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Annotated checklist of the plants of Mesa Verde, Colorado

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**ANNOTATED
CHECKLIST OF THE PLANTS
OF MESA VERDE, COLORADO**

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Stanley L. Welsh and James A. Erdman



Biological Series — Vol. IV, No. 2

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Errata sheet for Mesa Verde Plant List

- p. 6: 2nd column, species 10, line 3; *argenta* read *argentea*
- p. 7: 2nd column, species 5, WGRS 2274, Host *Lupinus* sp. read WGRS 2276
Amelanchier-utahensis
- p. 7: 2nd column, species 14; WE 2534 read WE 2524
- p. 10: 2nd column, *Berberideaceae* read *Berberidaceae*
- p. 10: 2nd column, species 5; *Asclepias* read *Asclepias*
- p. 11: 1st column, species 3; *Crythantha* read *Cryptantha*
- p. 13: 1st column, species 5; *Agoseris aurantiaca* read *Agoseris aurantiaca*
- p. 14: 1st column, species 4; *brachyphlla* read *brachyphylla*
- p. 14: 2nd column, species 1; Drawf rabbit brush read Dwarf rabbit brush
- p. 16: 2nd column, species 8; *Verbena* read *Verbesina*
- p. 17: 1st column, species 4; *Arbis* read *Arabis*
- p. 21: 1st column, species 7; *distant* read *distans*
- p. 21: 2nd column, species 4; *Ellisia nyctela* read *Ellisia nyctelea*
- p. 23: 2nd column, species 5; *Medicaga* read *Medicago*
- p. 24: 2nd column, species 3; *Mentbelia* read *Mentzelia*
- p. 25: 2nd column, species 2; *giganteus* read *gigantea*
- p. 27: 1st column, species 2; *hirstissima* read *hirsutissima*
- p. 28: 1st column, species 1; Sn 171 read SN 1713
- p. 28: 2nd column, species 7; *Commandra* read *Comandra*
- p. 30 2nd column, species 6; *Cympterus* read *Cymopterus*
- p. 30: 1st column, species 5; *thapus* read *thapsus*

FOREWORD

The extended scientific program of the Wetherill Mesa Archaeological Project is developing many bodies of information, well worthy of publication, which do not lie in the mainstream of its own effort. This checklist of the plants of Mesa Verde, Colorado, is one of them. Dr. Welsh, associate professor of botany at Brigham Young University, has worked with the project since 1961 as its botanical taxonomist. During this period he has identified many thousands of plant fragments from our excavations. Mr. Erdman, the project's plant ecologist, has been with us since 1959 doing several ecological studies and carrying the responsibility for an environmental measurement pro-

gram. He is a graduate student working toward the doctorate at the University of Colorado. Both men needed to know the flora of Mesa Verde National Park and indeed of the whole Mesa Verde area in order to carry on their research. Their field and laboratory work resulted in this valuable contribution.

The Wetherill Mesa Project is a part of the research program of the National Park Service locally financed in part by the National Geographic Society, to which we are indebted for a major share of the support for this study.

Douglas Osborne, Supervisory Archaeologist
Wetherill Mesa Archaeological Project

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CHECKLIST OF PLANTS OF MESA VERDE, COLORADO

INTRODUCTION

Mesa Verde is part of the pinyon-juniper climax region that extends through parts of Colorado, Utah, Arizona, New Mexico, Nevada, and California, and into northern Mexico. Situated in the southwestern corner of Colorado, its 200 square miles encompass the 80-square-mile Mesa Verde National Park, widely known for its prehistoric Indian cliff dwellings.

The plateau rises nearly 2,000 feet from the surrounding valleys to its highest elevation at the North Rim, 8,575 feet, and slopes gently southward to about 6,500 feet at the southern end, where the Mancos River cuts it off from Johnson Mesa, some 4 miles short of the New Mexico state line.

The 18-mile-long plateau is laced throughout with numerous parallel canyons, which generally run north-south. Thus Mesa Verde has many narrow, peninsular-like mesas rather than the one large "green table" that its name would suggest.

As might be expected the variations of slope, altitude, and soils support a vegetative cover that is far from uniform. While dominated by the pinyon pine and Utah juniper, Mesa Verde harbors small stands of Douglas-fir along the higher, north-facing slopes of the North Rim and in some of the more moist and protected canyon sites. A shrub zone of Gambel oak and Utah serviceberry is found along the upper reaches of the plateau. Sagebrush grows on the sandy loam terraces along the canyon floors, and also on some of the deep soils in burned-over areas and on prehistoric Indian sites.

The concern of the early Indian for his immediate plant environment was one of necessity—there was no turning to other markets. He derived sustenance directly from it; material for his dwellings and clothing; and even a measure of solace when he likely smoked a common weed, the wild tobacco.

In the archaeological work done on Wetherill Mesa (part of the Mesa Verde National Park) from 1959 through 1963, more than 80 species were recovered from the prehistoric ruins. (The most common of those recovered are indicated in the checklist by an asterisk.)

If the Indians of Mesa Verde have been vitally interested in the vegetation, so have the

botanists. The area was visited by T. S. Brandegee in 1876 with the Hayden Survey. Hazel Schmoll and Deric Nusbaum (1925) have contributed to the understanding of the flora in the area, as have E. H. Bader (1928 and 1929), Mesa Verde Explorers Camp for Boys (1944), W. A. Weber (1949), and J. A. Erdman (1962).

We have based our work on the collections of other authors, as well as on our own. This paper is an attempt to bring all the previous lists up to date. A few species have been removed; many others have been added.

Our use of nomenclature is as current as possible, and we have used several sources to check the terminology (see list of references).

In general, identifications are by the authors, though many of Erdman's collections were determined by W. A. Weber of the University of Colorado. Gerald Ownbey, University of Minnesota, identified critical thistle specimens. Specimens of *Astragalus missouriensis* and *A. deterior* were verified by Rupert Barneby, New York Botanical Garden. *Quercus ajoensis* was determined by J. M. Tucker, University of California. Fungi were identified by K. H. McKnight, Brigham Young University, and W. G. Solheim, University of Wyoming. Besides the specimens attributed to him, Weber verified critical materials from the Mesa Verde Park herbarium.

Collectors of a few specimens in the checklist are indicated with full names. More frequent contributors are keyed to the list of abbreviations below.

EHB	E. H. Bader
JAE	J. A. Erdman
MVEC	Mesa Verde Explorers Camp
N	D. Nusbaum
PRF	P. R. Franke
S	H. Schmoll
SLW	S. L. Welsh
SN	H. Schmoll and D. Nusbaum
WAW	W. A. Weber
WE	S. L. Welsh and J. A. Erdman
WEM	S. L. Welsh, J. A. Erdman, and C. Moore
WGRS	W. G. and R. Solheim
WW	S. L. and S. L. Welsh

The collections of Bader, Franke, Mesa Verde Explorers Camp, Nusbaum, Schmoll, and Solheim are in the herbarium of the Mesa Verde Park; Erdman's and Weber's are in the herbaria of the University of Colorado Museum; specimens collected by Welsh, et al., are in the Brigham Young University herbarium.

We wish to express our appreciation to Dr. Douglas Osborne, supervisory archaeologist of the Wetherill Mesa Archaeological Project, for his support and encouragement. Our thanks also go to Chester A. Thomas, Mesa Verde Park superintendent, and Mrs. Jean Pinkley, the park's chief archaeologist, for their cooperation.

ANNOTATED CHECKLIST

NONVASCULAR CRYPTOGRAMS

Fungi, Lichens and Mosses

This section of the checklist concerns plants which have not been investigated thoroughly and must be considered tentative.

FUNGI

Agrocybe dura (Bolt. ex Fr.) Sing. Mushroom
Wetherill Mesa, Bobcat Canyon, WE 2557.
Oak thicket under ponderosa pines. Late summer.

Armillaria alboanaripes Atkinson
Bobcat Canyon, WE 2547. Oak thicket under ponderosa pines. Late summer.

Astracys hygrometricus (Pers.) Morgan
Star puffball
Wetherill Mesa, Rock Springs, JAE F-11811.
A star puffball with a reticulated endoperidium, occurring on dry slopes. Occasional throughout the pinyon-juniper forest.

Boletus brevipes (Peck) O. Kuntze
Bobcat Canyon, WE 2551. Oak thicket under ponderosa pines. Late summer.

Calvatia sp. Puffball
Navajo Canyon, North Rim, SLW 1757. A large puffball in excess of five inches in diameter. Summer

Clitocybe sp. Mushroom
Little Moccasin Mesa, WE 2536. Pinyon-juniper forest. Late summer.

Clitocybe sp.
Bobcat Canyon, WE 2553. Oak thicket under ponderosa pines. Late summer.

Clitocybe sp.
Bobcat Canyon, WE 2554. Oak thicket under ponderosa pines. Late summer.

Coprinus comatus (Fr.) S. F. Gray
Shaggy mane inky cap
Wetherill Project Laboratory, JAE s.n. Pinyon-juniper forest. Late summer.

Coprinus micaceus Fr.
Moccasin Mesa, JAE s.n. Oak thicket. Late summer.

Cortinarius sp.
Little Moccasin Mesa, WE 2537. Pinyon-juniper forest. Late summer.

Crepidotus herbarum Peck Bracket fungus
Bobcat Canyon, WE 2561. Oak thicket under ponderosa pines. Late summer.

Crucibulum levis (DC.) Kambly & Lee
Bird's nest fungus
Bobcat Canyon, WE 2566. Small drainage in Pinyon-juniper forest. Late summer.

Cyathis striatus Pers.
Bobcat Canyon, WE 2562. Small drainage in pinyon-juniper forest. Late summer.

Disciseda subterranea (Peck) Coker & Couch
Bobcat Canyon, WE 2566a. Small drainage in pinyon-juniper forest. Late summer.

Erysiphe cichoracearum DC. Powdery mildew
Chapin Mesa, main campground WGRS 2291. Host, *Gutierrezia sarothrae*.

Fabraea maculata (Lev.) Atkinson
Chapin Mesa, Far View Group, WGRS 2282. Host, *Amelanchier utahensis*.

Fomes ellisianus Anderson Bracket fungus
Mancos Canyon, WEM 2166a. Host, *Shepherdia argenta*.

Fuligo intermedia Macbr. Slime mold
Chapin Mesa, Headquarters, WE 2444. Duff in pinyon-juniper forest. Late summer.

- Fuligo megaspora* Sturgis
Chapin Mesa, Headquarters, WE 2445.
Duff in pinyon-juniper forest. Late summer.
- Gaeastrum fenestratum* (Pers.) Fich. Star puffball
Bobcat Canyon, WE 2558a, Duff in pinyon-juniper forest. Late summer.
- Gaeastrum mammosus* Fr.
Wetherill Mesa, Long House, JAE F-11812.
The common star puffball in the pinyon-juniper forest.
- Gaeastrum* sp. (near *G. arenarius* Lloyd)
Bobcat Canyon, WE 2558b. Duff in pinyon-juniper forest. Late summer.
- Gymnosporangium speciosum* Peck
Spruce Tree Canyon, WGRS 2267. Host, *Fendlera rupicola*.
- Hadotrichum lupini* Ell. & Ev.
Far View Group, WGRS 2274. Host, *Lupinus* sp.
- Hygrophorus albiflavus* Hesler & Smith Mushroom
Little Moccasin Mesa, WE 2535. Pinyon-juniper forest. Late summer.
- Hygrophorus conicus* (Fr.) Fr.
Bobcat Canyon, WE 2550. Oak thicket under ponderosa pines. Late summer.
- Hygrophorus* sp.
Bobcat Canyon, WE 2548. Oak thicket under ponderosa pines. Late summer.
- Inocybe fastigiata* Bres.
Bobcat Canyon, WE 2549. Oak thicket under ponderosa pines. Late summer.
- Inocybe umbrina* Bres.? Little Moccasin Mesa, WE 2538. Pinyon-juniper forest. Late summer.
- Inocybe* sp.
Little Moccasin Mesa, WE 2538. Pinyon-juniper forest. Late summer.
- Lactarius deliciosus* (Fr.) S. F. Gray
Chapin Mesa, Headquarters, WEM 2114.
Pinyon-juniper forest. Summer.
- Leocarpus fragilis* Rost. Slime mold
Bobcat Canyon, WE 2564. Attached to ponderosa pine cone, needles, and to an oak leaf. Oak thicket under ponderosa pines. Late summer.
- Lepiota clypeolaria* (Fr.) Quelet Mushroom
Little Moccasin Mesa, WE 2539. Pinyon-juniper forest. Late summer.
- Lepiota* sp.
Little Moccasin Mesa, WE 2540. Pinyon-juniper forest. Late summer.
- Leucopaxillus albissinus* (Peck) Singer.
Moccasin Mesa, JAE s. n. Oak thicket. Late summer
- Lycoperdon umbrinum* Pers. Puffball
Bobcat Canyon, WE 2559, 2560. Oak thicket under ponderosa pines. Late summer.
- Microsphaera alni* (Wallr.) Salm. Powdery mildew
Spruce Tree Canyon, WGRS 2263. Host, *Quercus gambelii*.
- Phyllactinia corylea* (Pers.) Karst.
Far View Group, WGRS 2274. Host, *Lupinus* sp.
- Phyllosticta ferax* Ell. & Ev.
Far View Group, WGRS 2274. Host, *Lupinus* sp.
- Phyllosticta solidaginis* Bresad.
Far View Group, WGRS 2286. Host, *Solidago petradoria*.
- Polyporus cinnabarinus* Jacq. ex Fr.
Little Moccasin Mesa, WE 2542. A red bracket fungus, attached to an oak twig. Pinyon-juniper forest. Late summer.
- Polyporus volvatus* Peck
Long House, SLW 1759; Headquarters, SLW 2509. A white bracket fungus, attached to a pinyon trunk. Throughout the Mesa Verde.
- Puccinia aemulans* Syd. Rust
Far View Group, WGRS 2281. Host, *Viguiera multiflora*.
- Puccinia grindeliae* Peck
Far View Group, WGRS 2285. Host, *Solidago petradoria*.
- Puccinia rubig-vera* (DC.) Wint.
Far View Group, WGRS 2279. Host, *Sitanion hystris*.
- Puccinia tumidipes* Peck
Far View Group, WGRS 2272. Host, *Lycium pallidum*.
- Russula* sp. Mushroom
Little Moccasin Mesa, WE 2534. Pinyon-juniper forest. Late summer.
- Russula* sp.
Bobcat Canyon, WE 2552. Oak thicket under ponderosa pines. Late summer.

Sepultaria arenicola (Lev.) Massee

Cup fungus
Moccasin Mesa, WE 2546. A small, pale gray cup-fungus; in soil beneath the pinyon-juniper forest. Late summer.

Tulostoma simulans Lloyd. Stalked puffball
Bobcat Canyon, WE 2567. Duff beneath the pinyon-juniper forest. Late summer.*Tulostoma* sp.

Long House, JAE F-4872. The common stalked puffball in the pinyon-juniper forest.

Uromyces lupini Berk & Curt. Rust

Far View Group, WGRS 2292. Host, *Lupinus* sp.

Ustilago bromivora (Tul.) Fisch de Waldh.

Smut
Chapin Mesa, Headquarters, WGRS 2276.
Host, *Bromus tectorum*.

Volvariella speciosa (Fr. ex Fr.) Sing.

Little Moccasin Mesa, WE 2533. Pinyon-juniper forest. Late summer.

Xeromphalina sp.

Mushroom
Bobcat Canyon, WE 2555. Oak thicket under ponderosa pines. Late summer.

LICHENS

Agrestia cyphellata J. W. Thomson

Wetherill Mesa, Mug House, JAE S-28245.
Calcareous soils in the pinyon-juniper forest.

Caloplaca aurantiaca (Lightf.) Th. Fr.

Long House, JAE S-28266. On *Juniperus osteosperma*.

Candelariella vitellina (Ehrh.) Müll. Arg.

Long House, JAE S-28235.

Cladonia coniocraea (Floerke) Sandst.

Rock Canyon, Long House, JAE S-28228. A soil lichen in the pinyon-juniper forest.

Dermatocarpon lachneum (Ach.) A. L. Smith.

Long House, JAE S-28240. A component of the soil lichen crusts in the pinyon-juniper forest.

Dermatocarpon minutum (L.) Mann.

Bobcat Canyon, JAE S-28238. Moist sandstone cliffs in side canyons.

Diploschistes scruposus (Schreb.) Norm.

Long House, JAE S-28246. Soil, in pinyon-juniper forest.

Glypholecia scabra (Pers.) Muell. Arg.

Bobcat Canyon, JAE S-28231. Moist, calcareous cliffs, in side canyons.

Lecidia decipiens (Ehrh.) Ach.

Long House, JAE S-28237. Soil, in pinyon-juniper forest.

Lecidea rubiformis Wahlb.

Long House, JAE S-28243. Soil; pinyon-juniper forest.

Leptogium hildenbrandii (Garov.) Nyl.

Bobcat Canyon, JAE S-28232. On *Quercus gambelii*.

Parmelia conspersa (Ehrh.) Ach.

Bobcat Canyon, JAE S-28229. A common foliose lichen growing primarily on rocks.

Parmelia olivacea (L.) Ach.

Long House, JAE S-28247. On *Pinus edulis*

Peltigera canina (L.) Willd.

Wetherill Mesa, ruin No. 16, JAE S-28244.
Soil; pinyon-juniper forest.

Pertusaria sp.

Long House, JAE S-28074. On *Juniperus osteosperma*.

Physcia pulverulenta (Schreb.) Hampe

Long House, JAE S-28239. On *Juniperus osteosperma*.

Toninia candida (Web.) Th. Fr.

Bobcat Canyon, JAE S-28230. Calcareous sandstone.

Usnea hirta (L.) Wigg.

Rock Canyon, Long House, JAE S-28236.
On *Pinus edulis* and *Juniperus osteosperma*.

Xanthoria polycarpa (Ehrh.) Rieb.

Long House, JAE S-28234. On *Philadelphus microphyllus*.

MOSSES

Amblystegium compactum (C. M.) Aust.

Bobcat Canyon, JAE B-3675. Soil in moist caves.

Bryum cuspidatum (Br. & Sch.) Schimp.

Bobcat Canyon, JAE B-3679. Under brush thickets.

Bryum turbinatum (Hedw.) Schwaegr.

Rock Canyon, ruin No. 12, JAE B-3676.
Moist coal outcrops.

Bryum sp.

Long House, JAE B-6119. A sterile, common moss associated with the lichen crusts and pedestals of the pinyon-juniper forest.

Ceratodon purpureus (Hedw.) Brid.

Long Canyon, JAE B-3680. Under oak thickets.

Encalypta vulgaris Hedw.

Long House, JAE B-6122.

Grimmia anodon Br. & Sch.

Mug House, JAE B-6118. Sandstone rocks.

Grimmia apocarpa Hedw.

Bobcat Canyon, JAE B-3681. Bedrock.

Grimmia calyptrata Hook.

Rock Canyon, JAE B-3682. Talus slopes.

Gymnostomum calcareum Nees & Hornsch.

Rock Canyon, JAE B-3684. Calcareous sandstone seep walls.

Hypnum revolutum (Mitt.) Lindb.

Wetherill Mesa, east rim. JAE B-3685.

Leskea tectorum (A. Br.) Lindb.

Long House, JAE B-6124. On *Juniperus osteosperma*.

Orthotrichum alpestre Hornsch.

Long House, JAE B-6115. On *Juniperus osteosperma*.

Orthotrichum hallii Sull.

Bobcat Canyon, JAE B-3686. Shaded, moist ledges.

Orthotrichum jamesianum Sull.

Bobcat Canyon, JAE B-3687. Under calcareous ledges.

Timmia bavarica Hessel.

Bobcat Canyon, JAE B-3689. On shaded ledges.

Tortula obtusifolia Schleich.

Rock Canyon, JAE B-3691. Sandstone.

Tortula ruralis (Hedw.) Schwaegr.

Long House, JAE B-6120. An ubiquitous moss forming dense mats in the pinyon-juniper forest throughout the Mesa Verde.

Tortula subulata Hedw.

Rock Canyon, JAE B-3694. Calcareous stream-bed below an extensive spring.

Weisia controversa Hedw.

Long House, JAE B-3695. On decaying *Juniperus osteosperma*.

VASCULAR CRYPTOGRAMS

EQUISETACEAE — Horsetail Family

Equisetum laevigatum A. Br.

Horsetail

Chapin Mesa, Headquarters, WEM 2108; Mancos Canyon, WEM 2162, Common only in areas of abundant moisture.

Equisetum prealtum Raf.

Mancos Canyon, Soda Canyon Tipoff, MVEC 25.

POLYPODIACEAE — Fern Family

Adiantum capillus-veneris L.

Maidenhair fern
Chapin Mesa, Fewkes Canyon, EHB 222.
Rare.

Cheilanthes feci Moore.

Lip fern

Chapin Mesa, Spruce Tree House, SN 1766; Cliff Canyon, EHB 20; Rock Canyon, ruin No. 16, JAE 72. The most common of the ferns; found on ledges and in crevices of the more mesic side canyons.

Cystopteris fragilis (L.) Bernh.

Brittle fern

Morfield Canyon, EHB. 204. Rare.

Woodsia oregana D. C. Eaton.

Rock Springs, MVEC 147; Moccasin Mesa, Pine Canyon, WEM 2133. Locally common in the more moist canyons.

PHANEROGAMS

Cone and Seed-bearing Plants

GYMNOSPERMAE

Conifers and Allies

EPHEDRACEAE — Jointfir Family

**Ephedra viridis* Coville

Mormon tea

Chapin Mesa, Square Tower House, SN 1789; North Rim, MVEC 74; Chapin Mesa, Headquarters, WW 1540; Long House, JAE 14; Chapin Mesa, south rim, JAE 329. A shrub common in the southern part of the Mesa Verde and on the slopes of the canyons; pinyon-juniper forest.

PINACEAE — Pine Family

**Juniperus osteosperma* (Torr.) Little

Utah juniper

Chapin Mesa, Headquarters, S-1687; Chapin Mesa, Cedar Tree Tower, EHB 2; Spruce Tree Canyon, EHB 327; Far View Group, WW 1530; Rock Canyon, ruin No. 12, JAE 96. Common throughout the Mesa Verde, but more dominant in its southern part; a codominant in the pinyon-juniper forest.

Juniperus scopulorum Sarg.

Rocky Mountain juniper
Cliff Canyon, EHB 22; Point Lookout, PRF 11; Spruce Tree Canyon, WW 1558; Wetherill Mesa Burn, planted, JAE 110. Common along the North Rim; occurs elsewhere in moist draws and canyons.

**Pinus edulis* Engelm. Pinyon pine
Chapin Mesa, Headquarters, S 1571; Far
View Group, WW 1531; Chapin Mesa, Head-
quarters, WAW 5244; Bobcat Canyon, JAE
77. The most abundant tree species in the
Mesa Verde; a codominant of the pinyon-
juniper forest.

**Pinus ponderosa* Dougl. Ponderosa pine
North Rim, Knife Edge, MVEC 79; Bobcat
Canyon, JAE 117, WE 1612. Rare; occurring
as small relict stands throughout the Mesa
Verde. The North Rim, at an elevation of
8000 feet, should possibly support a montane
forest; this problem remains an enigma and
certainly bears investigating.

**Pseudotsuga menziesii* (Mirb.) Franko Douglas fir
North Rim, EHB s. n. (without number);
Bobcat Canyon, JAE 80; Spruce Canyon,
JAE 283; Spruce Tree Canyon, WW 1557.
Common in mesic draws and side canyons,
and on the Mesa top along the North Rim.
This is the "spruce" of Spruce Tree House,
Spruce Tree Canyon, and Spruce Canyon.

ANGIOSPERMAE Flowering Plants

ACERACEAE — Maple Family

Acer glabrum Torr. Rocky Mountain maple
Prater Canyon, SN 1721; Wetherill Mesa,
North Rim, JAE 112; North Rim, B Cut, JAE
365, WEM 2140. A shrub common only be-
low the North Rim escarpment. Spring.

Acer grandidentatum Nutt. ex T. & G. Big-toothed maple
North Rim, B Cut, WAW 5233. This site be-
low the escarpment is the only place in Colo-
rado where big-toothed maple has been
found (Weber, 1950); the species is abund-
ant in adjacent Utah. Spring.

**Acer negundo* L. Boxelder
Prater Canyon, SN 1711, MVEC 101; Soda
Canyon Tipoff, MVEC 30. Somewhat rare;
occurring throughout the Mesa Verde only
in shaded, moist sites. Spring.

AMARANTHACEAE — Amaranth Family

Amaranthus graecizans L. Pigweed
Chapin Mesa, Headquarters, WAW 5237;
Wetherill Project Laboratory, JAE 229. Ad-
ventive in disturbed sites; occasional. Sum-
mer.

Amaranthus hybridus L.
Far View Group, SLW 1853. Adventive in
disturbed sites; occasional. Summer.

ANACARDIACEAE — Sumac Family

**Rhus trilobata* Nutt. Skunkbush
Spruce Tree Canyon, SN 1782; Soda Canyon
Tipoff, MVEC 26; Rock Canyon, ruin No.
12, JAE 99; Spruce Tree Canyon, WW 1556.
Common in side canyons and drainages. This
shrub flowers in early spring before leaves
appear.

**Toxicodendron radicans* (L.) Kuntze Poison ivy
Spruce Tree Canyon, WAW 5238; Occasin
Mesa, Pine Canyon, WEM 2120. Occurs at
base of cliffs and on ledges of moist side
canyons. Spring.

APOCYNACEAE — Dogbane Family

Apocynum cannabinum L. Dogbane
Pine Canyon, WEM 2119. Rare; this speci-
men was taken in a stand of aspen in a
moist, shaded box canyon. Spring.

ASCLEPIADACEAE — Milkweed Family

Asclepias capricornu Woodson Milkweed
Wickiup Canyon, SN 1636; Long House,
JAE 153; Chapin Mesa, Headquarters, WEM
2051. Occurs occasionally throughout the
pinyon-juniper forest. Summer.

Asclepias speciosa Torr. Morfield Canyon, EHB 203. Probably adven-
tive; apparently rare. Summer.

Asclepias subverticillata (A. Gray) Vail
Chapin Mesa, Navajo Hill MVEC 260;
Chapin Mesa, Headquarters, SLW 2213. Oc-
casional in waste places; mesa top. Summer.

BERBERIDEACEAE — Barberry Family

**Berberis repens* Lindl. Oregon grape
Navajo Canyon, SN 1627; Prater Canyon,
MVEC 81; Rock Canyon, ruin No. 16, JAE
71; Spruce Tree Canyon, JAE 281. Common
in side canyons under shady thickets, form-
ing a dense, evergreen ground cover. Spring.

BETULACEAE — Birch Family

Betula occidentalis Hook. Rocky Mountain birch
Locality none, C. W. Quaintance s. n. (Mesa
Verde herbarium). Apparently rare, the only
known stand occurring in a shady site in
Johnson Canyon south of the Mancos River.

BORAGINACEAE — Borage Family

Cryptantha bakeri Greene

Chapin Mesa, Headquarters, SN 1732; Soda Canyon Tipoff, MVEC 46; Soda Canyon, Battleship Rock, MVEC 107; Long House, JAE 39; Navajo Canyon, JAE 294. Common throughout the Pinyon-juniper forest. Spring.

Cryptantha fendleri (A. Gray) Greene

Morfield Canyon, EHB 288.

Cryptantha flava (A. Nels.) Payson

Wetherill Mesa, south end, WEM 2184. Known only from the lower parts of the Mesa Verde. Spring.

Cryptantha gracilis Osterh.

Chapin Mesa, Headquarters, SN 1689; Chapin Mesa, south rim, JAE 269. Abundant under the forest at lower elevations. A spring annual.

**Hackelia gracilentia* (Eastw.) Johnston

Spruce Canyon, SN 1660; Navajo Canyon, Ross s. n. (Mesa Verde herbarium); Rock Springs, MVEC 146; Bobcat Canyon, JAE 46. Common in shaded side canyons under thickets. Spring.

**Lappula redowskii* (Hornem.) Greene var. *redowskii* Stickseed

Confluence of Navajo and Wicket Canyon, SN 1650; Spruce Canyon EHB 11; Rock Springs, JAE 27; Jackson Butte, west rim, JAE 278; Chapin Mesa, Wetherill Project Laboratory, JAE 288, 291. Navajo Canyon, JAE 297. An abundant weedy annual found especially in disturbed sites. Spring.

Lappula redowskii var. *cupulata* (A. Gray) Jones

Prater Canyon, SN 1724. Spring.

Lithospermum incisum Lehm.

Puccoon Navajo Canyon, JAE 293; Chapin Mesa, south end, JAE 298. Occasional throughout the pinyon-juniper forest. Spring.

**Lithospermum ruderales* Dougl.

North Rim, Switchbacks Road, SN 1759, EHB 64; Park Point, MVEC 70; Wetherill Mesa, North Rim, JAE 139, 151; Far View Group, JAE 304; Morfield Burn, JAE 357. Fairly common throughout the northern part of the Mesa Verde, in the brush zone. Spring.

Mertensia fusiformis Greene

Bluebells Park Point, SN 1585; Navajo Canyon, EHB 33; Wetherill Mesa, North Rim, JAE 202; Park Point, JAE 285; Prater Canyon, JAE

362. Common in the brush zone along the North Rim. Spring.

CACTACEAE — Cactus Family

Echinocactus mesa-verdae (Boiss. & David.)

Benson

Not collected. Endemic to the Jackson Butte area below the west rim of the Mesa Verde in the saltbush desert (Boissevain and Davidson, 1940). Early spring.

Echinocactus whipplei Engelm. & Bigel.

Fishhook cactus

Not collected. Common along the south end of the Mesa Verde. Spring.

**Echinocereus coccineus* Engelm.

Hedgehog cactus

Confluence of Spruce and Navajo Canyons, SN 1655; Long House, JAE 43. Common along the rimrock areas of the Mesa Verde. Spring.

Echinocereus fendleri (Engelm.) Rumpel

Mancos Canyon, Soda Canyon Tipoff, MVEC 29. The specimen consists of a single flower and the diagnostic color is difficult to establish. It may represent a large-flowered form of the preceding species. However, Weber, (1955) has collected this species below Soda Canyon Tipoff, WAW 5449.

Mamillaria vivipara (Nutt.) Haw

Ball cactus Chapin Mesa, Headquarters, SN 1791. Occasional throughout the pinyon-juniper forest. Spring.

**Opuntia davisii* Engelm. & Bigel. Rattail cactus

Navajo Canyon, SN 1767; Soda Canyon Tipoff, MVEC 28. Rare; occurring only in the canyons. Summer.

Opuntia hystricina Engelm. & Bigel. ?

Prickly pear Spruce Tree Canyon, WEM 2078. This specimen has the characteristics attributed to the species. However, the *Opuntia* species (especially *O. polyacantha* and this one) show considerable variation and intergradation. It is possible that *O. rhodantha* also occurs on the Mesa. Certain specimens resemble that taxon.

**Opuntia phaeacantha* Engelm.

Spruce Canyon, SN 1731; Chapin Mesa, Pool Canyon, WEM 2181. Common on the mesa tops to the south and in the deeper canyons. Spring.

**Opuntia polyacantha* Haw

Wickiup Canyon, SN 1642; Morfield Canyon, MVEC 100; Long House JAE 42, 73. Very common throughout the Mesa Verde pinyon-juniper forest. Spring.

CAPPARIDACEAE — Capper Family

Cleome lutea Hook.

Yellow spiderflower
Confluence of Navajo and Spruce Canyons, SN 1739. *C. lutea* has not been noted in the Mesa Verde by the present authors. It is presumed to be rare. Summer.

**Cleome serrulata* Pursh

Beeplant

Morfield Canyon, EHB 289, 312; Rock Canyon, Long House, JAE 125. Rare in the Mesa Verde, growing in sandy, disturbed sites. Summer.

Cleome serrulata Pursh var. *angustum*

(Jones) Tidestr.

Morfield Canyon, EHB 312. Summer.

CAPRIFOLIACEAE — Honeysuckle Family

**Sambucus coerulea* Raf.

Blue elderberry

The Knife-Edge, SN 1764. Apparently restricted to the North Rim escarpment. Summer.

**Symphoricarpos oreophilus* A. Gray

Snowberry

Navajo Canyon, SN 1599; Spruce Canyon, SN 1727; Morfield Canyon, MVEC 20; Navajo Hill, MVEC 59; Rock Canyon, JAE 86; Navajo Canyon, JAE 224; North Rim, B Cut, JAE 336; North Rim, WW 1524. Common under brush along the North Rim and in shaded side canyons. Spring.

CARYOPHYLLACEAE — Pink Family

Arenaria congesta Nutt.

Sandwort

Prater Canyon, SN 1704; Navajo Hill, MVEC 63, 116; Park Point, MVEC 153; North Rim, B Cut, WEM 2143. Common in the brush zone along the North Rim. Spring.

Arenaria macrophylla Hook.

North Rim, B Cut, WEM 2146. In Douglas fir stands below the North Rim escarpment; occasional. Summer.

Silene antirrhina L.

Campion

Pool Canyon, WEM 2176. Occasional. Spring.

Silene noctiflora L.

Chapin Mesa, residence area, JAE 390. A garden weed. Spring.

Stellaria jamesiana Torr.

Chickweed

Prater Canyon, SN 1707; Park Point, EHB s.n.; Navajo Canyon, MVEC 109, 287; North Rim, WEM 2147. Occasional in oak and Douglas fir stands on the north rim. Early summer.

CELASTRACEAE — Staff Tree Family

**Pachystima myrsinites* Raf.

Mountain lover

Spruce Tree Canyon, SN 1661, EHB 8; Rock Springs, JAE 188; Spruce Tree House, WW 1555. Shady sites in the canyons; occasional. Spring.

CHENOPODIACEAE — Goosefoot Family

**Atriplex canescens* (Pursh) Nutt.

Fourwing saltbush

Far View Group, SN 1774; Navajo Canyon, SN 1773, EHB 242; Soda Canyon Tipoff, MVEC 33; Morfield Canyon, MVEC 98; Park Point, MVEC 163; Long House draw, JAE 56; Navajo Canyon, JAE 227; Far View Group, WW 1536. Widespread throughout the Mesa Verde from the lowest to the highest elevations; seldom abundant. Summer.

**Atriplex confertifolia* (Torr. & Frem.) S. Wats.

Shadscale

Spruce Canyon, SN 1735, JAE 346, WEM 2073. Uncommon; occurring on slopes in the canyons. Summer.

Atriplex corrugata S. Wats.

Mat-atrilex

Jackson Butte, west rim, JAE 280. Desert west of the Mesa Verde; a dominant species on the Mancos shale formation. Spring.

Atriplex rosea L.

Annual saltbush

Confluence of Navajo and Spruce Canyons, WAW 3623. Rare.

Chenopodium berlandieri Moq.

Goosefoot

Morfield Canyon, PRF 12. Occasional. Summer.

Chenopodium fremontii S. Wats.

Chapin Mesa, Headquarters, WAW 5218; Far View Group, SLW 1856. Disturbed sites; locally abundant. Summer.

Chenopodium leptophyllum Nutt. ex S. Wats.

Park Point, WAW 5231. Oak thickets. Summer.

Chenopodium pratericola Rydb.

Morfield Burn, JAE 207; Wetherill Mesa, Badger House, JAE 237; Mug House, SLW 1849. A pioneer in recently disturbed sites. This was a codominant with sunflower the

first year after the Morfield fire, and is abundant on the backfill of recently excavated ruins.

Eurotia lanata (Pursh) Moq. Winterfat
Park entrance, PRF 1. Apparently not found on the Mesa Verde proper, but below it on the Mancos shale formation. Summer.

Salsola kali L. Russian thistle
Chapin Mesa, Headquarters, WAW 5236; Morfield Burn, JAE 239. An Old World adventive in disturbed sites; occasional. Summer.

**Sarcobatus vermiculatus* (Hook.) Torr. Greasewood
Confluence of Navajo and Spruce Canyons, SN 1737; Navajo Canyon, JAE 226; Spruce Canyon, WEM 2070. Canyon bottoms and shale outcrops; locally common. Summer.

COMPOSITAE — Sunflower Family

Achillea millefolium L. Yarrow
Far View Group, SN 1757; Morfield Canyon, MVEC 93; Park Point, MVEC 158; Rock Canyon, JAE 66; Wetherill Mesa, North Rim, JAE 136. Common in the shrub zone along the North Rim. Summer.

Agoseris aurantiaca (Hook.) Greene Mountain dandelion
Morfield Canyon, EHB 97, 285. Spring.

Agoseris glauca (Pursh) D. Dietr.
Park Point, SN 1586. Spring.

Ambrosia coronopifolia T. & C. Ragweed
Chapin Mesa, Headquarters, SLW 2211. Rare; probably adventive. Summer.

Antennaria dimorpha (Nutt.) T. & C. Pussytoes
Bobcat Canyon, JAE 16; Prater Canyon, JAE 363. Exposed, sandy sites; occasional. Spring.

Antennaria parvifolia Nutt.
Wickiup Canyon, PRF 1786; Morfield Canyon, MVEC 12; Bobcat Canyon, JAE 21, 68; Navajo Canyon, SLW 1748; Chapin Mesa, Headquarters, WEM 2094. Common throughout the Mesa Verde. Summer.

Antennaria rosca (Eaton) Greene
Navajo Canyon, M. E. C. (surname unknown) s. n. Summer.

Artemisia dracunculul L. Tarragon
Chapin Mesa, Headquarters, D. Watson, s. n.; Wetherill Mesa, North Rim, JAE 127,

SLW 1659. Common especially in the saddles and meadows along the North Rim. Autumn.

Artemisia frigida Willd. Fringed sagebrush
Morfield Canyon, EHB 314, PRF 16; Navajo Canyon, JAE 240. Uncommon; canyons and North Rim area. Autumn.

**Artemisia ludoviciana* Nutt.
Switchbacks Road, EHB 293; Navajo Canyon, EHB s.n.; Rock Canyon, ruin No. 12, JAE 164; Spruce Tree Canyon, JAE 243; Long House, SLW 1651. Shaded side canyons and North Rim; common. Autumn.

Artemisia nova A. Nels. Black sagebrush
Square Tower House, EHB 326; Park Point, JAE 238. The dominant shrub in the openings between the thickets of oak and serviceberry along the North Rim; generally indicative of shallow soils. Autumn.

Artemisia spinescens D. C. Eaton Bud sagebrush
Jackson Butte, below west escarpment, JAE 279. Occurs in the desert below the Mesa Verde proper. Spring.

**Artemisia tridentata* Nutt. Big sagebrush
Far View Group; SN 1686, EHB 307, WW 1535; Navajo Canyon, JAE 241. The dominant climax species of the canyon bottom floodplains on sandy alluvium; also the dominant in successional stands on the mesa top where the soil mantle is deep, and an excellent indicator of prehistoric sites. Autumn.

Aster arenosus Blake Aster
Prater Canyon, SN 1703; Chapin Mesa, the Glades, EHB 127; Soda Canyon Tipoff, MVEC 36; Spruce Canyon, JAE 345. Common on exposed, shale slopes; occasional elsewhere. Spring.

Aster bigelovii A. Gray
Chapin Mesa, Sun Temple, SN 1750; Morfield Canyon, EHB 301; Navajo Canyon, JAE 221; Badger House, JAE 236; Long House, SLW 1656; Mug House, SLW 1850. A pioneer on backfill and other disturbed sites; elsewhere occasional. Summer-autumn.

Aster falcatus Lindl. ex DC. White aster
Park entrance, PRF 3; North Rim, EHB 302. Common on the North Rim. Late summer and autumn.

Aster glaucoles Blake.

Point lookout, EHB 216. Locally abundant on shale, especially along the North Rim. Summer-autumn.

Bahia dissecta (A. Gray) Britt.

Spruce Tree Canyon, Museum, WAW 5214; Bobcat Canyon rim, WE 2568. Rare. Autumn.

Balsamorhiza sagittata (Pursh) Nutt.

Balsamroot

Little Soda Canyon, East Fork, SN 1574; Spruce Tree Canyon, WAW 5214; Wetherill Mesa, North Rim, JAE 134; Park Point, JAE 331. Common; openings of the shrub zone along the North Rim. Spring.

Brickellia brachyphlla A. Gray

Brickellbush

Spruce Tree Canyon, Museum, WAW 5216. Autumn.

**Brickellia californica* (T. & G.) A. Gray

Cliff Canyon, EHB 305; Spruce Tree Canyon, WAW 5215, JAE 242; Moccasin Mesa, south rim, JAE 246; Long House, SLW 1655. Common; base of cliffs and on ledges of side canyons. This is by far the most abundant of the brickellbushes in the Mesa Verde. Autumn.

Brickellia grandiflora (Hook.) Nutt.

Navajo Canyon, SN 1746. Occasional; North Rim. Autumn.

Brickellia oblongifolia (Nutt.) Kuntze

Wetherill Mesa, south end, WEM 2188. Known in the Mesa Verde only from the basalt plug at the south end of Wetherill Mesa. Summer.

Brickellia scabra (A. Gray) A. Nels.

Spruce Tree Canyon, WAW 5243, SLW 1858; Moccasin Mesa, Pine Canyon, JAE 247. Restricted to exposed, often shaley sites. Autumn.

Centaurea repens L.

Russian knapweed

Chapin Mesa, Headquarters, SLW 2212. An Old World weed; rare. Summer.

Chaenactis douglasii (Hook.) H. & A.

False yarrow

Confluence of Wickiup and Navajo Canyons, SN 1632; Cedar Tree Tower, MVEC 1; Prater Canyon, MVEC 85; head of Bobcat Canyon, JAE 20. Common along the mesa rims and in the canyons. Spring.

Chrysopsis villosa (Pursh.) Nutt.

Golden aster

Switchbacks Road, SN 1755; Spruce Tree Canyon, EHB s.n.; Soda Canyon Tipoff,

MVEC 35; Rock Springs, MVEC 129; Long House, JAE 13. Common along the mesa rims and cliffs. Summer.

Chrysothamnus depressus Nutt.

Drawf rabbitbrush

North Rim, EHB 295; Wetherill Mesa, Bobcat drainage, JAE 178; Chapin Mesa, Headquarters, SLW 2570. Occasional; openings along the North Rim and in stands of big sagebrush and pinyon-juniper on the mesa tops. Summer.

**Chrysothamnus nauscosus* (Pall.) Britt.

Rabbitbrush

North Rim, EHB 303; Morfield Canyon, EHB 319; Rock Springs, MVEC 133; Wetherill Mesa, North Rim, JAE 126; Long Mesa, North Rim, JAE 232; Long House, SLW 1660. Common in the saddles along the North Rim; elsewhere, occurs in disturbed areas such as recent burns and road cuts. Autumn.

Chrysothamnus viscidiflorus (Hook.) Nutt.

Rock Canyon, JAE 106. Uncommon, occurring on the canyon bottom floodplains. Summer-autumn.

Cirsium arvense (L.) Scop.

Canadian thistle

Chapin Mesa, Headquarters, SLW 2207. A noxious Old World weed. Summer.

Cirsium lanceolatum (L.) Hill

Bull thistle

Chapin Mesa, Headquarters, SLW 2569. A noxious Old World weed. Summer-autumn.

Cirsium neomexicanum A. Gray ?

Thistle

Spruce Canyon, SN 1729. This specimen may belong to *C. tracyi* (see below). Summer.

Cirsium pulchellum (Greene) W. & S.

Confluence of Long and Navajo Canyons, SN 1776; Rock Canyon, WE 1620. Occasional in canyon bottoms. Summer.

Cirsium tracyi (Rydb.) Petrak

Rock Canyon, WE 1618. Occasional; canyon bottoms. Summer.

Cirsium undulatum (Nutt.) Spreng.

North Rim, EHB 180; Wetherill Mesa, North Rim, JAE 140; Morfield Burn, JAE 387; Wetherill Mesa, North Rim, WEM 2203. Common in disturbed sites. Summer.

Conyza canadensis (L.) Cronq.

Horseweed

Confluence of Navajo and Wickiup Canyons, PRF 1803; Mug House, JAE 391. Disturbed sites; the later collection was made from the backfill of a recently excavated ruin. Summer.

- Crepis acuminata* Nutt. Hawkbeard
Switchbacks Road, SN 1756, EHB 181b;
Wetherill Mesa, North Rim, MVEC 124,
WEM 2204; Park Point, MVEC 154; Navajo
Hill, MVEC 286. Common in the brush zone
along the North Rim. Summer.
- Crepis intermedia* A. Gray
Navajo Hill, MVEC 60; Wetherill Mesa,
North Rim, JAE 131; Morfield Canyon,
WEM 2063. Occasional; openings along the
North Rim. Summer.
- Crepis modocensis* Greene
School Section Canyon, EHB 110. This speci-
men has not been examined by the authors.
Another specimen collected by Bader in
School Section Canyon belongs to another
species. It was labeled as *C. modocensis*,
however.
- Crepis occidentalis* Nutt.
School Section Canyon, EHB s. n.; Park
Point, WEM 2087; Wetherill Mesa, North
Rim, WEM 2202. Common in the brush zone
along the North Rim. Summer.
- Erigeron divergens* T. & G.
Spreading fleabane
Navajo Canyon, S 1771; Wetherill Mesa, Bob-
cat drainage, JAE 17, 185; Rock Springs draw,
JAE 392; Park Point, WEM 2084. Occasional
along the North Rim and elsewhere. Summer.
- Erigeron eatonii* A. Gray
Prater Canyon, SN 1708.
- Erigeron engelmannii* A. Nels.
Park Point, EHB 160. This specimen may
well belong to *E. pumilus* which is separated
on technical characters.
- Erigeron speciosus* (Lindl.) DC. var. *macran-
thus* (Nutt.) Cronq. Morfield Canyon, EHB
264; Park Point, MVEC 157; Far View Group,
MVEC 218; Rock Canyon, JAE 93. Common
at edge of thickets along the North Rim.
Summer.
- Erigeron utahensis* A. Gray
Long Canyon, PRF 1777; Wetherill Mesa,
Double House, Ross 135. Occasional on talus
slopes. Summer.
- Eupatorium herbaceum* (A. Gray) Greene
Moccasin Mesa, Pine Canyon, JAE 245. Can-
yon ledge. Summer.
- Grindelia aphanactis* Rydb. Gumweed
Chapin Mesa, Headquarters, WAW 5219.
Summer.
- Grindelia arizonica* A. Gray
North Rim, PRF s. n. Common along the
North Rim. Summer.
- Gutierrezia sarothrae* (Pursh) Britt. & Rusby.
Snakeweed
Square Tower House, PRF 1813; Wetherill
Burn, Rock Springs, JAE 123; ruin No. 12,
JAE 163; Navajo Canyon, JAE 223. Common
in the canyons and lower parts of the Mesa
Verde; occurs also in disturbed areas. Sum-
mer.
- Haplopappus armerioides* (Nutt.) A. Gray
Goldenweed
Soda Canyon, EHB s. n.; North Rim, MVEC
71; Wetherill Mesa, south end, JAE 214;
Chapin Mesa, south rim, JAE 301. Common
in the calcareous soils along the south end of
the Mesa Verde. Spring.
- Haplopappus nuttallii* T. & G.
Park Entrance, PRF 2; Rock Canyon, JAE
168; Pine Canyon, WEM 2115. Occasional
along the canyon rims and on talus slopes.
Summer.
- **Helianthus annuus* L. Common sunflower
Park Point, WAW 5228; Wetherill Burn,
Rock Springs, JAE 113. Common in disturbed
sites. Summer.
- Helianthus petiolaris* Nutt.
Confluence of Navajo and Spruce Canyons,
SN 1736. Disturbed sites. Summer.
- Hymenopappus filifolius* Hook.
Confluence of Wickiup and Navajo Canyons,
SN 1631; Soda Canyon, EHB 128; Chapin
Mesa, south rim, JAE 324; Navajo Canyon,
SLW 1747. Canyons and lower mesa tops;
occasional. Spring.
- Hymenoxys acaulis* (Pursh) Parker
Chapin Mesa, Sun Temple, EHB s. n.; Park
Point, M. E. C. (surname unknown) s. n.;
Prater Canyon, MVEC 82; Chapin Mesa,
Headquarters, WW 1538; Wetherill Mesa,
North Rim, JAE 132; Chapin Mesa, south
rim, JAE 311; Park Point, WEM 2086. Com-
mon throughout the Mesa Verde. Spring-
summer.
- Hymenoxys richardsonii* (Hook.) Ckll. var.
floribunda (A. Gray) Parker
Big Mesa, JAE 398; Mancos Canyon, WEM
2163. Occasional; disturbed pinyon-juniper
woodland. Summer.

- Iva axillaris* Pursh Povertyweed
Mancos Canyon, WEM 2153. Common along Mancos River. Summer.
- Iva xanthifolia* Nutt.
Park Point, WAW 5229. Occasional in disturbed soils. Summer.
- Lactuca pulchella* (Pursh) DC. Wild lettuce
Morfield Canyon, EHB s.n. Occasional weed; brush zone. Summer.
- Lactuca scariola* L.
Little Soda Canyon, PRF 1815. Occasional weed; brush zone. Summer.
- Lygodesmia grandiflora* (Nutt.) T. & G. Skeleton plant
Mancos Canyon, WEM 2169. Occasional in disturbed pinyon-juniper woodland along Mancos River. Summer.
- Senecio eremophilus* Richards. Groundsel
Prater Canyon, EHB 300.
- Senecio longilobus* Benth.
Wetherill Burn, Rock Springs, JAE 107. Rare; occurring in burned areas at the higher elevations. Summer.
- Senecio multilobatus* T. & G. ex A. Gray
Wickiup Canyon, PRF 1637; Cedar Tree Tower, MVEC 2; Navajo Canyon MVEC 108; Chapin Mesa, Headquarters, WW 1539; Rock Canyon, JAE 67, 107; Wetherill project laboratory, JAE 292; Chapin Mesa, south rim, JAE 325. Occasional throughout the pinyon-juniper forest. Summer.
- Senecio mutabilis* Greene
Navajo Canyon, S 1598; ridge between Morfield and Prater Canyons, EHB s. n.; Cedar Tree Tower, MVEC 2a; Morfield Canyon, MVEC 97; Wetherill Mesa, Bobcat drainage, JAE 19; Wetherill Project laboratory, JAE 316; Chapin Mesa, north end, WW 1529. Occasional throughout the pinyon-juniper forest. Summer.
- Solidago petradoria* Blake ex Tidestr. Rock goldenrod
Morfield Canyon, EHB 192; Chapin Mesa, EHB 236; Soda Canyon Tipoff, MVEC 44; Far View Group, MVEC 219; Wetherill Mesa, North Rim, JAE 114. Common, especially in the openings of the shrub zone. Summer.
- Solidago sparsiflora* A. Gray
Soda Canyon, EHB 239; Rock Canyon, JAE 88, WE 1624. Common along the channel bottoms in the canyons. Summer.
- Sonchus aspera* (L.) Hill Sow thistle
Confluence of Navajo and Spruce Canyons, PRF 1595a; Rock Canyon JAE 92. A weed occurring occasionally in moist, open sites. Summer.
- Stephanomeria tenuifolia* (Torr.) Hall Wirelettuce
Chapin Mesa, Oak Tree House, EHB 224; Wetherill Mesa, ruin No. 12, JAE 102; Long House, JAE 235; Step House, SLW 1848. Common along cliffs and ledges. Summer.
- Taraxicum officinale* Wiggins Dandelion
Park Point, M. E. C. (surname unknown) s. n. An old World weed; common only in moist sites. Spring-summer.
- Tetradymia canescens* DC. Gray horsebrush
Chapin Mesa, EHB 230; Wetherill Mesa, North Rim, JAE 109. Occasional in the openings of the brush zone. Summer.
- Townsendia exscapa* (Richards.) Porter
Head of Bobcat Canyon, JAE 75; Wetherill Mesa, south end, WW 1552. Rare; pinyon-juniper forest. Spring.
- Townsendia incana* Nutt. Easter daisy
Spruce Tree Canyon, SN 1570a, EHB 122; Soda Canyon Tipoff, MVEC 39; Rock Canyon, ruin No. 12, JAE 193; Chapin Mesa, south rim, JAE 310, 322; Pine Canyon, WEM 2137. Occasional in pinyon-juniper forest. Spring.
- Tagopogon pratensis* L. Salisfly
Long Canyon, SN 1780; Prater Canyon, EHB 176; Rock Springs, MVEC 131; Rock Canyon, JAE 62; Wetherill Project laboratory, JAE 383; Morfield Canyon, WEM 2062. An Old World weed; common besides roads and elsewhere. Summer-autumn.
- Verbena encelioides* (Cav.) B. & G. ex A. Gray
Morfield Canyon, EHB 206; Wetherill Project Laboratory, JAE 230; Far View Group, SLW 1852. Locally abundant in wet seasons. Summer-autumn.
- Viguiera multiflora* (Nutt.) Blake Goldeneye
Far View Group, SLW 1855. Common in successional stands in the shrub zone; occasional elsewhere. Summer-autumn.

Wyethia arizonica A. Gray

Park Point, SN 1595; Spruce Tree Canyon, PRF 1800; Navajo Hill MVEC 62; Wetherill Mesa, North Rim, JAE 149; Chapin Mesa, North Rim, JAE 367. Common in opening along the North Rim. Spring.

CONVOLVULACEAE — Morning-glory Family

Convolvulus arvensis L.

Bindweed

Mancos Canyon, WEM 2170. An Old World weed. Summer.

CRASSULACEAE — Orpine Family

Sedum stenopetalum Pursh

Stonecrop

Prater Canyon, MVEC 86. Rare. Summer.

CRUCIFERAE — Mustard Family

Arabis drummondii A. Gray

Rockcress

Morfield Canyon, WEM 2064. Summer.

Arabis fendleri (S. Wats.) Greene

Bobcat Canyon, JAE 49; Chapin Mesa, Headquarters, WEM 2111. Summer.

Arabis hirsuta (L.) Scop.

Morfield Canyon, PRF 1819. Summer.

Arabis holboellii Hornem.

Morfield Canyon, WEM 2058; Chapin Mesa, Headquarters, WEM 2109. Occasional. Summer.

Arabis lignifera A. Nels.

Chapin Mesa, Headquarters, SN 1710. Spring-Summer.

Arabis pulchra M. E. Jones ex S. Wats.

Mancos Canyon rim, M. E. C. (surname unknown) s.n.; Chapin Mesa, south end, JAE 266. Under pinyon-juniper on calcareous soil. Spring.

Arabis selbyi Rydb.

Spruce Tree Canyon, EHB 16; Wetherill Mesa, south end, JAE 213; Navajo Canyon, JAE 253; Chapin Mesa, south end, JAE 271; Pine Canyon, WEM 2124; Wetherill Mesa north end, WEM 2200. Common throughout the Mesa Verde under pinyon-juniper. Spring.

Camelina microcarpa Andr.

False flax

Chapin Mesa, Headquarters, SN 1688; Morfield Canyon, EHB 98; Confluence of Navajo and Wickiup Canyons, JAE 348. Adventive

along trailsides and other disturbed sites. Spring.

Capsella bursa-pastoris (L.) Medic.

Shepherd's purse

Chapin Mesa, Headquarters, SLW 2216. An Old World weed; uncommon. Spring.

Cardaria draba (L.) Desv.

Whitewort

Mancos Canyon, WEM 2151. Locally common along the Mancos River; introduced from the Old World. Summer.

Chorispora tenella DC.

Navajo Canyon, JAE 258; Spruce Canyon, JAE 354. A trailside weed; introduced from the Old World. Spring.

Descurainia pinnata (Walt.) Britt.

Tansy mustard

Chapin Mesa, Headquarters, SN 1751; Soda Canyon, EHB 47; Chapin Mesa, south end, JAE 268. Common in disturbed sites. Spring.

Descurainia sophia (L.) Webb. ex Engler & Prantl

Morfield Canyon, MVEC 99; Wetherill Mesa, North Rim, JAE 137; Park Point, JAE 335. A robust weed in disturbed sites. Spring-summer.

Draba reptans (Lam.) Fern.

Whitlow wort

Long House, JAE 40; Wetherill Mesa, North Rim, JAE 197; Chapin Mesa, south end, JAE 252; Navajo Canyon, JAE 295. An abundant spring annual in the pinyon-juniper forest throughout the Mesa Verde.

Erysimum inconspicuum (S. Wats.) MacM.

Wallflower

Morfield Canyon, EHB 294. Rare. Spring.

Lepidium campestre (L.) R. Br.

Pepperweed

Chapin Mesa, Headquarters, WEM 2096. Moist drainage; rare. Summer.

Lepidium densiflorum Schrad.

Far View Group, SN 1679; Spruce Canyon, EHB 146. An annual plant which varies in abundance with varying moisture; occasional. Spring.

Lepidium montanum Nutt. ex T. & G.

Morfield Canyon, PRF 21; Step House, JAE 78; Rock Canyon, ruin No. 12, JAE 101; Long House, JAE 234, SLW 1851. Common throughout the Mesa Verde, but especially abundant on trash slopes and backfill of prehistoric sites. Summer.

Lesquerella rectipes Woot. & Standl.

Bladderpod

Spruce Tree House, SN 1563; Soda Canyon Tipoff, MVEC 45; Chapin Mesa, south rim, JAE 308; Chapin Mesa, Headquarters, WEM 2104. Southern parts of the Mesa Verde; canyons and open sites on calcareous soil. Spring.

Physaria australis (Pays.) Rollins

Double bladderpod

Park Point, MVEC 122; Mug House, JAE 26; Chapin Mesa, south end, JAE 267, 323. Occasional throughout the Mesa Verde; especially on mesa rims and in the canyons. Spring.

Raphanus raphanistrum L.

Wild radish

Navajo Canyon, EHB 274. Rare.

Rorippa obtusa (Nutt.) Britt.

Chapin Mesa, Headquarters, WEM 2090. Occasional; moist drainage. Summer.

Sisymbrium altissimum L.

Tumbling mustard

Rock Canyon, Long House draw, JAE 63; Wetherill Project laboratory, JAE 317. A robust weed introduced from Europe; disturbed sites. Spring.

Sisymbrium linifolium Nutt.

Spruce Tree House, SN 1562; Morfield Canyon, EHB 95; Wetherill Project laboratory, JAE 315. A plant of disturbed or open sites; occasional. Spring.

**Stanleya pinnata* (Pursh) Britt.

Prince's plume

Chapin Mesa, Balcony House, SN 1742; Wickiup Canyon, EHB 189; Soda Canyon Tipoff, MVEC 42; Long House draw, JAE 55; Spruce Tree Canyon, WEM 2077. Occasional in canyons on shale outcrops. This plant is an indicator of seleniferous soils (Cannon, 1952). Spring-summer.

Stanleyella wrightii (A. Gray) Rydb.

Confluence of Spruce Tree and Spruce Canyons, PRF 1804. Rare.

Streptanthus cordatus Nutt.

Twistflower

Navajo Canyon, SN 1741; Soda Canyon, EHB 57; Chapin Mesa, Headquarters, PRF 2066; Navajo Hill, MVEC 265; ruin No. 12, JAE 199; Chapin Mesa, south rim, JAE 284, 319. Common; especially in the southern parts of the Mesa Verde and on canyon slopes. Spring.

Thlaspi alpestre L.

Wild candytuft

Navajo Canyon, SN 1626, EHB s.n.; Rock Canyon, Kodak House, JAE 198. Occasional

throughout the Mesa Verde; especially along the North Rim. Spring.

Thelepodium rhomboideum Greene

Confluence of Spruce and Spruce Tree Canyons, PRF 1804; Rock Springs, MVEC 143, JAE 395. Occasional in canyons and draws, usually under oak thickets. Summer.

CYPERACEAE — Sedge Family

Carex geyeri Boott.

Elk sedge

Rock Springs draw, JAE 187. Common under oak thickets along the North Rim and in side canyons and draws. Summer.

Carex deweyana Schw.?

Pine Canyon, WEM 2117.

Carex festivella Mack.

Spruce Canyon, EHB 146a.

Carex heliophila Mack.

Morfield Canyon, EHB 102, 162.

Carex occidentalis Bailey

Spruce Canyon, EHB 107; Morfield Canyon, WEM 2061; Pine Canyon, WEM 2135. Occasional in mesic sites; canyon bottoms and slopes. Summer.

Carex praegracilis Boott.

Navajo Canyon, EHB 91; Prater Canyon, WEM 2056. Summer.

Carex sp.

Navajo Canyon, JAE 273; Pine Canyon, WEM 2134.

Eleocharis macrostachya Britt. ex Small

Spikesedge

Mancos Canyon, WEM 2157, 2161. Common on streamside gravels. Summer.

Scirpus americanus Pers.

Bulrush

Mancos Canyon, WEM 2155. Common along Mancos River. Summer.

Scirpus paludosus A. Nels.

Rock Canyon, JAE 174. Apparently rare, this collection taken from an extensive spring site; an emergent. Summer.

Scirpus vallisidus Vahl.

Mancos Canyon, WEM 2156. Occasional along Mancos River. Summer.

ELEAGNACEAE — Oleaster Family

Shepherdia argentea (Pursh) Nutt.

Buffaloberry

Without collector or locality, s. n. (Mesa

Verde herbarium). Common along the Mancos River at the east boundary of the Park. Spring.

EUPHORBIACEAE — Spurge Family

Euphorbia fendleri T. & G. Spurge
Chapin Mesa, south rim, JAE 307, 321. Common in the open pinyon-juniper woodland on calcareous soils, Spring-summer.

Euphorbia robusta (Engelm.) Small
Spruce Tree House, SN 1662; Navajo Canyon, EHB 251; Bobcat Canyon, JAE 48; Pine Canyon, WEM 2130. Under thickets and along moist cliffs in shaded side canyons. Summer.

FAGACEAE — Beech Family

Quercus ajoensis Muller Ajo oak
Bobcat Canyon rim, JAE 95, WE 1611. Rare; restricted to a few small clones in xeric rim-rock sites. Formerly believed to be endemic to the Ajo Mountains of southwestern Arizona (Erdman, et al., 1962).

**Quercus gambelii* Nutt. Gambel oak
Navajo Canyon, EHB 271, 272; Cedar Tree Tower, MVEC 6; Far View Group, MVEC 222; Park Point, JAE 333; Wetherill Mesa, north end, WW 1532. The common oak of the Mesa Verde, but especially abundant and dominant in the shrub zone along the North Rim. Spring.

**Quercus gambelii* Nutt. X *Q. turbinella* Greene Wavy-leaf oak
Long House, SLW 1764; Wetherill Mesa, south end, WEM 2185, 2190. These specimens are not at all uniform and may represent crosses with other species; combinations between *Q. gambelii* and *Q. ajoensis* or between *Q. gambelii* and *Q. havardii* are also possible. Rare; primarily on rimrock along the south end of the Mesa Verde. Spring.

Quercus turbinella Greene X *Q. ajoensis* Muller
Chapin Mesa, Thomas House, JAE 220. Rare; this clone occurring on the mesa rim. Spring.

FUMARIACEAE — Fumitory Family

Corydalis aurea Willd. Goldensmoke
Confluence of Navajo and Wickiup Canyons, SN 1649; Spruce Canyon, EHB 12. Rare; open sandy areas. Spring-summer.

GENTIANACEAE — Gentian Family

Sweria albomarginata (S. Wats.) Kuntze Green gentian
Soda Canyon Tipoff, MVEC 34; ruin No. 12, WE 1617. Occasional in the southern part of Mesa Verde on calcareous soils. Spring.

GERANIACEAE — Geranium Family

Erodium cicutarium (L.) L'Her Storks-bill
Chapin Mesa, Headquarters, SN 1691; Wetherill Project laboratory, JAE 264. A prostrate weed on disturbed sites. Spring-summer.

Geranium caespitosum James
Morfield Canyon, EHB 202; Rock Springs, JAE 397. Occasional in draws and side canyons. Summer.

GRAMINEAE — Grass Family

Agropyron desertorum (Fisch.) Schult. Crested wheatgrass
Morfield Burn, JAE 212. Introduced in burned areas in an attempt to check erosion; an Old World grass. Summer.

Agropyron intermedium (Host.) Beauv. Intermediate wheatgrass
Morfield Burn, JAE 210; Wetherill Project laboratory, JAE 386. Introduced in burned areas, but also common beside roads; an Old World grass. Summer.

Agropyron smithii Rydb. Western wheatgrass
North Rim, EHB 181; Morfield Canyon, MVEC 2; Park Point, MVEC 165; Wetherill Mesa, North Rim, JAE 146; Bobcat drainage, JAE 182; Navajo Canyon, JAE 378. Common; especially in North Rim saddles. Summer.

Agropyron trachycaulum (Linke) Malte Slender wheatgrass
Far View Group, SN 1781; Spruce Canyon, EHB 118; Rock Canyon, JAE 172; Spruce Canyon, WEM 2075, 2080. Occasional in canyon bottoms; usually in shaded areas. Summer.

Agrostis alba L. Redtop
Fewkes Canyon, EHB 256; Chapin Mesa, Headquarters, SLW 2210. Locally common in moist areas; an Old World grass. Summer.

Aristida fendleriana Steud. Three-awn
Wetherill Mesa, south end, JAE 216; Chapin Mesa, Pool Canyon, WEM 2178. Occasional on the mesas in the southern part of Mesa Verde. Summer.

- Avena fatua* L. Wild oat
Park Point, WAW 5232. An Old World adventive in disturbed sites. Summer.
- Bouteloua curtipendula* (Michx.) Torr. ex Emory
Sideoats grama
Mancos Canyon, Two-story Cliff House, JAE 409. Dry, open ledges; rare. Summer.
- Bouteloua gracilis* (H. B. K.) Lag. ex Steud.
Blue grama
Morfield Canyon, EHB 268; Moccasin Mesa, south rim, JAE 249. Occasional throughout the Mesa Verde; more common in moist years. Summer.
- Bromus anomalus* Rupr. ex Fourn.
Nodding brome
Spruce Canyon, EHB 119.
- Bromus carinatus* Hook. & Arn.
California brome
Morfield Burn, JAE 211. Occasional in disturbed sites. Summer.
- Bromus inermis* Leyss.
Smooth brome
Rocks Springs, MVEC 137; Wetherill Burn JAE 152; Wetherill Mesa, Bobcat drainage, JAE 181; Morfield Burn, JAE 358. Introduced in burned area, but also common along roads; an Old World grass. Summer.
- Bromus japonicus* Thunb.
Japanese chess
Morfield Burn, JAE 209; Chapin Mesa, Headquarters, WEM 2107; Mancos Canyon, WEM 2166. An introduced weed of disturbed sites. Summer.
- Bromus tectorum* L.
Cheatgrass
Chapin Mesa, Sun Temple, EHB 80; Mancos Canyon, MVEC 37; Wetherill Mesa, North Rim, JAE 145; Wetherill Project laboratory, JAE 372. An introduced weed under big sagebrush in canyon bottoms and waste places. Spring.
- Dactylis glomerata* L.
Orchard grass
Far View Group SN 1685; Navajo Canyon, MVEC 121; Spruce Tree Canyon WEM 2071. Introduced; occasional in shaded waste places. Summer.
- Elymus salinus* M.E. Jones
Wild rye
Wetherill Mesa, North Rim, JAE 3, WEM 2197; Chapin Mesa, south end, SLW 1744. Rare; rocky places. Summer.
- Festuca octoflora* Walt.
Six-weeks fescue
Pool Canyon, WEM 2177. A winter annual; pinyon-juniper woodland. Spring.
- Hilaria jamesii* (Torr.) Benth.
Galleta
Moccasin Mesa, Spencer G-107; Navajo Canyon, JAE 376. Common on shale outcrops in canyons and dry, open sites to the south. Spring.
- Hordeum jubatum* L.
Foxtail barley
Morfield Canyon, MVEC 92; Chapin Mesa, Headquarters, WAW 5230, WEM 2110; Rock Canyon, JAE 169. Restricted to moist habitats. Summer.
- Hordeum pusillum* Nutt.
Little barley
Spruce Tree Canyon, EHB 145.
- Koeleria cristata* (L.) Pursh
Junegrass
North Rim, SN 1758; Morfield Canyon, MVEC 96, WEM 2065; Park Point, MVEC 156; Wetherill Mesa, North Rim, JAE 141, WEM 2199; Long Canyon, West Fork, JAE 159. Common in the northern part of the Mesa Verde. Summer.
- Muhlenbergia andina* (Nutt.) Hitchc.
Foxtail muhly
Oak Tree House, EHB 321.
- **Muhlenbergia richardsonis* (Trin.) Rydb.
Mat muhly
North Rim, B Cut, WAW 5241. Sandstone ledge. Summer-autumn.
- **Oryzopsis hymenoides* (R. & S.) Ricker
Indian ricegrass
Spruce Canyon, SN 1663; Soda Canyon Tip-off, MVEC 43; Rock Canyon, ruin No. 16 draw, JAE 70; Rock Canyon JAE 85; Wetherill Project laboratory, JAE 385. Abundant in Canyon bottoms and draws; elsewhere common in disturbed sites and waste places. Summer.
- Oryzopsis micrantha* (Trin. & Rupr.) Thurb.
Littleseed ricegrass
Navajo Canyon, JAE 218; Pine Canyon, WEM 2116. Shaded, moist habitats. Summer.
- Phleum pratense* L.
Timothy
Cliff Palace, EHB 219. An adventive in waste areas. Summer.
- **Phragmites communis* Trin.
Common reed
Rock Canyon, ruin No. 12, JAE 166, 176. Occasional throughout the Mesa Verde near seeps and springs. Summer-autumn.
- Poa annua* L.
Annual bluegrass
Chapin Mesa, Headquarters, SLW 2215. Locally common in moist areas; adventive. Summer.

- Poa compressa* L. Canada bluegrass
Cliff Canyon, Cliff Palace, EHB 220; Long Canyon, West Fork, JAE 158. Occasional in moist habitats. Summer.
- Poa fendleriana* (Steud.) Vasey Mutton grass
Lower Soda Canyon, EHB 58; Navajo Canyon, EHB 84; Cliff Canyon, EHB s. n.; Rock Canyon, ruin No. 12 draw, JAE 203; Wetherill Project laboratory, JAE 263; Far View Group, WW 1534. The dominant grass throughout the Mesa Verde; a major component of the climax pinyon-juniper forest on deep loess soils. Spring.
- Poa longiligula* Scribn. & Will. Spruce Canyon, EHB 14. Spring.
- Poa pratensis* L. Kentucky bluegrass
Morfield Canyon, SN 1754, EHB 291, WEM 2067; Navajo Canyon, Ross and Sylvus s. n.; Rock Canyon, JAE 173; Far View Group, WW 1537. Occasional in moist habitats. Summer.
- Poa secunda* Presl. Sandberg bluegrass
Balcony House, SN 1699; Confluence of Navajo and Wickenburg Canyons, JAE 347; Morfield Canyon, JAE 382; Spruce Tree Canyon, WEM 2079. Occasional along the talus slopes and canyon bottoms. Spring.
- Polypogon monspeliensis* (L.) Desf. Beardgrass
Rock Canyon, ruin No. 12, JAE 170. Moist habitat; alkaline spring. Summer.
- Puccinellia distant* (L.) Parl. Alkali grass
Morfield Canyon, MVEC 90; Rock Canyon, JAE 171; Mancos Canyon, WEM 2158. Moist habitat; seeps, drainages and ditches. Summer.
- Secale cereale* L. Rye
Mug House, SLW 1758. Introduced on recently excavated trash slopes. Summer-autumn.
- Sitanion hystrix* (Nutt.) J. G. Smith Squirreltail
Far View Group, SN 1680; The Glades EHB 124; North Rim, MVEC 123; Wetherill Mesa, North Rim, JAE 142; Long Canyon, West Fork, JAE 160; Wetherill Mesa, Bobcat drainage, JAE 183; Navajo Canyon, JAE 377; Prater Canyon, WEM 2068. Common in canyons and drainages, and in the shrub zone. Summer.
- Sporobolus cryptandrus* (Torr.) A. Gray Sand dropseed
Pine Canyon, Spencer G-32; Mancos Canyon, Two-story Cliff House, JAE 402. Occasional in the mesa-top pinyon-juniper forest. Summer-autumn.
- Stipa comata* Trin. & Rupr. Needle-and-thread
Prater Canyon, SN 1722; North Rim, SN 1726; Navajo Canyon, MVEC 120; Park Point, MVEC 164; Wetherill Mesa, North Rim, JAE 143; Long House, JAE 177; Wetherill Project laboratory, JAE 384. Common along the North Rim; elsewhere an indicator of disturbed sites. Summer.
- Stipa speciosa* Trin. & Rupr. Desert needlegrass
Rock Canyon, ruin No. 12, JAE 97, 165. Rare, restricted to cliff ledges. Summer.
- Triticum aestivum* L. Wheat
Morfield Burn, JAE 208. An adventive, probably escaped cultivation. Summer.
- HYDROPHYLLACEAE — Waterleaf Family
- Ellisia nycetela* L. Confluence of Wickenburg and Navajo Canyons, SN 1648; Spruce Canyon, EHB 138. Occasional in disturbed soils. Summer.
- Phacelia heterophylla* Pursh Scorpion weed
Far View Group, SN 1672, MVEC 50; Wetherill Mesa, North Rim, JAE 135; Rock Springs draw, JAE 393. Occasional; saddles and drainages along North Rim. Summer.
- Phacelia splendens* Eastw. Jackson Butte, west escarpment, JAE 274; Point Lookout, SLW 1756. Restricted to the Mancos shale formation below the north and west rims. Spring.
- IRIDACEAE — Iris Family
- Iris missouriensis* Nutt. Prater Canyon, SN 1712; EHB 177, JAE 379, WEM 2054; Morfield Canyon, MVEC 14. Restricted to wet meadows in Prater and Morfield Canyons. Summer.
- JUNCACEAE — Rush Family
- Juncus balticus* Willd. Baltic rush
Navajo Canyon, EHB 94; Morfield Canyon, JAE 381; Prater Canyon, WEM 2055; Chapin Mesa, Headquarters, WEM 2092. Common in moist areas; especially in Prater and Morfield Canyons. Summer.
- Juncus longistylis* Torr. Long-styled rush
Chapin Mesa, Headquarters, WEM 2102. Common; moist drainage. Summer.

Juncus saximontanus A. Nels f. *brunescens*
(Rydb.) Herm.
Chapin Mesa, Headquarters, WEM 2106.
Common; moist drainage. Summer.

Juncus tenuis Willd. Slender rush
Chapin Mesa, Headquarters, WEM 2105.
Common; moist drainage. Summer.

JUNCAGINACEAE — Arrowgrass Family

Triglochin maritima L. Arrowgrass
Mancos Canyon, WEM 2163. Restricted to
the gravel beds of Mancos River. Summer.

LABIATAE — Mint Family

Marrubium vulgare L. Hoarhound
Chapin Mesa, Headquarters, WEM 2087.
An introduced mint. Rare.

Moldavica parviflora (Nutt.) Britt. False dragonhead
Confluence of Wickiup and Navajo Canyons,
SN 1646; Spruce Canyon, EHB 143; Navajo
Canyon, MVEC 110; Rock Springs, MVEC
148; Wetherill Mesa, North Rim, JAE 138;
Morfield Canyon, WEM 2059. Occasional
in canyon bottoms and in the saddles along
the North Rim. Summer.

**Salvia reflexa* Hornem. Lanceleaf sage
Chapin Mesa, Headquarters, PRF 1816. Rare.
Summer.

LEGUMINOSAE — Pea Family

Astragalus bisulcatus (Hook.) A. Gray
var. *haydenianus* (A. Gray) Barneby Milkvetch
Point Lookout, SLW 1752. Occasional; seleni-
ferous shales below Point Lookout and along
Mancos River. Summer.

Astragalus calycosus Torr. ex S. Wats.
Mancos Canyon, M. C. (surname unknown)
s.n.; Chapin Mesa, south rim, JAE 191, 265,
327, WEM 1743. Common on calcareous
soils in the southern part of the Mesa Verde.
Spring.

Astragalus deterior (Barneby) Barneby
Chapin Mesa, Cliff Palace, Ripley and Barne-
by 5359 (Holotype, *A. deterior*); Sun Temple,
Ripley and Barneby 8397 (Paratype, *A.*
deterior); Moccasin Mesa, south rim, JAE
248, 371; Navajo Canyon, SLW 1746; Pine
Canyon, WEM 2132. Known only from the
Mesa Verde, where it is restricted to rimrock

and talus slope situations (Barneby, 1948;
Barneby, 1953). Spring.

Astragalus flexuosus (Hook.) Don
Navajo Canyon, JAE 373; SLW 1745; ruin
No. 12, WW 1553, SLW 1763. A glabrous
form of the species, occasional along talus
slopes and canyon bottoms. Spring-summer.

Astragalus humillimus A. Gray ex Brandegee
A Mesa Verde endemic which has not been
found since it was collected by T. S. Bran-
degee (Hayden Survey, 1876) "Growing up-
on sandstone rock of the Mesa Verde, near
the edge of the Mancos Canyon." The Bran-
degee specimens are located in the collections
of the New York Botanical Garden and of the
Gray Herbarium (Barneby, 1948). Weber
has reproduced the original description of the
species (1961).

Astragalus lentiginosus Dougl. var. *diphysus*
(A. Gray) M. E. Jones
Wickiup Canyon, SN 2038; Long House,
JAE 206, WW 1551, SLW 1657; Navajo
Canyon, JAE 272; Spruce Tree Canyon, JAE
355. Navajo slopes; occasional. Spring,
autumn.

Astragalus lonchocarpus Torr.
Confluence of Navajo and Wickiup Canyons,
JAE 351. Rare.

Astragalus missouriensis Nutt. var. *missouriensis*
Soda Canyon, EHB 53; Pine Canyon, WEM
2131. The position of the former specimen in
this variety is in doubt. It is in flower only
and the mature fruit is diagnostic. The latter
specimen has the straight pods characteristic
of the variety. Locally common along the
rimrock at Pine Canyon. Spring.

Astragalus missouriensis Nutt. var. *amphibolus*
Barneby
Mancos, Montezuma Co., Colorado, Baker,
Earle and Tracy 56 (Herbarium, New York
Botanical Garden; Holotype, var. *amphi-*
bolus); Mancos Canyon, WEM 2167. The
pods of the latter specimen are strongly
curved and ovoid. They are characteristic
of the variety (Barneby, 1947). Occasional;
Mancos Canyon. Spring.

Astragalus pattersonii A. Gray
Base of Point Lookout, JAE 287, SLW 1754;
Park Entrance, WW 1561. A white-flowered,
clump-forming plant restricted to the seleni-
ferous Mancos shale formation below the
North Rim; locally abundant. Spring.

Astragalus schmollae C. L. Porter

Spruce Tree House, SN 1555 (Holotype, *A. schmollae*, Rocky Mountain Herbarium; Iso-type, Mesa Verde herbarium); Cliff Canyon, EHB 26; Chapin Mesa, Headquarters, WAW 4283, WW 1550. Endemic to the Mesa Verde. It occupies a very limited area in the pinyon-juniper forest around Park Headquarters (Porter, 1945). Spring-summer.

Astragalus scopulorum T. C. Porter

Spruce Tree House, SN 1555a; Far View Group, MVEC 55; Park Point, MVEC 159; Wetherill Mesa, North Rim, JAE 4, WEM 2198; Chapin Mesa, ruins road, JAE 300; Park Point, JAE 332; Chapin Mesa, Headquarters, WW 1543. The most common *Astragalus* in the Mesa Verde; especially abundant along the North Rim. Spring-summer.

Astragalus wingatanus S. Wats.

Soda Canyon, EHB 38; Chapin Mesa, south rim, JAE 309; Chapin Mesa, Headquarters, WW 1544; Base of Point Lookout, SLW 1753. Occasional pinyon-juniper forest. Summer.

Hedysarum boreale Nutt.

Morfield Canyon, EHB 158; Park Point, WEM 2082. Rare; North Rim. Summer.

Lathyrus eucosmus Butters & St. John Sweetpea

Mancos Canyon, SLW 1761. Clay soils near Mancos River. Spring.

Lathyrus leucanthus Rydb. var. *laetivirens*

(Rydb.) Hitchc.
North Rim, B Cut, WEM 2149; Big Mesa, SLW 1760. Rare; North Rim. Spring-summer.

Lathyrus leucanthus Rydb. X *L. pauciflorus* Fern.

Spruce Canyon, JAE 353 (corolla white with purple streaks); North Rim, B Cut, WEM 2150. The latter specimen is nearer to *L. leucanthus* but other white-flowered specimens in the vicinity have the large broad stipules of *L. pauciflorus*. Common along the North Rim. Spring-summer.

Lathyrus pauciflorus Fern.

Between Little Soda and Soda Canyons, SN 1577a; Navajo Hill, MVEC 64 (white flowers); Navajo Canyon, MVEC 118; Wetherill Mesa, North Rim, JAE 148; Rock Springs draw, JAE 189; Park Point, JAE 330, WW 1528. Common under oak thickets of the North Rim. Spring.

Lupinus ammophilus Greene

Sand lupine
North Rim, SN 1763; Navajo Canyon, without collector, s.n. (Mesa Verde herbarium); Rock Springs, MVEC 139; Long House, JAE 179; Wetherill Project laboratory, JAE 313. Occasional in pinyon-juniper forest. Spring.

Lupinus caudatus Kell.

Spurred lupine
Spruce Tree House, SN 1562a; Far View Group, SN 1673, MVEC 49; Morfield Canyon, EHB 284, MVEC 18; Park Point, MVEC 162; Rock Canyon, JAE 64, 84; Bobcat drainage, JAE 116; Morfield Burn, JAE 356; Chapin Mesa, Headquarters, WW 1549. Common throughout the northern part of Mesa Verde; abundant along North Rim. Summer.

Melilotus alba Desf. ex Lam.

White sweetclover
North Rim, PRF 1802. Trail and roadside weed; adventive, Summer.

Melilotus officinalis (L.) Lamb.

Yellow sweetclover
Rock Springs, MVEC 145; Rock Canyon, JAE 65; Wetherill Project laboratory, JAE 360. Same habitat as *M. alba*, but more common. Summer.

Medicago lupulina L.

Black medic
Chapin Mesa, Headquarters, WEM 2093. An Old World adventive; moist waste places. Summer.

Thermopsis montana Nutt.

Golden banner
Prater Canyon, SN 1705. Rare; occurring in moist sites in the Prater-Morfield Canyon area. Summer.

Trifolium pratense L.

Red clover
Mancos Canyon, WEM 2159. Introduced forage plant; escaped from cultivation. Summer.

Trifolium repens L.

White Dutch clover
Prater Canyon, EHB 175; Mancos Canyon, WEM 2152. Introduced forage plant; escaped from cultivation. Summer.

Vicia americana Muhl.

Common vetch
Park Point, PRF 26; Morfield Canyon, JAE 361. Under thickets in shrub zone along the North Rim. Spring.

LILIACEAE — Lily Family

Allium acuminatum Hook.

Wild onion
North Rim, MVEC 76; Rock Springs, JAE 29; Pool Canyon, WEM 2179. Occasional; sandy soils. Summer.

**Allium textile* Nels. & Macbr.

Jackson Butte, west escarpment, JAE 276. Restricted to the Mancos shale slopes below the Mesa Verde. Spring.

Androstephium breviflorum S. Wats. Funnellily
Mancos Canyon, WEM 2171. Rare; pinyon-juniper woodland along the Mancos River Spring.

Calochortus gunnisonii S. Wats. Mariposa lily
Chapin Mesa, EHB 127; Rock Springs, MVEC 125; Bobcat drainage, JAE 79; Wetherhill Mesa, North Rim, JAE 144, WEM 2193. Occasional; primarily in the shrub zone on the mesa tops. Summer.

Calochortus nuttallii Torr. Sego lily
The Glades, EHB 123; Bobcat drainage, JAE 18; Wetherill Mesa, North Rim, JAE 130; Morfield Burn, JAE 380; Spruce Tree Canyon, WEM 2072. Habitat similar to that for *C. gunnisonii*. Summer.

Fritillaria atropurpurea Nutt. Fritillary
No specimen has been seen. There is a note in the Mesa Verde herbarium which indicates that a specimen of this species was collected by P. R. Franke on May 25, 1933.

Smilacina racemosa (L.) Desf. False Solomon's seal
Prater Canyon, SN 1718; EHB 209. Moist, shaded woodlands; North Rim. Spring.

Smilacina stellata (L.) Desf.
Prater Canyon, SN 1716, EHB 62; Pine Canyon, WEM 2121. Shaded woodlands, especially along canyon bottoms. Spring.

**Yucca baccata* Torr. Datil yucca
Without locality, SN 1659; Long House, JAE 11; Chapin Mesa, Headquarters, WW 1546. Common in the pinyon-juniper forest throughout the Mesa Verde, both on the mesas and on the canyon slopes. Spring-summer.

**Yucca harrimaniae* Trel.
Spruce Canyon, SN 1728; Wetherill Mesa, south end, JAE 121. Occasional; open slopes in the canyons and southern parts of the mesas. Spring-summer.

Zygadenus paniculatus S. Wats. Death camas
Navajo Canyon, west of Mummy Lake, SN 1668; Far View Group, PRF 20, JAE 340. Occasional; openings in shrub zone. Spring-summer.

LINACEAE — Flax Family

Linum perenne L. Wild flax
Far View Group, SN 1598, EHB 83; Chapin Mesa, JAE 314; Navajo Canyon, SLW 1749. Ditches beside highway and other moist waste places; locally common. Spring.

LOASACEAE — Loasa Family

Mentzelia albicaulis Dougl. ex Hook. Blazing star
Confluence of Navajo and Wickiup Canyons, SN 1647, EHB 137. Rare

Mentzelia multiflora (Nutt.) A. Gray
North Rim, EHB 215. Rare.

LORANTHIACEAE — Mistletoe Family

Arceuthobium campylopodium Engelm. f. *divaricatum* (Engelm.) Gill. Dwarf mistletoe
Wetherill Mesa, south end, JAE 120, WEM 2186. Host, pinyon pine. This mistletoe is most abundant in the southern parts of the Mesa Verde.

Phoradendron juniperinum Engelm. Juniper mistletoe
Chapin Mesa, Headquarters, WAW 5225; Long House, JAE 74. Host, Utah juniper. Common throughout the pinyon-juniper forest.

MALVACEAE — Mallow Family

Ilamnia rivularis (Dougl.) Greene Wild hollyhock
Wickiup Canyon, SN 1639; Switchbacks Road, SN 1760; Rock Springs, MVEC 134; below Point Lookout, WEM 2175. Rare; clay soils along entrance road. Summer.

Sphaeralcea coccinea (Pursh) Rydb. Globe mallow
Wetherill Mesa, North Rim, JAE 10; Chapin Mesa, ruins road, JAE 312. A pioneer in waste places and disturbed sites; common in burned areas. Summer.

Sphaeralcea parvifolia A. Nels. Confluence of Navajo and Spruce Canyons, SN 1651, 1653; confluence of Navajo and Wickiup Canyons, JAE 352, SLW 1751. A trailside plant occurring in the canyons; occasional. Summer.

NYCTAGINACEAE — Four-O'clock Family

Abronia fragrans Nutt. Sand verbenia
Navajo Canyon, SN s. n.; Mancos Canyon, MVEC 40. Occasional in the canyons. Spring, autumn.

Mirabilis multiflora (Torr.) A. Gray ex Torr.
Wild four-o'clock
Wetherill Mesa, south end, WEM 2183. Rare;
pinyon-juniper woodland, south end of Mesa
Verde. Spring.

Mirabilis oxybaphoides A. Gray
Fewkes Canyon, EHB 324; Soda Canyon,
Painted Kiva House, JAE 403. Rare. Summer.

Oxybaphus linearis (Pursh) Robins.
Moccasin Mesa, south rim, JAE 400; Pine
Canyon, WEM 2136. Rare; southern end of
Mesa Verde on rimrock. Summer-autumn.

OLEACEAE — Olive Family

Forestiera neomexicana A. Gray Adelia
Confluence of Navajo and Long Canyons,
SN 1775; Rock Canyon, JAE 90; WE 1621;
Moccasin Mesa, south rim, JAE 370; Pine
Canyon, WEM 2125. Somewhat rare; re-
stricted to moist canyon sites. Spring.

Fraxinus anomala Torr. ex S. Wats.
Single-leaf ash
Wetherill Mesa, Bobcat spur, JAE 35. Rare;
one mature tree on rimrock, and a sapling in
bottom of Rock Canyon. Spring.

ONAGRACEAE — Evening Primrose Family

Epilobium paniculatum Nutt. ex T. & G.
Autumn willowweed
Moccasin Canyon, PRF 1820; Morfield Can-
yon, EHB 265; Chapin Mesa, Headquarters,
SLW 2209. Locally common in moist situa-
tions. Summer.

Gayophytum ramosissimum T. & G.
Morfield Canyon, EHB 205.

Oenothera caespitosa Nutt. var. *marginata*
(Nutt.) Munz Evening primrose
School Section Canyon, SN 1725; Morfield
Canyon, MVEC 22; Navajo Hill, MVEC 261;
Prater Canyon, JAE 388, WEM 2053. Oc-
casional; canyon bottoms and along the
North Rim. Spring-summer.

Oenothera coronopifolia T. & G.
Morfield Canyon, EHB 166, MVEC 88; Moc-
casin Mesa, south end, JAE 368; Prater Can-
yon, WEM 2057. Waste places. Spring.

Oenothera flava (A. Nels.) Garrett
Mancos Canyon, WEM 2172. Rare; moist
places. Summer.

Oenothera hookeri T. & G.
Chapin Mesa, Headquarters, PRF 1806.
Moist waste places. Summer-autumn.

Oenothera pallida Lindl.
Confluence of Navajo and Wickiup Can-
yons, SN 1745, PRF 1801; Rock Canyon,
JAE 87. Occasional in sandy situations. Sum-
mer.

ORCHIDACEAE — Orchid Family

Epipactis giganteus Dougl. Heleborine
Ruin No. 12, JAE 103; WE 1614. Rare; re-
stricted to moist, seep walls; only one lo-
cality known. Summer.

PLANTAGINACEAE — Plantain Family

Plantago lanceolata L. English plantain
Mancos Canyon, WEM 2164. An Old World
weed. Summer.

Plantago major L. Common plantain
Mancos Canyon, WEM 2165. An Old World
weed. Summer.

Plantago purshii Roem. & Schult. Woolly plantain
Spruce Canyon, EHB 124, Mancos Canyon,
WEM 2168. An annual plantain locally com-
mon in Mancos Canyon. Spring-summer.

POLEMONIACEAE — Phlox Family

Collomia grandiflora Dougl. ex Lindl.
Chapin Mesa, EHB 231; Rock Springs, JAE
156. Occasional; shrub zone. Summer.

Collomia linearis Nutt.
Morfield Canyon, EHB 267, 292; Wetherill
Mesa, north end, WEM 2194. Occasional.
Summer.

Gilia aggregata (Pursh) Spreng Scarlet gilia
Spruce Tree House, SN 1568; Soda Canyon,
EHB 50; Morfield Canyon, MVEC 11; North
Rim, MVEC 78; Mug House, JAE 30; Long
Canyon, JAE 41; Long House, JAE 54; Nava-
jo Canyon, JAE 349. Common in the can-
yons and on the mesa rims. Spring-summer.

Gilia haydenii A. Gray
Switchbacks Road, EHB s. n.; Point Lookout,
SLW 1755. Restricted to Mancos shale for-
mation at the base of the Mesa Verde.
Spring.

Gilia sinuata Dougl. ex Benth.
Chapin Mesa, Headquarters, SN 1693; Rock
Springs, JAE 28; Navajo Canyon, JAE 296.
A small spring annual, abundant under pin-
yon-juniper.

Gilia sp.

Jackson Butte, west rim, JAE 275. Restricted to the Mancos shale formation below the Mesa Verde, Spring.

Leptodactylon pungens (Torr.) Rydb.

Granite *gilia*

Balcony House, SN 1700; Long House, JAE 161; Chapin Mesa, south rim, JAE 328. Occasional; canyons and southern parts of mesas. Spring-summer.

Microsteris humilis (Dougl.) Greene

Kodak House, JAE 192; Navajo Canyon, JAE 257, 261; Morfield Canyon, WEM 2060; Chapin Mesa, Headquarters, WEM 2098. A small annual, common throughout the Mesa Verde. Spring.

Phlox hoodii Richards.

Chapin Mesa, Headquarters, SN 1565, M. E. C. (surname unknown) s. n.; Long House, JAE 25; Chapin Mesa, south end, JAE 259. Common in canyons and southern parts of the mesas. Spring.

Phlox longifolia Nutt.

Spruce Tree House, SN 1558; Cliff Canyon, EHB 27; Morfield Canyon, MVEC 94; Chapin Mesa, south end, JAE 299. Occasional throughout the Mesa Verde; common on calcareous soils to the south. Spring.

Polemonium foliosissimum A. Gray.

Jacob's ladder

Prater Canyon, EHB 169; Rock Springs, JAE 190. Rare; restricted to moist sandy pockets in drainages. Summer

POLYGONACEAE — Buckwheat Family

**Eriogonum alatum* Torr. ex Sitgreaves

Winged eriogonum

Balcony House, SN 1695; Soda Canyon Tip-off, EHB 129; Cliff Palace, EHB 213; Rock Springs, MVEC 144; Long House, JAE 35; Rock Canyon, JAE 167. Occasional; pinyon-juniper forest throughout the Mesa Verde. Summer.

Eriogonum cernuum Nutt.

Morfield Canyon, EHB 286. Annual. Summer.

Eriogonum corymbosum Benth. ex DC.

North Rim, PRF 4, 6. Restricted to the Mancos shale formation. Autumn.

Eriogonum jamesii Benth.

Cliff Palace, EHB 270; Chapin Mesa, PRF

2138; Rock Springs, MVEC 149; Bobcat Canyon, JAE 118; Navajo Canyon, JAE 225; Long House, SLW 1652. Common; mesa rims and canyons. Summer.

Eriogonum lonchophyllum T. & G.

Switchbacks Road, EHB 214. Rare.

Eriogonum racemosum Nutt.

Soda Canyon, EHB 7; Far View Group, MVEC 225; Wetherill Burn, JAE 124. Common throughout the Mesa Verde. Summer.

Eriogonum simpsonii Benth. ex DC.

Big Mesa, JAE 399. Apparently restricted to the mesas in the extreme eastern part of the Mesa Verde. Summer.

Eriogonum umbellatum Torr. Sulfurflower

Far View Group, SN 1666; MVEC 55; Prater Canyon, MVEC 87; Navajo Canyon, MVEC 114; Park Point, MVEC 152; Navajo Hill, MVEC 263; Wetherill Mesa, North Rim, JAE 115, 133; North Rim, B Cut, WEM 2144. Common throughout the Mesa Verde. Summer.

Polygonum aviculare L.

Knotweed

Chapin Mesa, Headquarters, WAW 5235. Adventive. Summer.

Polygonum convolvulus L.

Rock Springs draw, JAE 394. Rare; moist, sandy site. Summer.

**Polygonum sawatchense* Small

Morfield Canyon, EHB 265; Far View Group, PRF 1671; Rock Springs, JAE 157, 396. A common annual; abundant throughout the Mesa Verde in moist years. Summer.

Rumex crispus L.

Curly dock

Chapin Mesa, Headquarters, SN 1758. Adventive. Spring-summer.

Rumex hymenosepalis Torr.

Canaigre

Confluence of Spruce and Navajo Canyons, SN 1654, WEM 2087a. Rare; known only from the locality cited. Spring-summer.

PORTULACACEAE — Purslane Family

Claytonia lanceolata Pursh Spring beauty

Confluence of Spruce Tree and Spruce Canyons, EHB 10; Wetherill Mesa, North Rim, JAE 196; Spruce Canyon, JAE 255. Common in spring under oak thickets in side canyons and along the North Rim.

PRIMULACEAE — Primrose Family

Androsace septentrionalis L. Rock jasmine
Wickiup Canyon, SN 1641; Morfield Canyon,
MVEC 15; Bobcat Canyon, JAE 23; Wetherill Project laboratory, JAE 239; Chapin Mesa, Headquarters, WEM 2100. Occasional; shaded side canyons and along washes on mesa rims. Spring.

RANUNCULACEAE — Buttercup Family

Clematis hirstissima Pursh
Prater Canyon, SN 1706; Morfield Canyon, MVEC 17. Rare. Spring.

**Clematis ligusticifolia* Nutt. ex T. & G.

Virgin's bower
Long Canyon, SN 1781; ruin No. 12, JAE 104. Moist, shaded sites in canyons and draws; somewhat rare. Summer.

Clematis pseudoalpina (Kuntze) A. Nels.
Fewkes Canyon, Fire Temple, SN 1748; North Rim, B Cut, WEM 2138; Wetherill Mesa, North Rim, WEM 2201. Common along cliff below North Rim escarpment. Spring.

Delphinium nelsonii Greene Larkspur
Navajo Hill, MVEC 65, 111; Far View Group, JAE 302; Chapin Mesa, Headquarters, WEM 2101. Common; primarily in the shrub zone in spring.

Ranunculus cymbalaria Pursh Shore buttercup
Prater Canyon, EHB 178; Morfield Canyon, MVEC 19; Mancos Canyon, MVEC 27, WEM 2160; Rock Canyon, JAE 89. Somewhat rare; an emergent restricted to moist sites. Spring.

Ranunculus testiculatus Crantz.
Spruce Canyon, JAE 256. A small spring annual, abundant on canyon trails.

Thalictrum fendleri Engelm. ex A. Gray
Prater Canyon, SN 1714, EHB 170. Rare; moist shaded woods. Spring.

RHAMNACEAE — Buckthorn Family

Ceanothus fendleri A. Gray New Jersey tea
Morfield Canyon, EHB 201; North Rim, PFR s. n. Rare.

ROSACEAE — Rose Family

**Amelanchier utahensis* Koehne
Utah serviceberry
Switchbacks Road, SN 1762; Cliff Canyon,

EHB 25; Soda Canyon Tipoff, MVEC 41; North Rim, MVEC 220; Bobcat Canyon, JAE 50; Spruce Tree Canyon, JAE 374; Park Point, JAE 339, WW 1525; Pine Canyon, WEM 2123. Common throughout the Mesa Verde on shallow soils of mesa rims and ridges, and on canyon slopes; dominant in shrub zone along North Rim. Spring.

Cercocarpus intricatus S. Wats.

Mountain mahogany
Wetherill Mesa, south end, JAE 217, WEM 2192. Rare; only one locality known, on exposed rimrock. Spring.

**Cercocarpus montanus* Raf.

Mountain mahogany
Without locality, SN 1572; Soda Canyon, EHB 41; Park Point, MVEC 155; Far View Group, MVEC 221, JAE 342; Wetherill Burn, JAE 108; Chapin Mesa, Headquarters, WW 1541. Common throughout the Mesa Verde on shallow soils in canyons and mesas. Spring.

Cercocarpus montanus Raf. X C. sp.

Pine Canyon, JAE 244, WEM 2131a. Rare; only one locality known, on rimrock. This specimen is evergreen and has toothed leaves. It appears to be intermediate between *C. montanus* and *C. ledifolius* Nutt. However, *C. ledifolius* is not known from southwestern Colorado (Harrington, 1954) and it is possible that the plant represents a segregate from a cross between *C. montanus* and *C. intricatus*. Spring.

Cowania mexicana Don Cliffrose
Chapin Mesa, Headquarters, SN 1790, WW 1560; Bobcat Canyon, JAE 32; Chapin Mesa, south rim, JAE 306. Occasional; occurring only on exposed mesa rims. Spring.

Holodiscus dumosus (Nutt.) Heller
Rock spirea
Wetherill Mesa, JAE 111. Rare; cliff below North Rim escarpment. Summer.

Peraphyllum ramosissimum Nutt. ex T. & G.
Squawapple

Chapin Mesa, Headquarters, SN 1665, WW 1542; Far View Group, MVEC 57; Wetherill Burn, JAE 154; Chapin Mesa, ruins road, JAE 305; Wetherill Mesa, south end, WEM 2191. Occasional throughout the Mesa Verde; more common near the North Rim and abundant on north- and east-facing clay slopes of the Mancos shale formation below the east escarpment. Spring.

Potentilla gracilis Dougl. ex Hook. Cinquefoil
Prater Canyon, SN 171, EHB s. n.; Navajo
Hill, MVEC 113. Locally common in the
saddles along the North Rim, Summer.

Prunus armeniaca L. Apricot
Chapin Mesa, Headquarters, WEM 2059.
The apricot has become established through-
out the headquarters area. The trees bore
fruit during the 1963 season and they will
probably persist. There is a large apricot
tree along the highway at the North Rim.
An apple tree is growing along the trail to
Spruce Tree House, but was not collected.

**Prunus virginiana* L. Chokecherry
Navajo Canyon, SN 2082; Morfield Canyon,
MVEC 13; Navajo Hill, MVEC 112; Bobcat
Canyon, JAE 52; North Rim, B Cut, JAE
364; Chapin Mesa, north end, WW 1527.
Locally common in mesic sites along the
North Rim and in shaded side canyons to
the south. Spring.

**Purshia tridentata* (Pursh) DC. Bitterbrush
Chapin Mesa, Headquarters, SN 1573, WW
1547; without locality, MVEC 285; Bobcat
Canyon, JAE 33. Common throughout the
Mesa Verde, becoming very robust after fire.
Spring.

Rosa nutkana Presl. ? Wild rose
North Rim, B Cut, WEM 2148. Occasional
in moist sites. Spring.

Rosa woodsii Lindl.
Prater Canyon, SN 1709; Chapin Mesa, Fire
Temple, SN 1747; Morfield Canyon, EHB
164; Spruce Tree Canyon, WEM 2176. Oc-
casional; side canyons and North Rim. Sum-
mer.

RUBIACEAE — Madder Family

Galium aparine L. Bedstraw
Spruce Canyon, JAE 375, WEM 2069. Under
oak thickets. Summer.

Galium coloradoense W. F. Wright
Colorado bedstraw
Point Lookout, EHB s.n.; Balcony House,
EHB 81a; North Rim, MVEC 72; Rock
Springs, MVEC 151; Long House, JAE 61;
Chapin Mesa, south rim, JAE 326; Mug
House, WW 1554. Common on mesa rims
and in canyons throughout the Mesa Verde.
Spring.

SALICACEAE — Willow Family

Populus angustifolia James ex Long
Narrowleaf poplar
Mancos River, C. W. Quaintance s.n. (Mesa
Verde herbarium); North Rim, B Cut, WEM
2141. Rare in the Mesa Verde proper oc-
casional along the Mancos River. Spring.

**Populus fremontii* S. Wats. Fremont poplar
Mancos Canyon, C. W. Quaintance s. n.;
Navajo Canyon, PRF 30; Rock Canyon, JAE
94. Scattered throughout the Mesa Verde,
but not common. Spring.

**Populus tremuloides* Michx. Aspen
Prater Canyon, EHB 298; Pine Canyon,
WEM 2118. Rare; small stands occur
throughout the Mesa Verde in moist, shel-
tered coves and box canyons. Spring.

**Salix exigua* Nutt. Sandbar willow
Oak Tree House, EHB 225; ruin No. 12, JAE
100, WE 1615. Occasional along canyon bot-
toms and near seeps and springs. Spring.

Salix lasiandra Benth.
Bobcat Canyon, Double House, JAE 119;
ruin No. 12, WE 1616; Chapin Mesa, Head-
quarters, WEM 2091. Habitat similar to
S. exigua, but much less common. Spring.

Salix lutea Nutt.
North Rim, B Cut, WEM 2139. Locally com-
mon in moist sites. Spring.

SANTALACEAE — Sandalwood Family

Commandra umbellata (L.) Nutt.
Bastard toadflax
Between Little Soda and Soda Canyons, SN
1579; Chapin Mesa, EHB 68; Far View
Group, MVEC 50; Navajo Hill, MVEC 262;
Wetherill Mesa, North Rim, JAE 5. Common
in the pinyon-juniper forest and in the shrub
zone throughout the northern part of Mesa
Verde. Spring-summer.

SAXIFRAGACEAE — Saxifrage Family

**Fendlera rupicola* A. Gray. Fendlerbush
Far View Group, SN 1575, PRF s.n., JAE
341, WW 1533; Cedar Tree Tower, MVEC
5; Navajo Hill, MVEC 61; Wetherill Mesa,
North Rim, JAE 7. Common to locally abun-
dant; primarily in the shrub zone, but also
in canyons and on mesa rims. Spring.

Heuchera parvifolia Nutt. ex T. & G. Alumroot
Park Point, SN 1591; Cedar Tree Tower,
MVEC 7; Navajo Canyon, JAE 350; North
Rim, B Cut, WEM 2145. Somewhat rare;
restricted to moist, shaded sites in canyons
and along the North Rim. Summer.

Philadelphus microphyllus A. Gray. Mockorange
Spruce Canyon, SN 1743; Spruce Tree Can-
yon, SN 1765; North Rim, MVEC 75; Rock
Springs, MVEC 126; Long House, JAE 57,
SLW 1613; Wetherill Mesa, south end, WEM
2187. A common shrub, restricted to the
mesa rims and cliff areas, especially in the
southern end of the mesa. Summer.

Ribes aureum Pursh Golden currant
Lower Soda Canyon, EHB 54. Rare. Spring.

Ribes leptanthum A. Gray Gooseberry
Navajo Canyon, SN 1625, EHB 243; Cedar
Tree Tower, MVEC 8; Prater Canyon,
MVEC 80; Bobcat Canyon, JAE 51; Spruce
Canyon, JAE 282. Locally abundant; drain-
ages and side canyons, often in dense thick-
ets. Spring.

SCROPHULARIACEAE — Figwort Family

Castilleja chromosa A. Nels. Indian paintbrush
Park Point, SN 1594, JAE 334; Cliff Canyon,
EHB 31; Navajo Canyon, MVEC 117; Weth-
erill Mesa, North Rim, JAE 128; Rock Can-
yon, JAE 200; Chapin Mesa, south end, JAE
270. Occurs throughout the Mesa Verde on
mesa rims and in canyons, but common only
in the openings of the shrub zone. Spring.

Castilleja linariaefolia Benth. ex DC.

Far View Group, SN 1669; Navajo Canyon,
EHB 249, JAE 222; Moccasin Canyon, PRF
s. n.; Rock Springs, MVEC 140; Rock Can-
yon, JAE 83, 91. Common in canyon drain-
ages and along the North Rim. Summer.

Collinsia parviflora Dougl. Blue-eyed Mary
Wetherill Project laboratory, JAE 290; Cha-
pin Mesa, Headquarters, WEM 2097. A
small annual, occurring in moist shaded sites.
Spring.

Cordylanthus wrightii A. Gray Birdbeak
Chapin Mesa, PRF 23; Bobcat drainage, JAE
184. An annual; common in moist years in
bare areas of the pinyon-juniper forest. Sum-
mer.

Orthocarpus luteus Nutt. Yellow owllover
Switchbacks Road, EHB 304c. Rare. Summer.

Orthocarpus purpureo-albus A. Gray
Purple owllover
Morfield Canyon, EHB 268; Far View
Group, MVEC 226; Bobcat drainage, JAE
186. An annual; abundant only in moist years
in mesa-top big sagebrush stands and in the
shrub zone. Summer.

Pedicularis centranthera A. Gray ex Torr.
Lousewort
Spruce Tree House, SN 1556; Long House,
JAE 201; Wetherill Project laboratory, JAE
262. Common throughout the pinyon-juniper
forest, but the leaves dying by autumn.
Spring.

Penstemon angustifolius Nutt. ex Pursh ssp.
caudatus (Heller) Keck
Wetherill Mesa, south end, JAE 215, WEM
2189. A blue-flowered plant, apparently re-
stricted to the mesa rims in the southern
part of the Mesa Verde. Spring.

Penstemon barbatus (Cav.) Roth ssp.
trichander (A. Gray) Keck
Confluence of Navajo and Spruce Canyons,
SN 1749; ruin No. 16, JAE 76; Chapin Mesa,
Headquarters, WW 1559; Pool Canyon,
WEM 2180. Occasional in canyons and on
mesa rims; flowers red. Summer.

Penstemon barbatus (Cav.) Roth X *P. strictus*
Benth. ex DC.
Chapin Mesa, Headquarters, WEM 2088.
Rare; a single specimen noted. It has dark,
pink-purple flowers, intermediate in color
and shape between the species. Summer.

Penstemon bridgesii A. Gray
Chapin Mesa, Headquarters, SN 1787;
Fewkes Canyon, EHB 227; ruin No. 12, JAE
98; Long House, SLW 1654. Common along
mesa rims and on canyon ledges. Summer-
autumn.

Penstemon comarrhenus A. Gray
Chapin Mesa, EHB 237; Chapin Mesa, Head-
quarters, SLW 2214. Rare; a blue-flowered
penstemon of mid- and late-summer.

Penstemon eatonii A. Gray ssp. *undosus*
(M. E. Jones) Keck
Spruce Canyon, SN 1656; Bobcat Canyon,
JAE 31; Long House draw, JAE 53; Chapin
Mesa, south rim, JAE 318. Common; mesa
rims and canyon ledges; red-flowered. Spring.

Penstemon jamesii Benth. ssp. *ophianthus* (Pennell) Keck
Mancos Canyon, SLW 1762, WEM 2174.
Apparently restricted to high gravel terraces
in Mancos Canyon. Spring-summer.

Penstemon linarioides A. Gray ssp.
coloradocensis (A. Nels.) Keck
Chapin Mesa, Headquarters, SN 1557, 1701;
Soda Canyon Tipoff, MVEC 48; Rock
Springs, MVEC 138; confluence of Long and
Bobcat Canyons, JAE 36; Long House, JAE
60. Widespread throughout the Mesa Verde,
primarily in the pinyon-juniper forest; blue-
flowered. Spring-summer.

Penstemon strictus Benth. ex DC.
Wetherill Mesa, North Rim, JAE 129, 155,
359, WEM 2196. The common blue-flowered
penstemon of the North Rim shrub zone.
Summer.

Penstemon strictus ssp. *strictiformis*
(Rydb.) Keck
Soda Canyon Tipoff, MVEC 47; ruin No. 16
draw, JAE 69; Long House, JAE 180; Pine
Canyon, JAE 369; Chapin Mesa, Headquar-
ters, WW 1546. The common blue-flowered
penstemon in the mesa-top pinyon-juniper
forest. Spring-summer.

Verbascum thapsus L. Mullein
Chapin Mesa, Headquarters, WEM 2095.
Disturbed sites and waste places; introduced
from the Old World. Summer.

Veronica anagallis-aquatica L.
Chapin Mesa, Headquarters, WEM 2103.
Moist places, locally common. Summer.

SOLANACEAE — Potato Family

Lycium pallidum Miers Tomatilla
Far View Group, SN 1677, SLW 1857; Nava-
jo Canyon, JAE 219, SLW 1750. Rare; occur-
ring on floodplain in Navajo Canyon and on
trash slopes of prehistoric sites. Spring-sum-
mer.

**Nicotiana attenuata* Torr. ex S. Wats.
Wild tobacco
Chapin Mesa, ruins road, JAE 233, SLW
1847. A weed in waste places; known only
from the location cited. Summer-autumn.

Physalis fendleri A. Gray Ground cherry
Rock Canyon, WE 1621; Mancos Canyon,
WEM 2154. Rare; a plant of disturbed soils.
Summer.

Solanum jamesii Torr. Wild potato
Confluence of Spruce and Navajo Canyons,
WAW 5627. Rare.

Solanum triflorum Nutt. Nightshade
Morfield canyon, EHB 208; Far View Group,
SLW 1854. A plant of disturbed soils; rare.
Summer.

TAMARICACEAE — Tamarix Family

Tamarix pentandra Pallas Salt cedar
Soda Canyon Tipoff, MVEC 24; Rock Can-
yon, JAE 105. Restricted to intermittent
stream channels in canyons, and to springs
and seeps. An Old World adventive (Chris-
tensen, 1962). Summer-autumn.

TYPHACEAE — Cattail Family

**Typha latifolia* L. Cattail
Chapin Mesa, Headquarters, WAW 5227;
Rock Canyon, JAE 175, WE 1619. Restricted
to seeps and springs throughout the Mesa
Verde. Summer.

UMBELLIFERAE — Carrot Family

Aletes macdougalii Coult. & Rose
Long House, JAE 2; Rock Canyon, ruin No.
12, JAE 195. Common; slopes of side can-
yons. Summer.

Cymopterus bulbosus A. Nels
Lower Soda Canyon, EHB 48; Wetherill
Mesa, North Rim, JAE 194; Chapin Mesa,
JAE 250; Park Point, JAE 251; Jackson Butte,
west escarpment, JAE 277. Occasional in suc-
cessional mesa-top stands. One of the earliest
plants to flower in the spring.

Cymopterus purpurascens (A. Gray) M. E. Jones
Rock Canyon, ruin No. 12, JAE 205. Canyon
slopes. Spring.

Cymopterus purpureus S. Wats.
Chapin Mesa, south rim, JAE 320. Rare.
Spring.

Ligusticum porteri Coult. & Rose Lovage
Between Little Soda and Soda Canyons, SN
1580; Navajo Canyon, S 1667; Prater Canyon,
SN 1714; North Rim, EHB 65; Navajo Hill,
MVEC 67; Spruce Tree Canyon, WEM 2074.
Locally common; moist shaded canyon bot-
toms and along the North Rim. Summer.

Lomatium grayi Coult. & Rose. Biscuitroot
Between Little Soda and Soda Canyons, SN
1578; North Rim, EHB 36; Point Lookout,
MVEC 68; Rock Springs, MVEC 130; Weth-

erill Mesa, North Rim, JAE 204; Park Point, JAE 286, 337. Common in openings along the North Rim. Spring.

Lomatium triternatum (Pursh) Coult. & Rose ssp. *platycarpum* (Torr.) Cronq. Park Point, SN 1583; Navajo Hill, MVEC 66; Far View Group, JAE 303; Wetherill Mesa, WEM 2195. Occasional; shrub zone. Spring.

VERBENACEAE — Vervain Family

Verbena bracteata Lag. & Rodr. Vervain Morfield Canyon, EHB 287; Wetherill Project laboratory, JAE 228. An adventive; com-

mon along roadsides and other waste places. summer.

VIOLACEAE — Violet Family

Viola sp.

Prater Canyon, SN 1720. The specimen is vegetative and the diagnostic characters are missing. Evidently rare. Spring.

VITACEAE — Grape Family

Parthenocissus vitacea (Knerr) Hitchc.

Virginia creeper

Cliff Palace, EHB 221; Pine Canyon, WEM 2127. Rare; moist shaded canyons. Spring.

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