistratus var sonora?

1003 Crochinese

1004 Eriogonum by stream
Conopholis mexicana 1 May

2 May, Cajon Bonito

- Astragalus allochrous
- Lupinus coninus
- Samolus floribundus

Trip w/ Vince Roth, SWRS; 55
Dr. Ches (Chuck) McMoran, Sierra Vista
Gail Monson, Spt. AZ-Son Desert Museum

at Road San Antonio in foothills of San Luis Mts.

56

Cajon Bonito, cont.

- Pansterium paryi
- Astragalus sp.
- Nicotiana
- Stavia?
- Tetraserian hispidum
- Leptus verbenae-like
- Scutellaria

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 *Grewia* 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 antirrhinoides* - common in soil pockets and below cliffs - usually shaded.
- 1010
- 1011 } all in moist edge of creek
- 1012 }
- 1013 *Erigeron* - Sandy creek bottom - spreading by underground rhizomes
- 1014 *Vicia leucophaea* - Sandy creek bottom under cottonwood.
- 1019 *Samolus floribundus* - Wet edge of creek
- 1015 *Astragalus* - Sandy rocky creek bottom.
- 1016 *Scutellaria* - Shady & gravelly side areas under oaks.
- 1017 *Pentstemon parryi* - Sandy creek bottom - occasional

60 Cajon Bonito

61

- 1017 *Stevia* { Side canyon near waterfall
- 1018 *Nicotiana* { beside cave.
- 1019 *Mimulus* Below waterfall
- 1020 *Elytaria imbricata* Crevices in rhyolite cliff.
- 1021 *Pegannum harmala* 11 May 74 ITC roadside 1/2 mi E of Canyon pass - Hidalgo Co.
- 1022 *Elytaria imbricata* crevices in rhyolite San Felipe Canyon 1 mi below Johnson's Ranch 11 May 74
- 1023 *Pedicularis pseudo-purpurea* - sandy base of cliffs
- 1024 *Hybanthus verticillatus* - lean in canyon bottom
- 1025 *Comandra pallida* - at base of oak.
- 1026 *Astragalus* - sandy lean bottom
- 1027 *Briocellia venosa*.
- 1028 -

128 *Samolus cuneatus* Dog Canyon 4 July 74
 Saw *Portula* everywhere on Black Mtn. of Dog Canyon
Petrophytum cespitosum on both Black Mtn. & Dog Canyon
Polygala on Black Mtn. apparently not *riunulicola* says Tom Wendt.
 July 74 - Big Hatchet Mtns, Seeb, N15W, T 31S. - Extremely dry - getting better.
 4829 - *Portula leonani*, cliffs on n. slopes of Big Hatchet Peak
Petrophytum cespitosum in great masses
 Tom Wendt collected *Polygala* (varied) at 5500' and at 7000'
Quercus maculata everywhere

62

9141 - *Spiranthes* (~~sp.~~) (^{magnicomponum}) - 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

7 Sep 74 Next up canyon S of Day Canyon - *Isobella coccinea*, *Hetero*, *Polytrichum*, *Strophophylla*, *Sambucus cuneata* all in bloom - Plants of *Epipactis* in fruit - Peculiar



63

64

May 75

55241 *Psathyrotes scaposa* - side of railroad cut on NE side of Cerro Maleros (Mt. Christo Rey) - S end of Dona Ana County - Elev ^{1200 m} 6500 ft. - limestone gravels.

5 MAY 75 - Shalam hills

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

55252 *Polygala macrodonia* - SE limestone hillside

55253 *Eriogonum* - NE facing hillside in grasses

55254 *Helianthus annuus* " " " " " "

6 May 75 - San Andres Mts near Day Canyon R2E T13S

55261 *Tatianum brevifolium* - See 4 on rocky hillside (limestone) 6000'

55262 *Rosa stolonata* - 2" w. w.

55263 *Phlox nana* - all w. w.

55264 *Astragalus pictiformis* - See 4 - flat pastureland @ 6000'

55265 *Eriogonum atratum*

55266 *Eriogonum trichopus*

65



66

- 26 May 75 (cont)
- ✓ 55267 *Evolvulus* ~~alsinoides~~ ^{alsinoides var. angustifolia}
 - ✓ 55268 *Lycium pallidum*
 - ✓ 55269 *Salvia henryi*
 - ✓ 552610 *Allium*
 - ✓ 552611 ~~...~~ *Pseudocymopterus montana*
 - ✓ 552612 *Castilleja integrifolia*
 - ✓ 552613 *Encasodium occidentale*
 - ✓ 552614 *Scutellaria*
 - ✓ 552615 *Hedeoma*
 - ✓ 552616 *Hymenoxys*
 - ✓ 552617 *Thymus* ~~...~~ ^{glauca}
 - ✓ 552618 *Penstemon* ^{but slender long flower spikes} probably *versicolor*

open flat meadows - Sect 6700'

- Open canyon bottoms ^{+ ridges} - Sec 4, Sec 7 6600'-7200'

- Canyon bottoms - Sec 4, Sec 9 6800'-7200'

- not yet in bloom - Sec 4, Sec 9, Sec 10

hillsides Sec 4, Sec 9

Ridge under Pinyon-Juniper Sec 10 7400'

Canyon bottom in wash Sec 4 6600'

Ridge among limestone Sec 9 7300'

Woods, hillsides Sec 4, Sec 9, Sec 10

Woods Sec 4 6600'

(strata), not stems

or *leptanthera* Sec 9 ^{Eastern} Clift face @ 7300'

67

16 May 75 68

- Mesa S mi S of Bloom field beside Hwy 49
- Gilia*
 - Gilia Phlox*
 - Asclepias tridentata*
 - Castilleja lineifolia?*
 - Streptanthus longirostris?*
 - Amelanchier alabamica?*
 - Astragalus onchocarpus* (*amphioxys?*)

69

23 May 75

- Glen Canyon Dam
- Lupinus*
 - Opuntia*
 - Astragalus amphioxys?*

22 Jun 75

- Peganum harmala* - 1.8 mi. W. of Cruces Airport entrance on shoulder of old highway - these are first plants - have seen in D.A. County except at western border
- Also in bloom ^{these plants} *Linum aristatum*, *Gilia longifolia*, *Baileya pagonathana*, *Baileya multiradiata*
- Nema hispida*, *Viguiera*, *Senecio*





78

5 Jun 77 (continued)

- ✓ *Perityle stansophylla stansophylla* in full bloom, quite a bit in seed
- ✓ *Castilleja* 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 Douglas fir, other trees mostly Gambel oak and *Asclepias grandidentata*. Soil was damp although there was little moisture lower down. Barz rock showed *Pinguicula*, *Perityle cormopifolia*, *Silene laciniata*, *Scirpus*, *Selaginella*, etc. Steep boulder slopes had *Pericoma cuneata*, *Urtica*, *Scrophularia leavis* (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*, *Maianthemum*, *Arenaria*, Canyon is in SE 1/4, Sec 31 and SW 1/4, Sec 32, R 4E, T 22S

*Asclepias
riophylla*

80

4 Sep 77

Hike to Winn Falls from Herb Martyr Campground

Just above campground on open southeast facing hillside with oak -

Milla biflora -

Brachydigma -

On way up - *Salvia lemnaei*,

Stachys coccinea, ~~*Stachys*~~

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

At Falls - *Pinus* spp., *Eriogonum*,

Adiantum pedatum, *Mimulus*

cardinalis, *Pericoma cuneata*,

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 Crila. A steady 2 hrs to the

Little Creek Box seep area. *Penstemon pseudospectabilis* in bloom all along.

In seep 50-100 *Cyp. calceolus* var. pubescens (dwarf form) in bloom.

Also in bloom *Viola nephrophylla* var. *arizonica*, *Senecio quercus*, *pusparellus*?

Rubus parviflorus, *Aquilegia chrysantha*.

Saw an *Aq. 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 *Penstemon barbatus* and one *Eriogonum*. 3 hrs to seep house



82

I went around west side of hill and came down above box so had to climb back out. Cyp. calceolus almost gone. Plectamblyx sparsiflora (some large plants) now with half spikes in bloom. Zigadenus virescens with flower stalks up but not developed. Viola nephrophylla, Aquilegia chrysantha, Rubus saxiflorus still blooming. Aconitum 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

10 Jun 78
Erythrina flabelliformis in Texas Canyon
 Walked up above Mife H Ranch in Ramsey Canyon, Shoshone Mtns
Philadelphus microphyllus var stramineus?
Bouvardia glaberrima
 Noted Arbutus arizonica past bloom
Perityle coronopifolia not in bloom
Hesperis!! almost in bloom
 just below cliffs that have golden eagle nest.
 11 Jun 78 up Ramsey Canyon onto Forest Service land.
Lilium Perryi in Box canyon
Habenaria lanosa along stream just beginning
Corethroglia Wislizeniana on Forest land long past in fruit

84

13 Jun - Went up Carr Canyon (next south of Ramsey)
Erythrina flabelliformis along road. Jatropha macrostiza also under oaks. Went up to granite cliff face - only Perityle coronopifolia.
Aquilegia chrysantha past bloom
Pensacola 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

15 Jul 78 - ...
Lythrum californicum
Epilobium sp.
Ranunculus - 2 sp.
Agrostis rupestris
Mentha spicata
Pomella vulgaris
Pellaea limifera
Loiseleuria pulchella?
Perityle coronopifolia
 ...



2 Aug 78 Range nearby
Scorpiocarpus *var. occidentalis*
 a ~~small~~ fruit, not yet ripe. Back again
 in August. Also saw the following
Panicum scribneri var. *scribneri*
Zinnia grandiflora
Pterocarpus wrightii
Trifolium
Stephanomeria
Distansseggia

Forest *Pentstemon lanceolatus* with
 in groups of small leaves, flowers
 apparently receptive, epiphytic
Panicum scribneri = *P. lanceolatus*
 = *P. pauciflorum* Greene
 See Crossroads, Cedar, 26. 1966.

2-20 Jul 78
 went to SW corner to check
 on *Hexalepis* in Arizone Mts w/
 Andy. Gotte with Mr. Lewis
 & didn't take time to get in. Went
 to Green River and west on Green
 property to Sec 8, R 21W, T 25S.
 Walked toward Goodhue Spring across
 into what would be Sec 2, R 22W, T 25S.
 In sec 2 collected *Pithecolobium* in
 tank. Also collected 4 ferns in Sec 7
 including what appears to be *Chailanthus*
wrightii. Also in Sec 7, *Pentstemon*
lanceolatus. Very little in bloom.
 Crossed Termino Trail & camped
 on Cottonwood Creek @ Miller Spring.
 Walked up right fork (south) past
 Silvertip Mine into N. Mts. Every thing
 dry but just starting a little.
 Then went to Rowland Hills on

Goodhue Canyon Road (AT, Sec 1,
 R 31E, T 24S). Found
Amaranthus, *Plygala twedyi*
P. maculata, *Abrus caryocarpus*
Mammillaria sp. in bloom.
 New *heyeri*-like *Mammillaria* not
 in bloom - Andy found 4 more.
Jatropha macrocarpa also in bloom.
 sub soil moist.

3 Aug 78 Plants seen above HTH
 @ South end of San Andres at Bear
 Peak. *Juniperus deppeana* & *monosperma*
Berberis _____, *Pinus edulis*, *Quercus*
Coryphantha Escobaria?, *Mammillaria* sp.
Echinocactus innotatus & *Wislizenia*
Echinocereus triglochidiatus, *Scleria*
Crotonia (Cholla) & *Picea* ^{prichardii}
Helianthemum fendleri ^{prichardii}
Eriogonum (two species, at least)

Yucca, *Arenaria*?, *Chryso*,
Favos, *Trifolium*, *Crotalaria*, *Supercaria*,
Sida, *Salvia*, *Candelia*.

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

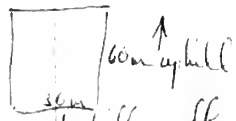
14 Aug Rhodes Canyon
 Mts due S of Halden Bend
 38793.2 Miles
 Rhodes Canyon Range (388701)
 Notes in bloom at Rhodes Canyon:
 Road *Zinnia grandiflora*, *Psilostrophe* ^{sp. 1}
pusilla ^{sp. 2} *aggregata*, *Cirsium* sp.
 in area NE of hill face a tree in
 on R 2E, T 2S - *Petrophile* ^{sp. 1}
sp. 2 *taurophylla*, white *distansseggia* ^{sp. 1}
 on west mountainside down to road.



was *Scutellaria tessellata* (Cresins?) also, particularly under pines was *Thymoxys* sp., - noted an intermediate like *Thymoxys rufus*, a few *Ipomopsis aggregata*, *Suaeda* sp., *Polygala* sp., *Galium* sp., *Byroad Penstemon janssii*, *Houstonia* sp. In shaded narrow draw at 6700 ft on NE slope, a suffrutescent mint or figwort I never seen before. Also on slope 2 sp *Chrysothamnus*, *Solidago* sp., *Briocellia* sp., *Aster* sp.

This is the same *Hedeoma* habitat - north facing gypsiferous limestone slope w/ pinyon, juniper, scrub oak, *Ceanothus griseus*, (a 6' tree in Sec. 34, T12S, R2E, Returned to location 18 Aug 78 - found one single hill - not on 5 similar hills

close by - may be up higher - since some above by in seed apparently blooms at least as early as July & possibly in May - probably related to rain fall. Obtained a *Castilleja* on same hillside 4 sp - returned to location, very few blooms - saw a hummingbird at the site but not at the flowers. Rain survey of site. Plants cut off sharply on all four sides. Site probably at this



went to next hill south - no plants. In meadow by Rhodes Canyon Rd to fort. *Salvia subincisa* sp., *Euphorbia dentata*, *Sauvitaia aberti* - Among rocks under cave shelter on mouth

of Cottonwood Canyon - *Polygala scoparioides*? Along Rouge Road 7 south of crystal beds - *Solidago* Also in meadow near Rio House Spring. Berlandiera & *Yucca* sp. in Rhodes Canyon bottom a *Petalostemon* *Stephanomeria* *paniculata*

15 Oct 78 - returned to *Hedeoma* site to gather seed. Found 12 seed in ca 100 calyxes, 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 *Santivallia florivalis*, a *Hedeoma* probably *nana*, *Marrubium* (*perennans*)

24 Nov 78 Long Canyon Found many plants of *Parityle ceras* 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 intermittent above Box and west falls - also in canyon west of Box where there was *Mimulus* in bloom plus *Iresine* Found *Parityle coronopifolia* widespread & still a few blooms, *Agrostis can* in Box w/ a few blooms *Perezia wrightii* still blooming, several *Eriogonum*, many *Mammillaria guayana* in fruit. *Erythronium* still blooming, *Lepidium nudum* var. *du* cliff in Box *Nicotiana* growing and blooming. *Phacelia* (*peper*?) blooming *Briocellia venosa* (var. *westonii*?) *Thymoxys* sp. *Chrysothamnus*

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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, *Silene* ~~sp.~~ sp.,
Irada cuneata var. *cuneata*,
Thamnosma texana, *Phacelia coccinea*,
Tikus microphylla, *Erysimum*
Lesquerella?, *Cryptantha* sp.,
Astragalus nuttallianus, *Discuremia*
sp.

- noted *Escobolzia mexicana*
in bloom on canyon floor (500-600
m. elevation).

9 Mar 79 - Sec 17, T20S, R3E
1 Km E of Taylor Well at
WILR Boundary. *Selenia dissecta*
in large numbers

95

28 Mar 79 - Mesa north of Goat
Mtn - *Oenothera albicollis*, *Oenothera*
chamaejasmioides, *Draba uniflora*,
Gilia flavocincta or *var. coccinea*,
Discuremia sp.,
Nama hispida, *Galium proliferum*,
Astragalus nuttallianus, *Sium* ~~sp.~~ *ligularii*

East foothills of Goat Mtn, all
of above plus *Lepidium*
Escobolzia mexicana, *Erosimum*
texanum (just blooming), *Echinocereus*
trijugidatus (just beginning),
Dioscorea ~~sp.~~ *peruviana*, *Delosperma*
microcarpum, *Delosperma* ~~sp.~~ *peruviana*,
Delosperma ~~sp.~~ *peruviana*,
(just starting), *Eucrypta*
micrantha, *Phacelia coccinea*,
Lupinus caninus, *Lupinus* sp., *Lupinus* sp.,
Astragalus nuttallianus, *Hedysarum* ~~sp.~~ *roseum*

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13 Mar 79 - Went out by Taylor Well to
Ash Canyon. *Selenia dissecta* scattered
from WILR boundary to Middle Well.
At Middle Well, *Townsendia* and
Gilia (*Griastrium?*). On hillside,
east facing, above Ash Canyon,
Astragalus castorei var. *castorei*,
Sesuvium ~~sp.~~ *portulacastrum* ~~sp.~~ *portulacastrum*
just beginning. On west
facing hillside above Springs, *Arenaria*
pubescens still with a few flowers.
Leontodon ~~sp.~~ *microcarpum* just beginning.
Agrostis chrysantha just starting.
Eriogonum ~~sp.~~ *chrysantha*, *Eriogonum*
puberulum, *Draba* ~~sp.~~ *through*,
Lepidium sp. beginning. There
are three horizon crosses at
Ash Canyon Spring, the largest
about 1.5 m high. *Phacelia*
just starting. There is no
water this year. The moisture

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from is starting to come back from
the bed freeze two years ago.

Streptanthus all over.

Horrorum ~~sp.~~ *simulans* and *Leontodon*
villosa also. *Phacelia* ~~sp.~~ *peruviana*
erectus; not yet in bloom. *Eriogonum*
just starting out.

6/3/79 - Went into Organ - Achuback
to Soledad to North Canyon &
return - In bloom *Asclepias speciosa*,
Verbena wrightii (small), *Eriogonum* sp.,
Delosperma ~~sp.~~ *peruviana*, *Delphinium* *viridescens*,
Comphrena sp., *Haplopappus spiculatus*
var., *Festuca fendleri* (last),
Pentstemon tinctorius (early), *Escobolzia*
mexicana (late), *Polygala tweedyi*,
Oenothera organensis (North Canyon),
Malacothrix sp., *Sphaeromeria* sp.,
Androsace sp., *Schizanthus* sp., *Erythraea*
sp., *Hebe* sp., *Mimulus* ~~sp.~~ *guttatus*



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29 Aug 79

Jornada Range Road
Cesalpinia Jamesii, *Dalea*
surcea?, *Kalstroemia parviflora*,
Palafoxia, *Grillardia*, *Dithyrea*,
Ptilostrophe, *Zinnia grandiflora*,
Lepidium virginicum var *medium*,
Croton, *Baileya*,

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30 Aug 79

Engle Gate - *Thlas arizon*
Erigeron multiflorus, *Cassia*
brummondii, *Gilia rigida* var *acuta*
Loasium nutretum, *Gentilija integrifolia*,
Polygala alba, *Ptilostrophe*, *Viguiera*
panopsis aggregata, *Salvia missouriensis*,
Asclepias subverticillata,
Sarcocolla concolor, *Sphaeralcea*

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2 Sep 79

hillsides above (north) of ^{Ranch} ~~the~~ *Bismarck*
Stachys coccinea, *Trichostema arizonicum*
Hedeoma oblongifolium, *Penstemon*
lincolnioides, *Elytaria integrifolia*,
Trachycarpus pinetorum, *Polygala*
tweedyi, *Stephanomeria pauciflora*,
Cyperus rotundus, *Chenopodium* sp.
Croton corymbulosus (all are)

105

31

10 Sep 79

by LC 0615 80455
for Zedot Rd 500 10455 0610
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.



106

30 June 81
 Rhoads Canyon Tank - 81258.55
 Granite Gap - 81264.0
 R.C. Pange Camp - 81275.3
 Collected buds of Hedeoma
helianthifolium at type locality.
 Collected buds of the un described
 var. hirsuta of Perityle stemphylla
 at Granite Gap; the best 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 threat of
 rain - got soaked. Collected
Polemonium rificinum and
Achillea borealis? or temulosa?

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26 Jul 81
 L.C. 0500 81880
 @ Hwy 52 81875.8
 Winston 81981.2
 Chloride Creek 913.2
 Collected Melilotus, Plantago major,
 composite, Geranium erosiphilum.
 At 913.3 collected Phacelia rufepetala,
Morada austroriparian and a small
 mustard.
 At 913.4 and 913.55 collected
Mammillaria heideri, mustard, composite
 inside canyon at 913.7 collected
Senecio, Eupatorium, Thalictrum
tenderi.
 At ~~916~~ 916 in wet area collected
Epilobium aduncum and Rorippa
sphaerocarpa?
 Winston 81923.7
 Las Cruces 1600 - 82033.4.

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

— Linnaeus

A Comparison of the Mosses Known and Reported for New Mexico with Flora North America, and a Current Catalog of the Mosses of New Mexico

Kelly W. Allred

Range Science Herbarium, Department of Animal & Range Sciences (emeritus)
New Mexico State University, Las Cruces, NM 88003 kallred@nmsu.edu

The recent completion of the two volumes of Flora North America that deal with the mosses (BFNA27-2007; BFNA28-2014) allows for a fuller accounting of the moss flora of New Mexico. I enumerate, first, mosses new to New Mexico as recorded in BFNA28 in 2014. (New records from BFNA27-2007, have already been incorporated into our list.) Second, I list, with references, moss species that were reported for New Mexico prior to 2007, but were not included in BFNA27-2007. Third, I list, with references, moss species that were reported for New Mexico prior to 2014, but were not included in BFNA28-2014. Fourth, I itemize mosses that were not recorded for New Mexico in BFNA27-2007, but have been found and reported for the state since the publication of that volume. Lastly, an up-to-date catalog of the mosses of New Mexico is provided, with validating references.

I. New Records for New Mexico from BFNA28-2014

1. *Bartramia stricta* Bridel
2. *Brachymenium macrocarpum* Cardot : This validates that our material is not *Brachymenium klotzschii* as reported in Conard & Redfearn (1979)
3. *Bryum argenteum* Hedwig var. *muticum* Bridel
4. *Entodon beyrichii* Schwägrichen
5. *Gemmabryum demaretianum* (Arts) J.R. Spence
6. *Gemmabryum exile* (Dozy & Molkenboer) J.R. Spence & H.P. Ramsay
7. *Gemmabryum kunzei* (Hornschuch) J.R. Spence
8. *Hygrohypnum bestii* (Renauld & Bryhn) Holzinger
9. *Hygrohypnum duriusculum* (DeNotaris) D.W. Jamieson
10. *Pohlia bolanderi* (Sullivant) Brotherus

II. Reported for New Mexico Prior to 2007, but not recorded in BFNA27-2007

1. *Andreaea heinemannii* Hampe & Müller Hal. [Mahler 1985]
2. *Bryoerythrophyllum recurvirostrum* (Hedwig) Chen [Bartram 1931; Mahler 1978]
3. *Dichodontium pellucidum* (Hedwig) Schimper [Allred et al. 1998]

4. *Dicranella varia* (Hedwig) Schimper [Ireland et al. 1981]
5. *Dicranoweissia cirrata* (Hedwig) Lindberg ex Milde [Mahler 1978]
6. *Didymodon rigidulus* Hedwig var. *icmadophilus* (Müller Hal.) Zander [Allred et al. 1998]
7. *Ditrichum flexicaule* (Schwägrichen) Hampe [Allred et al. 1998]
8. *Encalypta rhamnoides* Schwägrichen [Conard & Redfearn 1979]
9. *Funaria apiculatopilosa* Cardot [Worthington 1996]
10. *Funaria hygrometrica* Hedwig var. *calvescens* (Schwägrichen) Montagne [Darigo & Allred 2001]
11. *Funaria muhlenbergii* Turner [Stark & Castetter 1982]
12. *Grimmia elatior* Bruch ex Balsamo-Crivelli & De Notaris [Darigo & Allred 2001]
13. *Grimmia orbicularis* Bruch ex Wilson [Mahler 1978]
14. *Schistidium ambiguum* Sullivant [Sullivant 1849]
15. *Lorentziella imbricata* (Mitten) Brotherus [Allred et al. 1998]
16. *Microbryum starkeanum* (Hedwig) R.H. Zander var. *starkeanum* [Ireland et al. 1981]
17. *Physcomitrium pyriforme* (Hedwig) Hampe [Ireland et al. 1984]
18. *Polytrichastrum sexangulare* (Bridel) G.L. Smith [Mahler 1978]
19. *Saelania glaucescens* (Hedwig) Brotherus [Bartram 1931; Mahler 1978]
20. *Sphagnum fimbriatum* [Coop 2002]
21. *Tetraphis pellucida* Hedwig [Allred et al. 1998]
22. *Tortella humilis* (Hedwig) Jennings [Ireland et al. 1981]
23. *Tortula brevipes* (Lesquereux) Brotherus [Allred et al. 1998]
24. *Tortula cernua* (Hübner) Lindberg [Crum & Anderson 1981]
25. *Tortula protobryoides* R.H. Zander [Allred et al. 1998]
26. *Trichostomum brachydontium* Bruch [Ireland et al. 1984]
27. *Trichostomum tenuirostre* (Hooker & Taylor) Lindberg [Ireland et al. 1984]

(Continued on page 2)

Botanice est Scientia Naturalis quae Vegetabilium cognitioem tradit.

— Linnaeus



(Continued from page 1)

III. Reported for New Mexico Prior to 2014,
but not recorded in BFNA28-2014

1. *Anomodon julaceum* [Allred 2012]
2. *Atrichum tenellum* (Röhling) Bruch & Schimper [Romig & Allred 2013]
3. *Bartrania ithyphylla* [Bartram 1931; Mahler 1978]
4. *Brachythecium acuminatum* [Bartram 1931; Mahler 1978]
5. *Brachythecium albicans* [Stark & Castetter 1982]
6. *Campylophyllum hispidulum* [Bartram 1931; Mahler 1978]
7. *Campylophyllum hispidulum* [Bartram 1931; Mahler 1978]
8. *Dicranum tauricum* Sappajin [Romig & Allred 2013]
9. *Drepanocladus longifolius* [Allred 2012]
10. *Entodon seductrix* [Blisard & Kleinman 2012]
11. *Fabronia pusilla* [Mahler 1978]
12. *Gemmabryum dichotomum* [Allred et al. 1998]
13. *Homomallium incurvatum* [Allred 2012]
14. *Ilygrohypnum ochraceum* [Mahler 1985]
15. *Hylocomium splendens* [Bartam 1931; Mahler 1978]
16. *Hypnum pratense* [Allred et al. 1998]
17. *Imbriobryum minutum* [Stark & Castetter 1982]
18. *Isopterygium tenerum* [Allred et al. 1998]
19. *Lescurea saxicola* [Mahler 1985]
20. *Leskea angustata* [Worthington 2012]
21. *Orthotrichum cupulatum* [Worthington 2012]
22. *Orthotrichum laevigatum* [Allred et al. 1998]
23. *Orthotrichum pallens* Bridel [Romig & Allred 2013]
24. *Oxyrrhynchium hians* [Allred 2012; Conard & Redfearn 1979; Grout 1928-40]
25. *Philonotis capillaris* [Mahler 1978]
26. *Philonotis fontana* (Hedwig) Bridel var. *americana* (Dismier) Flowers ex Crum [Flowers 1973]
27. *Philonotis fontana* (Hedwig) Bridel var. *pumila* (Turner) Bridel [Bartram 1931; Mahler 1978]
28. *Plagionnium ciliare* [Allred 2012]
29. *Plagionnium ellipticum* [Allred et al. 1998]
30. *Plagionnium medium* [Allred 2012]
31. *Plagionnium rostratum* [Bartram 1931; Mahler 1978]
32. *Platydictya subtilis* [Allred 2012]
33. *Platygyrium repens* [Allred 2012]
34. *Pohlia obtusifolia* [Worthington 2012]
35. *Pseudocampylium radicale* [Mahler 1985]
36. *Pseudoleskea incurvata* [Mahler 1985]
37. *Pseudoleskeella rupestris* [Allred 2011]
38. *Ptychostomum pallescens* [Allred et al. 1998]
39. *Ptychostomum pseudotriquetrum* [Bartram 1931; Mahler 1978]
40. *Ptychostomum turbinatum* [Bartram 1931; Mahler 1978]
41. *Pylaisia selwynii* [Allred 2011]
42. *Rhizomnium magnifolium* [Crum & Anderson 1981]
43. *Rhizomnium pseudopunctatum* [Mahler 1985]
44. *Sciuro-hypnum plumosum* [Mahler 1985]
45. *Sciuro-hypnum populeum* [Bartram 1931; Mahler 1978]
46. *Scleropodium obtusifolium* [Allred 2012]
47. *Sphagnum girgensohnii* Russow [Romig & Allred 2013]
48. *Stereophyllum radiculosum* [Grout 1945; Mahler 1978]
49. *Tortella fragilis* (Hooker & Wilson) Limpricht [Romig &

Allred 2013]

50. *Tortella tortuosa* (Hedwig) Limpricht var. *fragilifolia* (Juratzska) Limpricht [Romig & Allred 2013]
51. *Warnstorfia exannulata* (Hedwig) Loeske [Romig & Allred 2013]
52. *Warnstorfia fluitans* [Price 2011]

IV. Not Recorded in BFNA27-2007, but Reported for New
Mexico Since the Publication of that Volume

1. *Crumia latifolia* (Kindberg) W.B. Schofield [Kleinman 2012]
2. *Distichium inclinatum* (Hedwig) Bruch & Schimper [Allred 2012]
3. *Ditrichum gracile* (Mitten) Kuntze [Allred 2011]
4. *Grimmia americana* Bartram [Allred 2011]
5. *Grimmia trichophylla* Grev. [Worthington 2011]
6. *Microbryum starckeanum* (Hedwig) R.H. Zander var. *fosbergii* (Bartr.) Zander [Allred 2011]
7. *Ptychomitrium serratum* Bruch & Schimper [Worthington 2011]
8. *Rhabdoweisia crispata* (Dickson ex Withering) Lindberg [Allred 2011]
9. *Schistidium dupretii* (Thériot) W.A. Weber [Allred 2011]
10. *Schistidium viride* H.H. Blom & Darigo [Allred 2011]
11. *Trematodon longicollis* Michaux [Allred 2011]
12. *Tuerckheimia svihlae* (Bartram) Zander [Worthington 2012]
13. *Weissia muhlenbergiana* (Swartz) W.D. Reese & B.A.E. Lemmon [Allred 2011]

Lists II and III comprise 79 taxa that had been reported for New Mexico in the literature, nearly all with validating vouchers, but were not noted in Flora North America as occurring in the state. In a few cases, the identifications in the reports may have been in error; in most cases, the BFNA authors were apparently unaware of the published reports, and did not examine specimens from New Mexico herbaria nor inquire with New Mexico bryologists. Some of these discrepancies, however, can serve as alerts for species needing verification.

The last official accounting of the mosses of New Mexico was 3½ years ago (Allred 2011). Below is presented a current catalog of the mosses of the state, complete with synonyms, index, and literature citations. The number of families has increased from 38 to 41, genera from 130 to 139, species from 302 to 343, and total taxa from 312 to 353.

The catalog of mosses, as well as other pertinent information about the bryophytes of New Mexico, may be found at floraneomexicana.org.

I am pleased to acknowledge the frequent and agreeable assistance of Karen Blisard, Russ Kleinman, and Kirsten Romig in finding and studying the mosses of New Mexico.

(Continued on page 3)



(Continued from page 2)

MOSSES OF NEW MEXICO – FAMILY LIST

Total families = 41
Total genera = 139
Total species = 343
Total taxa = 353

Family AMBLYSTEGIACEAE

Amblystegium

- fluviatile* (Hedwig) Bruch, Schimper, & Gumbel = *Hygroamblystegium varium* (Hedwig) Mönkemeyer
humile (Beauvois) Bruch, Schimper, & Gumbel = *Hygroamblystegium varium* (Hedwig) Mönkemeyer var. *humile* (Beauvois) Vanderpoorten & Hedenäs
juratzkanum = *Amblystegium serpens* (Hedwig) Bruch & Schimper
noterophilum (Sullivant & Lesquereux) Holzinger = *Hygroamblystegium varium* (Hedwig) Mönkemeyer
riparium (Hedwig) Schimper = *Leptodictyum riparium* (Hedwig) Warnstorff
serpens (Hedwig) Bruch & Schimper var. *juratzkanum* (Schimper) Rau & Hervey = *Amblystegium serpens* (Hedwig) Bruch & Schimper
serpens (Hedwig) Bruch & Schimper [Bartram 1931; Mahler 1978]
Amblystegium juratzkanum Schimper
Amblystegium serpens (Hedwig) Bruch & Schimper var. *juratzkanum* (Schimper) Rau & Hervey
tenax (Hedwig) C. Jensen = *Hygroamblystegium varium* (Hedwig) Mönkemeyer
varium (Hedwig) Lindberg = *Hygroamblystegium varium* (Hedwig) Mönkemeyer
Calliergon stramineum (Bridel) Kindberg = *Straminergon stramineum* (Bridel) Hedenäs

Campyliadelphus

- chrysophyllus* (Bridel) Kanda [Bartram 1931; Mahler 1978]
Campylium chrysophyllum (Bridel) J. Lange

Campylium

- chrysophyllum* (Bridel) J. Lange = *Campyliadelphus chrysophyllus* (Bridel) Kanda
hispidulum (Bridel) Mitten = *Campylophyllum hispidulum* (Brid.) Hedenäs
radicale (P. Beauvois) Grout = *Pseudocampylium radicale* (P. Beauvois) Vanderpoorten & Hedenäs
stellatum (Hedwig) C. Jensen [Conard & Redfeam 1979; Lawton 1971]

Campylophyllum

- hispidulum* (Bridel) Hedenäs [Bartram 1931; Mahler 1978]
Campylium hispidulum (Bridel) Mitten

Conardia

- compacta* (Müller Hal.) Robinson [Mahler 1978]
Rhynchostegiella compacta (Müller Hal.) Loeske

Cratoneuron

- commutatum* of American reports = *Palustriella falcata* (Bridel) Hedenäs
decepiens of American reports = *Palustriella falcata* (Bridel) Hedenäs
filicinum (Hedwig) Spruce [Bartram 1931; Mahler 1978]

Drepanocladus

- aduncus* (Hedwig) Warnstorff [Bartram 1931; Mahler 1978; Wynne 1944]
Drepanocladus aduncus (Hedwig) Warnstorff var. *kneiffii* (Schimper) Mönkemeyer
Drepanocladus aduncus (Hedwig) Warnstorff var. *polycarpus* (Blandow ex Voit) Roth
longifolius (Mitten) Brotherus ex Paris [Allred 2012]
aduncus (Hedwig) Warnstorff var. *kneiffii* (Schimper) Mönkemeyer = *Drepanocladus aduncus* (Hedwig) Warnstorff
aduncus (Hedwig) Warnstorff var. *polycarpus* (Blandow ex Voit) Roth = *Drepanocladus aduncus* (Hedwig) Warnstorff
sendtneri (Schimper) Warnstorff: this species not yet known from North America [BFNA28]; reported by various authors; our material is referred to *Drepanocladus aduncus* (Hedwig)

Warnstorff;

- Drepanocladus sendtneri* (Schimper) Warnstorff var. *wilsonii* fluitans (Hedwig) Warnstorff = *Warnstorfia fluitans* (Hedwig) Loeske
sendtneri var. *wilsonii* = *Drepanocladus sendtneri* Warnstorff
uncinatus (Hedwig) Warnstorff = *Santonia uncinata* (Hedwig) Loeske

Hygroamblystegium

- fluviatile* (Hedwig) Loeske = *Hygroamblystegium varium* (Hedwig) Mönkemeyer
orthocladon (P. Beauvois) Macoun & Kindberg = *Hygroamblystegium varium* (Hedwig) Mönkemeyer
noterophilum (Sullivant & Lesquereux in Sullivant) Warnstorff = *Hygroamblystegium varium* (Hedwig) Mönkemeyer Holzinger
tenax (Hedwig) Jennings = *Hygroamblystegium varium* (Hedwig) Mönkemeyer
varium (Hedwig) Mönkemeyer var. *humile* (Beauvois) Vanderpoorten & Hedenäs [Vanderpoorten 2014]
Amblystegium humile (Beauvois) Bruch, Schimper, & Gumbel
Leptodictyum humile (P. Beauvois) Ochyra
varium (Hedwig) Mönkemeyer var. *varium* [Bartram 1931; Mahler 1978]
Amblystegium fluviatile (Hedwig) Bruch, Schimper, & Gumbel
Amblystegium varium (Hedwig) Lindberg
Hygroamblystegium noterophilum (Sullivant & Lesquereux) Warnstorff
Hygroamblystegium orthocladon (P. Beauvois) Macoun & Kindberg
Hygroamblystegium tenax (Hedwig) Jennings
Leptodictyum trichopodium (Schulz) Warnstorff
luridum (Hedwig) Jennings var. *julaceum* (Schimper) Podpera = *Hygrohypnum luridum* (Hedwig) Jennings

Hygrohypnum

- bestii* (Renauld & Bryhn) Holzinger [Jamieson 2014]
Hypnum molle (Hedwig) Loeske subsp. *bestii* Renauld & Bryhn
duriusculum (DeNotaris) D.W. Jamieson [Jamieson 2014]
Linnobium duriusculum DeNotaris
luridum (Hedwig) Jennings [Bartram 1931; Mahler 1978]
Hygrohypnum luridum (Hedwig) Jennings var. *julaceum* (Schimper) Podpera
molle (Hedwig) Loeske [Bartram 1931; Mahler 1978] Note: This species is not included for NM in BFNA28, and has been confused with *H. bestii* and *H. duriusculum*; warrants verification.
ochraceum (Turner ex Wilson) Loeske [Mahler 1985]

Leptodictyum

- humile* (P. Beauvois) Ochyra = *Hygroamblystegium varium* (Hedwig) Mönkemeyer var. *humile* (Beauvois) Vanderpoorten & Hedenäs
riparium (Hedwig) Warnstorff [Prior 1966]
Amblystegium riparium (Hedwig) Schimper
trichopodium (Schulz) Warnstorff = *Hygroamblystegium varium* (Hedwig) Mönkemeyer
Linnobium duriusculum DeNotaris = *Hygrohypnum duriusculum* (DeNotaris) D.W. Jamieson

Palustriella

- falcata* (Bridel) Hedenäs [Allred et al. 1998]
Cratoneuron commutatum of North American reports
Cratoneuron decepiens of North American reports
Palustriella commutata of North American reports
Palustriella decepiens of North American reports
commutata of North American reports = *Palustriella falcata* (Bridel) Hedenäs
decepiens of North American reports = *Palustriella falcata* (Bridel) Hedenäs

Platydictya

- jungermannioides* (Bridel) Crum [Mahler 1978]
subtilis (Hedwig) Crum [Allred 2012]

Pseudocampylium

- radicale* (P. Beauvois) Vanderpoorten & Hedenäs [Mahler 1985]
Campylium radicale (P. Beauvois) Grout

Sanonia

(Continued on page 4)



(Continued from page 3)

uncinata (Hedwig) Loeske [Bartram 1931; Mahler 1978; Wynne 1944]
Drepanocladus uncinatus (Hedwig) Warnstorf
Straminergon : go to Calliergonaceae

Tomentypnum

nitens (Hedwig) Loeske [Crum & Anderson 1981]
Warnstorfia : go to Calliergonaceae

Family ANDREAEACEAE

Andreaea

heinemannii Hampe & Müller Hal. [Mahler 1985]
Andreaea rupestris sensu Mahler (1985)

Family ANOMODONTACEAE

Anomodon

attenuatus (Hedwig) Hübener [Bartram 1931; Mahler 1978]
minor (Hedwig) Fűrnrrohr [Ireland et al. 1984]
rostratus (Hedwig) Schimper [Bartram 1931; Mahler 1978]

Family AULACOMNIACEAE

Aulacomnium

palustre (Hedwig) Schwägrichen [Bartram 1931; Mahler 1978]
Aulacomnium palustre (Hedwig) Schwägrichen var. *imbricatum*
Bruch & Schimper
palustre (Hedwig) Schwägrichen var. *imbricatum* Bruch & Schimper =
Aulacomnium palustre (Hedwig) Schwägrichen

Family BARTRAMIACEAE

Anacolia

laevisphaera (Taylor) Flowers [Mahler 1978]
Anacolia subsessilis (Taylor) Brotherus
menziesii (Turner) Paris [Weber et al. 2003]
subsessilis (Taylor) Brotherus = *Anacolia laevisphaera* (Taylor) Flowers

Bartramia

brevifolia Bridel [Allred et al. 1998.]
ithyphylla Bridel [Bartram 1931; Mahler 1978]
potosica Montagne [Allred et al. 1998]
stricta Bridel [Griffin III, D.G. 2014]

Philonotis

capillaris Lindberg [Mahler 1978] Note : According to BFNA28-2014, this species is associated with an oceanic climate; warrants verification.
fontana (Hedwig) Bridel var. *americana* (Dismier) Flowers ex Crum [Flowers 1973]
fontana (Hedwig) Bridel var. *caespitosa* (Juratzka) Schimper [Stark & Castetter 1982]
fontana (Hedwig) Bridel var. *fontana* [Bartram 1931; Mahler 1978]
fontana (Hedwig) Bridel var. *pumila* (Turner) Bridel [Bartram 1931; Mahler 1978]
Philonotis tomentella Molendo
marchica (Hedwig) Bridel [Bartram 1931; Mahler 1978]
tomentella Molendo = *Philonotis fontana* (Hedwig) Bridel var. *pumila* (Turner) Bridel

Family BRACHYTHECIACEAE

Brachythecium

collinum (Schleicher ex Müller Hal.) Ignatov & Huttunen [Bartram 1931; Mahler 1978]
Brachythecium collinum (Schleicher ex Müller Hal.) Schimper
Hypnum collinum Schleicher ex Müller Hal.
fendleri (Sullivant) Ochyra & Żarnowiec [Bartram 1931; Mahler 1978]
Brachythecium fendleri (Sullivant) Jaeger
Brachythecium utahense James
Leskea fendleri Sullivant
velutinum (Hedwig) Ignatov & Huttunen [Bartram 1931; Mahler 1978]
Brachythecium velutinum (Hedwig) Ignatov & Huttunen var.
salicinum (Schimper) Ochyra & Żarnowiec
Brachythecium petrophilum R.S. Williams
Brachythecium suberythrorrhizon Renaud & Cardot

Brachythecium velutinum (Hedwig) Bruch & Schimper
Brachythecium velutinum (Hedwig) Bruch & Schimper var. *venustum* (De Notaris) Arcangeli
Hypnum velutinum Hedwig
velutinum (Hedwig) Ignatov & Huttunen var. *salicinum* (Schimper) Ochyra & Żarnowiec = *Brachythecium velutinum* (Hedwig) Ignatov & Huttunen

Brachythecium

acuminatum (Hedwig) Austin [Bartram 1931; Mahler 1978]
Leskea acuminata Hedwig
albicans (Hedwig) Schimper [Stark & Castetter 1982]
Hypnum albicans Hedwig
collinum (Schleicher ex Müller Hal.) Schimper = *Brachythecium collinum* (Schleicher ex Müller Hal.) Ignatov & Huttunen
digastrum Muller Hal. ex Kindberg = *Brachythecium laetum* (Bridel) Schimper
erythrorrhizon Schimper var. *erythrorrhizon* [Bartram 1931; Mahler 1978]
fendleri (Sullivant) Jaeger = *Brachythecium fendleri* (Sullivant) Ochyra & Żarnowiec
laetum (Bridel) Schimper [Worthington 1996]
Brachythecium digastrum Muller Hal. ex Kindberg
Brachythecium oxycladon (Bridel) Jaeger
Hypnum laetum Bridel
latifolium Kindberg = *Sciuro-hypnum latifolium* (Kindberg) Ignatov & Huttunen
nelsonii Grout = *Sciuro-hypnum latifolium* (Kindberg) Ignatov & Huttunen
oedipodium (Mitten) Jaeger = *Sciuro-hypnum oedipodium* (Mitten) Ignatov & Huttunen
oxycladon (Bridel) Jaeger = *Brachythecium laetum* (Bridel) Schimper in B.S.G.
petrophilum R.S. Williams = *Brachythecium velutinum* (Hedwig) Ignatov & Huttunen
plumosum (Hedwig) Bruch & Schimper = *Sciuro-hypnum plumosum* (Hedwig) Ignatov & Huttunen
populeum (Hedwig) Bruch & Schimper = *Sciuro-hypnum populeum* (Hedwig) Ignatov & Huttunen
rivulare Bruch & Schimper [Bartram 1931; Mahler 1978]
rotaeum DeNotaris [Allred 2012]
ruderales (Bridel) W.R. Buck [Grout 1926; Mahler 1978]
Brachythecium stereopoma (Spruce ex Mitten) Jaeger
Brachythecium wootonii Grout
Hypnum ruderales Bridel
salebrosium (Weber & Mohr) Bruch & Schimper [Bartram 1931; Lawton 1971; Mahler 1978; 1985]
Hypnum salebrosium Weber & Mohr
stereopoma (Spruce ex Mitten) Jaeger = *Brachythecium ruderales* (Bridel) W.R. Buck
suberythrorrhizon Renaud & Cardot = *Brachythecium velutinum* (Hedwig) Ignatov & Huttunen
utahense James = *Brachythecium fendleri* (Sullivant) Jaeger
velutinum (Hedwig) Bruch & Schimper = *Brachythecium velutinum* (Hedwig) Ignatov & Huttunen
wootonii Grout = *Brachythecium ruderales* (Bridel) W.R. Buck

Eurhynchiastrum

pulchellum (Hedwig) Ignatov & Huttunen var. *pulchellum* [Bartram 1931; Mahler 1978]
Eurhynchium diversifolium Schimper
Eurhynchium pulchellum (Hedwig) Jennings
Hypnum pulchellum Hedwig
Rhynchostegium pulchellum (Hedwig) Robinson
Eurhynchium diversifolium Schimper = *Eurhynchiastrum pulchellum* (Hedwig) Ignatov & Huttunen
hians (Hedwig) Sande Lacouture = *Oxyrrhynchium hians* (Hedwig) Loeske
pulchellum (Hedwig) Jennings = *Eurhynchiastrum pulchellum* (Hedwig) Ignatov & Huttunen
praelongum (Hedwig) Schimper = *Kindbergia praelonga* (Hedwig) Ochyra
Kindbergia praelonga (Hedwig) Ochyra : Reported tentatively by Worthington (1996), but not by BFNA28; awaits verification

(Continued on page 5)



(Continued from page 4)

Eurhynchium praelongum (Hedwig) Schimper

Oxyrrhynchium

hians (Hedwig) Loeske [Allred 2012; Conard & Redfearn 1979; Grout 1928-40]

Eurhynchium hians (Hedwig) Sande Lacouture

Platyhypnidium aquaticum (A. Jaeger) M. Fleischer = *Rhynchostegium aquaticum* A. Jaeger

Rhynchostegiella compacta (Müller Hal.) Loeske = *Conardia compacta* (Müller Hal.) Robinson

Rhynchostegium

aquaticum A. Jaeger [Allred et al. 1998]

Platyhypnidium aquaticum (A. Jaeger) M. Fleischer

Rhynchostegium riparioides of American authors

pulchellum (Hedwig) Robinson = *Eurhynchiastrium pulchellum* (Hedwig) Ignatov & Huttunen

riparioides of American authors = *Rhynchostegium aquaticum* A. Jaeger

serrulatum (Hedwig) Jaeger & Sauerbeck [Stark & Castetter 1982]

Hypnum serrulatum Hedwig

Steerecleus serrulatus (Hedwig) Robinson

Sciuro-hypnum

latifolium (Kindberg) Ignatov & Huttunen [Allred et al. 1998]

Brachythecium latifolium Kindberg

Brachythecium nelsonii Grout

oedipodium (Mitten) Ignatov & Huttunen [Allred et al. 1998]

Brachythecium oedipodium (Mitten) Jaeger

plumosum (Hedwig) Ignatov & Huttunen [Mahler 1985]

Brachythecium plumosum (Hedwig) Bruch & Schimper

populeum (Hedwig) Ignatov & Huttunen [Bartram 1931; Mahler 1978]

Brachythecium populeum (Hedwig) Bruch & Schimper

Scleropodium

cespitans (Müller Hal.) Koch : Specimens from NM identified as this have been corrected to *Brachythecium*.

obtusifolium (Mitten) Kindberg [Allred 2012]

Steerecleus serrulatus (Hedwig) Robinson = *Rhynchostegium serrulatum* (Hedwig) Jaeger & Sauerbeck

Family BRUCHIACEAE

Trematodon

longicollis Michaux [Allred 2011]

Family BRYACEAE

Anomobryum

julaceum (Bridel) Schimper [Allred 2012]

Brachymenium

vinosulum Cardot [Spence 2007] = *Plagiobryoides vinosula* (Cardot) J.R. Spence

klotzschii (Schwägrichen) Paris : Reported by Conard & Redfearn (1979) but this species is found in Central and South America.

macrocarpum Cardot [Spence 2014]

systylium (Müller Hal.) Jaeger = *Leptostomopsis systylia* (Müller Hal.) J.R. Spence

Bryum

affine Lindberg & Arnell = *Bryum creberrimum* Taylor

algovicum Sendtner ex Müller Hal. = *Ptychostomum pendulum* Hornschuch

andicola Hooker = *Rosulabryum andicola* (Hooker) Ochyra

argenteum Hedwig var. *argenteum* [Bartram 1931; Mahler 1978]

argenteum Hedwig var. *muticum* Bridel [Spence 2014]

bicolor Dickson = *Bryum dichotomum* Hedwig

billardieri Schwägrichen = *Rosulabryum andicola* (Hooker) Ochyra

bolanderi Sullivant = *Pohlia bolanderi* (Sullivant) Brotherus

caespiticium Hedwig = *Gemmabryum caespiticium* (Hedwig) J.R. Spence

capillare Hedwig = *Rosulabryum capillare* (Hedwig) J.R. Spence

creberrimum Taylor = *Ptychostomum creberrimum* (Taylor) J.R. Spence & H.P. Ramsay

cyclophyllum (Schwägrichen) Bruch & Schimper = *Ptychostomum cyclophyllum* (Schwägrichen) J.R. Spence

demaretianum Arts = *Gemmabryum demaretianum* (Arts) J.R. Spence

dichotomum Hedwig = *Gemmabryum dichotomum* (Hedwig) Spence &

Ramsay

drummondii Müller Hal. = *Pohlia drummondii* (Müller Hal.) Andrews
exile Dozy & Molkenboer = *Gemmabryum exile* (Dozy & Molkenboer) J.R. Spence & H.P. Ramsay

gemmaiparum De Notaris = *Imbricobryum gemmaiparum* (De Notaris) J.R. Spence

incrassatolimbata Cardot = *Plagiobryoides incrassatolimbata* (Cardot) J.R. Spence

kunzei Hornschuch = *Gemmabryum kunzei* (Hornschuch) J.R. Spence

laevifilum Syed = *Rosulabryum laevifilum* (Syed) Ochyra

lanatum (P. Beauvois) Bridel [Allred 2011]

lisa De Notaris var. *cuspidatum* (Bruch ex Schimper) Margadant = *Ptychostomum creberrimum* (Taylor) J.R. Spence & H.P. Ramsay

lonchocaulon Müller Hal. = *Ptychostomum lonchocaulon* (Müller Hal.) J.R. Spence

miniaturum Lesquereux = *Imbricobryum miniaturum* (Lesquereux) J.R. Spence
muehlenbeckii Bruch & Schimper = *Imbricobryum muehlenbeckii* (Bruch & Schimper) Pedersen

pallens (Bridel) Swartz = *Ptychostomum pallens* (Bridel) J.R. Spence

pallescens Schleicher ex Schwägrichen = *Ptychostomum pallescens*

(Schleicher ex Schwägrichen) J.R. Spence

pendulum (Hornschuch) Schimper = *Ptychostomum pendulum* Hornschuch

pseudotriquetrum (Hedwig) Gaertner et al. = *Ptychostomum*

pseudotriquetrum (Hedwig) J.R. Spence

pyriferum Crundwell & Whitehouse = *Bryum valparaisense* Thériot

systylium Müller Hal. = *Leptostomopsis systylia* (Müller Hal.) J.R. Spence

tortifolium Funck in Bridel = *Bryum cyclophyllum* (Schwägrichen) Bruch & Schimper

turbinatum (Hedwig) Turner = *Ptychostomum turbinatum* (Hedwig) J.R. Spence

uliginosum (Bridel) Bruch & Schimper = *Ptychostomum cernuum* Hornschuch

valparaisense Thériot = *Gemmabryum valparaisense* (Thériot) J.R. Spence

Gemmabryum

caespiticium (Hedwig) J.R. Spence [Allred et al. 1998]

Bryum caespiticium Hedwig

demaretianum (Arts) J.R. Spence [Spence 2014]

Bryum demaretianum Arts

dichotomum (Hedwig) Spence & Ramsay [Allred et al. 1998]

Bryum bicolor Dickson

Bryum dichotomum Hedwig

exile (Dozy & Molkenboer) J.R. Spence & H.P. Ramsay [Spence 2014]

Bryum exile Dozy & Molkenboer

kunzei (Hornschuch) J.R. Spence [Spence 2014]

Bryum kunzei Hornschuch

valparaisense (Thériot) J.R. Spence [Ireland et al. 1981, 1984]

Bryum pyriferum Crundwell & Whitehouse

Bryum valparaisense Thériot

Imbricobryum

gemmaiparum (De Notaris) J.R. Spence [Ireland et al. 1981]

Bryum gemmaiparum De Notaris

miniaturum (Lesquereux) J.R. Spence [Stark & Castetter 1982]

Bryum miniaturum Lesquereux

muehlenbeckii (Bruch & Schimper) Pedersen [Ireland et al. 1981]

Bryum muehlenbeckii Bruch & Schimper

Leptobryum : go to Meesiaceae

Leptostomopsis

systylia (Müller Hal.) J.R. Spence [Mahler 1978]

Brachymenium systylium (Müller Hal.) Jaeger

Bryum systylium Müller Hal.

Plagiobryoides

incrassatolimbata (Cardot) J.R. Spence [Darigo & Allred 2001]

Bryum incrassatolimbata Cardot

vinosula (Cardot) J.R. Spence [Spence 2007]

Brachymenium vinosula Cardo

Pohlia : go to Mielichhoferiaceae

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Ptychostomum

- cernuum* Hornschuch [Mahler 1978]
Bryum uliginosum (Bridel) Bruch & Schimper
creberrimum (Taylor) J.R. Spence & H.P. Ramsay [Bartram 1931; Mahler 1978]
Bryum affine Lindberg & Arnell
Bryum creberrimum Taylor
Bryum lisae De Notaris var. *cuspidatum* (Bruch ex Schimper) Margadant
cyclophyllum (Schwägrichen) J.R. Spence [Stark & Castetter 1982]
Bryum cyclophyllum (Schwägrichen) Bruch & Schimper
Bryum tortifolium Funck in Bridel
lonchocaulon (Müller Hal.) J.R. Spence [Mahler 1978]
Bryum lonchocaulon Müller Hal.
pallens (Bridel) J.R. Spence [Allred et al. 1998]
Bryum pallens (Bridel) Swartz
palescens (Schleicher ex Schwägrichen) J.R. Spence [Allred et al. 1998]
Bryum palescens Schleicher ex Schwägrichen
pendulum Hornschuch [Bartram 1931; Mahler 1978]
Bryum pendulum (Hornschuch) Schimper
Bryum algovicum Sendtner ex Müller Hal.
pseudotriquetrum (Hedwig) J.R. Spence [Bartram 1931; Mahler 1978]
Bryum pseudotriquetrum (Hedwig) Gaertner et al.
turbinatum (Hedwig) J.R. Spence [Bartram 1931; Mahler 1978]
Bryum turbinatum (Hedwig) Turner

Rhodobryum

- ontariense* (Kindberg) Kindberg [Mahler 1985]
roseum (Hedwig) Limpricht : Reported by Stark & Castetter (1986), but identification corrected to *Rhodobryum ontariense* (Kindberg) Kindberg

Rosulabryum

- andicola* (Hooker) Ochyra [Mohamed 1979]
Bryum billarderi Schwägrichen
capillare (Hedwig) J.R. Spence [Bartram 1931; Mahler 1978]
Bryum capillare Hedwig
laevifilum (Syed) Ochyra [Allred 2011]
Bryum laevifilum Syed

Webera nutans Hedwig = *Pohlia nutans* (Hedwig) LindbergFamily BRYOXIPHIACEAE**Bryoxiphium**

- norvegicum* (Bridel) Mitten [Allred et al. 1998]

Family CALLIERGONACEAE**Straminergon**

- stramineum* (Bridel) Hedenäs [Flowers 1973]
Calliergon stramineum (Bridel) Kindberg

Warnstorfia

- exannulata* (Hedwig) Loeske [Romig & Allred 2013]
fluitans (Hedwig) Loeske [Price 2011]
Drepanocladus fluitans (Hedwig) Warnstorff
Hypnum fluitans Hedwig

Family CLIMACIACEAE**Climacium**

- americanum* Bridel [Mahler 1985]
dendroides (Hedwig) Weber & Mohr [Bartram 1931; Mahler 1978]

Family DICRANACEAE**Brothera**

- leana* (Sullivant) Muller Hal. [Kleinman et al. 2011]

Dichodontium

- pellucidum* (Hedwig) Schimper [Allred et al. 1998]

Dicranella

- varia* (Hedwig) Schimper [Ireland et al. 1981]

Dicranoweisia

- cirrata* (Hedwig) Lindberg ex Milde [Mahler 1978]
crispula (Hedwig) Lindberg ex Milde [Bartram 1931; Mahler 1978]

Dicranum

- acutifolium* (Lindberg & Arnell) Jensen [Ireland 2007]
brevifolium (Lindberg) Lindberg [Ireland 2007]
fuscescens Turner var. *fuscescens* [Allred et al. 1998]
montanum Hedwig [Bartram 1931; Mahler 1978]
muehlenbeckii Bruch & Schimper [Bartram 1931; Mahler 1978]
rhabdocarpum Sullivant [Bartram 1931; Mahler 1978]
scoparium Hedwig [Allred et al. 1998]
tauricum Sapjegin [Romig & Allred 2013]

Oncophorus

- virens* (Hedwig) Bridel [Bartram 1931; Mahler 1978]
wahlenbergii Bridel [Allred et al. 1998]

Paraleucobryum

- enerve* (Thedenius) Loeske [Bartram 1931; Mahler 1978]
longifolium (Hedwig) Loeske [Bartram 1931; Mahler 1978]

Rhabdoweisia

- crispata* (Dickson ex Withering) Lindberg [Allred 2011]

Symblepharis

- helicophylla* Montagne = *Symblepharis vaginata* (Hooker) Wijk & Margadant
vaginata (Hooker) Wijk & Margadant [Ireland et al. 1984; Mahler 1978]
Symblepharis helicophylla Montagne

Family DITRICHACEAE**Ceratodon**

- purpureus* (Hedwig) Bridel subsp. *purpureus* [Bartram 1931; Mahler 1978]
purpureus (Hedwig) Bridel subsp. *stenocarpus* (Bruch & Schimper) Dixon [Darigo & Allred 2001]
stenocarpus Bruch & Schimper = *Ceratodon purpureus* (Hedwig) Bridel subsp. *stenocarpus* (Bruch & Schimper) Dixon

Distichium

- capillaceum* (Hedwig) Bruch & Schimper [Bartram 1931; Mahler 1978]
inclinatum (Hedwig) Bruch & Schimper [Allred 2012]

Ditrichum

- flexicaule* (Schwägrichen) Hampe [Allred et al. 1998]
gracile (Mitten) Kuntze [Allred 2011]

Saelania

- glaucescens* (Hedwig) Brotherus [Bartram 1931; Mahler 1978]
Didymodon trifarius (Hedwig) Rohling

Family ENCALYPTACEAE**Encalypta**

- ciliata* Hedwig [Bartram 1931; Mahler 1978]
rhaptocarpa Schwägrichen [Conard & Redfearn 1979]
vulgaris Hedwig [Chamberlain 1925; Bartram 1931]

Family ENTODONTACEAE**Entodon**

- beyrichii* Schwägrichen [Buck 2014]
cladorrhizans (Hedwig) Müller Hal. : Reported by Mahler (1978), but identification corrected to *Entodon schleicheri* (Schimper) Demeter [Darigo & Allred 2001]
concinus (De Notaris) Paris [Bartram 1931; Mahler 1978]
Entodon orthocarpus (Bridel) Lindberg
orthocarpus (Bridel) Lindberg = *Entodon concinns* (De Notaris) Paris
schleicheri (Schimper) Demeter [Buck & Crum 1978]
seductrix (Hedwig) Muller Hal. [Blisard & Kleinman 2012]
sullivantii (Müller Hal.) Lindberg [Crum & Anderson 1981]

Family FABRONIACEAE

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Fabronia

- ciliaris* (Bridel) Bridel [Bartram 1931; Mahler 1978]
Fabronia ciliaris (Bridel) Bridel var. *wrightii* (Sullivant) Buck
Fabronia gymnostoma Sullivant & Lesquereux ex Sullivant
Fabronia octoblepharis (Schleicher) Schwägrichen
Fabronia wrightii Sullivant
ciliaris (Bridel) Bridel var. *wrightii* (Sullivant) Buck = *Fabronia ciliaris* (Bridel) Bridel
gymnostoma Sullivant & Lesquereux ex Sullivant = *Fabronia ciliaris* (Bridel) Bridel
octoblepharis (Schleicher) Schwägrichen = *Fabronia ciliaris* (Bridel) Bridel
pusilla Raddi [Mahler 1978]
wrightii Sullivant = *Fabronia ciliaris* (Bridel) Bridel

Family FISSIDENTACEAE**Fissidens**

- bryoides* Hedwig [Grout 1928-1940; Mahler 1978; Stark & Castetter 1982]
Fissidens bryoides Hedwig var. *pusillus* (Wilson) Pursell
Fissidens bryoides Hedwig var. *viridulus* (Swartz) Brotherus
Fissidens exiguus Sullivant forma *emarginatus* Grout
Fissidens viridulus (Swartz) Wahlenberg
bryoides Hedwig var. *pusillus* (Wilson) Pursell = *Fissidens bryoides* Hedwig
bryoides Hedwig var. *viridulus* (Swartz) Brotherus = *Fissidens bryoides* Hedwig
crispus Montagne [Darigo & Allred 2001; Mahler 1978]
exiguus Sullivant forma *emarginatus* Grout = *Fissidens bryoides* Hedwig var. *bryoides*
fontanus (B.-Pyl.) Steudel [Weber 1973]
limbatus Sullivant : Reported by Mahler (1978), but our material is referred to *Fissidens crispus* Montagne [Darigo & Allred 2001]
litlei (Williams) Grout [Allred 1998; Williams 1936]
Moenkemeyera litlei Williams
obtusifolius Wilson var. *acuminatus* Grout [Eckel 1986]
obtusifolius Wilson var. *apiculatus* Grout : Reported by Stark & Castetter (1982), but identification corrected to *Fissidens sublimbatus* Grout by Ron Pursell. [Darigo & Allred 2001]
sublimbatus Grout [Pursell 2007]
viridulus (Swartz) Wahlenberg = *Fissidens bryoides* Hedwig
Moenkemeyera litlei Williams = *Fissidens litlei* (Williams) Grout

Family FONTINALACEAE**Fontinalis**

- antipyretica* Hedwig [Mahler 1978; Welch 1963]
lypnoides Hartman [Allred et al. 1998]
neomexicana Sullivant & Lesquereux [Bartram 1931; Mahler 1978; Sullivant & Lesquereux 1856]

Family FUNARIACEAE**Eurostodon**

- attenuatus* (Dickson) Bryhn [Miller & Miller 2007]
rubiginosus (Williams) Grout [Ireland et al. 1984]

Funaria

- apiculatopilosa* Cardot [Worthington 1996]
Funaria orcuttii Bartram
calvescens Schwägrichen = *Funaria hygrometrica* Hedwig var. *calvescens* (Schwägrichen) Montagne
flavicans Michaux [Miller & Miller 2007]
hygrometrica Hedwig var. *calvescens* (Schwägrichen) Montagne [Darigo & Allred 2001]
Funaria calvescens Schwägrichen
hygrometrica Hedwig var. *hygrometrica* [Bartram 1931; Mahler 1978]
Funaria hygrometrica Hedwig var. *utahensis* Grout
hygrometrica Hedwig var. *utahensis* Grout = *Funaria hygrometrica*
muhlenbergii Turner [Stark & Castetter 1982]
orcuttii Bartram = *Funaria apiculatopilosa* Cardot

Physconitrium*pyriforme* (Hedwig) Hampe [Ireland et al. 1984]**Pyramidula***tetragona* (Bridel) Bridel [Goffinet 2007]Family GIGASPERMACEAE**Lorentziella***imbricata* (Mitten) Brotherus [Allred et al. 1998]Family GRIMMIACEAE**Coscinodon**

- calyptratus* (Hooker) C. Jensen ex Kindberg [Bartram 1931; Hastings 1999; Mahler 1978]
Grimmia calyptrata Hooker
cribrosus (Hedwig) Spruce [Hastings 1999; Ireland et al. 1984]
Grimmia cribrosa Hedwig
wrightii Sullivant in Gray = *Jaffueliobryum wrightii* (Sullivant in Gray) Thériot

Grimmia

- affinis* Hoppe & Hornschuch ex Hornschuch = *Grimmia longirostris* Hooker
alpestris (Weber & Mohr) Schleicher [Hastings & Greven 2007]
Grimmia ungeri of New Mexico reports
alpicola of American authors = *Schistidium agassizii* Sullivant & Lesquereux
alpicola Swartz ex Hedwig var. *rivularis* = *Schistidium rivulare* (Bridel) Podpera var. *rivulare*
ambigua (Sullivant) Sullivant = *Schistidium ambiguum* Sullivant
americana Bartram [Allred 2011]
anodon Bruch & Schimper [Bartram 1931; Mahler 1978]
apocarpa Hedwig var. *ambigua* (Sullivant) G. Jones in Grout = *Schistidium ambiguum* Sullivant
apocarpa Hedwig var. *apocarpa* = *Schistidium apocarpum* (Hedwig) Bruch & Schimper
apocarpa Hedwig var. *conferta* (Funck) Sprengel = *Schistidium confertum* (Funck) Bruch & Schimper
apocarpa Hedwig var. *stricta* = *Schistidium apocarpum* (Hedwig) Bruch & Schimper
arizonae Renault & Cardot [Hastings & Greven 2007; Weber et al. 2003]
bernoullii Mueller Hal. : Reported by Weber et al. (2003), but duplicate specimens were considered to be *Grimmia ovalis* (Hedwig) Lindberg (Hastings & Greven 2007); awaits verification.
calyptrata Hooker = *Coscinodon calyptratus* (Hooker) C. Jensen ex Kindberg
catalinensis Bartram = *Grimmia longirostris* Hooker
converta Funck var. *obtusifolia* Schimper = *Schistidium apocarpum* (Hedwig) Bruch & Schimper
cribrosa Hedwig = *Coscinodon cribrosus* (Hedwig) Spruce
crinitoleucophaea Cardot [Hastings & Greven 2007]
Grimmia poecilostoma Cardot & Sebille
elatior Bruch ex Balsamo-Crivelli & De Notaris [Darigo & Allred 2001]
donniana Smith : Reported by Mahler (1978), but material re-identified as *Grimmia longirostris* Hooker [Darigo & Allred 2001]
laevigata (Bridel) Bridel [Mahler 1978]
longirostris Hooker [Darigo & Allred 2001]
Grimmia affinis Hornschuch
Grimmia catalinensis Bartram
montana Bruch & Schimper [Darigo & Allred 2001]
orbicularis Bruch ex Wilson [Mahler 1978]
ovalis (Hedwig) Lindberg [Bartram 1931; Mahler 1978]
pilifera Beauvois [Darigo & Allred 2001]
plagiopodia Hedwig [Mahler 1978]
poecilostoma Cardot & Sebille = *Grimmia crinitoleucophaea* Cardot
pulvinata (Hedwig) Smith [Mahler 1978]
raui Austin = *Jaffueliobryum raii* Thériot
sessitana De Notaris [Hastings & Greven 2007]

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(Continued from page 7)

- Grimmia tenerrima* Renault & Cardot
tenerrima Renault & Cardot = *Grimmia sessitana* De Notaris
texicana Greven [Greven 2010]
trichophylla Grev. [Worthington 2011]
ungeri of New Mexico reports = *Grimmia alpestris* (Weber & Mohr)
 Schleicher
wrightii (Sullivant in Gray) Austin = *Jaffueliobryum wrightii* (Sullivant in Gray) Thériot

Jaffueliobryum

- raui* (Austin) Thériot [Ireland et al. 1981]
Grimmia raui Austin
wrightii (Sullivant in Gray) Thériot [Bartram 1931; Mahler 1978]
Coscinodon wrightii Sullivant in Gray
Grimmia wrightii (Sullivant in Gray) Austin

Schistidium

- alpicola* of Amer. authors = *Schistidium rivulare* (Bridel) Podpera
ambiguum Sullivant [Sullivant 1849] Note : The type is a Fendler specimen from Santa Fe; essentially ignored by bryologists since its publication; possibly conspecific with *Schistidium confertum* (Funck) Bruch & Schimper.
Grimmia ambigua (Sullivant) Sullivant
Grimmia apocarpa Hedwig var. *ambigua* (Sullivant) G. Jones in Grout
 apocarpum (Hedwig) Bruch & Schimper : reported by Bartram (1931) and Mahler (1978), but this species occurs in norther U.S. and Canada (McIntosh 2007); our material is perhaps referred to *Schistidium ambiguum* Sullivant or *Schistidium confertum* (Funck) Bruch & Schimper
Grimmia apocarpa Hedwig
Grimmia apocarpa Hedwig var. *stricta*
Grimmia converta Funck var. *obtusifolia* Schimper
atrofuscum (Schimper) Limpricht [McIntosh 2007]
 confertum (Funck) Bruch & Schimper : not reported for NM, but material previously referred to *Schistidium apocarpum* (Hedwig) Bruch & Schimper may belong to this species; awaits verification.
Grimmia apocarpa Hedwig var. *conferta* (Funck) Sprengel
dupretii (Thériot) W.A. Weber [Allred 2011]
frigidum H.H. Blom [McIntosh 2007]
rivulare (Bridel) Podpera var. *latifolium* (Zetterstedt) Crum & Anderson = *Schistidium rivulare* (Bridel) Podpera
rivulare (Bridel) Podpera [Bartram 1931; Mahler 1978]
Grimmia alpicola of Amer. authors
Grimmia alpicola Swartz ex Hedwig var. *rivularis* (Bridel) Wahlenberg
Schistidium alpicola of Amer. authors
Schistidium rivulare (Bridel) Podpera var. *latifolium* (Zetterstedt) Crum & Anderson
viride H.H. Blom & Darigo [Allred 2011]

Family HEDWIGIACEAE

Braunia

- secunda* (Hooker) Bruch, Schimper, & Gumbel [Allred et al. 1998]

Hedwigia

- ciliata* (Hedwig) P. Beauvois [Bartram 1931; Mahler 1978]

Family HYLOCOMIACEAE

Hylocomium

- splendens* (Hedwig) Schimper [Bartram 1931; Mahler 1978]

Pleurozium

- schreberi* (Bridel) Mitten [Mahler 1985]

Family HYPNACEAE

- Breidleria pratensis* (Koch ex Spruce) Loeske = *Hypnum pratense* (Rabenh.) Spruce
arcuata (Lindberg) Loeske = *Hypnum lindbergii* Mitten
Calliergonella lindbergii (Mitten) Hedenäs = *Hypnum lindbergii* Mitten
Homomallium

- adnatum* (Hedwig) Brotherus : Plants previously thought to be *Homomallium adnatum* have all been verified by Bruce Allen (MO) as *Homomallium mexicanum* Cardot
incurvatum (Schrader ex Bridel) Loeske [Allred 2012]
mexicanum Cardot var. *latifolium* Cardot [Bartram 1931; Mahler 1978]
mexicanum Cardot var. *mexicanum* [Bartram 1931; Mahler 1978]

Hypnum

- albicans* Hedwig = *Brachythecium albicans* (Hedwig) Schimper
collinum Schleicher ex Müller Hal. = *Brachytheciastrum collinum* (Schleicher ex Müller Hal.) Ignatov & Huttunen
cupressiforme Hedwig var. *subulaceum* Molendo [Bartram 1931; BFN28; Little 1937]
fluitans Hedwig = *Warnstorfia fluitans* (Hedwig) Loeske
lindbergii Mitten [Bartram 1931; Mahler 1978]
Breidleria arcuata (Lindberg) Loeske
Calliergonella lindbergii (Mitten) Hedenäs
molle (Hedwig) Loeske subsp. *bestii* Renault & Bryhn = *Hygrohypnum bestii* (Renauld & Bryhn) Holzinger
pallescens (Hedwig) P. Beauvois [Stark & Castetter 1982]
pratense (Rabenh.) Spruce [Allred et al. 1998]
Breidleria pratensis (Koch ex Spruce) Loeske
pulchellum Hedwig = *Eurhynchiastrum pulchellum* (Hedwig) Ignatov & Huttunen
revolutum (Mitten) Lindberg [Bartram 1931; Mahler 1978]
ruderales Bridel = *Brachythecium ruderales* (Bridel) W.R. Buck
salebrosum Weber & Mohr = *Brachythecium salebrosum* (Weber & Mohr) Schimper
serrulatum Hedwig = *Rhynchostegium serrulatum* (Hedwig) Jaeger & Sauerbeck
vaucheri Lesquereux [Ireland et al. 1981]
velutinum = *Brachytheciastrum velutinum* (Hedwig) Ignatov & Huttunen
wahlenbergii F. Weber & Mohr = *Pohlia wahlenbergii* (F. Weber & Mohr) Andrews

Isopterygiopsis

- pulchella* (Hedwig) Iwatsuki [Allred et al. 1998]
Isopterygium pulchellum (Hedwig) Jaeger
Plagiothecium pulchellum (Hedwig) Schimper

Isopterygium

- homomallifolium* Redfearn = *Pseudotaxiphyllum homomallifolium* (Redfearn) Ireland
pulchellum (Hedwig) Jaeger = *Isopterygiopsis pulchella* (Hedwig) Iwatsuki
tenerum Mitten [Allred et al. 1998]

Platygyrium

- fuscoluteum* Cardot [Mahler 1978; Reese 1999]
repens (Bridel) Schimper [Allred 2012]

Pseudotaxiphyllum

- homomallifolium* (Redfearn) Ireland [Ireland et al. 1984]
Isopterygium homomallifolium Redfearn

Pylaisia

- polyantha* (Hedwig) Schimper [Bartram 1931; Mahler 1978]
Pylaisiella polyantha (Hedwig) Grout
sehwnii (Kindberg) Crum, Steere, & L.E. Anderson [Allred 2011]
Pylaisiella polyantha (Hedwig) Grout = *Pylaisia polyantha* (Hedwig) Schimper

Taxiphyllum

- deplanatum* (Bruch & Schimper ex Sullivant) Fleischer [Bartram 1931; Mahler 1978]
taxirameum (Mitten) Fleischer [Mahler 1978]

Family LESKEACEAE

Bryohaplocladium

- angustifolium* (Hampe & Müller Hal.) Watson & Iwatsuki = *Haplocladium angustifolium* (Hampe & Müller Hal.) Brotherus
microphyllum (Hedwig) Watson & Iwatsuki = *Haplocladium microphyllum* (Hedwig) Brotherus

Claopodium

- pellucinerve* (Mitten) Best [Mahler 1978]

Haplocladium

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angustifolium (Hampe & Müller Hal.) Brotherus [Allred et al. 1998]
Bryohaplodadium angustifolium (Hampe & Müller Hal.) Watson & Iwatsuki

microphyllum (Hedwig) Brotherus [Bartram 1931; Mahler 1978; Stark & Castetter 1986]

Bryohaplodadium microphyllum (Hedwig) Watson & Iwatsuki

Leptopterigynandrum

antroalpinum Müller Hal. [Allred et al. 1998]

Lescuraea

arizonae (Williams) P. Wilson & Norris = *Pseudoleskeella arizonae* (Williams) Lawton

incurvata (Hedwig) Lawton = *Pseudoleskea incurvata* (Hedwig) Loeske

saxicola (Schimper) Milde [Mahler 1985]

Leskea

acuminata Hedwig = *Brachythecium acuminatum* (Hedwig) Austin

angustata Taylor [Worthington 2012]

fendleri Sullivant = *Brachytheciastrum fendleri* (Sullivant) Ochyra & Zarnowiec

Leskeella

nervosa (Bridel) Loeske [Stark & Castetter 1986]

Pseudoleskeella nervosa (Bridel) Nyholm

nervosa (Bridel) Loeske var. **sibirica** (Arnell) Brotherus = *Pseudoleskeella rupestris* (Berggren) Hedenas & Soderstrom

williamsii Best = *Pseudoleskeella tectorum* (Funck ex Bridel) Kindberg

Lindbergia

brachyptera (Mitten) Kindberg [Bartram 1931; Mahler 1978]

mexicana (Bescherelle) Cardot ex Pringle [Bartram 1949]

Pseudoleskea

incurvata (Hedwig) Loeske [Mahler 1985]

Lescuraea incurvata (Hedwig) Lawton

radicosa (Mitten) Macoun & Kindberg var. **radicosa** [Worthington 1996]

Pseudoleskeella

arizonae (Williams) Lawton [Bartram 1931; Mahler 1978]

Lescuraea arizonae (Williams) P. Wilson & Norris

nervosa (Bridel) Nyholm = *Leskeella nervosa* (Bridel) Loeske var. **nervosa**

rupestris (Berggren) Hedenas & Soderstrom [Allred 2011]

Leskeella nervosa (Bridel) Loeske var. **sibirica** (Arnell) Brotherus

Pseudoleskeella sibirica (Arnell) P. Wilson & Norris

sibirica (Arnell) P. Wilson & Norris = *Pseudoleskeella rupestris* (Berggren) Hedenas & Soderstrom

tectorum var. **flagellifera** (Best) Amann = *Pseudoleskeella tectorum* (Funck ex Bridel) Kindberg

tectorum (Funck ex Bridel) Kindberg [Bartram 1931; Mahler 1978]

Leskeella williamsii Best

Pseudoleskeella tectorum var. **flagellifera** (Best) Amann

Family MEESIACEAE**Leptobryum**

pyriforme (Hedwig) Wilson [Bartram 1931; Mahler 1978]

Family MIELICHHOFERACEAE**Pohlia**

bolanderi (Sullivant) Brotherus [Shaw, A.J. 2014]

Bryum bolanderi Sullivant

cruda (Hedwig) Lindberg [Bartram 1931; Mahler 1978]

Mnium crudum Hedwig

drummondii (Müller Hal.) Andrews [Stark & Castetter 1982]

Bryum drummondii Müller Hal.

elongata Hedwig [Allred et al. 1998]

nutans (Hedwig) Lindberg [Bartram 1931; Mahler 1978]

Webera nutans Hedwig

obtusifolia (Bridel) Koch [Worthington 2012]

tundrae A.J. Shaw [Allred 2012]

wahlenbergii (F. Weber & Mohr) Andrews [Ireland et al. 1981]

Hypnum wahlenbergii F. Weber & Mohr

Family MNIACEAE**Mnium**

affine Bland. ex Funck var. **rugicum** (Laur.) Bruch & Schimper = *Plagiommium ellipticum* (Bridel) T. Koponen

arizonicum Amann [Bartram 1931; Mahler 1978]

blyttii Bruch & Schimper [Bartram 1931; Mahler 1978]

crudum Hedwig = *Pohlia cruda* (Hedwig) Lindberg

marginatum (Dickson ex Withering) Bridel ex P. Beauvois [Bartram 1931; Mahler 1978]

thomsonii Schimper [Bartram 1931; Mahler 1978]

Plagiommium

ciliare (Müller Hal.) Koponen [Allred 2012]

cuspidatum (Hedwig) Koponen [Bartram 1931; Mahler 1978]

ellipticum (Bridel) Koponen [Allred et al. 1998]

Mnium affine Bland. ex Funck var. **rugicum** (Laur.) Bruch & Schimper

medium (Bruch & Schimper) Koponen [Allred 2012]

rostratum (Schrader) Koponen [Bartram 1931; Mahler 1978]

Pohlia : go to Mielichhoferiaceae

Rhizomnium

magnifolium (Horik.) T. Koponen [Crum & Anderson 1981, as *Mnium punctatum*]

pseudopunctatum (Bruch & Schimper) Koponen [Mahler 1985]

punctatum (Hedwig) T. Koponen [Allred et al. 1998]

Family NECKERACEAE

Metaneckera menziesii (Drummond) Steere = *Neckera menziesii* Drummond

Neckera

menziesii Drummond [Cardot 1910; Mahler 1978]

Metaneckera menziesii (Drummond) Steere

Porotrichum neomexicanum (Cardot) Wagner

pennata Hedwig [Bartram 1931; Mahler 1978]

Neckera pennata Hedwig var. **tenera** Müller Hal.

pennata Hedwig var. **tenera** Müller Hal. = *Neckera pennata* Hedwig

Porotrichum neomexicanum (Cardot) Wagner = *Neckera menziesii* Drummond

Family ORTHOTRICHACEAE**Orthotrichum**

alpestre Hornschuch ex Bruch & Schimper [Mahler 1978]

anomalum Hedwig [Bartram 1931; Mahler 1978]

cupulatum Bridel [Worthington 2012]

diaphanum Bridel [Mahler 1978]

hallii Sullivant & Lesquereux in Sullivant [Bartram 1931; Mahler 1978]

laevigatum Zetterstedt [Allred et al. 1998]

obtusifolium Bridel [Mahler 1978]

pallens Bridel [Romig & Allred 2013]

pellucidum Lindberg [Worthington 2012]

pumilum Swartz [Mahler 1978]

pycnophyllum Schimper [Vitt 1973]

rupestre Schleicher ex Schwägrichen [Bartram 1931; Mahler 1978]

tenellum Bruch ex Bridel : Reported by Mahler (1978), but this species occurs in the West Coast states and Nevada, and is not likely in NM; our material most likely referred to *Orthotrichum pumilum* Swartz.

Zygodon

viridissimus (Dickson) Bridel var. **rupestris** Lindberg ex Hartman [Bartram 1931; Mahler 1978]

Zygodon viridissimus (Dickson) Bridel var. **vulgaris** Malta

viridissimus (Dickson) Bridel var. **vulgaris** Malta = *Zygodon viridissimus* (Dickson) Bridel var. **rupestris** Lindberg ex Hartman

Family PLAGIOTHECIACEAE**Plagiothecium**

denticulatum (Hedwig) Schimper [Ireland et al. 1981]

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(Continued from page 9)

- laetum* Schimper [Mahler 1978]
pulchellum (Hedwig) Schimper = *Isopterygiopsis pulchella* (Hedwig) Iwatsuki

Family POLYTRICHACEAE

Atrichum

- rupestris* Hedwig : Reported by Mahler (1985), but not included in North America by Smith-Merrill (2007); awaits verification.
selwynii Austin [Mahler 1985; Smith-Merrill 2007]
tenellum (Röhling) Bruch & Schimper [Romig & Allred 2013]
undulatum (Hedwig) P. Beauvois : Reported by Bartram (1931) and Mahler (1978), but scarcely in North America fide Smith-Merrill (2007); specimens await correct determination.

Meiotrichum

- lyallii* (Mitten) G.L. Smith [Conard & Redfern 1979; Smith-Merrill 2007]
Polytrichum lyallii (Mitten) Kindberg
Pogonatum alpinum (Hedwig) Rhl. = *Polytrichastrum alpinum* (Hedwig) G.L. Smith

Polytrichastrum

- alpinum* (Hedwig) G.L. Smith var. *alpinum* [Bartram 1931; Mahler 1985]
Pogonatum alpinum (Hedwig) Rhl.
ohioense (Renauld & Cardot) G.L. Smith [Smith-Merrill 2007]
sexangulare (Bridel) G.L. Smith [Mahler 1978]
Polytrichum sexangulare Bridel

Polytrichum

- juniperinum* Hedwig [Bartram 1931; Mahler 1978]
lyallii (Mitten) Kindberg = *Meiotrichum lyallii* (Mitten) G.L. Smith
piliferum Hedwig [Mahler 1985; Smith-Merrill 2007]
sexangulare Bridel = *Polytrichastrum sexangulare* (Bridel) G.L. Smith

Family POTTIACEAE

Aloina

- rigida* (Hedwig) Limpricht var. *rigida* [Delgadillo-M. 2007; Mahler 1978]
Anoetangium obtusifolium (Brotherus & Paris in Cardot) Grout = *Molendoa sendtneriana* (Bruch & Schimper) Limpricht

Astomum phascoides (Drumm.) Grout = *Weissia phascopsis* Zander

Barbula

- acuta* (Bridel) Bridel = *Didymodon rigidulus* Hedwig var. *gracilis* (Schleicher ex Hooker & Greville) Zander
acuta (Bridel) Bridel var. *bescherellei* (Sauerbeck ex Jaeger) Crum = *Didymodon rigidulus* Hedwig var. *gracilis* (Schleicher ex Hooker & Greville) Zander
bescherellei Sauerbeck = *Didymodon rigidulus* Hedwig var. *gracilis* (Schleicher ex Hooker & Greville) Zander
bolleana (Müller Hal.) Brotherus [Eckel 1988; Zander 2007]
Barbula ehrenbergii (Lorentz) Fleischer
convoluta Hedwig var. *convoluta* [Zander 2007]
ehrenbergii (Lorentz) Fleischer = *Barbula bolleana* (Müller Hal.) Brotherus
gracilis Schwägrichen = *Didymodon rigidulus* Hedwig var. *gracilis* (Schleicher ex Hooker & Greville) Zander
indica (Hooker) Sprengel var. *indica* [Zander 2007]
reflexa (Bridel) Bridel = *Didymodon ferrugineus* (Schimper ex Beschereille) M.O. Hill
sinensis Müller Hal. = *Syntrichia sinensis* (Müller Hal.) Ochyra
spiralis (Schimper) ex Müller Hal. = *Pseudocrossidium replicatum* (Taylor) Zander
unguiculata Hedwig [Bartram 1931; Mahler 1978]

Bryoerythrophyllum

- recurvirostrum* (Hedwig) Chen [Bartram 1931; Mahler 1978]
Bryoerythrophyllum recurvirostrum (Hedwig) Chen var. *dentatum* (Schimper) Crum et al.
Didymodon recurvirostrum (Hedwig) Jennings
Weissia recurvirostra Hedwig
recurvirostrum (Hedwig) Chen var. *dentatum* (Schimper) Crum et al. = *Bryoerythrophyllum recurvirostrum* (Hedwig) Chen

Chenia

- leptophylla* (Müller Hal.) Zander [Ireland et al. 1984]

- Chenia rhizophylla* Sakurai) Zander
Tortula rhizophylla (Sakurai) Iwatsuki & Saito

Crossidium

- aberrans* Holzinger & Bartram [Ireland et al. 1981]
crassinervium (De Notaris) Juratzka var. *crassinervium* [Stark & Castetter 1986]
seriatum Crum & Steere [Delgadillo-M. 1996]

Crumia

- latifolia* (Kindberg) W.B. Schofield [Kleinman 2012]
Desmatodon cernuus (Hübner) Bruch & Schimper = *Tortula cernua* (Hübner) Lindberg
convolutus (Bridel) Grout = *Tortula atrovirens* (J.E. Smith) Lindberg
guepini Bruch & Schimper = *Tortula guepini* (Bruch & Schimper) Brotherus
heimii (Hedwig) Mitten = *Hennediella heimii* (Hedwig) Zander
latifolius (Hedwig) Bridel = *Tortula euryphylla* Zander
latifolius (Hedwig) Bridel var. *muticus* (Bridel) Bridel = *Tortula hoppeana* (Schultz) Ochyra
obtusifolius (Schwägrichen) Schimper = *Tortula obtusifolia* (Schwägrichen) Mathey
plinthobius Sull & Lesquereux = *Tortula plinthobia* (Sullivant & Lesquereux) Austin

Didymodon

- anserinocapitatus* (X.-j. Li) Zander [Zander & Weber 1997]
acutus (Bridel) Saito = *Didymodon rigidulus* Hedwig
australasiae (Greville & Hooker) Zander [Stark & Castetter 1986; Ireland et al. 1984]
Husnotiella torquescens (Cardot) Bartram
Trichostomopsis australasiae (Greville & Hooker) Robinson
australasiae (Hooker & Greville) Zander var. *umbrosus* (Müller Hal.) Zander = *Didymodon umbrosus* (Müller Hal.) Zander
brachyphyllus (Sullivant) Zander [Zander & Ochyra 2001]
Didymodon luridus of NM reports
fallax (Hedwig) Zander [Zander 2007]
fallax (Hedwig) Zander var. *reflexus* (Bridel) Zander = *Didymodon ferrugineus* (Schimper ex Beschereille) M.O. Hill
ferrugineus (Schimper ex Beschereille) M.O. Hill [Bartram 1931; Mahler 1978]
Barbula reflexa (Bridel) Bridel
Didymodon fallax (Hedwig) Zander var. *reflexus* (Bridel) Zander
luridus of NM reports = *Didymodon brachyphyllus* (Sullivant) Zander
nevadensis Zander [Zander 2007]
recurvirostrum (Hedwig) Jennings = *Bryoerythrophyllum recurvirostrum* (Hedwig) Chen
revolutus (Cardot) Williams [Stark & Castetter 1982]
rigidulus Hedwig var. *gracilis* (Schleicher ex Hooker & Greville) Zander [Bartram 1931; Mahler 1978; Stark & Castetter 1986]
Barbula acuta Bridel
Barbula acuta (Bridel) Bridel var. *bescherellei* (Sauerbeck ex Jaeger) Crum
Barbula beschereillei Sauerbeck
Didymodon acutus (Bridel) Saito

- rigidulus* Hedwig var. *icmadophilus* (Müller Hal.) Zander [Allred et al. 1998]
rigidulus Hedwig var. *rigidulus* [Bartram 1931]
tectorum (Müller Hal.) Saito [Zander & Ochyra 2001]
toplaceus (Bridel) Lisa [Bartram 1931; Mahler 1978]
trifarius (Hedwig) Rhl. = *Saelania glaucescens* (Hedwig) Brotherus (Ditrichaceae)
umbrosus (Müller Hal.) Zander [Zander 2007]
Didymodon australasiae (Hooker & Greville) R.H. Zander var. *umbrosus* (Müller Hal.) R.H. Zander
vinealis (Bridel) Zander var. *luridus* of NM reports = *Didymodon brachyphyllus* (Sullivant) Zander
vinealis (Bridel) Zander var. *vinealis* [Stark & Castetter 1982]

Eucladium

- verticillatum* (Bridel) Bruch & Schimper [Bartram 1931; Mahler 1978]
Weissia verticillata Bridel

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Gymnostomum

- aeruginosum* Smith [Bartram 1931; Mahler 1978]
Gymnostomum calcareum of NM reports
calcareum of NM reports = *Gymnostomum aeruginosum* Smith

Hennediella

- heimii* (Hedwig) Zander var. *heimii* [Bartram 1931; Mahler 1978]
Desmatodon heimii (Hedwig) Mitten
Pottia heimii (Hedwig) Hampe
Husnotiella torquescens (Cardot) Bartram = *Didymodon australasiae* (Greville & Hooker) Zander
Hymenostomum tortile (Schwägrichen) Bruch & Schimper = *Weissia condensata* (Voit) Lindberg

Hymenostylium

- recurvirostrum* (Hedwig) Dixon var. *recurvirostrum* [Bartram 1931; Mahler 1978]
Gymnostomum recurvirostrum Hedwig

Leptodontium

- flexifolium* (Withering) Hampe in Lindberg [Mahler 1978]

Microbryum

- davallianum* (Smith) R.H. Zander var. *conicum* (Schwägrichen) R. H. Zander [Reported tentatively by Worthington 1996]
Pottia texana Wareham
starckeanum (Hedwig) R.H. Zander var. *fosbergii* (Bartr.) Zander [Allred 2011]
starckeanum (Hedwig) R.H. Zander var. *starckeanum* [Ireland et al. 1981]
Pottia arizonica Wareham var. *mucronulata* Wareham

Molendoa

- sendtneriana* (Bruch & Schimper) Limpricht [Ireland et al. 1981; Stark & Castetter 1982]
Anoetangium obtusifolium (Brotherus & Paris in Cardot) Grout
Neocardotia subnigra (Mitten) Thériot & Bartram = *Rhexophyllum subnigrum* (Mitten) Thériot ex Hilpert
Oxystegus tenuirostris (Hooker & Taylor) A.J.E. Smith = *Trichostomum tenuirostre* (Hooker & Taylor) Lindberg
Phascum cuspidatum Hedwig = *Tortula acaulon* (Withering) Zander

Pleurochaete

- luteola* (Bescherelle) Thériot [Mahler 1978]
Pleurochaete squarrosa of New World reports
squarrosa of New World reports = *Pleurochaete luteola* (Bescherelle) Thériot
Pottia arizonica Wareham var. *mucronulata* Wareham = *Microbryum starckeanum* (Hedwig) R. H. Zander [Ireland et al. 1981]
bryoides (Dickson) Mitten = *Tortula protobryoides* R. H. Zander
heimii (Hedwig) Hampe = *Hennediella heimii* (Hedwig) Zander
nevadensis Cardot & Thériot = *Tortula nevadensis* (Cardot & Thériot) R.H. Zander
texana Wareham = *Microbryum davallianum* (Smith) R.H. Zander var. *conicum* (Schwägrichen) R. H. Zander [Reported tentatively by Worthington 1996]

Pseudocrossidium

- crinitum* (Schultz) Zander [Mahler 1978]
Pseudocrossidium aureum (Bartram) Zander
Tortula aurea Bartram
aureum (Bartram) Zander = *Pseudocrossidium crinitum* (Schultz) Zander
obtusulum (Lindberg) Crum [Zander 2007]
replicatum (Taylor) Zander [Mahler 1978, as *Barbula spiralis*]
Barbula spiralis (Schimper) ex Müller Hal.

Pterygoneurum

- cavifolium* (Ehrh.) Juratzka = *Pterygoneurum ovatum* (Hedwig) Dixon
ovatum (Hedwig) Dixon [Mahler 1978]
Pterygoneurum cavifolium (Ehrh.) Juratzka
subsessile (Bridel) Juratzka var. *subsessile* [Ireland et al. 1981]

Rhexophyllum

- subnigrum* (Mitten) Thériot ex Hilpert [Bartram 1931; Mahler 1978]
Neocardotia subnigra (Mitten) Thériot & Bartram

Stegonia

- latifolia* (Schwägrichen) Venturi ex Brotherus var. *latifolia* [Zander

2007]

Syntrichia

- bartramii* (Steere) Zander [Mahler 1978]
Tortula bartramii Steere in Grout
caninervis Mitten [Flowers 1973, as *Tortula bistratosata* Flowers]
Tortula bistratosata Flowers
Tortula caninervis (Mitten) Brotherus
chisoa (Magill, Delgadillo, & Stark) Zander [Magill et al. 1983; Stark & Castetter 1986]
Tortula chisoa Magill, Delgadillo, & Stark
fragilis (Taylor) Ochyra [Bartram 1931; Mahler 1978]
Tortula fragilis Taylor
inermis (Bridel) Bruch = *Tortula inermis* (Bridel) Montagne
laevipila Bridel [Bartram 1931; Mahler 1978]
Tortula pagorum (Milde) De Notaris
montana Nees [Allred et al. 1998; Mishler 2007]
Tortula intermedia (Bridel) Berkeley
Tortula montana (Nees) Lindberg
norvegica Weber & Mohr [Allred et al. 1998; Flowers 1973]
Tortula norvegica (Weber & Mohr) Wahlenberg ex Lindberg
obtusissima (Müller Hal.) Zander [Ireland et al. 1981]
Tortula obtusissima (Müller Hal.) Mitten
pagorum (Milde) Amann = *Syntrichia laevipila* Bridel
papillosa (Wilson) Juratzka [Weber 1957]
Tortula papillosa Wilson
papillosissima (Coppey) Loeske [Flowers 1973]
Tortula papillosissima (Coppey) Brotherus
Tortula ruralis (Hedwig) Gaertner var. *hirsuta* (Venturi) Paris
ruralis (Hedwig) Weber & Mohr [Bartram 1931; Mahler 1978]
Tortula ruralis (Hedwig) Gaertner
Tortula ruralis (Hedwig) Gaertner et al. var. *crinita* De Notaris
sinensis (Müller Hal.) Ochyra [Mishler 2007]
Barbula sinensis Müller Hal.

Tinmiella

- anomala* (Bruch & Schimper) Limpricht [Stark & Castetter 1986]

Tortella

- fragilis* (Hooker & Wilson) Limpricht [Romig & Allred 2013]
lumilis (Hedwig) Jennings [Ireland et al. 1981]
tortuosa (Hedwig) Limpricht var. *fragilifolia* [Romig & Allred 2013]
tortuosa (Hedwig) Limpricht var. *tortuosa* [Stark & Castetter 1982]

Tortula

- aurea* Bartram = *Pseudocrossidium crinitum* (Schultz) Zander
acaulon (Withering) Zander [Ireland et al. 1981; Zander & Eckel 2007]
Phascum cuspidatum Hedwig
atrovirens (J.E. Smith) Lindberg [Stark & Castetter 1986]
Desmatodon convolutus (Bridel) Grout
bartramii Steere in Grout = *Syntrichia bartramii* (Steere) Zander
bistratosata Flowers = *Syntrichia caninervis* Mitten
brevipes (Lesquereux) Brotherus [Allred et al. 1998]
caninervis (Mitten) Brotherus = *Syntrichia caninervis* Mitten
cernua (Hübner) Lindberg [Crum & Anderson 1981]
Desmatodon cernuus (Hb.) Bruch & Schimper
chisoa Magill, Delgadillo, & Stark = *Syntrichia chisoa* (Magill, Delgadillo, & Stark) Zander
eurphylla Zander = *Tortula hoppeana* (Schultz) Ochyra
fragilis Taylor = *Syntrichia fragilis* (Taylor) Ochyra
guelpinii (Bruch & Schimper) Brotherus [Mahler 1978]
Desmatodon guelpinii Bruch & Schimper
hoppeana (Schultz) Ochyra [Mahler 1978; Zander & Eckel 2007]
Desmatodon latifolius (Hedwig) Bridel
Desmatodon latifolius (Hedwig) Bridel var. *nuticus* (Bridel) Bridel
Tortula eurphylla Zander
inermis (Bridel) Montagne [Mahler 1978]
Syntrichia inermis (Bridel) Bruch
intermedia (Bridel) Berkeley = *Syntrichia montana* Nees
montana (Nees) Lindberg = *Syntrichia montana* Nees
mucronifolia Schwägrichen [Bartram 1931; Mahler 1978]

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nevadensis (Cardot & Thériot) R.H. Zander [Ireland et al. 1984]

Pottia nevadensis Cardot & Thériot
norvegica (Weber & Mohr) Wahlenberg ex Lindberg = *Syntrichia norvegica* Weber & Mohr

obtusifolia (Schwägrichen) Mathieu [Bartram 1931; Mahler 1978]
Desmatodon obtusifolius (Schwägrichen) Schimper
obtusissima (Müller Hal.) Mitten = *Syntrichia obtusissima* (Müller Hal.) Zander

pagorum (Milde) De Notaris = *Syntrichia laevipila* Bridel
papillosa Wilson = *Syntrichia papillosa* (Wilson) Juratzka
papillosissima (Coppey) Brotherus = *Syntrichia papillosissima* (Coppey) Loeske

Tortula ruralis (Hedwig) Gaertner var. *hirsuta* (Venturi) Paris
plinthobia (Sullivant & Lesquereux) Austin [Mahler 1978]
Desmatodon plinthobius Sullivant & Lesquereux

protobryoides R.H. Zander [Allred et al. 1998]
Pottia bryoides (Dickson) Mitten
rhizophylla (Sakurai) Iwatsuki & Saito = *Chenia leptophylla* (Müller Hal.) Zander

ruralis (Hedwig) Gaertner et al. var. *crinita* De Notaris = *Syntrichia ruralis* (Hedwig) Weber & Mohr

ruralis (Hedwig) Gaertner var. *hirsuta* (Venturi) Paris = *Syntrichia papillosissima* (Coppey) Loeske
ruralis (Hedwig) Gaertner = *Syntrichia ruralis* (Hedwig) Weber & Mohr

Tortula ruralis (Hedwig) Gaertner et al. var. *crinita* De Notaris
Trichostomopsis australasiae (Greville & Hooker) Robinson = *Didymodon australasiae* (Greville & Hooker) Zander

Trichostomum

Trichostomum svihlae Bartram = *Tuerckheimia svihlae* (Bartram) Zander
brachydontium Bruch [Ireland et al. 1984]

crispulum Bruch [Ireland et al. 1984]
planifolium (Dixon) R.H. Zander [Stark 1996]
Trichostomum sweetii (Bartram) Stark

Weissia planifolia Dixon
Weissia sweetii Bartram
sweetii (Bartram) Stark = *Trichostomum planifolium* (Dixon) R.H. Zander

tenuirostre (Hooker & Taylor) Lindberg [Ireland et al. 1984]
Oxystegus tenuirostris (Hooker & Taylor) A.J.E. Smith
Weissia tenuirostris Hooker & Taylor

Tuerckheimia

svihlae (Bartram) Zander [Worthington 2012]
Trichostomum svihlae Bartram

Weissia

andersoniana Zander = *Weissia ligulifolia* (Bartram) Grout
condensa (Voit) Lindberg : Not known from North America [Zander 2007]; reports of this species in NM refer to *Weissia controversa* Hedwig

Hymenostomum tortile (Schwägrichen) Bruch & Schimper
Weissia tortilis (Schwägrichen) Müller Hal.

controversa Hedwig [Bartram 1931; Mahler 1978]
Weissia condensa auct., non (Voit) Lindberg
Weissia viridula Hedwig

glauca Bartram = *Weissia ligulifolia* (Bartram) Grout
ligulifolia (Bartram) Grout [Ireland et al. 1981; Stark & Castetter 1982]
Weissia andersoniana Zander

Weissia glauca Bartram
muhlenbergiana (Swartz) W.D. Reese & B.A.E. Lemmon [Allred 2011]

phascopsis Zander [Eckel 1986]
Astomum phascoides (Drummond) Grout [not *Weissia phascoides* (Wilson) Müller Hal.]

planifolia Dixon = *Trichostomum planifolium* (Dixon) R.H. Zander
recurvirostra Hedwig = *Bryoerythrophyllum recurvirostrum* (Hedwig) Chen

sweetii Bartram = *Trichostomum planifolium* (Dixon) R.H. Zander
tenuirostris Hooker & Taylor = *Trichostomum tenuirostre* (Hooker & Taylor) Lindberg

tortilis (Schwägrichen) Müller Hal. = *Weissia condensa* (Voit) Lindberg
verticillata Bridel = *Eucladium verticillatum* (Bridel) Bruch & Schimper

viridula Hedwig = *Weissia controversa* Hedwig

Family PTYCHOMITRIACEAE

Ptychomitrium

serratum Bruch & Schimper [Worthington 2011]
sinense (Mitten) A. Jaeger [Ireland et al. 1984; Reese 1998]
Ptychomitrium leibergii Best
leibergii Best = *Ptychomitrium sinense* (Mitten) A. Jaeger

Family RHYTIDIACEAE

Rhytidium

rugosum (Hedwig) Kindberg [Bartram 1931; Mahler 1978]

Family SELIGERIAACEAE

Blindia acuta (Hedwig) Bruch & Schimper : Allred 9880 was identified as this, but the specimen is corrected to *Hymenostylium recurvirostrum* (Hedwig) Dixon

Family SPHAGNACEAE

Sphagnum

fimbriatum Wilson [Coop 2002]
girgensohnii Russow [Romig & Allred 2013]

Family SPLACHNACEAE

Tayloria

acuminata Hornschuch [Crum & Anderson 1981]

Family STEREOPHYLLACEAE

Stereophyllum

radiculosum (Hooker) Mitten [Grout 1945; Mahler 1978]

Family TETRAPHIDACEAE

Tetraphis

pellucida Hedwig [Allred et al. 1998]

Family THUIDIACEAE

Abietinella

abietina (Hedwig) Fleischer [Bartram 1931; Mahler 1978]
Thuidium abietinum (Hedwig) Schimper

Thuidium

abietinum (Hedwig) Schimper = *Abietinella abietina* (Hedwig) Fleischer
delicatulum (Hedwig) Schimper var. *radicans* (Kindberg) Crum et al. [Bartram 1931; Mahler 1978]

Thidium philibertii Limpricht
philibertii Limpricht = *Thuidium delicatulum* (Hedwig) Schimper var. *radicans* (Kindberg) Crum et al.

Family TIMMIACEAE

Timmia

austriaca Hedwig [Bartram 1931; Mahler 1978]
bavarica Hessler = *Timmia megapolitana* Hedwig var. *bavarica* (Hessler) Bridel
megapolitana Hedwig var. *bavarica* (Hessler) Bridel [Mahler 1978]
Timmia bavarica Hessler

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Submissions will be reviewed by the editor, who may ask

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- Kelly Allred, editor

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

— Linnaeus

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A Review of *Carex* in New Mexico: Initial Findings

James McGrath

20 Robin Ct., Edgewood, NM 87015 sedges@swcp.com

Max Licher

Box 1456, Sedona, Arizona 86339 mlicher@wildapache.net

William R. Norris

Department of Natural Sciences, Western New Mexico University, P.O. Box 680,
1000 W. College Ave., Silver City, NM 88062 norrisw@wnmu.edu

Glenn Rink

Deaver Herbarium, Biological Sciences Department, Northern Arizona University
P.O. Box 5640, Flagstaff, Arizona 86011-5640 faroutbotany@gmail.com

During January 8-10, 2014 four botanists convened at the University of New Mexico Herbarium (UNM) to review New Mexico plant specimens in the genus *Carex*. The purpose of the review was 1) to annotate misidentified specimens, and 2) to clarify the status of *Carex* species known to occur in the state of New Mexico. This initial 3-day event launched formation of the Southwest *Carex* Working Group (SWCWG).

SOUTHWEST *CAREX* WORKING GROUP (SWCWG)

The four authors of this paper are all experienced botanists with diverse backgrounds who have over the years developed a particular interest in sedge species in the genus *Carex* while working in states other than New Mexico. James ("Jim") McGrath has been studying *Carex* species since his days mapping wetlands in Yellowstone National Park in the mid 1990's. McGrath has specialized in wetlands and has discovered and documented the existence of six *Carex* species previously unrecorded in New Mexico, originally reported under Plant Distribution Reports in The New Mexico Botanist newsletter, and later included in the Flora Neomexicana series (Allred 2012). In 2013 he co-presented (with Bill Norris and Russell Kleinman) a *Carex* identification workshop in New Mexico sponsored by the Native Plant Society of New Mexico. Glenn Rink and Max Licher are based at the Deaver Herbarium at Northern Arizona University in Flagstaff. They have studied *Carex* extensively in Arizona and neighboring states. Their studies have included reviewing the *Carex* collections in 20 herbaria and examining nearly 6,000 *Carex* specimens during the past four years. The culmination of their

efforts has resulted in a document entitled "*Carex* of Arizona" (Rink and Licher 2015 – currently submitted for publication). This document includes a key to Arizona *Carex* species, full descriptions of each species and discussions of various taxonomic, identification, ecological, and habitat issues pertaining to these species. William R. ("Bill") Norris has studied *Carex* extensively in Iowa, where he has annotated more than 12,000 *Carex* specimens, prepared an unpublished dichotomous key to Iowa's 120 *Carex* taxa, and co-presented six *Carex* identification workshops. Norris is currently a biology professor at Western New Mexico University in Silver City. He is the author of the *Carex* key in Flora Neomexicana III (Allred & Ivey 2012), a manual dedicated to the identification of New Mexico flora.

Botanist Charles ("Chick") Keller is also a member of SWCWG, but he has not been as deeply involved in specimen annotation. Like McGrath, Keller discovered several *Carex* species previously unrecorded in the state of New Mexico and he published these in The New Mexico Botanist under Plant Distribution Reports. Keller is the founder of and primary contributor to the Jemez Mountain Herbarium in Los Alamos, New Mexico.

NEW MEXICO SPECIMENS REVIEWED AND ANNOTATED AT SIX REGIONAL HERBARIA

Our 3-day event at the UNM herbarium was just the beginning of our review of New Mexico *Carex*. During 2014 through January 2015, New Mexico *Carex* specimens deposited in the Biology Herbarium (NMC) and the Range Science Herbarium (NMCR) at New Mexico State

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University, and at the University of Texas at El Paso Herbarium (UTEP), were reviewed and annotated by Licher, Rink and Norris. All four of us reviewed and annotated New Mexico *Carex* specimens at San Juan College (SJM) in Farmington, New Mexico in early January 2015. Licher and Rink reviewed a similar collection at the Brigham Young University Herbarium (BRY) in Provo, Utah. Licher and McGrath extended our study of New Mexico *Carex* to the field by making the first Southwest *Carex* Working Group's sedge collecting trip to the Vermejo Park Ranch in Taos County about 25 miles northeast of Questa, New Mexico in late July 2014.

ANNOTATIONS – RULE OF THREE

During our review of UNM, NMC and SJM specimens, we adopted a Rule of Three regarding the annotation of specimens. That is, we affix an annotation label listing our four names to a given specimen sheet if three of us agree on a determination. We decided that if three of us agreed on a determination, then confirmation by a fourth reviewer was unnecessary. This procedure evolved because sometimes it was logistically difficult for all four of us to review every single specimen.

GOALS

It is our intent to improve the understanding of the large and complex genus *Carex*, which is the second most diverse genus (after *Astragalus*) in the New Mexico vascular plant flora. It is our intention that this paper will be the first of a series of publications focused on New Mexico *Carex* taxa. In this paper we first summarize our findings during reviews of the UNM, NMC and SJM collections based on databases that we developed for those collections. Secondly, we identify and discuss additions, deletions and nomenclature upgrades to the New Mexico flora based on our review of all of the above-described herbaria. In this discussion, we clarify the status of several *Carex* taxa previously thought to exist in New Mexico, but for which verification of their existence in this state is needed.

Future publications will focus on specific sections of genus *Carex* as described in Volume 23 of Flora of North America (Ball and Reznicek 2002). Each publication will focus on a particular section or sections of genus *Carex*. By focusing on a few closely related species we can highlight the morphological, ecological and habitat characteristics that distinguish these species from one another as well as from other species of *Carex*.

REVIEW OF UNM, NMC, AND SJM COLLECTIONS – A SUMMARY

UNM

We annotated 714 specimens at UNM representing 48 *Carex* taxa. In this process, we determined 26 specimens (3.6%) for which there was no specific epithet. Furthermore, we annotated 17 specimens as *Carex* sp. because of their immature and/or fragmentary condition that precluded their accurate determination to species level. Among these 17

specimens were 15 that we downgraded from a previous species determination. We determined that 51 of 671 specimens (7.6%) which had a previous determination were misidentified. An additional 27 specimens are currently under review by Norris and eight highly questionable specimens were sent to North American *Carex* expert Anton A. Reznicek (University of Michigan) for determination. The most commonly misidentified specimens were *Carex emoryi*, *C. nebrascensis*, *C. petasata*, *C. praegracilis* and *C. siccata*.

Finally, we set aside for later review all UNM specimens representing taxa in *Carex* section *Acrocystis* (i.e., *Carex geophila*, *C. inops* subsp. *heliophila*, *C. pityophila*, *C. rossii*) and many specimens in *Carex* section *Ovales* because they were too difficult for us to confidently determine in a short time period.

NMC

The Southwest *Carex* Working Group reviewed all 159 *Carex* specimens in the NMC collection. We upgraded the nomenclature of 24 specimens (15.1%), and corrected the identification of 39 (24.5%) misidentified specimens. The most commonly misidentified species were *Carex inops* subsp. *heliophila*, *C. occidentalis*, *C. praegracilis*, and *C. wootonii*. We could not reach consensus on determinations of 11 specimens due to immature or poor quality specimens or to taxa that are not clearly defined. Nor could we reach agreement on the identity of two additional specimens, which will be sent to A.A. Reznicek for determination.

SJM

We annotated 166 *Carex* specimens representing 40 taxa during our review of the *Carex* collection in the San Juan College Herbarium. We provided nomenclature upgrades for eight (4.8%) specimens and we decided that two specimens were not identifiable and annotated them as *Carex* sp. We determined that 63 of the remaining 164 specimens (38.4%) were misidentified. The most commonly misidentified species were *C. microptera*, *C. occidentalis* and *C. siccata*. Less commonly misidentified taxa included *C. bella*, *C. douglasii*, *C. duriuscula*, *C. inops* subsp. *heliophila* and *C. praegracilis*.

ADDITIONS AND DELETIONS TO THE NEW MEXICO FLORA

Carex kelloggii W. Boott – Nomenclatural Upgrade

A recent publication by Dragon and Barrington (2009) recognized *Carex lenticularis* Michaux var. *lipocarpa* (Holm) L. Standley as *Carex kelloggii* W. Boott. We have accepted this nomenclatural change. Dragon and Barrington (2009) recognized other varieties of *Carex lenticularis*, but we have encountered none of these in our review of *Carex* collections in New Mexico. The treatment of *Carex* Section *Phacocystis* by Standley et al. (2002) reports that the other varieties of *C. lenticularis* occur in geographic regions (Pacific northwest, Pacific coast states, northern U.S and Canada) far distant from New Mexico.

A collections search on SEINet (2014), an on-line searchable database of plant specimens housed in more than

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100 herbaria mostly in the southwestern United States, revealed only eight *Carex kelloggii* specimens collected in New Mexico. Our review of UNM specimens revealed several specimens identified as what we now recognize as *C. kelloggii* to be other members of section *Phacocystis*, especially *C. aquatilis* Wahlenberg var. *aquatilis*, *C. nebrascensis* Dewey and *C. emoryi* Dewey. *Carex kelloggii* is cespitose, whereas the latter two species are long-rhizomatous. *C. kelloggii* normally has only one staminate spike, while *C. aquatilis* var. *aquatilis* and *C. emoryi* typically have more than one staminate spike (Rink and Licher 2015; Standley et al. 2002).

***Carex aureolensis* Steudel (Verified as part of the New Mexico flora) and**

***Carex frankii* Kunth (Dropped from the New Mexico flora)**

Several sedge specimens originally determined as *Carex frankii* Kunth and collected in New Mexico are housed in five western herbaria (UNM, NMC, BRY, UTEP and UCR – University of California, Riverside). All of these specimens have been reviewed by us except for two deposited at UCR. However, the UCR specimens are duplicates of specimens that we reviewed at other herbaria. Based on our review of these specimens we conclude that all New Mexico specimens originally determined as *Carex frankii* Kunth are, in fact, *Carex aureolensis* Steudel. Hence, we conclude that *Carex frankii* Kunth does not exist in New Mexico. Our conclusion is consistent with the treatment of *Carex* section *Squarrosae* by Ford and Reznicek (2002), who present the distribution of *C. frankii* as extending no further west than Oklahoma, Kansas and Nebraska and who show the distribution of *C. aureolensis* to include the state of New Mexico. Allred (2012) has recognized *C. aureolensis* as part of the New Mexico flora, citing Ball and Reznicek (2002), which includes Ford and Reznicek (2002).

Ford and Reznicek (2002) provided characteristics that distinguish *C. aureolensis* from *C. frankii*. *Carex aureolensis* is long-rhizomatous, while in contrast *C. frankii* is cespitose and short-rhizomatous. *C. aureolensis* is also distinguished from *C. frankii* by slightly wider and translucent pistillate scale bodies (0.4-0.9 mm wide compared to 0.1-0.4 mm wide) and wider staminate scales. According to a SEINet (2014) collections search and a review of UTEP *Carex* collections, *C. aureolensis* has been found only at a few springs in southern New Mexico: Sitting Bull Falls in the Guadalupe Mountains, Oak Springs in Carlsbad Caverns National Park, both in Eddy County, and at a spring in the Florida Mountains of Luna County.

***Carex stricta* Lamarck – Dropped from the New Mexico Flora**

In their treatment of *Carex* section *Phacocystis* in Flora of North America vol. 23, Standley et al. (2002) indicated at the end of their description of *Carex senta* Boott that “Collections from New Mexico identified as *C. senta* are *C. stricta*.” They, therefore, exclude New Mexico from the geographical range of *Carex senta* Boott. However, in this same publication they contradict the above statement by excluding New Mexico

from the geographic range for *Carex stricta*. Since the above publication, Norris (2012a) verified the existence of *C. senta* in New Mexico based on a specimen collected in Grant County with determination verified by A.A. Reznicek. Later, Norris (2012b) reported that *Carex senta* is “typically encountered and fairly common along high energy streams and rivers in the Gila National Forest...”

The presence of *C. stricta* in New Mexico has been an unanswered question since the publication of Flora of North America Vol. 23 in 2002. Norris (2012b) included *C. stricta* in his treatment of New Mexico *Carex*, basing his decision on an on-line collections search (SEINet, accessed late 2011) that revealed specimens determined as *C. stricta* were “collected in northern (border of small pond, Mora; in canyon, Union) and southwestern (sandy gravel bar, Catron) counties in New Mexico.” However, one or more members of SWCWG has reviewed *Carex* specimens collected in New Mexico at UNM, NMC, NMCR, SNM (Dale A. Zimmerman Herbarium at Western New Mexico University), UTEP and BRY herbaria. We have found no specimens identified as *C. stricta* nor any specimens of *C. stricta* misidentified as other taxa. Furthermore, a collections search on SEINet (2014) failed to reveal any *C. stricta* specimens collected in New Mexico. In fact, SEINet revealed only two *C. stricta* specimens collected in the entire state of Texas. An examination of the distribution of *C. stricta* on maps found on The PLANTS Database (USDA, NRCS 2014) indicated that *C. stricta* is known no further west than central Texas and western Kansas. *C. stricta* is apparently unrecorded in Oklahoma (Standley et al. 2002; USDA, NRCS 2014). Standley et al. (2002) reported that *C. stricta* may be “the most common wetland sedge in eastern North America,” but it is apparently very uncommon to absent in the southern U.S.

McGrath searched the New Mexico Biodiversity Collections Consortium website (NMBCC 2007) in late December 2014 and found records of seven *C. stricta* specimens that matched the habitat and location information described by Norris (2012b) in his treatment of New Mexico *Carex*. However, a search of the determination history of these specimens revealed that five of them had subsequently been annotated to *C. aquatilis* in 1998 by Miriam Fritts and we agreed with the Fritts determinations during our early 2014 review of UNM *Carex* specimens. We annotated the other two such *C. stricta* specimens to *C. emoryi* and *C. lenticularis* var. *lipocarpa* (*C. kelloggii*) during our review of NMC specimens in early 2014.

Based on the above evidence, we conclude that *Carex stricta* does not now exist nor has it ever existed in New Mexico. We base our conclusion on 1) no evidence of specimens documenting the existence of this species in New Mexico, 2) an apparent error by Standley et al. (2002) resulting in contradictory information regarding the distribution of *C. stricta* in New Mexico, and 3) the likelihood that New Mexico is substantially outside the range of *C. stricta*.

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***Carex buxbaumii* Wahlenberg, *Carex magellanica* Lamarck subsp. *irrigua* (Wahlenberg) Hiitonen, and *Carex saxatilis* Linnaeus – Additions to the New Mexico Flora**

Specimens of all three of these taxa were collected by Keller, Roy Greiner and McGrath in the San Pedro Parks Wilderness in Rio Arriba County, New Mexico in mid-August, 2012. The identities of the *Carex buxbaumii* Wahlenberg, *Carex magellanica* Lamarck subsp. *irrigua* (Wahlenberg) Hiitonen, and *Carex saxatilis* Linnaeus specimens were confirmed by Norris and the identities of the *C. buxbaumii* and *C. saxatilis* specimens were also confirmed by Reznicek. All three taxa are represented in the key to New Mexico *Carex* developed by Norris (2012b) because they are among more than 20 *Carex* taxa that have been collected in adjacent counties in Arizona, Utah and/or Colorado, implying that they might occur in New Mexico.

Chick Keller has for several years hypothesized that the flora of the San Pedro Parks Wilderness is a relict left over from the Ice Age. The San Pedro Parks Wilderness is at approximately 10,000 feet elevation and contains numerous springs and associated wetlands. In addition, two UNM specimens collected from what we now recognize as the San Pedro Parks Wilderness in the mid 1960's have been verified by Reznicek as *Carex macloviana* d'Urville. The recent documentation of *C. macloviana*, *C. magellanica* subsp. *irrigua* and *C. saxatilis* at high elevation sites in the San Pedro Parks Wilderness supports Keller's hypothesis because the range of each is centered in Colorado and states further north (Ball and Reznicek 2002).

An additional specimen most recently determined as *Carex* sp. by Julian Starr was annotated to *Carex saxatilis* Linnaeus by SWCWG in 2014. Paula Durkin collected this specimen on September 7, 1997 at Glacier Lakes on the Vermejo Park Ranch in northern New Mexico. Licher and McGrath attempted to return in late July 2014 to the Glacier Lakes to collect and photograph *C. saxatilis* and *C. limosa* Linnaeus. Durkin, now a wetland specialist with the Colorado Department of Transportation, graciously provided an aerial photo showing the sampling sites where she thought she made collections on behalf of the New Mexico Natural Heritage Program in the UNM Biology Department. The sampling sites are approximately 500 feet south of the New Mexico-Colorado state line. During their July 2014 visit to Glacier Lakes, Licher and McGrath failed to re-locate *C. saxatilis* at either of the two presumed sampling sites or in two wetlands on the Colorado side of the Glacier lakes area. It may have been too early to find this species in suitable collecting condition given that Durkin's specimen was collected about six weeks later in the growing season than our visit.

We found a record of another *Carex saxatilis* specimen supposedly collected in New Mexico during a SEINet Collections Search (SEINet 2015). However, Cortez, Colorado botanist Marian Rohman, the collector of this specimen (SJNM catalog # 63928, [Marian Rohman 3473](#), San Juan College Herbarium), has reported (personal communication 2015) that the locality information for this specimen reported on SEINet is incorrect, and that the specimen was, in fact,

collected in the San Juan Mountains of Colorado.

Details of the collected specimens as well as the annotated 1997 specimen follow:

***Carex magellanica* Lamarck subsp. *irrigua* (Wahlenberg) Hiitonen** (*Cyperaceae*, boreal bog sedge): Rio Arriba County: San Pedro Parks Wilderness, Santa Fe National Forest, Vega del Oso; very seepy wetland in heavily grazed meadow with *Eleocharis*; sec 26, T22N, R1E, 36.10872, -106.80833 (datum: NAD 27 CONUS), 10,420 feet, 16 August 2012, [J. McGrath 1199](#) (UNM). Verified by SWCWG. [first report for New Mexico].

***Carex buxbaumii* Wahlenberg** (*Cyperaceae*, Buxbaum's sedge): Rio Arriba County: San Pedro Parks Wilderness, Santa Fe National Forest, Rio de Las Vacas, near trail. 36.105556, -106.823611, sec 27, T22N, R1E, 10,350 feet, 17 August 2012. [C. Keller & R. Greiner 03530h](#) (Jemez Mountain Herbarium). Verified by W. R. Norris and A.A. Reznicek. [first report for New Mexico]

***Carex saxatilis* Linnaeus** (*Cyperaceae*, rock sedge): Rio Arriba County: San Pedro Parks Wilderness, Santa Fe National Forest, Rio de Las Vacas, streamside near trail. 36.105556, -106.823611, sec 27, T22N, R1E, 10,300 feet, 17 August 2012. [C. Keller & R. Greiner 03529h](#) (Jemez Mountain Herbarium). Verified by W.R. Norris and A.A. Reznicek [first report for New Mexico].

***Carex saxatilis* Linnaeus** (*Cyperaceae*, rock sedge): Taos County: Vermejo Park Ranch, Glacier Lakes; fine sandy loam, fen, *Carex limosa*-*Eleocharis quinqueflora* herbaceous vegetation. Associated species: *Carex aquatilis*, *Carex limosa*, *Eleocharis quinqueflora*. 11,560 feet, 7 September 1997. [P. Durkin 97MB024-G5](#) (UNM). Determination by SWCWG. [first report for New Mexico].

The *Carex tetrastachya* – *Carex crus-corvi* Conundrum

Our 2014 review of 159 *Carex* specimens at the New Mexico State University Herbarium (NMC) revealed specimens of two *Carex* species for which there are no other records in the state of New Mexico. These are *Carex tetrastachya* Scheele and *Carex crus-corvi* Shuttleworth. Label data for specimens of both species indicate that these sedges were collected from Bosque del Apache National Wildlife Refuge, Socorro County, in central New Mexico. *Carex tetrastachya* has been recognized as part of the New Mexico flora since Miriam Fritts annotated the specimen to this species in 1998. During our 2014 review of NMC *Carex* specimens, we annotated a specimen identified as *Carex stipata* Muhlenberg ex Willdenow var. *maxima* Chapman to *C. crus-corvi* Shuttleworth (subsequently verified by Reznicek). However, closer examination of the two specimen labels raises considerable doubt about the authenticity of these two collections.

As it turns out, NMC also contains two additional specimens representing these same two species, but which

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were collected by apparently the same collector (at least two of the four specimens) at “Hageman Refuge” near Denison, Texas. “Hageman Refuge” is Hagerman National Wildlife Refuge, which is located about 75 miles north of Dallas, Texas. The information on the labels of the four specimens is minimal and sometimes incomplete.

The detailed information on the four specimens follows, but we will first discuss the *Carex tetrastachya* specimens.

Carex tetrastachya Specimens

Unknown collector 153. No date of collection. Bosque del Apache NWR, Socorro County, San Antonio, NM. NMC catalog # 42333. Original determination *Carex brittoniana* Bailey by F. J. Hermon. Determined as *Carex tetrastachya* Schule (*C. brittoniana* L.H. Bailey) by M.C. Fritts in 1998 and by A.A. Reznicek in 2012. Determined *Carex tetrastachya* Scheele by SWCWG in 2014.

F.J. Herman 153. 03 May 1955. Hageman Refuge, Grayson County, Denison, TX. NMC catalog # 39572. Original determination *Carex brittoniana* Bailey. Annotated to *C. tetrastachya* Schule (*C. brittoniana*) by M.C. Fritts in 1998. Annotated to *Carex tetrastachya* Scheele by J. McGrath Jan 2015 and by other members of SWCWG via examination of digital images of the specimen.

Note that the New Mexico *C. tetrastachya* specimen label does not provide the collector or date of collection. However, the Texas specimen label has the same collector number as the New Mexico specimen. This coincidence suggests that F.J. Herman was the unknown collector and that the collection date for the New Mexico specimen was sometime in 1955. The coincidence of the collector number and the incomplete label information on the New Mexico specimen also raises doubt that the specimen was actually collected at Bosque del Apache National Wildlife Refuge. It is possible that the specimen was collected at Hagerman National Wildlife Refuge and that somehow during processing the specimen was mixed up with material collected from Bosque del Apache National Wildlife Refuge. A SEINet (2015) collections search revealed that the New Mexico specimen is the only such record of this species in New Mexico. According to a PLANTS database (USDA, NRCS, 2015) distribution map, *C. tetrastachya* is known no further west than west central Texas.

Carex crus-corvi Specimens

F.J. Herman 157. No date of collection. Bosque del Apache National Wildlife Refuge, San Antonio, NM. NMC catalog # 41697. Original determination *Carex stipata* var. *maxima* Chapm. and annotated by M. C. Fritts in 1998 as *Carex stipata* Muhlenberg var. *maxima* Chapman. Determined as *Carex crus-corvi* Shuttleworth by SWCWG 2014 and verified by A.A. Reznicek via examination of digital images of the specimen in 2014.

Unknown collector #151. 03 May 1955. Wet Place Hageman Refuge, Denison, TX. NMC catalog # 39573. Original determination *Carex stipata* var. *maxima* Chapman by F.J. Herman. Annotated to *Carex stipata* Muhlenberg var. *maxima* Chapman by M. C. Fritts in 1998. Determined as *Carex crus-corvi* Shuttleworth by McGrath in 2015 and by other members of SWCWG via examination of digital images of the specimen.

Note that, like the New Mexico *C. tetrastachya* specimen, the New Mexico *C. crus-corvi* specimen label lacks critical information, including the date of collection. Note also that the Texas *C. crus-corvi* specimen was collected in the same location and on the same date as the Texas *C. tetrastachya* specimen by presumably the same collector. However, the Texas *Carex tetrastachya* specimen lists F. J. Herman as the apparent collector, but the Texas *Carex crus-corvi* specimen specifically states “Det. By F. J. Herman.” The incomplete label of the New Mexico *C. crus-corvi* specimen again raises doubt that the specimen was actually collected at Bosque del Apache National Wildlife Refuge. The similarity of the collector's name “F.J. Herman” to that of F. J. Hermann, the author of “Manual of the Carices of the Rocky Mountains and Colorado Basin” (Hermann 1970) suggested that perhaps F. J. Hermann was the collector of these specimens. We consulted A. A. Reznicek of the University of Michigan Herbarium (where Hermann's field notes are housed), who informed us that F. J. Hermann collected specimens 153 and 157 in 1926 in Ann Arbor, Michigan. Reznicek speculated that perhaps F.J. Hermann determined the identity of the subject specimens collected by someone else, and that during the processing of the specimens he (Hermann) was incorrectly listed as the collector of these plants, with his name misspelled. A PLANTS Database distribution map reveals that *C. crus-corvi* is not known further west of east central Texas (USDA, NRCS, 2015).

Based on the poor label information, the confusion surrounding the identity of the collector, the absence of additional specimens and the fact that the New Mexico specimens of both *C. tetrastachya* and *C. crus-corvi* are from a locality substantially outside the normal range of both species, we conclude that their presence in New Mexico is highly doubtful both at present and in the past. We conclude that *Carex tetrastachya* Scheele should be dropped from and *Carex crus-corvi* Shuttleworth should not be added to the New Mexico flora pending verification of their existence in New Mexico.

[Footnote: *Carex stipata* Muhlenberg ex Willdenow var. *maxima* Chapman ex Boott, the original determination for the two *Carex crus-corvi* specimens described above, has never been recognized as part of the New Mexico flora (Allred 2012; Allred and Ivey 2012; Martin and Hutchins 1980, Wootton and Standley 1915). The distribution of this taxon was recognized no further west than Alabama by Standley (2002). A SEINet (2015) collections search revealed no other specimens of this taxon west of the Carolinas and Florida.]

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VERIFICATION OF TAXA IN THE NEW MEXICO FLORA

Carex petasata Dewey

Carex petasata Dewey has been a source of confusion in New Mexico. Allred (2012) and Norris (2012b) indicate this species as part of the New Mexico flora. At the same time Allred (2012) states that "In naming *Carex wootonii*, Mackenzie (1915) argued that his new *Carex wootonii* replaced what had been called *Carex petasata* in NM; merits verification." Mastroggiuseppe et al. (2002) in Volume 23 of Flora of North America do not include New Mexico as part of the range of distribution for *Carex petasata*.

Our review of the collections at UNM and NMC revealed that only two out of 12 *C. petasata* specimens were previously identified correctly as *C. petasata*. Our ability to accurately identify *C. petasata* derives from Licher and Rink's extensive study (herbarium specimens and in the field) of *C. petasata* and the very similar *Carex wootonii* in Arizona.

Both of these species are in Section *Ovales*, which is characterized by gynaeceandrous spikes and winged perigynia (Ball and Reznicek 2002). Both species have large perigynia (more than 5.5 mm long), have ovoid or obovoid to fusiform-shaped spikes and occur in mountain meadows and clearings within forests (Rink and Licher 2015). However, these two species each also occur in other, non-overlapping habitats: *C. petasata* in non-montane grasslands (Mastroggiuseppe et al. 2002) and *C. wootonii* in forests. The distribution of *C. wootonii* includes southeastern and east central Arizona and adjacent southwestern and west central New Mexico. However, *C. wootonii* has been found as far north as the Kaibab Plateau in Arizona (Rink and Licher 2015) and the Valles Caldera National Preserve in New Mexico, but it is unknown in Utah (SEINet 2015). During our review of SJNM specimens in January 2015, we annotated a specimen collected in Colorado as *C. wootonii* – a state record, since SEINet (2015) reveals no other *C. wootonii* specimens collected in that state. *C. petasata* occurs in northern Arizona and northern New Mexico and ranges as far north as Alaska (SEINet 2015; Mastroggiuseppe et al. 2002). The general region of overlap between the distributions of *C. wootonii* and *C. petasata* is east central Arizona and west central New Mexico and the northern portions of both states for as far north as the range of *C. wootonii* extends. In New Mexico both species are known to occur in the Valles Caldera National Preserve and the area around Mount Taylor (SEINet 2015).

Key differences between the two species as derived from Rink and Licher (2015) are described below:

<i>Carex petasata</i>	<i>Carex wootonii</i>
Perigynia light olive green, contrasting less with tan pistillate scales	Perigynia forest green, contrasting sharply with brown pistillate scales
Perigynia usually with evident nerves	Perigynia usually nerveless
Hyaline margins on pistillate scales 0.2-0.8 mm wide	Hyaline margins on pistillate scales 0-0.4 mm wide
Spikes narrowly fusiform to narrowly obovoid with many staminate flowers at base of each spike	Spikes broadly fusiform to ovoid with few staminate flowers at the base of each spike
Lowest inflorescence bract never longer than inflorescence	Lowest inflorescence bract sometimes longer than inflorescence

Near the conclusion of Licher and McGrath's sedge collecting trip to the Vermejo Park Ranch in July 2014, Licher indicated he wanted to walk up a grassy valley east of the broad Costilla Creek valley. He thought he might find *Carex petasata* because the valley was the right habitat. McGrath did not accompany Licher, but several days later Licher reported that he found *C. petasata* at about 9,650 feet elevation in that grassy valley.

Carex macloviana d'Urville

McGrath (2003) reported finding *Carex macloviana* d'Urville at timberline on the eastern shore of the uppermost lake of the Latir Lakes, Taos County, New Mexico. However, this single specimen collected by McGrath was determined by Reznicek and is housed in the University of Michigan Herbarium (MICH).

Following our review of UNM specimens, Reznicek further verified the existence of *C. macloviana* as part of the New Mexico flora by annotating two UNM specimens as *Carex macloviana* d'Urville. These specimens were originally collected in the San Pedro Parks Wilderness by Annehara Fleck in the mid-1960's. These specimens are as follows:

Rio Arriba County: San Pedro Cabin. [36 deg. 6 ' 59" N, 106 deg. 49' 24" W, ca 3150 m – hand written in pencil] (10,335 feet). 11 July 1964. A. Fleck s.n. (UNM). Determined *C. macloviana* by A. A. Reznicek 2015. Originally determined *C. festivella* Mackenzie presumably by collector in 1964, det. *C. microptera* Mackenzie by M.C. Fritts 1998, det. *C. macloviana* d'Urville by A. Hipp 2012.

Rio Arriba County: San Gregorio. 19 September 1964. A. Fleck s.n. (UNM). Determined *C. macloviana* by A. A. Reznicek 2015. Originally determined *C. festivella* Mackenzie presumably by collector in 1964, det. *C. macloviana* d'Urville by M.C. Fritts 1998, det. *C. macloviana* d'Urville by A. Hipp 2012.

Presumably, Fleck's collection of *C. macloviana* at San Gregorio refers to San Gregorio Reservoir in the San Pedro Parks Wilderness.

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CURRENT STATUS OF NEW MEXICO CAREX

With this report we add three new *Carex* taxa to the New Mexico flora: *C. buxbaumii* Wahl., *C. magellanica* Lam. subsp. *irrigua* (Wahlenberg) Hiitonen, and *C. saxatilis* Linnaeus. We also verify the existence of *Carex aureolensis* Steudel, *C. macloviana* d'Urville and *C. petasata* Dewey in the New Mexico flora. We provide evidence to drop three species from the New Mexico flora: *Carex frankii* Kunth, *C. stricta* Lamarck, and *C. tetrastachya* Scheele. In the case of *C. tetrastachya*, poor labeling of a single specimen collected substantially outside its normal range of distribution precludes it from being considered part of the New Mexico flora. Similarly, a single poorly labeled specimen of *Carex crucicorvi* Shuttleworth also collected well outside its normal range of distribution precludes its addition to the New Mexico flora at this time. Therefore, the existence of the latter two species in New Mexico must be verified beyond the above-mentioned poorly labeled specimens. Finally, we provide a nomenclatural upgrade for one species. *Carex lenticularis* Michaux var. *lipocarpa* (Holm) L. Standley is now recognized as *Carex kelloggii* W. Boott.

Based on the findings reported in this paper and the species reported in Allred (2012), there are apparently 92 *Carex* species documented in New Mexico. Additional field searches will very likely add more *Carex* species to the New Mexico flora. However, at least 10 species in the New Mexico flora are based on very few records, sometimes as few as a single specimen. In fact, we have encountered no records of specimens collected in New Mexico for one species, *Carex ultra* L.H. Bailey (recognized as such by Rink and Licher 2015, listed as *Carex spissa* L.H. Bailey in Allred 2012 and Allred and Ivey 2012). However, we have had an undocumented report of this species occurring in the Peloncillo Mountains of southwestern New Mexico (Richard Worthington - personal communication to McGrath in 2003). The few documented New Mexico records of some *Carex* species (e.g., *C. blanda* Dewey, *C. rosea* Schkuhr ex Willdenow, *C. leptalea* Wahlenberg, *C. garberi* Fernald) are substantially outside their normal range of distribution (Norris 2012b; USDA, NRCS 2015; SEINET, 2015). Additional field work and tracking down and examination of plant specimens will be necessary to determine whether these species actually exist within the state. Two other *Carex* species tentatively recorded from New Mexico (*Carex tenera* Dewey, *Carex tahoenis* Smiley) do not match precisely the expected characteristics of these two species despite their determination by *Carex* expert A.A. Reznicek. Furthermore, one *Carex* species (*Carex pityophila* Mackenzie), currently included in the New Mexico flora (Allred 2012) and under current systematic study elsewhere, may be merged with another taxon in *Carex* section *Acrocystis* sometime in the future (Bruce Ford, University of Manitoba Herbarium, Derick Poindexter, University of North Carolina Herbarium - personal communication). We also suspect that *Carex chihuahuensis* Mackenzie may eventually become subsumed into *Carex alna* L. H. Bailey, but more research is required to substantiate this

supposition.

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— Linnaeus

