



9-27-1993

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### Recommended Citation

Spence, John R. and Buchanan, Hayle (1993) "1993 update, checklist of the vascular plants of Bryce Canyon National Park, Utah," *Great Basin Naturalist*: Vol. 53 : No. 3 , Article 1.  
Available at: <https://scholarsarchive.byu.edu/gbn/vol53/iss3/1>

# The Great Basin Naturalist

PUBLISHED AT PROVO, UTAH, BY  
BRIGHAM YOUNG UNIVERSITY

ISSN 0017-3614

VOLUME 53

SEPTEMBER 1993

No. 3

Great Basin Natualist 53(3), pp. 207–221

## 1993 UPDATE, CHECKLIST OF THE VASCULAR PLANTS OF BRYCE CANYON NATIONAL PARK, UTAH

John R. Spence<sup>1</sup> and Hayle Buchanan<sup>2</sup>

**ABSTRACT.**—An updated checklist of the vascular flora of Bryce Canyon National Park is presented, including 458 species arranged in 232 genera and 73 families. Four species have been added to the park list based on 1991 fieldwork: *Arabis perennans*, *Arceuthobium divaricatum*, *Gentiana parryi*, and *Haplopappus acaulis*. Recent changes in nomenclature have been included, and several species identifications have been corrected. The six largest families are, in decreasing size, Asteraceae, Poaceae, Fabaceae, Brassicaceae, Scrophulariaceae, and Rosaceae. Common names and an index are provided.

*Key words:* Bryce Canyon National Park, flora, vascular plants.

Recent fieldwork in Bryce Canyon National Park, along with nomenclatural changes in the Utah flora, has neccesitated an updated version of the flora of Bryce Canyon National Park, south central Utah. The last published version of this species list is now 12 years old (Buchanan and Graybosch 1981). We offer this revised list hoping it will be useful to researchers currently engaged in vegetation and floristic work in and around the park.

Nomenclature in general follows the Intermountain Flora (Cronquist et al. 1972–1990), except for the substitution of the more recent treatment of the Poaceae in Arnow (1987). For those families not yet treated, Welsh et al. (1987) is used. We differ from the above volumes in the delimitation of some families. In particular, we cannot accept the outmoded use of the Polypodiaceae as a “catch-all” group

for the ferns, as fern phylogeny has become increasingly stable over the last few years, and well-established classifications currently exist. We follow Weber (1987), who has provided an analysis of the new classification for regional ferns. Only two genera occur at Bryce Canyon, *Cheilanthes*, in the Sinopteridaceae, and *Pteridium*, in the Hypolepidaceae. We also follow the now well-established classification for the Liliaceae and its allies, which has become generally accepted worldwide (Dahlgren et al. 1985). Hence, in addition to the Liliaceae, we have members of the Agavaceae, Alliaceae, Asparagaceae, Calochortaceae, Convallariaceae, and Melanthiaceae in the park flora. Although we feel that the alternative classifications of Weber (1987) have much to offer, we think it premature to utilize his system in its entirety, as this would

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neccesitate numerous nomenclatural innovations for Utah taxa. Hence, only three genera are accepted that differ from the treatments in A Utah Flora and Intermountain Flora: *Bistorta* (*Polygonum* in part), *Ipomopsis* (*Gilia* in part), and *Pseudocymopterus* (*Cymopterus* in part). We utilize these because they have been widely accepted in North American floristic work. Finally, we note that there are fundamental differences in nomenclature at the species level for some plants at Bryce Canyon when Welsh et al. (1987) and Weber (1987) are compared; e.g., in *Arabis*, *Euphorbia*, *Solidago*, and *Stephanomeria* among others. We hope that future revisionary work on these taxa will resolve these nomenclatural differences.

We have incorporated the additions to the park flora made by Hallsten and Roberts (1988). Also, four species have been added to the 1981 list based on recent fieldwork and corrections of herbarium material: *Arabis perennans*, *Arceuthobium divaricatum*, *Gentiana parryi*, and *Haplopappus acaulis* (Spence 1992). Several species have either been dropped from the list or replaced by other species, based on misidentifications or changes in our understanding of the taxonomy and distributions of certain taxa in Utah. These are listed in Table 1. The Atlas of the Vascular Plants of Utah (Albee et al. 1988) was consulted for range information. If a species on the 1981 list was not represented in the park herbarium, and was well outside its normal range in Utah based on the atlas, it was excluded. The checklist that follows is orga-

nized alphabetically by family, genus, and species.

Table 2 includes a list of species that have been found around the boundaries of Bryce Canyon National Park but are not yet known from within the park. Future fieldwork is likely to find some of these species in the park.

#### CHECKLIST OF THE VASCULAR PLANTS OF BRYCE CANYON NATIONAL PARK

##### ACERACEAE

- |                                   |                      |
|-----------------------------------|----------------------|
| 1. <i>Acer glabrum</i> Torr.      | Rocky Mountain maple |
| 2. <i>A. grandidentatum</i> Nutt. | bigtooth maple       |

##### AGAVACEAE

- |                                    |                  |
|------------------------------------|------------------|
| 3. <i>Yucca angustissima</i> Trel. | narrowleaf yucca |
| 4. <i>Y. harrimaniae</i> Trel.     | Harriman yucca   |

##### ALIACEAE

- |                                   |                |
|-----------------------------------|----------------|
| 5. <i>Allium acuminatum</i> Hook. | tapertip onion |
| 6. <i>A. nevadense</i> S. Wats.   | Nevada onion   |

##### AMARANTHACEAE

- |                                      |                   |
|--------------------------------------|-------------------|
| 7. <i>Amaranthus blitoides</i> Wats. | prostrate pigweed |
|--------------------------------------|-------------------|

##### ANACARDIACEAE

- |                                |           |
|--------------------------------|-----------|
| 8. <i>Rhus trilobata</i> Nutt. | squawbush |
|--------------------------------|-----------|

##### APIACEAE

- |   |                      |
|---|----------------------|
| 9. <i>Berula erecta</i> (Huds.) Cov.          | cutleaf waterparsnip |
| 10. <i>Cicuta maculata</i> L.                 | water hemlock        |
| 11. <i>Cymopterus purpureus</i><br>Wats.      | purple springparsley |
| 12. <i>Ligusticum porteri</i> Coul.<br>& Rose | southern ligusticum  |
| 13. <i>Lomatium minimum</i> (Math.)<br>Math.  | least biscuitroot    |

TABLE 1. Changes in species identifications in, and deletions from, the 1981 list of the flora of Bryce Canyon National Park. 1 = outside range, misidentification, deleted from list; 2 = inside range, misidentification, retained in list.

##### Taxa previously reported

- Arenaria nuttallii* Pax
- Campanula rotundifolia* L.
- Erigeron simplex* Greene
- Gentianella tenella* Rottb.
- Lomatium nuttallii* (Gray) Macbr.
- Phlox condensata* (Gray) E. Nels.
- P. diffusa* Benth.
- P. tumulosa* Wherry
- Physaria newberryi* Gray
- Polemonium viscosum* Nutt.
- Scirpus americanus* Pers.
- Senecio cymbalariae* Buck
- Solidago occidentalis* (Nutt.) T. & G.
- Tanacetum nuttallii* T. & G.
- Thelypodium sagittatum* (Nutt.) Endl.

##### Current justification and status

- (1) no specimen, outside range
- (2) *C. parryi* Gray
- (2) *E. compositus* Pursh
- (2) *G. tortuosa* (Jones) J. Gillett
- (2) *L. parryi* (Wats.) Macbr.
- (2) *P. pulvinata* (Wherry) Cronq.
- (2) *P. hoodii* Richards
- (2) *P. pulvinata* (Wherry) Cronq.
- (1) no specimen, outside range
- (1) no specimen, outside range
- (2) *S. pungens* Vahl
- (2) *S. hartianus* Heller
- (2) *S. sparsiflora* Gray
- (2) *Sphaeromeria capitata* Nutt.
- (1) no specimen, outside range

TABLE 2. List of species reported from near the boundary of Bryce Canyon National Park, but not yet collected from within the park.

ASCLEPIADACEAE <i>Asclepias cryptoceras</i> Wats.	JUNCACEAE <i>Juncus mertensianus</i> Bong.
ASTERACEAE <i>Artemisia filifolia</i> Torr. <i>Cirsium clavatum</i> (Jones) Petrak <i>C. wheeleri</i> (Gray) Petrak <i>Crepis atrabarba</i> Heller <i>Erigeron aphanactis</i> (Gray) Greene <i>E. lonchophyllum</i> Hook. <i>Haplopappus lanceolatus</i> Hook. <i>H. parryi</i> Gray <i>Hymenoxys depressa</i> (T. & G.) Welsh & Reveal <i>Senecio canus</i> Hook. <i>Solidago nana</i> Nutt. <i>Stephanomeria exigua</i> Nutt.	LAMIACEAE <i>Mentha arvensis</i> L.
BRASSICACEAE <i>Arabis drummondii</i> Gray <i>Lepidium lasiocarpum</i> Nutt. <i>Lesquerella wardii</i> Wats. <i>Thlaspi montanum</i> L.	LINACEAE <i>Linum australe</i> Heller
CAPRIFOLIACEAE <i>Sambucus racemosa</i> L.	ORCHIDACEAE <i>Habenaria hyperborea</i> (L.) R.Br.
CYPERACEAE <i>Carex egglestonii</i> Mack. <i>C. petasata</i> Dewey <i>C. simulata</i> Mack.	PINACEAE <i>Abies lasiocarpa</i> (Hook.) Nutt. <i>Picea engelmannii</i> Engelm.
EPHEDRACEAE <i>Ephedra viridis</i>	POACEAE <i>Lolium perenne</i> L.
FABACEAE <i>Astragalus lentiginosus</i> Hook. <i>A. wardii</i> Gray <i>Trifolium kingii</i> Wats.	POLEMONIACEAE <i>Leptodactylon caepitosum</i> Nutt.
GROSSULARIACEAE <i>Ribes montigenum</i> McClat.	POLYGONACEAE <i>Eriogonum aretioides</i> Barneby
HYPERICACEAE <i>Hypericum formosum</i> H.B.K.	RANUNCULACEAE <i>Caltha leptosepala</i> DC.
IRIDACEAE <i>Sisyrinchium idahoense</i> Bickn.	ROSACEAE <i>Amelanchier alnifolia</i> Nutt. <i>Ivesia kingii</i> Wats.
	SALICACEAE <i>Salix boothii</i> Dorn
	SCROPHULARIACEAE <i>Cordylanthus wrightii</i> Gray <i>Pedicularis groenlandica</i> Retz. <i>Penstemon laevis</i> Pennell <i>P. procerus</i> Graham
	SOLANACEAE <i>Datura stramonium</i> L. <i>Nicotiana attenuata</i> Wats.
	SPARGANIACEAE <i>Sparganium eurycarpum</i> Engelm.
	VIOLACEAE <i>Viola nephrophylla</i> Greene

- |   |                   |  |                             |
|---|-------------------|--|-----------------------------|
| 14. <i>L. parryi</i> (Wats.) Macbr.                           | Parry biscuitroot | 18. <i>A. speciosa</i> Torr.                     | showy or common<br>milkweed |
| 15. <i>Pseudocymopterus montanus</i><br>(Gray) Coulter & Rose | mountain parsley  |  |                             |
|   |                   |  | ASPARAGACEAE                |
|   |                   | 19. <i>Asparagus officinalis</i> L.              | asparagus                   |
| 16. <i>Apocynum androsaemifolium</i> L.                       | spreading dogbane |  |                             |
|   |                   |  | ASTERACEAE                  |
|   |                   | 20. <i>Achillea lanulosa</i> Nutt.               | yarrow                      |
| 17. <i>Asclepias asperula</i> (Dcne.)<br>Woodson              | spider milkweed   | 21. <i>Agoseris aurantiaca</i> (Hook.)<br>Greene | orange agoseris             |

var. <i>aurantiaca</i>	64. <i>E. eatonii</i> Gray	Eaton fleabane
var. <i>purpurea</i> (Gray) Greene	65. <i>E. flagellaris</i> Gray	trailing fleabane
22. <i>Agoseris glauca</i> (Pursh)	66. <i>E. pumilus</i> Nutt.	low fleabane
D. Dietr.	ssp. <i>concinnooides</i> Cronq.	
var. <i>parviflora</i> (Nutt.) Rydb.	67. <i>E. speciosus</i> (Lindl.) DC.	Oregon fleabane
23. <i>Antennaria dimorpha</i> (Nutt.)	68. <i>E. ursinus</i> D.C. Eaton	bear fleabane
T. & G.	69. <i>E. vagus</i> Payson	wandering fleabane
24. <i>A. microphylla</i> Rydb.	70. <i>Grindelia squarrosa</i> (Pursh)	
25. <i>A. parvifolia</i> Nutt.	Dunal	curlycup gumweed
26. <i>A. rosulata</i> Rydb.	71. <i>Gutierrezia sarothrae</i>	
27. <i>Arnica chamissonis</i> Less.	(Pursh) Britt. & Rusby	broom snakeweed
28. <i>A. cordifolia</i> Hook.	72. <i>Haplopappus acaulis</i> (Nutt.)	
29. <i>Artemisia campestris</i> L.	Gray	stemless goldenweed
30. <i>A. carruthii</i> Wood ex Carruth	73. <i>H. armerioides</i> (Nutt.) Gray	thrifty goldenweed
31. <i>A. dracunculus</i> L.	74. <i>H. scopulorum</i> (Jones)	
32. <i>A. frigida</i> Willd.	Blake	Rocky Mountain goldenweed
33. <i>A. ludoviciana</i> Nutt.	75. <i>H. zionis</i> L.C. Anderson	Cedar Breaks goldenweed
34. <i>A. nova</i> A. Nels.	76. <i>Helianthella uniflora</i>	
35. <i>A. pygmaea</i> Gray	(Nutt.) T. & G.	little sunflower
36. <i>A. tridentata</i> Nutt.	77. <i>Helianthus annuus</i> L.	common sunflower
37. <i>Aster chilensis</i> Nees	78. <i>Heliomeris multiflora</i> Nutt.	showy goldeneye
38. <i>A. eatonii</i> (Gray) Howell	79. <i>Heterotheca jonesii</i> (Blake)	
39. <i>A. glaucodes</i> Blake	Welsh & Atwood	Jones goldenaster
40. <i>A. occidentalis</i> (Nutt.) Torr.	80. <i>H. villosa</i> (Pursh) Shinn.	hoary goldenaster
& Gray	81. <i>Hymenopappus filifolius</i> Hook.	hymenopappus
41. <i>Balsamorhiza sagittata</i> (Pursh)	var. <i>cinereus</i>	
Nutt.	var. <i>lugens</i> (Greene) Jeps.	
42. <i>Brickellia oblongifolia</i> Nutt.	82. <i>Hymenoxyx acaulis</i> (Pursh)	
43. <i>Centaurea repens</i> L.	Parker	stemless woollybase
44. <i>Chaenactis douglasii</i> (Hook.)	83. <i>H. richardsonii</i> (Hook.)	
H. & A.	Cockerall	Colorado rubberplant
45. <i>Chrysothamnus depressus</i>	84. <i>Iva axillaris</i> Pursh	poverty sumpweed
Nutt.	85. <i>Lactuca serriola</i> L.	prickly lettuce
46. <i>C. linifolius</i> Greene	86. <i>L. taractica</i> (L.) C.A. May	blue lettuce
47. <i>C. nauseosus</i> (Pallas) Britt.	spp. <i>pulchella</i> (Pursh)	
var. <i>glabratus</i> (Gray) Cronq.	Stebbins	
48. <i>C. parryi</i> (Gray) Greene	87. <i>Leucelene ericoides</i> (Torr.)	
49. <i>C. vaseyi</i> (Gray) Greene	Greene	rose heath
50. <i>C. viscidiflorus</i> (Hook.) Nutt.	88. <i>Lygodesmia grandiflora</i>	
51. <i>Cirsium arizonicum</i> (Gray)	(Nutt.) T. & G.	showy rushpink
Petrak	89. <i>Machaeranthera canescens</i>	
var. <i>arizonicum</i>	(Pursh) Gray	hoary tansyaster
var. <i>nidulum</i> (Jones) Welsh	90. <i>M. grindelioides</i> (Nutt.)	
52. <i>C. calcareum</i> (Jones) Woot.	Shinners	gumweed tansyaster
& Standl.	91. <i>M. linearis</i> Greene	tansy aster
var. <i>pulchellum</i> (Greene)	92. <i>Petradoria pumila</i> (Nutt.)	
Welsh	Greene	rock goldenrod
53. <i>C. neomexicanum</i> Gray	93. <i>Senecio atratus</i> Greene	black groundsel
54. <i>C. undulatum</i> (Nutt.) Sprengel	94. <i>S. hartianus</i> Heller	Hart groundsel
55. <i>C. vulgare</i> (Savi) Ten.	95. <i>S. hydrophilus</i> Nutt.	water groundsel
56. <i>Conyza canadensis</i> (L.) Cronq.	96. <i>S. multilobatus</i> T. & G.	Uintah groundsel
57. <i>Crepis intermedia</i> Gray	97. <i>S. spartioides</i> T. & G.	broom groundsel
58. <i>C. occidentalis</i> Nutt.	98. <i>Solidago spathulata</i> DC.	coast goldenrod
59. <i>C. runcinata</i> (James) T. & G.	99. <i>S. parryi</i> (Gray) Greene	Parry goldenrod
var. <i>glauca</i> (Nutt.) Babcock	100. <i>S. sparsiflora</i> Gray	few-flowered goldenrod
& Stebbins	101. <i>Sphaeromeria capitata</i>	
60. <i>Erigeron abajoensis</i> Cronq.	Nutt.	sphaeromeria
61. <i>E. canus</i> Gray		
62. <i>E. compositus</i> Pursh		
63. <i>E. divergens</i> T. & G.		

102. <i>Stephanomeria spinosa</i> (Nutt.) Tomb	thorn wirelettuce	135. <i>D. sophia</i> (L.) Webb	flixweed
103. <i>S. tenuifolia</i> (Torr.) Hall	slenderleaf wirelettuce	136. <i>Draba subalpina</i> Goodman & Hitchc.	breaks draba
104. <i>Taraxacum officinale</i> Weber	common dandelion	137. <i>Erysimum asperum</i> (Nutt.) DC.	western wallflower
105. <i>Tetradymia canescens</i> DC.	Gray horsebrush	138. <i>E. inconspicuum</i> (S. Wats.) MacMill	small wallflower
106. <i>Townsendia exscapa</i> (Richards) Porter	stemless townsendia	139. <i>Lepidium densiflorum</i> Schrad.	prairie pepperweed
107. <i>T. incana</i> Nutt.	hoary townsendia	140. <i>L. montanum</i> Nutt.	mountain pepperweed
108. <i>T. minima</i> Eastw.	least townsendia	141. <i>Lesquerella intermedia</i> (S. Wats.) Heller	Watson bladderpod
109. <i>Tragopogon dubius</i> Scop.	yellow salsify	142. <i>L. kingii</i> S. Wats. var. <i>parvifolia</i> (Maguire & Holmgren) Welsh & Reveal	King bladderpod
110. <i>Verbesina encelioides</i> (Cav.) Benth. & Hook.	golden crownbeard	143. <i>L. rubicundula</i> Rollins	breaks bladderpod
BERBERIDACEAE			
111. <i>Mahonia fremontii</i> (Torr.) Fedde	Fremont mahonia	144. <i>Malcolmia africana</i> (L.) R. Br.	African mustard
112. <i>M. repens</i> (Lindl.) G. Don	Oregon grape	145. <i>Physaria chambersii</i> Rollins	Chamber twinpod
BETULACEAE			
113. <i>Betula occidentalis</i> Hook.	western water birch	146. <i>P. newberryi</i> Gray	Newberry twinpod
BORAGINACEAE			
114. <i>Cryptantha abata</i> I.M. Johnston	low cryptanth	147. <i>Schoencrambe limifolia</i> (Nutt.) Greene	schoencrambe
115. <i>C. bakeri</i> (Greene) Payson	Baker cryptanth	148. <i>Stanleya pinnata</i> (Pursh) Britton	prince's plume
116. <i>C. confertifolia</i> (Greene) Payson	golden cryptanth	149. <i>Streptanthus cordatus</i> Nutt.	twistflower
117. <i>C. fendleri</i> (Gray) Greene	sand dune cryptanth	150. <i>Thelypodium sagittatum</i> (Nutt.) Endl. var. <i>ovalifolium</i> (Rydb.) Welsh & Reveal	arrowleaf thelypody
118. <i>C. flava</i> (Nels.) Payson	yellow cryptanth	151. <i>Thlaspi arvense</i> L.	field pennycress
119. <i>C. fulvocanescens</i> (Gray) Payson	plateau cryptanth	CACTACEAE	
120. <i>C. humilis</i> (Greene) Payson	roundspike cryptanth	152. <i>Echinocereus</i> <i>triglochidiatus</i> Engelm.	claret cup
121. <i>C. jamesii</i> (Torr.) Payson	James cryptanth	153. <i>Opuntia erinacea</i> Engelm. & Bigel.	grizzlybear pricklypear
122. <i>C. ochroleuca</i> Higgins	yellowish cryptanth	154. <i>Pediocactus simpsonii</i> (Engelm.) Britt. & Rose	Simpson pediocactus
123. <i>C. setosissima</i> (Gray) Payson	bristly cryptanth	155. <i>Sclerocactus whipplei</i> (Engelm. & Bigel.) Britt. & Rose	fishhook cactus
124. <i>Lappula occidentalis</i> (Wats.) Greene	western stickseed	CALOCHORTACEAE	
125. <i>Lithospermum incisum</i> Lehm.	showy stickseed	156. <i>Calochortus nuttallii</i> T. & G.	segolily
126. <i>L. multiflorum</i> Torr.	southwestern stickseed	CAMPANULACEAE	
127. <i>Mertensia arizonica</i> Greene	aspen bluebell	157. <i>Campanula parryi</i> Gray	Parry bellflower
BRASSICACEAE			
128. <i>Arabis demissa</i> Greene	rockcress	CAPPARACEAE	
129. <i>A. holboellii</i> Hornem. var. <i>fendleri</i> Wats. var. <i>holboellii</i>	Holboell rockcress	158. <i>Cleome lutea</i> Hook.	yellow beeplant
130. <i>A. perennans</i> Wats.	common rockcress	CAPRIFOLIACEAE	
131. <i>Capsella bursa-pastoris</i> (L.) Medic	shepherd's purse	159. <i>Sambucus cerulea</i> Raf.	blue elderberry
132. <i>Caulanthus crassicaulis</i> (Torr.) S. Wats.	thickstem wildcabbage	160. <i>Symphoricarpos oreophilus</i> Gray	mountain snowberry
133. <i>Conringia orientalis</i> (L.) Dumort	hare's ear mustard	CARYOPHYLLACEAE	
134. <i>Descurainia richardsonii</i> (Sweet) O.E. Schulz	Richardson tansymustard	161. <i>Arenaria fendleri</i> A. Gray	Fendler sandwort
		162. <i>Lychnis drummondii</i> (Hook.) S. Wats.	Drummond catchfly

163. <i>Paronychia sessiliflora</i> Nutt.		193. <i>C. stenophylla</i> Wahl.	narrowleaf sedge
164. <i>Silene petersonii</i> Maguire var. <i>minor</i> C.L. Hitchc. & Maguire	creeping nailwort Peterson campion	194. <i>Eleocharis palustris</i> (L.) R. & S.	common spikerush
165. <i>Stellaria jamesiana</i> Torr.	James chickweed	195. <i>E. pauciflorus</i> (Lightf.) Link	spikerush
166. <i>S. longipes</i> Goldie	longstalk chickweed	196. <i>E. rostellata</i> (Torr.) Torr.	beaked spikerush
		197. <i>Scirpus pungens</i> Pers.	common threesquare bulrush
CELASTRACEAE			
167. <i>Paxistima myrsinoides</i> (Pursh) Raf.	mountain lover	ELAEAGNACEAE	
CHENOPodiACEAE			
168. <i>Atriplex canescens</i> (Pursh) Nutt.	fourwing saltbush	198. <i>Shepherdia argentea</i> (Pursh) Nutt.	silver buffaloberry
169. <i>A. confertifolia</i> (Torr. & Frem.) Wats.	shadscale	199. <i>S. canadensis</i> (L.) Nutt.	russet buffaloberry
170. <i>A. gardneri</i> (Moq.) D. Dietr. var. <i>tridentata</i> (Kuntze) MacBr.	Gardner saltbush	200. <i>S. rotundifolia</i> Parry	roundleaf buffaloberry
171. <i>Chenopodium atrovirens</i> Rydb.	mountain goosefoot	EQUISETACEAE	
172. <i>C. fremontii</i> Wats. var. <i>incanum</i> Wats.	Fremont goosefoot	201. <i>Equisetum arvense</i> L.	field horsetail
173. <i>C. leptophyllum</i> Nutt.	narrowleaf goosefoot	202. <i>E. laevigatum</i> A. Br.	smooth horsetail
174. <i>Eurotia lanata</i> (Pursh) Moq.	winterfat	ERICACEAE	
175. <i>Salsola iberica</i> Sennen & Pau	Russian thistle	203. <i>Arctostaphylos patula</i> Greene	greenleaf manzanita
176. <i>Sarcobatus vermiculatus</i> (Hook.) Torr.	greasewood	204. <i>A. uva-ursi</i> (L.) Spreng.	bearberry
CONVALLARIACEAE			
177. <i>Smilacina stellata</i> (L.) Desf.	starry false Solomon seal	EUPHORBIACEAE	
CONVOLVULACEAE			
178. <i>Convolvulus arvensis</i> L.	field bindweed	205. <i>Euphorbia brachycera</i> Engelm.	shorthorn spurge
CORNACEAE		206. <i>E. fendleri</i> T. & G.	Fendler spurge
179. <i>Cornus stolonifera</i> Michx.	red-osier dogwood	FABACEAE	
CUPRESSACEAE			
180. <i>Juniperus communis</i> L.	common juniper	207. <i>Astragalus agrestis</i> G. Don	field milkvetch
181. <i>J. osteosperma</i> (Torr.) Little	Utah juniper	208. <i>A. amphioxys</i> Gray	crescent milkvetch
182. <i>J. scopulorum</i> Sarg.	Rocky Mountain juniper	209. <i>A. argophyllus</i> T. & G.	silverleaf milkvetch
CYPERACEAE		210. <i>A. bisulcatus</i> (Hook.) Gray	two-grooved milkvetch
183. <i>Carex athrostachya</i> Olney	slenderbeak sedge	211. <i>A. calycosus</i> Wats.	Torrey milkvetch
184. <i>C. aurea</i> Nutt.	golden sedge	212. <i>A. convallarius</i> Greene	timber milkvetch
185. <i>C. canescens</i> L.	pale sedge	213. <i>A. hallii</i> Gray	Hall milkvetch
186. <i>C. douglasii</i> F. Boott.	Douglas sedge	214. <i>A. humistratus</i> Gray	groundcover
187. <i>C. microptera</i> Mkze.	smallwing sedge	215. <i>A. kentrophyta</i> Gray	milkvetch
188. <i>C. nebrascensis</i> Dewey	Nebraska sedge	216. <i>A. lonchocarpus</i> Torr.	kentrophyta
189. <i>C. oederi</i> Retz.	green sedge	217. <i>A. megacarpus</i> (Nutt.) Gray	great rushy
190. <i>C. praegracilis</i> W. Boott	blackcreeper sedge	218. <i>A. miser</i> Hook.	milkvetch
191. <i>C. rossii</i> F. Boott.	Ross sedge	219. <i>A. tenellus</i> Pursh	weedy milkvetch
192. <i>C. rostrata</i> Stokes	beaked sedge	220. <i>Hedysarum boreale</i> Nutt.	pulse milkvetch
		northern sweetvetch	
		221. <i>Lathyrus brachycalyx</i> Rydb.	purple peavine
		222. <i>Lotus utahensis</i> Ottley	Utah trefoil
		223. <i>Lupinus argenteus</i> Pursh var. <i>argenteus</i>	silvery lupine
		var. <i>rubricaulis</i> (Greene)	
		Welsh	
		224. <i>L. kingii</i> S. Wats.	King lupine
		225. <i>L. sericeus</i> Pursh	silky lupine
		226. <i>Medicago lupulina</i> L.	black medic
		227. <i>M. sativa</i> L.	alfalfa

228. <i>Melilotus officinalis</i> (L.) Pall.	yellow sweetclover	LAMIACEAE
229. <i>Oxytropis deflexa</i> (Pall.) DC. var. <i>sericea</i> T. & G.	hangpod locoweed	256. <i>Dracocephalum parviflorum</i> Nutt. American dragonhead
230. <i>O. oreophila</i> Gray	mountain locoweed	257. <i>Hedeoma drummondii</i> Benth. mock pennyroyal
231. <i>Pediomelum pariense</i> (Welsh & Atwood) J. Grimes	Paria breadroot	258. <i>Marrubium vulgare</i> L. hoarhound
232. <i>Trifolium repens</i> L.	white clover	259. <i>Monardella odoratissima</i> Benth. cloverhead horsemint
233. <i>Vicia americana</i> Willd.	American vetch	260. <i>Prunella vulgaris</i> L. selfheal
FAGACEAE		
234. <i>Quercus gambelii</i> Nutt.	Gambel oak	
FUMARIACEAE		
235. <i>Corydalis aurea</i> Willd.	golden corydalis	
GENTIANACEAE		
236. <i>Frasera speciosa</i> Griseb.	elkweed	
237. <i>Gentiana affinis</i> Griseb.	Rocky Mountain gentian	263. <i>Linum aristatum</i> Engelm. broom flax
238. <i>G. parryi</i> Engelm.	Parry gentian	264. <i>L. kingii</i> Wats. King flax
239. <i>Gentianella heterosepala</i> (Engelm.) Holub	Engelmann gentian	265. <i>L. lewisii</i> Pursh blue flax
240. <i>G. tortuosa</i> (Jones) J. Gillett	Jones gentian	
241. <i>Gentianopsis detonsa</i> (Rottb.) Ma	fringed gentian	
GERANIACEAE		
242. <i>Geranium caespitosum</i> James	small-leaf geranium	
243. <i>G. richardsonii</i> Fisch. & Trautv.	Richardson geranium	
GROSSULARIACEAE		
244. <i>Ribes aureum</i> Pursh	golden currant	266. <i>Mentzelia multiflora</i> (Nutt.) Gray desert blazing star
245. <i>Ribes cereum</i> Dougl.	wax or squaw currant	
HYPOLEPIDACEAE		
246. <i>Pteridium aquilinum</i> (L.) Kuhn	bracken fern	
IRIDACEAE		
247. <i>Iris missouriensis</i> Nutt.	Missouri iris	
248. <i>Sisyrinchium demissum</i> Greene	blue-eyed grass	
JUNCACEAE		
249. <i>Juncus arcticus</i> Willd.	wiregrass	
250. <i>J. bufonius</i> L.	toad rush	270. <i>Abronia fragrans</i> Hook. fragrant sand verbena
251. <i>J. ensifolius</i> Wikstr.	swordleaf rush	271. <i>A. nana</i> Wats. low sand verbena
252. <i>J. longistylis</i> Torr.	longstyle rush	
253. <i>J. torreyi</i> Coville	Torrey rush	
JUNCAGINACEAE		
254. <i>Triglochin maritima</i> L.	maritime arrowgrass	
255. <i>T. palustris</i> L.	marsh arrowgrass	
LAMIACEAE		
256. <i>Dracocephalum parviflorum</i> Nutt.	American dragonhead	
257. <i>Hedeoma drummondii</i> Benth.	mock pennyroyal	
258. <i>Marrubium vulgare</i> L.	hoarhound	
259. <i>Monardella odoratissima</i> Benth.	cloverhead horsemint	
260. <i>Prunella vulgaris</i> L.	selfheal	
LILIACEAE		
261. <i>Fritillaria atropurpurea</i> Nutt.	leopard lily	
262. <i>Leucocrinum montanum</i> Nutt. ex Gray	star lily	
LINACEAE		
263. <i>Linum aristatum</i> Engelm.	broom flax	
264. <i>L. kingii</i> Wats.	King flax	
265. <i>L. lewisii</i> Pursh	blue flax	
LOASACEAE		
266. <i>Mentzelia multiflora</i> (Nutt.) Gray	desert blazing star	
MALVACEAE		
267. <i>Sphaeralcea coccinea</i> (Pursh) Rydb.	scarlet globemallow	
268. <i>S. parvifolia</i> A. Nels.	small-flowered globemallow	
MELANTHIACEAE		
269. <i>Zigadenus elegans</i> Pursh	mountain death camas	
NYCTAGINACEAE		
270. <i>Abronia fragrans</i> Hook.	fragrant sand verbena	
271. <i>A. nana</i> Wats.	low sand verbena	
ONAGRACEAE		
272. <i>Calylophus lavandulifolius</i> (T. & G.) Raven	lavender evening primrose	
273. <i>Epilobium angustifolium</i> L.	fireweed	
274. <i>E. ciliatum</i> Raf.	northern willowherb	
275. <i>Gayophytum ramosissimum</i> T. & G.	branchy groundsmoke	
276. <i>G. racemosum</i> T. & G.	kitchenweed	
277. <i>Oenothera caespitosa</i> Nutt.	tufted evening primrose	
278. <i>O. coronopifolia</i> T. & G.	rootstalk evening primrose	
279. <i>O. flava</i> (A. Nels.) Garrett	yellow evening primrose	
280. <i>O. howardii</i> (A. Nels.) W.L. Wagner	bronze evening primrose	
281. <i>O. longissima</i> Rydb.	Bridges evening primrose	



359. <i>P. pulvinata</i> (Wherry) Cronq.	cushion phlox	ROSACEAE
360. <i>Polemonium caeruleum</i> L.	western Jacobs ladder	
	POLYGONACEAE	
361. <i>Bistorta vivipara</i> (L.) S. Gray	American bistort	
362. <i>Eriogonum alatum</i> Torr.	winged buckwheat	
363. <i>E. corymbosum</i> Benth.	Corymb buckwheat	
364. <i>E. microthecum</i> Nutt. var. <i>foliosum</i> (T. & G.) Reveal	slender buckwheat	
365. <i>E. panguicense</i> (M.E. Jones) Reveal	Panguitch buckwheat	
366. <i>E. racemosum</i> Nutt.	redroot buckwheat	
367. <i>E. subreniforme</i> S. Wats.	Stokes buckwheat	
368. <i>E. umbellatum</i> Torr. var. <i>subaridum</i> Stokes	sulphur buckwheat	
369. <i>Polygonum aviculare</i> L.	knotweed	
370. <i>P. douglasii</i> Greene var. <i>johnstonii</i> Munz	Douglas knotweed	
371. <i>P. ramosissimum</i> Michx.	bushy knotweed	
372. <i>Rumex crispus</i> L.	curly dock	
373. <i>R. salicifolius</i> Weinm. var. <i>triangulivalvis</i> Danser.	beach dock	
	PRIMULACEAE	
374. <i>Androsace septentrionalis</i> L.	pygmy-flower	
	rockjasmine	
375. <i>Dodecatheon pulchellum</i> (Raf.) Merrill	pretty shooting star	
	PYROLACEAE	
376. <i>Pyrola asarifolia</i> Michx.	liverleaf wintergreen	
377. <i>P. virens</i> Schweigg.	green wintergreen	
378. <i>Pterospora andromedea</i> Nutt.	pinedrops	
	RANUNCULACEAE	
379. <i>Aconitum columbianum</i> Nutt.	monkshood	
380. <i>Anemone multifida</i> Poir.	globeflower	
381. <i>Aquilegia caerulea</i> James	Colorado columbine	
382. <i>A. scopulorum</i> Tides.	rock columbine	
383. <i>Clematis columbiana</i> (Nutt.) T. & G.	Rocky Mountain clematis	
384. <i>C. ligusticifolia</i> Nutt.	white virgin's bower	
385. <i>Delphinium andersonii</i> Gray var. <i>scaposum</i> (Greene) Welsh	Anderson larkspur	
386. <i>Ranunculus cymbalaria</i> Pursh	marsh buttercup	
387. <i>R. flammula</i> L.	spearwort	
388. <i>R. inamoenum</i> Greene	drab buttercup	
389. <i>Thalictrum fendleri</i> Engelm.	Fendler meadowrue	
	RHAMNACEAE	
390. <i>Ceanothus fendleri</i> Gray	Fendler mountain	
	lilac	
391. <i>C. martinii</i> M.E. Jones	Utah mountain lilac	
	ROSACEAE	
392. <i>Amelanchier utahensis</i> Koehne	Utah serviceberry	
393. <i>Cercocarpus ledifolius</i> Nutt.	curlleaf mountain	
	mahogany	
	alder leaf mountain	
	mahogany	
	SAXIFRAGACEAE	
423. <i>Lithophragma tenella</i> Nutt.	Apache plume	
	mountain strawberry	
	bush ocean spray	
	Sevier ivesia	
	squaw-apple	
	silverweed cinquefoil	
	pretty cinquefoil	
	bearded cinquefoil	
	shrubby cinquefoil	
	slender cinquefoil	
	RUBIACEAE	
412. <i>Galium trifidum</i> L.	cinquefoil	
413. <i>Kelloggia galionoides</i> Torr.	chokecherry	
	SALICACEAE	
414. <i>Populus angustifolia</i> James	narrowleaf	
	cottonwood	
415. <i>P. fremontii</i> S. Wats.	Fremont	
	cottonwood	
	quaking aspen	
	Bebb willow	
	Drummond willow	
	narrowleaf willow	
	Ceyer willow	
	whiplash willow	
	SANTALACEAE	
422. <i>Comandra umbellata</i> (L.) Nutt.	bastard toadflax	
	SAXIFRAGACEAE	
423. <i>Lithophragma tenella</i> Nutt.	slender woodland star	

424. <i>Parnassia palustris</i> L.	northern grass-of-Parnassus	455. <i>A. divaricatum</i> Engelm.	pinyon pine
SCROPHULARIACEAE			
425. <i>Castilleja chromosa</i> A. Nels.	desert paintbrush	456. <i>A. douglasii</i> Engelm.	dwarf mistletoe
426. <i>C. linariifolia</i> Benth.	Wyoming paintbrush	457. <i>A. vaginatum</i> (Willd.) Presl.	Douglas dwarf mistletoe
427. <i>C. revealii</i> N. Holmgren	Bryce Canyon paintbrush	458. <i>Phoradendron juniperinum</i> Gray	southwestern dwarf mistletoe
428. <i>Cordylanthus kingii</i> S. Wats.	King birdsbeak		juniper mistletoe
429. <i>C. parviflorus</i> (Ferris) Wiggins	smallflower birdsbeak	ACKNOWLEDGMENTS	
430. <i>Mimulus guttatus</i> DC.	common monkeyflower	We would like to thank the superintendent of Bryce Canyon National Park for providing housing, collecting permits, and the use of equipment and office space, and the Bryce Canyon Natural History Association for financial support. Therese Johnson and Charlie Schelz provided us with the opportunity to work on the flora, for which we are grateful. Linda Allen and Leila Schultz helped confirm critical collections and helped check species locations.	
431. <i>M. rubellus</i> Gray	monkeyflower		
432. <i>Orthocarpus luteus</i> Nutt.	yellow owlclover		
433. <i>O. purpureo-albus</i> Gray	purple-white owlclover		
434. <i>Pedicularis centranthera</i> Gray	dwarf lousewort		
435. <i>Penstemon bracteatus</i> Keck	Platy penstemon		
436. <i>P. caespitosus</i> Nutt. ex Gray	mat penstemon		
437. <i>P. comarrhenus</i> Gray	dusty penstemon		
438. <i>P. eatonii</i> Gray	firecracker penstemon		
439. <i>P. leiophyllus</i> Pennell	Markagunt penstemon		
440. <i>P. rostriflorus</i> Kellogg	beaked penstemon		
441. <i>P. rydbergii</i> A. Nels.	Rydberg penstemon		
442. <i>P. strictus</i> Benth.	Rocky Mountain penstemon		
443. <i>P. utahensis</i> Eastw.	Utah penstemon		
444. <i>Verbascum thapsus</i> L.	flannel mullein		
445. <i>Veronica americana</i> Schw.	American brooklime		
SINOPTERIDACEAE			
446. <i>Cheilanthes feei</i> Moore	slender lipfern	LITERATURE CITED	
SOLANACEAE			
447. <i>Solanum triflorum</i> Nutt.	cutleaf nightshade	ALBEE, B. J., L. M. SCHULTZ, AND S. GOODRICH. 1988. Atlas of the vascular plants of Utah. Salt Lake City, Utah Museum of Natural History Occasional Publications No. 7.	
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450. <i>V. edulis</i> Nutt.	taprooted valerian	HALLSTEN, G. P., AND D. W. ROBERTS. 1988. Additions to the vascular flora of Bryce Canyon National Park, Utah. Great Basin Naturalist 48: 352.	
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452. <i>Viola adunca</i> J.E. Smith	blue violet		
453. <i>V. purpurea</i> Kellogg	pine violet		
VISCACEAE			
454. <i>Arceuthobium cyanocarpum</i> Coulter & Rose	limber pine dwarf mistletoe		

## INDEX TO GENERA AND COMMON NAMES

- Abajo fleabane 60  
*Abies* 289  
*Abronia* 270, 271  
*Acer* 1, 2  
*Achillea* 20  
*Aconitum* 379  
African mustard 144  
*Agoseris* 21, 22  
*Agropyron* 298  
*Agrostis* 299  
alderleaf mountain mahogany 394  
alfalfa 227  
alkali sacaton 344  
*Allium* 5, 6  
*Amaranthus* 7  
*Amelanchier* 392  
American bistort 361  
American brooklime 445  
American dragonhead 256  
American vetch 233  
Anderson larkspur 385  
*Androsace* 374  
*Anemone* 380  
*Antennaria* 23–26  
Apache plume 395  
*Apocynum* 16  
*Aquilegia* 381, 382  
*Arabis* 128–130  
*Arceuthobium* 454–457  
*Arctostaphylos* 203, 204  
*Arenaria* 161  
*Aristida* 300  
Arizona thistle 51  
*Arnica* 27, 28  
arrowgrass 254, 255  
arrowleaf balsamroot 41  
*Artemisia* 29–36  
*Asclepias* 17, 18  
*Asparagus* 19  
aspen bluebell 127  
*Aster* 37–40  
*Astragalus* 207–219  
*Atriplex* 168–170  
Baker cryptanth 115  
ballhead gilia 352  
*Balsamorhiza* 41  
barberry 111  
barley 327, 328  
bastard toadflax 422  
beach dock 373  
beaked penstemon 440  
beaked sedge 192  
beaked spikerush 196  
bearberry 204  
bearded cinquefoil 402  
bear fleabane 68  
Bebb willow 417  
bedstraw 412  
beeplant 158  
bellflower 157  
bentgrass 299  
*Berula* 9  
*Betula* 113  
big sagebrush 36  
bigtooth maple 2  
bindweed 178  
birch 113  
birdsbeak 428, 429  
biscuitroot 13, 14  
*Bistorta* 361  
bitterbrush 408  
black creeper sedge 190  
black groundsel 93  
black medic 226  
black sagebrush 34  
bladderpod 141–143  
blazing star 266  
bluebell 127  
bluebunch wheatgrass 320  
blue elderberry 159  
blue-eyed grass 248  
blue flax 265  
blue grama 301  
bluegrass 337, 339–341  
blueleaf aster 39  
blue lettuce 86  
blue spruce 290  
bluestem 343  
blue violet 452  
blue wildrye 314  
bog orchid 286, 287  
*Bouteloua* 301  
bracken fern 246  
branchy groundsmoke 275  
breadroot 231  
breaks bladderpod 143  
breaks draba 136  
*Brickellia* 42  
brickellbush 42  
Bridges evening primrose 281  
bristlecone pine 293  
bristly cryptanth 123  
*Bromus* 302–307  
brome 302–306  
bronze evening primrose 280  
brooklime 445  
broom flax 263  
broom groundsel 97  
broomrape 288  
broom snakeweed 71  
Bryce Canyon paintbrush 427  
buckwheat 362–368  
bull thistle 55  
bulrush 197  
bush ocean spray 397  
bushy knotweed 371  
buttercup 386, 388  
*Calamagrostis* 308, 309  
*Calochortus* 156  
*Calylophus* 272  
*Campanula* 157  
campion 164  
Canada bluegrass 337  
Canada wildrye 312  
*Capsella* 131  
*Carex* 183–193  
carpet bentgrass 299  
carpet phlox 356  
Carruth sagewort 30  
*Castilleja* 425–427  
catchfly 162  
*Caulanthus* 132  
*Ceanothus* 390, 391  
Cedar Breaks goldenweed 75  
*Centaurea* 43  
*Cercocarpus* 393  
*Chaenactis* 44  
Chamber twinpod 145  
Chamisso arnica 27  
cheatgrass 307  
*Cheilanthes* 446  
*Chenopodium* 171–173  
chickweed 165  
chokecherry 406  
*Chrysanthemum* 45–50  
*Cicuta* 10  
cinquefoil 400–405  
*Cirsium* 51–55  
claret cup 152  
*Clematis* 383, 384  
*Cleome* 158  
cliffrose 407  
clover 232  
cloverhead horsemint 259  
clustered broomrape 288  
coast goldenrod 98  
Colorado columbine 381  
Colorado rubber plant 83  
columbine 381, 382  
*Comandra* 422  
common dandelion 104  
common juniper 180  
common milkweed 18  
common monkeyflower 430  
common rockcress 130  
common spikerush 194  
common sunflower 77  
*Conringia* 133  
*Convolvulus* 178

- Corallorrhiza* 283, 284  
 coralroot 283, 284  
*Cordilleran valerian* 449  
*Cordylanthus* 428, 429  
*Cornus* 179  
*Corydalis* 235  
*Corymb buckwheat* 363  
*cottonwood* 414, 415  
*creeping nailwort* 163  
*Crepis* 57–59  
*crescent milkvetch* 208  
*crested wheatgrass* 298  
*crownbeard* 110  
*Cryptantha* 114–123  
*curlleaf mountain mahogany* 393  
*curlycup gumweed* 70  
*curly dock* 372  
*currant* 244, 245  
*cushion phlox* 359  
*cutleaf nightshade* 447  
*cutleaf waterparsnip* 9  
*Cymopterus* 11  
  
*Dactylis* 310  
*dandelion* 22, 104  
*death camas* 269  
*Delphinium* 385  
*Deschampsia* 311  
*Descurainia* 134, 135  
*desert blazing star* 266  
*desert paintbrush* 425  
*desert phlox* 355  
*dock* 372, 373  
*Dodecatheon* 375  
*dogbane* 16  
*dogwood* 179  
*Douglas dustymaiden* 44  
*Douglas dwarf mistletoe* 456  
*Douglas fir* 295  
*Douglas knotweed* 370  
*Douglas sedge* 186  
*Draba* 136  
*drab buttercup* 388  
*Dracocephalum* 256  
*dragonhead* 256  
*Drummond catchfly* 162  
*Drummond willow* 418  
*dwarf lousewort* 434  
*dwarf mistletoe* 454–457  
*dwarf rabbitbrush* 45  
  
*Eaton aster* 38  
*Eaton fleabane* 64  
*Echinocereus* 152  
*elderberry* 159  
*Eleocharis* 194–196  
*elkweed* 236  
*Elymus* 312–321  
*Engelmann gentian* 239  
*English plantain* 297  
  
*Epilobium* 273, 274  
*Epipactis* 285  
*Equisetum* 201, 202  
*Erigeron* 60–69  
*Eriogonum* 362–368  
*Erysimum* 137, 138  
*Euphorbia* 205, 206  
*Eurotia* 174  
*evening primrose* 272, 277–282  
  
*Fallugia* 395  
*Fendler meadowrue* 389  
*Fendler mountain lilac* 390  
*Fendler sandwort* 161  
*Fendler spurge* 206  
*fernleaf fleabane* 62  
*Festuca* 322–324  
*fewflowered goldenrod* 100  
*field bindweed* 178  
*field horsetail* 201  
*field milkvetch* 207  
*field pennycress* 151  
*field sagewort* 29  
*fir* 289, 295  
*firecracker penstemon* 438  
*fireweed* 273  
*fishhook cactus* 155  
*flannel mullein* 444  
*flax* 263–265  
*flaxflower* 354  
*fleabane* 60–69  
*flixweed* 135  
*foothill sagebrush* 33  
*fourwing saltbush* 168  
*fowl managrass* 325  
*foxtail barley* 328  
*foxtail muhly* 330  
*Fragaria* 396  
*fragrant sand verbena* 270  
*Frasera* 236  
*Fremont barberry* 111  
*Fremont cottonwood* 415  
*Fremont goosefoot* 172  
*fringed brome* 304  
*fringed sagebrush* 32  
*Fritillaria* 261  
  
*galleta* 326  
*Galium* 412  
*Gambel oak* 234  
*Gardner saltbush* 170  
*Gayophytum* 275, 276  
*gentian* 237–241  
*Gentiana* 237, 238  
*Gentianella* 239, 240  
*Gentianopsis* 241  
*Geranium* 242, 243  
*Geyer willow* 420  
*giant helleborine* 285  
*gilia* 351, 352  
  
*Glyceria* 325  
*globeflower* 380  
*globemallow* 267, 268  
*goldenaster* 79, 80  
*golden corydalis* 235  
*golden crownbeard* 110  
*golden cryptanth* 116  
*golden currant* 244  
*goldeneye* 78  
*goldenrod* 92, 98–100  
*golden sedge* 184  
*goldenweed* 72–75  
*goosefoot* 171–173  
*Gray hawksbeard* 57  
*Gray horsebrush* 105  
*grass-of-Parnassus* 424  
*great bladdery milkvetch* 217  
*great rushy milkvetch* 216  
*greasewood* 176  
*greenleaf manzanita* 203  
*green sedge* 189  
*green wintergreen* 377  
*Grindelia* 70  
*grizzlybear pricklypear* 153  
*groundsel* 93–97  
*ground smoke* 275  
*gumweed* 70  
*gumweed tansyaster* 90  
*Gutierrezia* 71  
  
*Habenaria* 286, 287  
*hairgrass* 311  
*Hall milkvetch* 213  
*hangpod locoweed* 229  
*Haplopappus* 72–75  
*hare's ear mustard* 133  
*Harriman yucca* 4  
*Hart groundsel* 94  
*hawksbeard* 57–59  
*heartleaf arnica* 28  
*Hedeoma* 257  
*Hedysarum* 220  
*Helianthella* 76  
*Helianthus* 77  
*Heliotropis* 78  
*helleborine* 285  
*Heterotheca* 79, 80  
*Hilaria* 326  
*hoary fleabane* 61  
*hoary goldenaster* 80  
*hoary tansyaster* 89  
*hoary townsendia* 107  
*Holboell rockcress* 129  
*Holodiscus* 397  
*Hordeum* 327, 328  
*horehound* 258  
*horsebrush* 105  
*horsemint* 259  
*horsetail* 201, 202  
*Hymenopappus* 81

- Hymenoxys* 82  
*Indian ricegrass* 347  
*Ipomopsis* 351, 352  
*Iris* 247  
*Iva* 84  
*Ivesia* 398  
*Jacobs ladder* 360  
*James chickweed* 165  
*James cryptanth* 121  
*Jones gentian* 240  
*Jones goldenaster* 79  
*Jones reedgrass* 308  
*Juncus* 249–253  
*junegrass* 329  
*Juniperus* 180–182  
*juniper mistletoe* 458  
*Kelloggia* 413  
*kentrophyta* 215  
*Kentucky bluegrass* 339  
*King birdsbeak* 428  
*King bladderpod* 142  
*King flax* 264  
*King lupine* 224  
*kitchenweed* 276  
*knapweed* 43  
*knotweed* 369–371  
*Koeleria* 329  
*Lactuca* 85, 86  
*Lappula* 124  
*larkspur* 385  
*Lathyrus* 221  
*lavender evening primrose* 272  
*least biscuitroot* 13  
*least townsendia* 108  
*leopard lily* 261  
*Lepidium* 139, 140  
*Leptodactylon* 353  
*Lesquerella* 141–143  
*Letterman needlegrass* 348  
*lettuce* 85, 86  
*Leucelene* 87  
*Leucocrinum* 262  
*Ligusticum* 12  
*lily* 261, 262  
*limber pine* 292  
*limber pine dwarf mistletoe* 454  
*limestone thistle* 52  
*Linanthastrum* 354  
*Linum* 263–265  
*Lithophragma* 423  
*Lithospermum* 125, 126  
*little bluestem* 343  
*littleseed ricegrass* 335  
*little sunflower* 76  
*liverleaf wintergreen* 376  
*locoweed* 229, 230  
*Lomatium* 13  
*longleaf phlox* 357  
*Lotus* 222  
*lousewort* 434  
*low cryptanth* 114  
*low fleabane* 66  
*low pussytoes* 23  
*low sand verbena* 271  
*Lupinus* 223–225  
*Lychnis* 162  
*Lygodesmia* 88  
*Machaeranthera* 89–91  
*Mahonia* 111, 112  
*Malcolmia* 144  
*mannagrass* 325  
*manzanita* 203  
*maple* 1, 2  
*maritime arrowgrass* 254  
*Markagunt penstemon* 439  
*Marrubium* 258  
*marsh arrowgrass* 255  
*marsh buttercup* 386  
*mat muhly* 334  
*mat penstemon* 436  
*meadow barley* 327  
*meadow brome* 306  
*meadow fescue* 324  
*meadow gentian* 241  
*meadow hawksbeard* 59  
*meadowrue* 389  
*Medicago* 226, 227  
*Melilotus* 228  
*Mentzelia* 266  
*Mertensia* 127  
*milkvetch* 207–214, 216–219  
*milkweed* 17, 18  
*Mimulus* 430, 431  
*Missouri iris* 247  
*mistletoe* 454–458  
*mock pennyroyal* 257  
*Monardella* 259  
*monkeyflower* 430, 431  
*monkshood* 379  
*moss phlox* 358  
*mountain brome* 303  
*mountain chess* 306  
*mountain dandelion* 22  
*mountain deathcamas* 269  
*mountain goosefoot* 171  
*mountain lilac* 390, 391  
*mountain locoweed* 230  
*mountain lover* 167  
*mountain muhly* 332  
*mountain parsley* 15  
*mountain pepperweed* 140  
*mountain rabbitbrush* 50  
*mountain snowberry* 160  
*mountain strawberry* 396  
*Muhlenbergia* 330–334  
*muhly* 330–334  
*mullein* 444  
*muttongrass* 338  
*nailwort* 163  
*narrowleaf cottonwood* 414  
*narrowleaf goosefoot* 173  
*narrowleaf sedge* 193  
*narrowleaf willow* 419  
*narrowleaf yucca* 3  
*Nebraska sedge* 188  
*needle-and-thread grass* 346  
*needle grass* 348–350  
*Nelson needlegrass* 349  
*Nevada onion* 6  
*Newberry twinpod* 146  
*New Mexico thistle* 53  
*nightshade* 447  
*nodding bluegrass* 340  
*nodding brome* 302  
*northern grass-of-Parnassus* 424  
*northern sweetvetch* 220  
*northern willowherb* 274  
*Nutka rose* 409  
*Nuttall alkaligrass* 342  
*Nuttall flaxflower* 354  
*oak* 234  
*ocean spray* 397  
*Oenothera* 277–282  
*onion* 5, 6  
*Opuntia* 153  
*orange agoseris* 21  
*orchard grass* 310  
*Oregon fleabane* 67  
*Oregon grape* 112  
*Orobanche* 288  
*Orthocarpus* 432, 433  
*Oryzopsis* 335  
*owlclover* 432, 433  
*Oxytropis* 229, 230  
*Paxistima* 167  
*Pacific aster* 37  
*paintbrush* 425–427  
*pale evening primrose* 282  
*pale sedge* 185  
*Panguitch buckwheat* 365  
*Paria breadroot* 231  
*parsley* 15  
*Parnassia* 424  
*Paronychia* 163  
*Parry bellflower* 157  
*Parry biscuitroot* 14  
*Parry gentian* 238  
*Parry goldenrod* 99  
*Parry rabbitbrush* 48  
*Pedicularis* 434  
*Pediocactus* 154  
*Pediomelum* 231

- pennycress 151  
 pennyroyal 257  
*Penstemon* 435–443  
 pepperweed 139, 140  
*Peraphyllum* 399  
 Peterson campion 164  
*Petradoria* 92  
*Phleum* 336  
*Phlox* 355–359  
*Phoradendron* 458  
*Physaria* 145, 146  
*Picea* 290  
 pigmy sagebrush 35  
 pinedrops 378  
 pine violet 453  
 pinewoods needlegrass 350  
*Pinus* 291–294  
 pinyon 291  
 pinyon pine dwarf mistletoe 455  
*Plantago* 296, 297  
 plantain 296, 297  
 plateau cryptanth 119  
 Platy penstemon 435  
*Poa* 337–341  
*Polemonium* 360  
*Polygonum* 369–371  
 ponderosa pine 294  
*Populus* 414–416  
*Potentilla* 400–405  
 poverty sumpweed 84  
 prairie pepperweed 139  
 pretty cinquefoil 401  
 pretty shooting star 375  
 prickly lettuce 85  
 prickly pear 153  
 prickly phlox 353  
 prince's plume 148  
 prostrate pigweed 7  
 prostrate vervain 451  
*Prunella* 260  
*Prunus* 406  
*Pseudocymopterus* 15  
*Pseudotsuga* 295  
*Pteridium* 246  
*Pterospora* 378  
*Puccinellia* 342  
 pulse milkvetch 219  
 purple peavine 221  
 purple springparsley 11  
 purple threeawn 300  
 purple-white owlclover 433  
*Purshia* 407, 408  
 pussytoes 23–26  
 pygmy-flower rockjasmine 374  
*Pyrola* 376, 377  
  
 quaking aspen 416  
*Quercus* 234  
  
 rabbitbrush 45–50
- Ranunculus* 386–388  
 raspberry 411  
 red-osier dogwood 179  
 redroot buckwheat 366  
 reedgrass 308, 309  
*Rhus* 8  
*Ribes* 244, 245  
 ricegrass 335, 347  
 Richardson geranium 243  
 Richardson tansymustard 134  
 rock columbine 382  
 rockerress 128–130  
 rock goldenrod 92  
 rockjasmine 374  
 Rocky Mountain clematis 383  
 Rocky Mountain gentian 237  
 Rocky Mountain goldenweed 74  
 Rocky Mountain juniper 182  
 Rocky Mountain maple 1  
 Rocky Mountain penstemon 442  
 rootstalk evening primrose 278  
*Rosa* 409, 410  
 rose heath 87  
 Ross sedge 191  
 rosy pussytoes 24  
 roundleaf buffaloberry 200  
 roundspike cryptanth 120  
 rubberplant 83  
 rubber rabbitbrush 47  
*Rubus* 411  
*Rumex* 372, 373  
 rush 250–253  
 rush pink 88  
 russet buffaloberry 199  
 Russian knapweed 43  
 Russian thistle 175  
 Russian wildrye 315  
 Rydberg penstemon 441  
  
 sagebrush 33–36  
 sagewort 29–30, 32  
 Salina wildrye 317  
*Salix* 417–421  
*Salsola* 175  
 salsify 109  
 saltbush 168, 170  
 salt cedar 448  
*Sambucus* 159  
 Sandberg bluegrass 341  
 sand dropseed 345  
 sand dune cryptanth 117  
 sandhill muhly 333  
 sand verbena 270, 271  
 sandwort 161  
*Sarcobatus* 176  
 scarlet gilia 351  
 scarlet globemallow 267  
*Scirpus* 197  
*Schizachyrium* 343  
*Schoenocrambe* 147
- Sclerocactus* 155  
 scratchgrass 331  
 sedge 183–193  
 sego lily 156  
 selfheal 260  
*Senecio* 93–97  
 serviceberry 392  
*Sevier ivesia* 398  
 shadscale 169  
 sheep fescue 323  
*Shepherdia* 198–200  
 shepherd's purse 131  
 shooting star 375  
 shorthorn spurge 205  
 showy goldeneye 78  
 showy milkweed 18  
 showy rush pink 88  
 showy stoneseed 125  
 shrubby cinquefoil 403  
*Silene* 164  
 silky lupine 225  
 silver buffaloberry 198  
 silverleaf milkvetch 209  
 silverweed cinquefoil 400  
 Simpson pediocactus 154  
*Sisyrinchium* 248  
 sixweeks fescue 322  
 skyrocket 351  
 slenderbeak sedge 183  
 slender buckwheat 364  
 slender cinquefoil 404  
 slender lipfern 446  
 slender wheatgrass 321  
 slender wirelettuce 103  
 slender woodland star 423  
 slimstem reedgrass 309  
 small bedstraw 412  
 smallflower birdsbeak 429  
 small-flowered globemallow 268  
 small-leaf geranium 242  
 small-leaf pussytoes 25  
 small wallflower 138  
 smallwing sedge 187  
*Smilacina* 177  
 smooth brome 305  
 smooth horsetail 202  
 snakeweed 71  
 snowberry 160  
*Solanum* 447  
*Solidago* 98–100  
 southern ligusticum 12  
 southwestern dwarf mistletoe 457  
 southwestern stoneseed 126  
 squaw apple 399  
 squawbush 8  
 squaw currant 245  
 squirrel tail 313  
*Sphaeralcea* 267, 268  
*Sphaeromeria* 101  
 spider milkweed 17

- spikerush 194–196  
*Sporobolus* 344, 345  
 spotted coralroot 283  
 spreading dogbane 16  
 spreading fleabane 63  
 spreading rabbitbrush 46  
 spearwort 387  
 spurge 205, 206  
*Stanleya* 148  
 star lily 262  
 starry false Solomon seal 177  
*Stellaria* 165, 166  
*Stephanomeria* 102, 103  
 stemless goldenweed 72  
 stemless townsendia 106  
 stemless woollybase 82  
 stickseed 124  
*Stipa* 346–350  
 Stokes buckwheat 367  
 stoneseed 125, 126  
 strawberry 396  
*Streptanthus* 149  
 striped coralroot 284  
 sulphur buckwheat 368  
 sumpweed 84  
 sunflower 76, 77  
 sweetvetch 220  
*Symphoricarpos* 160  
 swordleaf rush 251
- tamarisk 448  
*Tamarix* 448  
 tansyaster 89–91  
 tansymustard 134  
 tapertip onion 5  
 taprooted valerian 450  
*Taraxacum* 104  
 tarragon 31  
*Tetradymia* 105  
*Thalictrum* 389  
*Thelypodium* 150  
 thelypody 150  
 thickspike wheatgrass 316  
 thistle 51–55  
*Thlaspi* 151  
 thorn wirelettuce 102  
 threeawn 300  
 threesquare bulrush 197  
 timber milkvetch 212  
 timothy 336  
 thickstem wildcabbage 132  
 thrifty goldenweed 73  
 toad rush 250  
 Torrey milkvetch 211  
 Torrey rush 253  
*Townsendia* 106–108  
*Tragopogon* 109  
 trailing fleabane 65  
*Trifolium* 232  
*Triglochin* 254, 255
- tufted evening primrose 277  
 tufted hairgrass 311  
 twinpod 145, 146  
 twistflower 149  
 two-grooved milkvetch 210  
 two-needle pinyon 291
- Uintah groundsel 96  
 Utah juniper 181  
 Utah mountain lilac 391  
 Utah penstemon 443  
 Utah serviceberry 392  
 Utah trefoil 222
- Valeriana* 449, 450  
 Vasey rabbitbrush 49  
*Verbascum* 444  
*Verbena* 451  
*Verbesina* 110  
*Veronica* 445  
 vervain 451  
 vetch 233  
*Vicia* 233  
*Viola* 452, 453
- wallflower 137, 138  
 wandering fleabane 69  
 water birch 113  
 water groundsel 95  
 water hemlock 10  
 waterparsnip 9  
 Watson bladderpod 141  
 Watson bog orchid 287  
 wavyleaf thistle 54  
 wax currant 245  
 weedy milkvetch 218  
 western aster 40  
 western hawksbeard 58  
 western Jacobs ladder 360  
 western stickseed 124  
 western wallflower 137  
 western water birch 113  
 western wheatgrass 319  
 wheatgrass 298, 316, 318–321  
 whiplash willow 421  
 white bog orchid 286  
 white clover 232  
 white fir 289  
 white virgin's bower 384  
 wildcabbage 132  
 wildrye 312, 314, 315, 317  
 willow 417–421  
 willowherb 274  
 winterfat 174  
 winged buckwheat 362  
 wintergreen 376, 377  
 wiregrass 249  
 wirelettuce 102, 103  
 Woods rose 410  
 woolly-foot plantain 296
- woolly pussytoes 26  
 Wyoming paintbrush 426
- yarrow 20  
 yellow beeplant 158  
 yellow cryptanth 118  
 yellow evening primrose 279  
 yellowish cryptanth 122  
 yellow owlclover 432  
 yellow salsify 109  
 yellow sweetclover 228  
*Yucca* 3, 4
- Zigadenus* 269

*Received 29 January 1992**Accepted 8 May 1993*