

AN ABSTRACT OF THE THESIS OF

William Hudson Baker for the PhD in Botany
(Name) (Degree) (Major)

Date Thesis presented April 16, 1949

Title "A Taxonomic and Ecologic comparison of the Floras of Iron
and Fairview Mountains in Oregon"

Abstract Approved Idene M. Gilkey
(Major Professor)

Many topographic units in the state of Oregon have been only partially explored botanically and very few areas have been collected intensively. Two such areas were selected and a detailed investigation was made of the vegetation.

Fairview Mountain and Iron Mountain are strategically located geographically and climatically. The former in a region where certain southern species find their northern limit and several species their southern limit. The latter is situated in an area high in endemic species and long considered the last outpost in Oregon of a predominantly Californian flora.

Three of the Merriam life zones are recognized on Fairview Mountain, the Hudsonian, Canadian, and Transition. Only two life zones are acknowledged on Iron Mountain, the Canadian and Transition.

The flora of Fairview Mountain consists of species representing three different floral provinces. These can be divided into the Northern element, Southern element, and Eastern element. The Northern element is predominant, equaling 14%; while the Southern and Eastern element each equal 8%. The class of plants which have a continuous range in three directions, equals 70% of the species. The plants of Iron Mountain are made up mostly of species coming from two different floral provinces, the Northern element and the Southern element. Another small segment of the population consists of the endemic species. The Eastern element comprises only 2%. By far the largest group of plants represents the Southern element with 20% of the total flora. The Northern element equals 3%. The plants which have a continuous range in 3 directions equal 72%.

The plants adventive to Fairview Mountain equal 5%, which is below the average for the state of Oregon. The introduced plants of Iron Mountain consist of 10% of the total flora, which is equal to the state average.

The Biological Spectrum was determined for both mountains according to the Raunkiaer Method. These spectra were in turn compared with each other, and with other regions in the northwest to obtain a statistical measurement of climate based on the plant life. The climate of both mountains is predominantly cryptophytic and hemi-cryptophytic. It was found in making a comparison of Iron Mountain and Fairview Mountain that the former had a reduction of 7% in hemicryptophytes and cryptophytes; a 3% increase in phanerophytes and a 1% increase in therophytes. This indicates the influence of a modified coastal climate due to proximity of the ocean.

For a number of species in the flora of both mountains, the present study revealed extensions in range. These species, for the most part, have entered the region from typically different floral provinces. New distributional records for Fairview Mountain total 15%. New distributional records for Iron Mountain total 14%.

The flora of Fairview Mountain includes 315 species of plants of which 95% appear to be indigenous. The flora of Iron Mountain consists of 300 species and varieties of plants, 90% of which are native. The annotated catalogues of the plants of both mountains indicate that the two mountains exhibit a significantly diverse flora within the comparatively narrow limits of the areas to which this investigation was confined. The flora of each mountain represented 10% of the total flora of the state and from 43 to 50% of the families listed for the state were represented.

Polygonum cascadenae was described as new from Fairview Mountain. It belongs to the subgenus *Avicularia* of the family Polygonaceae.

The study was based on extensive field collections made over a period of years by the author; and upon published data, the latter consisting largely of general or casual comments of little definitive value. Keys to the families, genera and species were prepared and the plants are listed in the catalogue with notes on abundance, range, and habitat of the various species. The zonal distribution and life form of each plant is also given.

A TAXONOMIC AND ECOLOGIC COMPARISON
OF THE FLORAS OF IRON AND FAIRVIEW
MOUNTAINS IN OREGON

by

WILLIAM HUDSON BAKER

A THESIS

submitted to

OREGON STATE COLLEGE

In partial fulfillment of
the requirements for the
degree of

DOCTOR OF PHILOSOPHY

June 1949

ACKNOWLEDGMENT

The writer is indebted to a number of persons for their valuable assistance in the preparation of this paper. Thanks are due particularly to Dr. Helen M. Gilkey, Professor of Botany and Curator of the Herbarium, as advisor, under whose direction this study was undertaken. Thanks are due as well to Molly Cochran Baker for checking and proof-reading the manuscript, also for assistance in collecting plants on many field trips. Special mention should go to Dr. Morton E. Peck of Willamette University for aid in the identification of specimens and to Dr. Henry P. Hansen of Oregon State College for helpful suggestions concerning sections on ecology. The author also wishes to express appreciation to the following specialists for determination of certain critical species: the genus Carex, the genus Juncus, and Gramineae, Mr. John Thomas Howell; the genus Viola, Mr. Milo S. Baker; the genus Saxifraga, Dr. Rimo Bacigalupi; the genus Lupinus, Dr. C. P. Smith; the genus Polygonum, Dr. J. F. Brenckle; the genus Lomatium, Dr. Lincoln Constance; the genus Calochortus, Dr. Marion Ownbey; the genus Erigeron, Dr. Arthur Cronquist; and Polypodiaceae, Mrs. Harvey M. Hall.

TABLE OF CONTENTS

PART I. THE FLORA OF FAIRVIEW MOUNTAIN

PHYSIOGRAPHY AND TOPOGRAPHY.....	page..1
CLIMATE.....	3
LIFE ZONES.....	5
FLORAL ELEMENTS.....	15
INTRODUCED SPECIES.....	21
BIOLOGICAL SPECTRUM.....	22
EXTENSIONS IN RANGE.....	30
ANNOTATED CATALOG OF PLANTS.....	34
SUMMARY OF PLANTS OF FAIRVIEW MOUNTAIN.....	93

PART II. THE FLORA OF IRON MOUNTAIN

PHYSIOGRAPHY AND TOPOGRAPHY.....	95
CLIMATE.....	97
LIFE ZONES.....	98
FLORAL ELEMENTS.....	103
INTRODUCED SPECIES.....	109
BIOLOGICAL SPECTRUM.....	111
EXTENSIONS IN RANGE.....	114
ANNOTATED CATALOG OF PLANTS.....	117
SUMMARY OF PLANTS OF IRON MOUNTAIN.....	177

PART III. A COMPARISON OF THE TWO FLORAS.....179

SUMMARY OF COMBINED STUDY.....204

BIBLIOGRAPHY.....208

ILLUSTRATIONS

- Fig. 1. Fairview Mountain, north slope.....page.33-a
Fig. 2. Fairview Mountain, south slope.....33-b
Fig. 3. Polygonum cascaden sp. nov.....50-a
Fig. 4. Iron Mountain, east slope.....116-a
Fig. 5. Veratrum insolitum Jeps., southeast slope
of Iron Mountain130-a

A TAXONOMIC AND ECOLOGIC COMPARISON OF THE FLORAS
OF IRON AND FAIRVIEW MOUNTAINS IN OREGON

PHYSIOGRAPHY AND TOPOGRAPHY OF FAIRVIEW MOUNTAIN

Fairview Mountain is located in the Bohemia District, southeastern Lane County, Oregon. The mountain is part of the Calapooya Range, a subsidiary chain connecting the cascades and coast Range at the head of the Willamette Valley. It is 32 air miles west of the main crest of the Cascade Divide and is one of the highest peaks in this region, reaching an elevation of 5933 feet. The lower boundary of the area studied corresponds closely to the 4500 foot contour line on the U.S.G.S. topographic map of the Lowell Quadrangle.

The steep often precipitous north slope is drained by Crystal Creek and Golden Curry Creek which flow into Champion Creek. The west slope drops down into the Sharps Creek watershed, and the south slope is cut by City Creek Canyon. The streams on the east slope empty into Champion Creek which flows northeast and is the largest stream in the region.

According to Smith (108, pp. 32-40), the lower part of the Calapooya formation is dominantly sedimentary, while the upper part is mostly igneous. The lower or sedimentary phase of the Calapooya is made up for the most part of pyroclastics or coarse breccias and agglomerates, all of these being different facies of volcanic materials of more or less explosive origin. Mud flows are also present. The upper igneous phase consists largely of different types of andesitic, dacitic and and basaltic flows. The mountains in this area are made up predominantly of tertiary sediments and related intrusive igneous rocks, basalts and andesites, which are the result of folding and faulting peneplanation and later dissection by rejuvenated streams. They do not seem to present any regular pattern. The topography is in that stage usually designated as mature.

CLIMATE

Fairview Mountain is situated in a region which has a marine climate of the cool dry summer type. This is due to its proximity to the Pacific Ocean about 75 miles to the west.

The prevailing winds are westerly carrying moisture from the ocean. During the winter months these moisture laden winds blow over cooler land masses and are forced to ascend the cold mountain slopes which causes condensation and results in a heavy precipitation. In summer months little rainfall occurs because the prevailing winds come from a relatively cool ocean and traverse warm land masses.

The nearest weather stations are located at Black Butte, Rujada, Cottage Grove, Oakridge and Musick. The annual rainfall at Rujada, 1,212 feet elevation, is 48.28 inches, most of which falls from October to May. The rainfall at Musick, 5,530 feet elevation, is 84.76, nearly double the amount at Rujada. This indicates that the precipitation increases sharply at higher elevations. The annual rainfall on Fairview Mountain, 5,933 feet elevation, is probably closer to the figure for the Musick station.

Very little moisture appears to be available during

the season when temperatures are favorable to plant growth. The rainfall during June, July and August is less than 6 inches. Although summer thunder showers are frequent and quite heavy, most of them are of very short duration. Most of the water is dissipated in a quick run off and it is not held in the shallow rocky soil that is so characteristic of the region.

The growing season ranges from 90 to 120 days in average years. The average January temperature is around 35 degrees, while the average July temperature is usually about 65 degrees.

There is a considerable annual snow-fall which is important in considering the growth of plant life on the mountain. The snow melts early in the season on the warm south slope. Moisture is made available in this way over a longer period during the summer. Many plants are found growing along the edge of the receding snow banks.

THE LIFE ZONES OF FAIRVIEW MOUNTAIN

Only three vegetational or life zones are recognized, based on the scheme resulting from studies by Merriam (74) of life zones, because this mountain does not reach an altitude that would produce a typical alpine flora. A number of plants are found growing here that inhabit the Arctic-Alpine Zone of the Cascades; however, this fact is probably more interesting than significant and would hold no great importance in this study as the plants are found growing in the Hudsonian Zone of the Cascades also. The following species on Fairview Mountain grow in the Arctic-Alpine Zone of the Cascades.

Polystichum Lonchitis	Thlaspi alpestre
Athyrium americanum	Saxifraga bronchialis var. austromontana
Melica subulata	Saxifraga rufidula
Poa gracillima	Saxifraga ferruginea
Poa epilis	Hypericum Anagalloides
Sitanion Hystrix	Epilobium alpinum
Carex ablata	Gentiana calycosa
Carex spectabilis	Phlox diffusa var. longistylis
Luzula campestris	Penstemon rupicola
Polygonum Newberryi	Anaphalis margaritacea var. subalpina
Arenaria formosa	Senecio intergerrimus

The Hudsonian Zone

The Hudsonian Zone is usually a narrow strip seldom over 1000 feet in vertical height and ranging from about 5000 to 6000 feet, although varying circumstances may alter this. It must be kept in mind that these zones are not level altitudinal lines and that the indicator plants merely reach their maximum development or abundance within them. The trees of the Hudsonian Zone extend up the mountain sides much higher on the ridges than in the valleys between. This has been considered by Merriam partly the result of more or less favorable exposure to the sun rays, and partly to air currents, the warm currents tending to follow up the steep ridges while the cold currents flow down the valleys. Therefore, certain species ascend highest on warm ridges, while others descend farthest into the cool valleys. It is here in the Hudsonian Zone, that you have the greatest floral display on the mountain. The growing season is short and the flowers hardly wait for the snow to melt, some of the hardest plants growing in the very edge of the snow line. During the warm days of July the snow vanishes and the slopes burst into bloom. The plants of this zone make up 30% of the Flora of Fairview Mountain.

Polypodium vulgare
var. *columbianum*

Polystichum Lonchitis

Athyrium americanum

Cheilanthes gracillima

Cryptogramma acrostichoides

Tsuga Mertensiana

Chamaecyparis nootkatensis

Muhlenbergia filiformis

Agrostis aequivalvis

Melica subulata

Poa gracillima

Poa epilys

Poa leptocoma

Festuca viridula

Sitanion Hystrix

Carex ablata

Carex spectabilis

Carex Kelloggii

Carex subfusca

Juncus Mertensianus

Luzula parviflora

Luzula campestris

Xerophyllum tenax

Calochortus Lobbii

Habenaria saccata

Eriogonum umbellatum

Polygonum bistortoides

Polygonum Newberryi

Polygonum minimum

Arenaria formosa

Claytonia lanceolata

Delphinium depauperatum

Delphinium glareosum

Aquilegia formosa

Caltha biflora

Thlaspi alpestre

Arabis Drummondii

Sedum oregonensis

Mitella trifida

Mitella Breweri

Saxifraga bronchialis

Saxifraga rufidula

Saxifraga Mertensiana

Saxifraga ferruginea

Ribes lacustre

Sorbus occidentalis

Prunus emarginata

Holodiscus glabrescens

Erthronium grandiflorum
var. *pallidum*

Erythronium klamathense

Potentilla Drummondii

Lupinus latifolius
var. *subalpinus*

Pachistima Myrsinites

Hypericum Anagalloides

Epilobium angustifolium

Epilobium alpinum

Epilobium Hornemannii

Osmorhiza occidentalis

Lomatium Martindalei

Heracleum lanatum

Leptotaenia dissecta

Arctostaphylos nevadensis

Gentiana calycosa

Polemonium carneum

Phlox diffusa var. *longistylis*

Gilia Nuttallii

Romanzoffia sitchensis

Hackelia floribunda

Penstemon procerus

Penstemon Cardwellii

Penstemon Davidsonii

Penstemon rupicola

Rubus pedatus

Rubus lasiococcus

Pedicularis flavida

Pedicularis racemosa

Lonicera utahenses

Valeriana sitchensis

Agoseris aurantiaca

Hieracium cynoglossoides

var. *nudicaule*

Hieracium gracile

Aster ledophyllus

Erigeron cascadiensis

Erigeron Aliceae

Antennaria rosea

Anaphalis margaritacea

var. *subalpina*

Achillea Millefolium

var. *lanulosa*

Luina stricta

Arnica diversifolia

Arnica latifolia

Haplopappus Hallii

Senecio triangularis

Senecio integerrimus

Penstemon nemorosa

Cirsium americanum

Castilleja miniata

Orthocarpus imbricatus

The Canadian Zone

The Canadian Zone is the least well defined zone on the mountain. Many so called Canadian species range down into the Transition Zone and sharp lines of division between these two regions cannot be drawn. It is a mountain zone which can be considered to range from about 4000 to 5000 feet in this area. It is often characterized by an increase in the percentage of Tsuga heterophylla and Abies grandis present. It should be noted that both these species are also found in the Transition zone. Pinus monticola seems to be the most characteristic representative of the Canadian life zone on Fairview Mountain. The appearance of Xerophyllum tenax on the slopes of the mountain is also a good indicator. Piper (94, p. 59) summarizes the situation as follows: "The zone can, in fact, be recognized not so much by any purely characteristic species as by the great abundance of species relatively rare in contiguous zones". This is also an area in which many shrubs and small trees abound such as: Acer circinatum, Alnus sinuata, Vaccinium membranaceum, Sorbus sitchensis, Arctostaphylos nevadensis, Vaccinium ovalifolium, Pachistima Myrsinites and Vaccinium scoparium. Many of the species in the Canadian Zone are those whose ranges extend far north-

ward. The wide range of Vaccinium scoparium into the north is a good example of this. The following list consists of species which occur mainly in the Canadian Zone:

Xerophyllum tenax	Polygonum Nuttallii
Clintonia uniflora	Trautvetteria grandis
Aconitum Howelli	Coptis laciniata
Tiarella unifoliata	Anemone deltoidea
Chimaphila Menziesii	Gilia aggregata
Cornus canadensis	Viola glabella
Corallorhiza maculata	Pyrola secunda
Corallorhiza Mertensiana	Galium kamtschaticum var. oreganum
Elymus virescens	Sanicula septentrionalis
Carex laeviculmis	Pyrola bracteata
Carex Mertensii	Galium bifolium
Listera Convallarioides	Heuchera micrantha
Listera caurina	Chimaphila umbellata
Abies amabilis	Pyrola picta
Cinna latifolia	Hypopitys fimbriata
Carex pachystachya	Navarretia divaricata
Habenaria unalaschensis	Collomia aristella
Polygonum Austinae	Stachys rigida
Stellaria crispa	Senecio Harfordii
Ribes binominatum	Viola Sheltonii

Potentilla glandulosa

Potentilla Breweri

Acer Douglasii

Lomatium Hallii

Orogenia fusiformis

Trifolium Kingii

Lupinus Andersonii

Rosa gymnocarpa

Arabis Drummondii

Anemone Lyallii

Transition Zone

The Transition Zone is also represented on the mountain at lower altitudes. Allowance being made for overlap in zones, the Transition region extends upward to about 4500 feet. In view of the boundaries defined for the mountain it will be noted that much of the Transition Zone would remain below our limits. However, there are still about 29 percent of the plants growing here that must be classed as typical of the Transition Zone. The most characteristic species of the zone are Pseudotsuga taxifolia and Acer macrophyllum. Other common species are included in the list below.

Pteridium aquilinum
var. *pubescens*

Polystichum munitum

Abies grandis

Tsuga heterophylla

Ribes sanguineum

Ribes bracteosum

Acer circinatum

Sambucus callicarpa

Gaultheria Shallon

Berberis nervosa

Rubus parviflorus

Trillium ovatum

Oxalis oregana

Smilacina sessilifolia

Smilacina racemosa

Streptopus amplexifolius

Achlys triphylla

Taxus brevifolia

Libocedrus decurrens

Galium triflorum

Hieracium albiflorum

Arenaria macrophylla

Vaccinium parvifolium

Vancouveria hexandra

Rubus spectabilis

Mimulus guttatus

THE FLORAL ELEMENTS

The flora of this area consists of plants representing three different floral provinces. These can be divided into the Northern element, Southern element, and Eastern element. It is interesting to note that both Piper and Beattie (95) and Gilkey (39) in their regional floras have taken this range of mountains as the southern limit of the area covered.

The Northern Element

The Northern or Alaskan element in the flora comprises most of the plants found growing in the Hudsonian Zone and many of the plants of the Canadian Zone. There are several extensions of the Northern element worthy of consideration. Luina stricta and Haplopappus Hallii have been previously reported only from Northern Oregon. The former was long considered an endemic of Washington. It is interesting to observe the occurrence of this plant here. It may yet be found at intermediate stations when botanical exploring of these areas is done more intensively. The following plants are considered representative of the Northern element in our flora on Fairview Mountain. These plants usually never range

farther south than the northern-most counties of California and for the most part only reach Oregon.

<i>Abies amabilis</i>	<i>Carex ablata</i>
<i>Chamaecyparis nootkatensis</i>	<i>Carex pachystachya</i>
<i>Agrostis aequivalis</i>	<i>Calochortus Lobbii</i>
<i>Listera caurina</i>	<i>Pachistima Myrsinites</i>
<i>Alnus sinuata</i>	<i>Lomatium Martindalei</i>
<i>Eriogonum umbellatum</i>	<i>Lomatium Hallii</i>
<i>Polygonum phytolaccaefolium</i>	<i>Ligusticum apiifolium</i>
<i>Polygonum Newberryi</i>	<i>Pyrola bracteata</i>
<i>Polygonum Nuttallii</i>	<i>Gaultheria ovatifolia</i>
<i>Arenaria formosa</i>	<i>Vaccinium ovalifolium</i>
<i>Montia flagellaris</i>	<i>Penstemon Cardwellii</i>
<i>Anemone Lyallii</i>	<i>Penstemon Davidsonii</i>
<i>Delphinium glareosum</i>	<i>Penstemon rupicola</i>
<i>Thlaspi alpestre</i>	<i>Castilleja hispida</i>
<i>Mitella trifida</i>	<i>Galium kamtschaticum</i> var. <i>oreganum</i>
<i>Saxifraga rufidula</i>	<i>Valeriana sitchensis</i>
<i>Saxifraga ferruginea</i>	<i>Aster ledophyllus</i>
<i>Tiarella trifoliata</i>	<i>Anaphalis margaritacea</i> var. <i>subalpina</i>
<i>Sorbus occidentalis</i>	<i>Luina stricta</i>
<i>Rubus pedatus</i>	<i>Arnica latifolia</i>

Rubus lasiococcus

Haplopappus Hallii

Lupinus latifolius
var. *subalpinus*

Senecio Harfordii

The Eastern Element

The Eastern element consists of those plants which are common east of the Cascade Mountains and are of Blue Mountain, Great Basin, or Rocky Mountain origin. These plants are not normally found in the area west of the Cascade Mountains. Some swing around to the south of the region and have been reported from California. A considerable number have not been reported previously in the state except from eastern Oregon and may be considered extensions of range. Ordinarily the extension of a plant for 50 miles or so, would not be unusual but in this area the high mountain barrier of the Cascades is a phyto-geographical feature of no small importance. Plants are not usually adapted to the varied conditions of the humid western side of these mountains, as well as the arid regions which are found on the east side. The plants found growing here characteristic of this element are:

Bromus polyanthus

Gayophytum diffusum

Sitanion Hystrix

Gayophytum lasiospermum
var. *Hoffmannii*

Carex festivella

Gilia aggregata

<i>Eriogonum compositum</i>	<i>Microsteris humilis</i>
<i>Polygonum Austinae</i>	<i>Hydrophyllum Fendleri</i> var. <i>albifrons</i>
<i>Delphinium depauperatum</i>	<i>Hackelia floribunda</i>
<i>Sedum Douglasii</i>	<i>Agastache urticifolia</i>
<i>Philadelphus Lewisii</i>	<i>Penstemon procerus</i>
<i>Prunus emarginata</i>	<i>Mimulus Breweri</i>
<i>Holodiscus glabrescens</i>	<i>Galium bifolium</i>
<i>Lupinus aridus</i> var. <i>Torreyi</i>	<i>Lonicera utahensis</i>
<i>Trifolium Kingii</i>	<i>Artemisia vulgaris</i> var. <i>ludoviciana</i>
<i>Linum Lewisii</i>	

The Southern Element

The Southern element in our flora is predominantly of California origin. The extreme southern end of the Willamette Valley and the northern end of the Umpqua Valley are very much alike floristically, as would be expected since they are separated by only a narrow ridge of mountain. Within a few miles of the summit of the Calapooya divide the vegetation of these two areas may be said to meet and on both sides of the divide we have a commingling of the flora. The character of the flora is greatly influenced by the climate and soil. The rainfall in the Willamette Valley

decreases as we proceed southward. Across the divide in the Umpqua Valley the annual rainfall is only 35 inches; this coupled with a soil which is loose and rocky causes the rapid loss of the available moisture. The rainy season ends by early summer and the high summer temperature has a definite effect on the vegetation. These conditions are ideal for xerophytes. On the south slope of the Calapooya Mountains in the Umpqua Valley, many California plants reach their northern limit; while in the Rogue River Valley, which is the next southward, the flora is predominantly Californian. Plants considered typical of this element are listed below:

<i>Libocedrus decurrens</i>	<i>Trifolium Howellii</i>
<i>Veratrum insolitum</i>	<i>Vicia californica</i>
<i>Lilium Washingtonianum</i>	<i>Orogenia fusiformis</i>
<i>Erythronium klamathense</i>	<i>Hypopitys fimbriata</i>
<i>Eriogonum nudum</i>	<i>Apocynum medium</i> var. <i>vestitum</i>
<i>Polygonum cascadenis</i>	<i>Hydrophyllum occidentale</i>
<i>Silene campanulata</i>	<i>Campanula prenanthoides</i>
<i>Sedum oregonensis</i>	<i>Hieracium cynoglossoides</i> var. <i>nudicaule</i>
<i>Ribes binominatum</i>	<i>Hieracium Parryi</i>
<i>Potentilla Breweri</i>	<i>Erigeron cascadenis</i>
<i>Lupinus Andersonii</i>	<i>Erigeron foliosus</i> var. <i>confinis</i>

Pedicularis flavida

Lupinus albifrons
var. *flumineus*

INTRODUCED SPECIES

All species adventive on Fairview Mountain are of European origin. These total 15 species or about 5% of the total number of vascular plants found growing in the area. These species are all classed as weeds. Some of them are the most widespread and noxious weeds in our region. However, based on a comparison with other areas closer to the habitat of man, this region is comparatively low in the percentage of weeds present. The total number of introduced species in the flora of Oregon approximates 10% according to Baker and Yancey (11). The weed flora of Mount Hamilton Range, California comprises 9% of the total flora as indicated by Sharsmith (104, p. 312).

In the list of introduced species that follows, 3 are monocotyledons, all grasses; while 12 are dicotyledons. All are herbaceous, 55% being annual and 65% perennial.

<i>Avena fatua</i>	<i>Trifolium repens</i>
<i>Poa compressa</i>	<i>Hypericum perforatum</i>
<i>Poa annua</i>	<i>Veronica arvensis</i>
<i>Rumex Acetosella</i>	<i>Plantago lanceolata</i>
<i>Rumex obtusifolius</i>	<i>Sherardia arvensis</i>
<i>Spergularia rubra</i>	<i>Hypochaeris radicata</i>
<i>Brassica campestris</i>	<i>Chrysanthemum leucanthemum</i> var. <i>pinnatifidum</i>
<i>Brassica arvensis</i>	

BIOLOGICAL SPECTRUM

The altitudinal distribution of the plants of Fairview Mountain are limited by certain climatic conditions. It is often difficult to measure these conditions by physical means and then correlate the value of the climate for plant life with mechanical measurement of the climate. There is, however, a very close correlation between life forms and climate. These particular life forms indicate a relationship between flora and environment. These facts were noted by Raunkiaer who worked out a simple method, based on sound biological principles, to show statistically the relationship between the climate of a region and its flora. He chose a single important feature--the adjustment of a plant to the unfavorable season, that is, during the cold winter or hot dry summer. Plants are divided into five main groups. The position of the plant in this system is determined by the position of the perennating bud during the unfavorable season.

On this basis were distinguished as follows:

1. Phanerophytes (Ph) which have aerial buds at least 25 cm. above the ground. This class would belong more properly to warm, moist regions. The buds appear well above the soil surface and are afforded little protection.

Examples: Pinus monticola, Pseudotsuga taxifolia, Acer macrophyllum, Alnus sinuata, Gaultheria Shallon, Prunus emarginata, etc.

2. Chamaephytes (Ch) with buds close above or at the surface of the ground, covered with dead leaves or snow.

The renewal buds are protected by the decaying vegetation or long winter snows. This type is characteristic of the Arctic climate which is marked by cold desiccating winds and frozen soil. It is found also in the alpine zones of the mountains where corresponding conditions are present. It is likewise adapted to regions with long dry seasons in the warmer zones. Examples: Penstemon rupicola,

Gaultheria ovatifolia, Rubus pedatus, Saxifraga bronchialis, Sedum Douglasii, Linnaea borealis americana.

3. Hemicryptophytes (H) with buds at the soil level.

These buds have a varying amount of protection and are characteristic of the temperate regions of the world.

The aerial shoots die down to soil level when the unfavorable season sets in. The remaining portion with the hibernating buds is all that persists through the

unfavorable season. Examples: Eriogonum umbellatum, Montia sibirica, Lupinus albicaulis, Cornus canadensis, Pyrola picta, Gilia aggregata, Hypericum perforatum, Achillea Millefolium, Hypochaeris radicata, Goodyera decipiens, Plantago lanceolata, Trifolium repens,

Penstemon nemorosus, Potentilla gracilis, Trisetum cernuum, Sitanion Hystrix, Polystichum munitum.

4. Cryptophytes (Cr) with the buds buried in the soil, or beneath the surface of the water, or marsh plants, are best adapted to avoid desiccation and effects of sudden changes in temperature. These plants are not characteristic of any particular climate and are relatively few in number in comparison with other life forms. Examples: Polypodium vulgare, Pteridium aquilinum, Poa compressa, Carex ablata, Lilium Washingtonianum, Habenaria saccata, Asarum caudatum, Dentaria tenella pulcherrima, Circaea pacifica, Stachys rigida, Hypopitys fimbriata, Apocynum androsaemifolium, Phlox diffusa var. longistylis.

5. Therophytes (Th), annual plants which pass the season in the form of seeds. These plants are characteristic of the hot dry regions and are often classed as drought evaders. Examples: Festuca megalura, Poa annua, Avena fatua, Polygonum Douglasii, Montia perfoliata, Brassica campestris, Gayophytum diffusum, Godetia amoena, Nemophila parviflora, Sherardia arvensis, Veronica arvensis, Mimulus Breweri, Collomia grandiflora, Microsteris gracilis, etc.

Raunkiaer obtained the normal spectrum by selecting 1000 species at random from the flora of the

world and determining the life form class for each. The life form may be defined as the "form which the vegetative body of the plant produces as the result of all the life processes which are affected by the environment" (18, p. 287). The biological spectrum is obtained by studying the flora and determining the percentage of plants belonging to each life form. The character of the flora can be presented statistically and compared with the normal spectrum and the spectra of other regions. In designating a climate based on life forms, the deviation from the normal spectrum is to be considered, not the highest percentage of its own curve.

TABLE 1

The Biological Spectrum of Fairview Mountain on the
basis of Life Zones

Life Zones	<u>Percentage of Species</u>				
	Ph	Ch	H	Cr	Th
Hudsonian Zone	8	8	67	12	3
Canadian Zone	14	6	45	28	6
Transition Zone	19	3	50	13	13
Biological Spectrum	14	6	54	18	8

In a comparison of the life zones, it is apparent that in the Hudsonian Zone the phanerophytes and therophytes are less in number than in any other zone present here. This Zone is the coldest, most rigorous, highest (or most northerly) in which these two groups exist. In regions where the Arctic-alpine Zone is present, phanerophytes and therophytes are entirely absent. The Canadian Zone shows an increase in phanerophytes, while the chamaephytes and hemicryptophytes are greatly reduced. The cryptophytes are more than double and the therophytes are twice the number present in the Hudsonian Zone. In the Transition Zone the phanerophytes reach their greatest development. Over 50% of the total number

of species of trees and shrubs are present in this Zone. The chamaephytes are almost completely reduced and there is also a considerable reduction in cryptophytes while there is a very sharp increase in therophytes.

TABLE 2

The Biological Spectrum of Fairview Mountain Compared with the Normal Spectrum of Raunkiaer and of several other mountain regions in the northwest

Region	Percentage of Species				
	Ph	Ch	H	Cr	Th
Fairview Mountain	14	6	54	18	8
Normal Spectrum	46	9	26	6	13
Cascades (Oregon)	10	9	35	37	7
Blue & Wallowa Mts.	12	11	48	24	2
Mount Rainier	12	8	51	18	9

It is quite obvious from these data that the flora of this region is dominantly hemicryptophytic and cryptophytic. Herbaceous perennials with buds protected by the substratum are the most numerous elements in the flora. The $H + Cr = 72\%$ on Fairview Mountain. A comparison with the normal spectrum indicates that there are more than twice the normal number. Therophytes are fewer than normal. The great reduction in phanerophytes indicates a sufficiently severe climate, as does the fewer number of chamaephytes. All of this indicates a rigorous climate common to all the higher mountains of the

northwest and to the other areas of similar latitude and elevation.

A comparison with the biological spectra of other mountain areas in the northwest gives us a very close correlation. The total of the hemicryptophytes and cryptophytes, 72%, on Fairview Mountain can be compared with Mount Rainier 69%, Blue and Wallowa Mountains 72%, Cascade Mountains (Oregon) 72%. The phanerophytes vary from 10 to 14%, the highest percentage being on Fairview Mountain. The percentage of therophytes is much reduced in all mountain regions. This is due to the short growing season in these areas, which tends to almost exclude the annuals and limit the species able to survive an unfavorable climate to those which are best protected. The greatest reduction is found in the Blue and Wallowa Mountains where the growing season is limited from 100 to 160 days. These regions frequently have freezing temperatures during the growing season, and the frostless days are relatively few.

EXTENSIONS IN RANGE

Extensions of range are reported from the 48 species listed below. These represent 15 percent of the total number of species collected on Fairview Mountain. The relatively high percentage is perhaps due to the fact that the area had not been collected intensively before; also the great diversity of the flora has a definite bearing on the number of species likely to be found in the region. This in turn would increase the probability of finding range extensions. The area is of particular interest because; (1) it is the northern limit of a number of California species, (2) it is the southern limit of some Northern species, (3) and there is a considerable number of eastern Oregon or Great Basin plants present. The occurrence of the latter may be due to migration over the high barrier of the Cascades; or on the other hand it may be that these plants were once common in western Oregon and due to changing climatic conditions survived only on the high mountain peaks. The conditions on the peaks closely simulate the drier habitats east of the mountains.

The occurrence of Lonicera utahensis on Fairview is of special interest since it is not known from the Cascade Mountains at all. This is a good example of discontinuous

distribution. A check on material in several herbaria indicates that it does occur in the Blue Mountains. This is the nearest locality record to our region. Another species which should be mentioned is Erigeron cascadensis. This rare plant is nearly endemic to the Calapooya range. It is apparently found only on high mountain peaks above the watershed of the Umpqua River and adjacent ranges. The plant is quite common at the summit of both Fairview and Bohemia Mountains. Additional collections have been made at Mt. Scott, Klamath-Jackson Counties; Amabilis Peak, Calapooya Mountains; 45th parallel, Cascade Mountains; Hershberger Butte, Douglas County; and on a rocky bank, Pansy Camp, Cascade Mountains (Type) Howell (26, p. 218). The plants listed as extensions of range are recorded below. Each species is followed by an appropriate symbol indicating probable origin of the plant or at least its regional affiliation. (N) signifies Northern element; (S) Southern or California element; (E) Eastern Oregon or Grant Basin element.

Chamaecyparis nootkatensis (N)

Bromus polyanthus (E)

Sitanion Hystrix (E)

Veratrum insolitum (S)

Erythronium klamathense (S)

Eriogonum compositum (E)
Polygonum Austiniae (E)
Polygonum Nuttallii (N)
Polygonum cascadenis (S)
Arenaria formosa (N)
Silene campanulata (S)
Delphinium depauperatum (E)
Sedum Douglasii (E)
Sedum oregonense (S)
Heuchera micrantha var. glaberrima (N)
Saxifraga rufidula (N)
Philadelphus Lewisii (E)
Ribes binominatum (S)
Prunus emarginata (E)
Holodiscus glabrescens (E)
Potentilla Breweri (S)
Lupinus aridus var. Torreyi (E)
Lupinus Andersonii (S)
Trifolium Howellii (S)
Trifolium Kingii (E)
Vicia californica (S)
Linum Lewisii (E)
Gayophytum diffusum (E)
Gayophytum lasiosperum var. Hoffmannii (E)
Orogenia fusiformis (S)

Apocynum medium var. *vestitus* (S)
Gilia aggregata (E)
Gilia Nuttallii (E)
Hackelia floribunda (E)
Agastache Urticifolia (E)
Penstemon procerus (E)
Mimulus Breweri (E)
Pedicularis flavida (S)
Galium bifolium (E)
Lonicera utahensis (E)
Campanula prenanthoides (S)
Hieracium cynoglossoides var. *nudicaule* (S)
Erigeron cascadiensis (S)
Erigeron foliosus (S)
Artemisia vulgaris var. *ludoviciana* (E)
Luina stricta (N)
Haplopappus Hallii (N)
Senecio Harfordii (N)



Fig. 1. Fairview Mountain, north slope.



Fig. 2. Fairview Mountain, south slope

ANNOTATED CATALOGUE OF PLANTS

PTERIDOPHYTA. Ferns and Fern-allies

1. POLYPODIACEAE. Fern Family.

Indusium present (often apparently or quite absent in
Athyrium americanum)

Sori marginal, covered by the revolute portion of the
leaf

Fronds of two kinds

Sterile leaf blades simple pinnate.....

.....6. Struthiopteris

Sterile leaf blades 2-3 pinnate..10. Cryptogramma

Fronds alike

Plants with fan-shaped pinnules...7. Adiantum

Plants with pinnules not as above

Plants large and stout; fronds usually solitary

.....8. Pteridium

Plants small and slender; fronds generally
clustered.....9. Cheilanthes

Sori not marginal, borne on the veins

Indusia partially inferior.....1. Cystopteris

Indusia superior

Sori oblong, lunate.....5. Athyrium

Sori round

Indusium orbicular, centrally pelate

.....3. Polystichum

Indusium reniform, attached at its sinus

.....4. Dryopteris

Indusium wanting.....2. Polypodium

1. Cystopteris Bernh.

1. Cystopteris fragilis (L.) Bernh. Bladder fern.
Growing on a cliff near the Bohemia saddle; occasional.
Hudsonian. (H)

2. Polypodium L.

1. Polypodium vulgare L. var. occidentale Hook.
Licorice fern. Along stream on the north slope;
common. Humid Transition. (Cr)

Polypodium vulgare L. var. columbianum Gilbert.
Mountain licorice fern. Growing at top of northwest
slope among rocks; not common. Hudsonian. (Cr)

3. Polystichum Roth.

- Pinnae linear-attenuate, the teeth pointing upward.....
2. P. munitum
 Pinnae deltoid-lanceolate, the teeth pointing outward...
1. P. Lonchitis

1. Polystichum Lonchitis (L.) Roth. Holly-fern.
 On north slope near top, growing among boulders and rocks;
 occasional. Hudsonian. (H)

2. Polystichum munitum (Kaulf.) Presl. Common
 sword fern. In woods of north slope and at lower
 elevations along Utopian Way; fairly common. Humid
 Transition. (H)

4. Dryopteris Adans.

1. Dryopteris dilatata (Hoffm.) Gray. Spreading
 woodfern. Along stream banks in woods of north slope;
 fairly common. Humid Transition and Canadian. (Cr)

5. Athyrium Roth.

- Indusia lunate, present; pinnules sessile
2. A. Filix-femina
 Indusia evanescent; pinnules short stalked,
 somewhat cuneate at base.....1. A. americanum

1. Athyrium americanum (Butters) Maxon. Alpine
 ladyfern. On north slope near summit of the mountain;
 occasional. Hudsonian. (H)

2. Athyrium Filix-femina (L.) Roth. Lady-fern.
 About springs and watercourses; common. Transition
 and Canadian. (H)

6. Struthiopteris Scop.

1. Struthiopteris spicant (L.) Weis. Deer-fern.
 Common along watercourses and in dense forests on north
 slope. Humid Transition. (H)

7. Adiantum L.

1. Adiantum pedatum L. var. aleuticum Rupr. Western
 maidenhair fern. West slope along Utopian Way; common.
 Humid Transition and Canadian. (Cr)

8. Pteridium Scop.

1. Pteridium aquilinum (L.) Kuhn var. pubescens
Underw. Western bracken. Common around Musick Guard
Station. Humid Transition to Hudsonian. (Cr)

9. Cheilanthes Sw.

1. Cheilanthes gracillima D. C. Eaton. Lace-fern.
Common on summit growing on rock slopes and outcroppings.
Hudsonian. (H)

10. Cryptogramma R. Br.

1. Cryptogramma acrostichoides R. Br. American
parsley-fern. Fairly common at high elevations among
rocks. Hudsonian. (H)

SPERMATOPHYTA. Seed Plants

CLASS GYMNOSPERMAE. Cone-bearing plants

2. TAXACEAE. Yew Family

1. Taxus L.

1. Taxus brevifolia Nutt. Western Yew. Found along
Utopian Way; scattered. Humid Transition and Canadian.
(Ph)

3. PINACEAE. Pine Family

Leaves in clusters, 2 to 5 in a bundle.....1. Pinus
Leaves solitary, opposite or whorled, scattered
along the branch

Cones erect; scales deciduous.....3. Abies
Cones pendulous; scales persistent

Branchlets smooth; leaves persistent when dried,
bracts exceeding the scales.....2. Pseudotsuga

Branchlets roughened by the persistent leaf bases;
leaves deciduous when dried, scales longer
than the bracts.....4. Tsuga

1. Pinus L.

1. Pinus monticola Dougl. Western white pine.
Occurs on north slope and Elephant saddle; common.
The characteristic tree of the Canadian Zone. (Ph)

2. Pseudotsuga Carr.

1. Pseudotsuga taxifolia (Lamb.) Britt. Douglas fir. Common on south slope and along Musick Mine Road. Humid Transition and Canadian. (Ph)

3. Abies (Tourn.) Hill.

Cones green; leaves notched at apex.....2. A. grandis
Cones purple, large; leaves generally acute

.....1. A. amabilis

1. Abies amabilis (Dougl.) Forbes. Lovely fir. Growing on south slope Fairview-Bohemia saddle and along headwaters of City Creek near Musick Mine; common. Canadian. (Ph)

2. Abies grandis Lindl. Grand fir. Very common at low elevations on north slope and growing up to summit in scattered stands. Humid Transition and Canadian. (Ph)

4. Tsuga (Engl.) Carr.

Leaves in flattened sprays; cones small, $\frac{1}{2}$ to 1 inch long.....1. T. heterophylla
Leaves spreading from all sides of the stem; cones
✓ larger, $1\frac{1}{2}$ to 3 inches long.....2. T. Mertensiana

1. Tsuga heterophylla (Raf.) Sarg. Western hemlock. Very abundant in forests of lower elevations at base of the mountain. Humid Transition and Canadian. (Ph)

2. Tsuga Mertensiana (Bong.) Sarg. Mountain hemlock. On north and west slopes, forming principal tree at timberline. Hudsonian. (Ph)

4. CUPRESSACEAE. Cypress Family

Cones oblong; scales oblong, imbricated; leaves appearing to be in whorls of four.....1. Libocedrus

Cones globose; scales shield or wedge-shaped; leaves in pairs.....2. Chamaecyparis

1. Libocedrus Endl.

1. Libocedrus decurrens Torr. Incense cedar. Present on south slope at headwaters of City Creek. Common in the dry more arid region to the south. Arid Transition. (Ph)

2. Chamaecyparis Spach.

1. Chamaecyparis nootkatensis (Lamb.) Spach. Alaska cedar. Common on west slope above Utopian Way where there is a considerable grove. South slope near Musick Mine, also several small trees at the summit. This tree practically reaches its southern limit here, although trees have been reported from northern California. It is best developed in its range in southeastern Alaska and British Columbia where it is of considerable commercial importance as a lumber tree. Canadian and Hudsonian. (Ph)

MONOCOTYLEDONEAE

5. GRAMINEAE. Grass Family

Spikelets with several to many flowers

Inflorescence a panicle

Glumes shorter than the lemma; awn apical and straight or none at all.....Tribe 1. Festuceae

Glumes longer than the lemma; awn dorsal, bent and twisted.....Tribe 3. Aveneae

Inflorescence a spike.....Tribe 2. Hordeae

Spikelets with one perfect flower..Tribe 4. Agrostideae

Tribe 1. Festuceae

Lemmas keeled on the back

Lemmas awned from a minutely two-toothed apex.....

.....1. Bromus

Lemmas awnless; spikelets small, not over 8 mm. long.

.....3. Poa

Lemmas rounded on the back (slightly keeled toward the summit in Festuca and some species of Bromus)

Glumes papery; upper florets sterile, folded about each other.....4. Melica

Glumes not papery; upper florets perfect

Lemmas entire, awned from the tip or pointed.....

.....2. Festuca

Lemmas awned from a minutely two-toothed apex.....

.....1. Bromus

Tribe 2. Hordeae

- Rachis continuous, not readily broken into joints; glumes
entire.....5. Elymus
Rachis breaking apart at maturity into joints; glumes
often parted.....6. Sitanion

Tribe 3. Aveneae

- Spikelets less than 1 cm. long.....7. Trisetum
Spikelets 2 cm. or more long.....8. Avena

Tribe 4. Agrostideae

- Rachilla articulating above the glumes
Glumes longer than the lemma
Florets with hairs at the base at least half as long
as the lemma; palea present.....9. Calamagrostis
Florets naked at the base or with short hairs.....
.....10. Agrostis
Glumes shorter than the lemma.....12. Muhlenbergia
Rachilla articulating below the glumes.....
.....11. Cinna

1. Bromus L.

- Spikelets strongly flattened and keeled
Lemmas smooth or rough; sheaths smooth.....
.....1. B. polyanthus
Lemmas pubescent at least below.....2. B. marginatus
Spikelets not strongly flattened and keeled.....
.....3. B. vulgaris

1. Bromus polyanthus Scribn. Great Basin brome-grass. Dry open hillside; quite common. This is a plant of the Rogue River Valley to the south, that enters our limits here. It is quite common in Eastern Oregon. Arid Transition. (H)

2. Bromus marginatus Nees. Large mountain brome-grass. Quite common at summit. Transition. (H)

3. Bromus vulgaris (Hook.) Shear. Narrow-flowered brome-grass. Woods of north slope; common. Humid Transition. (H)

2. Festuca L.

Plants annual; stamens usually one....1. F. megalura

Plants perennial; stamens three

Lemmas awnless or nearly so.....2. F. viridula

Lemmas awned.....3. F. occidentalis

1. Festuca megalura Nutt. Western six-weeks fescue.
Dry open hillside; fairly common. Humid Transition. (Th)

2. Festuca viridula Vasey. Mountain bunch grass.
Summit of mountain; fairly common. Hudsonian. (H)

3. Festuca occidentalis Hook. Western fescue.
Moist north slope; quite common. Transition. (H)

3. Poa L.

Annual.....1. P. annua

Perennial

Plants with creeping rhizomes

Stems flattened.....2. P. compressa

Stems terete

Lemma with web-like hairs at the base.....

.....3. P. rhizomata

Lemma without web-like hairs....4. P. epilis

Plants without creeping rhizomes....5. P. gracillima

1. Poa annua L. Annual bluegrass. Very common on
west slope about springs and watercourses. Introduced
from Europe. (Th)

2. Poa compressa L. Canada bluegrass. Very common
at summit. Introduced from Europe. (Cr)

3. Poa rhizomata Hitch. Timber bluegrass. Found
on summit and on north slope; very abundant. Humid
Transition and Canadian. (Cr)

4. Poa epilis Scribn. Mountain bluegrass. Fairly
common on open hillsides, east slope near summit.
Hudsonian. (H)

5. Poa gracillima Vasey. Pacific bluegrass.
Abundant on summit. Canadian to Hudsonian. (H)

4. Melica L.

1. Melica subulata (Griseb.) Scribn. Alaska onion-grass. North slope; rather scarce. Transition to Hudsonian. (H)

5. Elymus L.

Glumes and lemmas awnless or mucronate...1. E. virescens
Glumes and lemmas distinctly awned.....2. E. glaucus

1. Elymus virescens Piper. Pacific Rye-grass. Moist slope on north side; not common. Canadian. (H)

2. Elymus glaucus Buckl. Western Rye-grass. Growing near Musick Guard Station; common. Transition. (H)

6. Sitanion Raf.

1. Sitanion Hystrix (Nutt.) J. G. Smith. Bottle-brush squirrel-tail. Fairly common at summit of the mountain. Found very commonly in the high Cascades and eastward. Hudsonian. (H)

7. Trisetum Pers.

1. Trisetum cernuum Trin. Nodding trisetum. Growing on the moist north slope; common. Transition. (H)

8. Avena L.

1. Avena fatua L. Wild oat. Common around Musick Guard Station. Introduced from Europe. (Th)

9. Calamagrostis Adans.

1. Calamagrostis canadensis (Michx.) Beauv. Blue-joint. North slope in moist places; quite common. Transition. (H)

10. Agrostis L.

Rachilla prolonged behind the palea...1. A. aequalvis
Rachilla not prolonged behind the palea.....
.....2. A. exarata

1. Agrostis aequivalvis Trin. Northern bent-grass.
North slope in marshy ground; not common. Hudsonian. (H)

2. Agrostis exarata Trin. Western bent-grass.
Common on north slope in marshy ground. Humid Transition.
(H)

11. Cinna L.

1. Cinna latifolia (Trevir.) Griseb. Slender wood
reed-grass. Moist woods along west slope, also about
springs; common. Canadian. (H)

12. Muhlenbergia Gmel.

1. Muhlenbergia filiformis (Thurb.) Rydb. Slender
Muhlenbergia. Marsh on north slope; fairly common.
Hudsonian. (Th)

6. CYPERACEAE. Sedge Family.

1. Carex L.

Stigmas 3; achenes 3-angled

Perigynia slightly compressed but not strongly....

flattened.....1. C. ablata

Perigynia strongly flattened, oval in outline, minutely
beaked

Pistillate spikes erect, sessile or short peduncled

.....2. C. spectabilis

Pistillate spikes nodding on slender peduncles...

.....7. C. Mertensii

Stigmas 2; achenes lenticular

Lateral spikes short; terminal spike only partly
staminate

Perigynia winged on the margins

Perigynia thin, flattened except as distended by
the achene.....5. C. festivella

Perigynia strongly plano-convex, thick in the
center

Perigynia 3 to 3.5 mm., serrulate above, some-
what flattened to the apex..4. C. subfusca

Perigynia 3.5 to 5 mm., not very serrulate,
terete and smooth at the apex.....

.....8. C. pachystachya

Perigynia not winged on the margins...C. laeviculmis

Lateral spikes elongated; terminal spike entirely

staminate.....C. Kelloggii

1. Carex ablata Bailey. American cold-loving sedge. In marsh on north side; common. Canadian and Hudsonian. (Cr)

2. Carex spectabilis Dewey. Showy sedge. Marsh on north side; very common. Hudsonian. (Cr)

3. Carex Kelloggii W. Boot. Kellogg's sedge. Marsh on north side; common. Hudsonian. (H)

4. Carex subfusca W. Boot. Rust sedge. Marsh on north side; common. Transition to Hudsonian. (Cr)

5. Carex festivella Mack. Mountain meadow sedge. In meadow on west slope; rather common. Transition. (Cr)

6. Carex laeviculmis Meinsh. Smooth-stemmed sedge. West slope, marshy ground; not common. Canadian. (H)

7. Carex Mertensii Presl. Mertens' sedge. Moist ground in woods of east slope. Canadian. (Cr)

8. Carex pachystachya Cham. Thick-headed sedge. Marshes and wet meadows on south and west slopes; very common. Canadian. (Cr)

7. JUNCACEAE. Rush Family

Leaf-sheaths open; capsule many-seeded....1. Juncus
Leaf-sheaths closed; capsule 3-seeded.....2. Luzula

1. Juncus L.

Lower leaf of the inflorescence appearing like a continuation of the stem; inflorescence therefore appearing lateral.....1. J. effusus
Lower leaf not as above; inflorescence therefore appearing terminal

Leaf blades flattened, ensiform; septa incomplete; stem 2-edged; stamens 3 (rarely 6).....2. J. ensifolius

Leaf blades little flattened, not ensiform; septa complete; stem not 2-edged; stamens 6.....
.....3. J. Mertensianus

1. Juncus effusus L. Common rush. Marsh on north side; fairly common. Transition to Canadian. (Cr)

2. Juncus ensifolius Wiks. Three-stamened rush. Marshy ground of lower north slope; common. Transition and Canadian. (Cr)

3. Juncus Mertensianus Bong. Mertens' Rush. Growing in a marsh on south slope; rather common. Hudsonian. (Cr)

2. Luzula DC.

Flowers in a loose panicle, solitary on the end of the branches.....1. L. parviflora
Flowers congested into spikes or head-like clusters....
.....2. L. campestris

1. Luzula parviflora (Ehrh.) Desv. Small-flowered wood-rush. Common growing at summit. Humid Transition to Hudsonian. (H)

2. Luzula campestris (L.) D.C. Common wood-rush. Summit of the mountain; common. Transition to Hudsonian. (H)

8. LILIACEAE. Lily Family.

Fruit a capsule

Sepals and petals not alike

Leaves 3, in one whorl.....10. Trillium

Leaves several, not whorled.....3. Calochortus

Sepals and petals alike

Plants with narrow leaves appearing grass-like.....

.....1. Xerophyllum

Plants with broader leaves

Leaves 2, rather broad, appearing to be basal....

.....5. Erythronium

Leaves several to many, not basal, stems leafy

Flowers large, showy; inflorescence solitary
or racemose.....4. Lilium

Flowers small, many; inflorescence paniculate..

.....2. Veratrum

Fruit a berry

Plants with leafy stems

Flowers drooping, axillary or terminal

Flowers axillary.....9. Streptopus

Flowers terminal, 1 to 2 at end of stem.....

.....8. Disporum

Flowers erect, racemose or paniculate.....

.....7. Smilacina

Plants with few leaves, mostly basal...6. Clintonia

1. Xerophyllum Michx.

1. Xerophyllum tenax (Pursh) Nutt. Bear-grass.

Very common on open dry hillside of southwest slope.

Canadian to Hudsonian. (H)

2. Veratrum L.

1. Veratrum insolitum Jepson. Siskiyou false hellebore. Locally abundant on open hillside of south slope. Found commonly in southern Oregon and northern California and recently reported from Benton County. It differs from others of the same genus in this region by having perianth parts fimbriate and a densely woolly ovary. This is an extension of the known range of this species. Humid Transition. (Cr)

3. Calochortus Pursh

1. Calochortus Lobbii (Baker) Purdy. Alpine cat's ear. Very common at summit. Hudsonian. (Cr)

4. Lilium L.

1. Lilium Washingtonianum Kell. Cascade lily. Open ground at summit just west of lookout tower; common. Arid Transition. (Cr)

5. Erythronium L.

Perianth white; stigma nearly entire...1. E. klamathense

Perianth bright yellow; stigma distinctly lobed.....

.....2. E. grandiflorum

1. Erythronium klamathense Appleg. Klamath fawn lily. Open hillside on the north slope; rare. This is a rare and unusual white species found for the first time this far north. It is reported from Crater Lake National Park on the west slope. Hudsonian. (Cr)

2. Erythronium grandiflorum Pursh var. pallidum
St. John. Yellow fawn lily. North slope near edge of
receding snow; common. Hudsonian. (Cr)

6. Clintonia Raf.

1. Clintonia uniflora (Schult.) Kunth. Queen's
cup. Common on wooded north slope. Canadian. (Cr)

7. Smilacina Desf.

Inflorescence a few-flowered raceme...1. S. sessilifolia
Inflorescence a many-flowered panicle.2. S. racemosa

1. Smilacina sessilifolia (Baker) Nutt. Small
false Solomon's seal. Common on northwest slope. Humid
Transition and Canadian. (Cr)

2. Smilacina racemosa (L.) Desf. Large false
Solomon's seal. Very common in shaded humus soil of
the northwest slope. Humid Transition. (Cr)

8. Disporum Salisb.

1. Disporum oreganum (Wats.) B. & H. Fairy bells.
Common on east slope and at base of St. Peter's Rock.
Humid Transition. (Cr)

9. Streptopus Michx.

1. Streptopus amplexifolius (L.) DC. Twisted stalk.
Marsh at Musick Mine; not common. Canadian. (Cr)

10. Trillium L.

1. Trillium ovatum Pursh. Wood lily. Very abundant
on north slope in cool moist woods, also springing up
along receding snow banks. Humid Transition and Canadian.
(Cr)

9. ORCHIDACEAE. Orchid Family

Plants with green foliage leaves present

Leaves 2, opposite, borne near middle of stem.....

.....3. Listera

Leaves several, alternate or basal

Flowers with a spur.....1. Habenaria

Flowers without a spur.....2. Goodyera

Plants not green; leaves reduced to scales.....

.....4. Corallorhiza

1. Habenaria Willd.

Leaves basal; stem leaves bract-like, usually withered by flowering time.....1. H. unalaschensis
 Leaves not basal; stems leafy, leaves not withered as above.....2. H. saccata

1. Habenaria unalaschensis (Spreng.) Wats. Alaska bog orchid. Fairly common in marshes on north slope of the mountain. Canadian. (Cr)

2. Habenaria saccata Greene. Green bog orchid. Quite common in marshes at Musick Mine and on north slope. Hudsonian. (Cr)

2. Goodyera R. Br.

1. Goodyera decipiens (Hook.) St. John & Const. Rattlesnake plantain. Common in dense coniferous woods on west slope. Transition. (H)

3. Listera R. Br.

Lip 9 mm. long, 2-lobed at apex; ovary glandular.....
1. L. Convallarioides
 Lip 6 mm. long, spatulate or retuse; ovary glabrous.....
2. Listera caurina

1. Listera Convallarioides (Sw.) Torr. Twayblade. In densely shaded woods with the following species; not common. Canadian. (Cr)

2. Listera caurina Pip. Northwestern twayblade. In densely shaded woods along Utopian Way; rare. Canadian. (Cr)

4. Corallorhiza R. Br.

Lip purple-spotted, 3-lobed; spur attached almost its entire length.....1. C. maculata
 Lip purple, not spotted, entire or toothed; spur free below middle.....2. C. Mertensiana

1. Corallorhiza maculata Raf. Spotted coral-root. West slope of Utopian Way; not common. Canadian. (Cr)

2. Corallorhiza Mertensiana Bong. Purple coral-root. Scattered along trail on southwest slope. Canadian. (Cr)

DICOTYLEDONEAE

10. SALICACEAE. Willow Family

1. Salix (Tourn.) L.

Capsules glabrous; stamens 4 to 8.....1. S. lasiandra

Capsules pubescent; stamens one or 2

Leaves satiny beneath, coetaneous with the catkins;
stamen one.....2. S. sitchensis

Leaves glabrous, short-pubescent, or tomentose, not
satiny; precocious; stamens 2.....3. S. Scouleriana

1. Salix lasiandra Benth. Red willow. Common on
north slope along banks of Crystal Creek. Humid Transi-
tion. (Ph)

2. Salix sitchensis Sans. Sitka willow. Along
edge of stream on north slope. Hudsonian. (Ph)

3. Salix Scouleriana Barr. Scouler's willow. On
open hillsides of south slope, also on edge of marsh at
Musick Mine, headwaters of City Creek. Frequent along
streams on north slope. Very common. Canadian. (Ph)

11. BETULACEAE. Birch Family

1. Alnus Hill.

1. Alnus sinuata (Regel.) Rydb. Sitka alder.
Abundant along waterways and wet places on north slope,
also along Utopian Way. Canadian and Hudsonian. (Ph)

12. FAGACEAE. Oak Family

1. Castanopsis Spach.

1. Castanopsis chrysophylla (Dougl.) A. DC. Giant
chinquapin. Common along roadsides and open woodlands of
northwest slope. Humid Transition. (Ph)

13. ARISTOLOCHIACEAE. Dutchman's Pipe Family

1. Asarum L.

1. Asarum caudatum Lindl. Wild ginger. Northwest
slope in shaded woods; fairly common. Transition and
Canadian. (Cr)

14. POLYGONACEAE. Buckwheat Family

- Stipules wanting; flowers involucrate...1. Eriogonum
 Stipules present and sheath-like; flowers not involucrate
 Sepals 6, unequal; stigmas tufted.....2. Rumex
 Sepals 5, equal; stigmas capitate.....3. Polygonum

1. Eriogonum Michx.

Calyx stipitate

Leaves large, 4-8 cm. long, mostly cordate.....

.....1. E. compositum

Leaves smaller, never cordate.....2. E. umbellatum

Calyx not stipitate.....3. E. nudum

1. Eriogonum compositum Dougl. Heart-leaved eriogonum. Dry rocky southeast slope; common. This is a plant of the arid regions of Eastern Oregon. Its occurrence on the west side of the Cascades is an extension of range of peculiar significance. Arid Transition. (H)

2. Eriogonum umbellatum Torr. Sulphur-flower. Very common on summit and on open rocky hillside of southeast slope. Arid Transition and Hudsonian. (H)

3. Eriogonum nudum Dougl. Naked eriogonum. Northwest slope along Sharps Creek Road; common. Transition and Upper Sonoran. (H)

2. Rumex L.

Plants dioecious; leaves hastate.....1. R. Acetosella

Plants not dioecious; leaves not hastate

Margins of inner perianth parts entire.....

.....2. R. occidentalis

Margins of inner perianth parts with teeth or bristles

.....3. R. obtusifolius

1. Rumex Acetosella L. Sour dock. Common on the Champion Creek-Sharps Creek divide. This is an abundant and widespread weed pest introduced from Europe. (Cr)

2. Rumex occidentalis Wats. Western dock. Roadside, south slope, in moist ground. Widely distributed. Boreal and Transition. (H)

3. Rumex obtusifolius L. Broad-leaved dock. Marsh on the south slope. Introduced from Europe. (H)

3. Polygonum L.

Leaves broad; stems not wiry

Flowers in a single dense head-like raceme.....
.....1. P. bistortoides

Flowers not as above

Flowers few, in axillary raceme or cluster; stems
short, spreading.....3. P. Newberryi

Flowers in terminal panicle; stem tall, erect.....
.....2. P. phytolaccaefolium

Leaves narrow; stems wiry

Flowers reflexed in fruit

Lower leaves obtuse; calyx 3 mm. long; achenes oblong
.....5. P. Douglasii

Lower leaves acute; calyx 2 mm. long; achenes ovoid
.....6. P. Austinae

Flowers not reflexed in fruit

Flowers in loose axillary clusters, or if dense,
distributed the entire length of the branches;
leaves not much reduced upwards

Leaves oval; flowers 2 or 3 in the axils.....
.....4. P. minimum

Leaves oblanceolate to obovate; flowers 4 or 5 in
the axils.....8. P. cascadenae

Flowers in close spicate or interrupted terminal
racemes, leaves decidedly reduced upwards.....
.....7. P. Nuttallii

1. Polygonum bistortoides Pursh. Bistort. Quite
common on open hillsides of north slope. Hudsonian. (H)

2. Polygonum phytolaccaefolium Meisn. Alpine
knotweed. Roadside on south slope, first switchback
on road to lookout; rare. (Powell.) Canadian. (Cr)

3. Polygonum Newberryi Small. Newberry's knotweed.
Moist rocky north slope; common. Hudsonian. (H)

4. Polygonum minimum Wats. Leafy knotweed. Dry
slopes near Musick Mine. Scattered. Hudsonian. (Th)

5. Polygonum Douglasii Greene. Douglas' knotweed.
Common about Musick Guard Station and along roadsides.
Transition. (Th)

6. Polygonum Austinae Greene. Austin's knotweed.
Dry open hillside on south slope; not common. A first
western record for this plant which typically is found

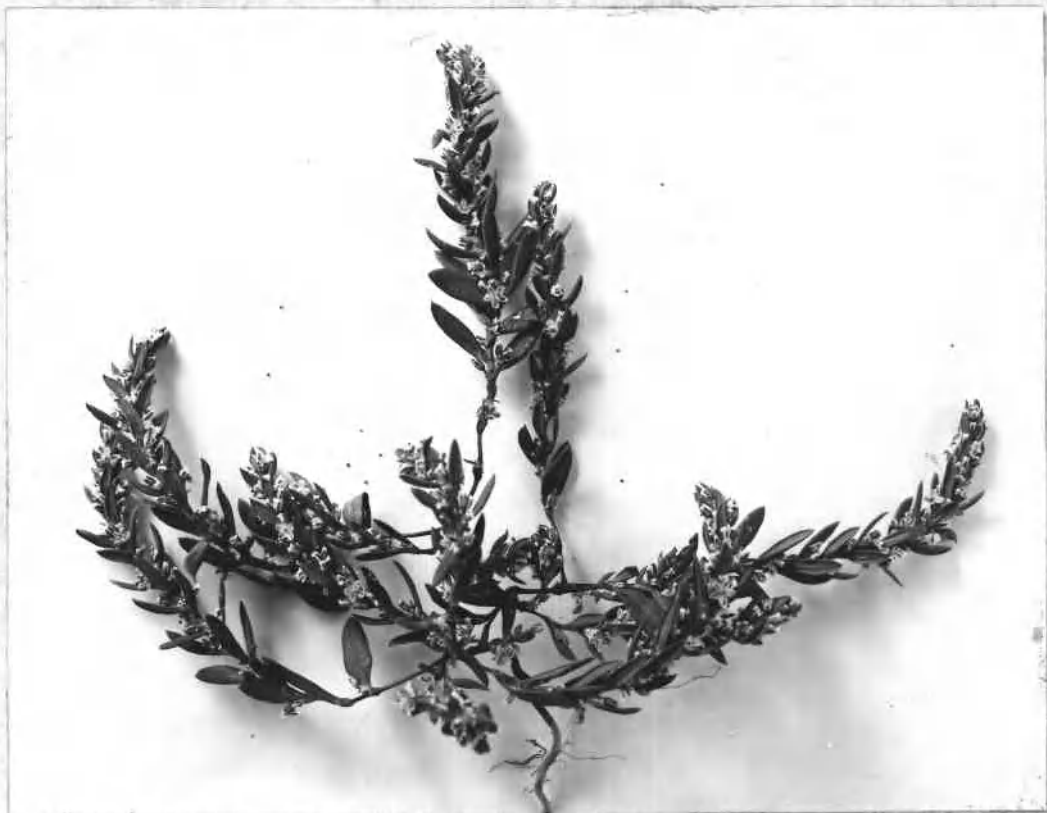


Fig. 3. Polygonum cascadense sp. nov. ined.

on sagebrush plains of Eastern Oregon. Type locality, Modoc County, California. Arid Transition. (Th)

7. Polygonum Nuttallii Small. Nuttall's knotweed. Rocky open hillsides at summit of the mountain. A plant of the Northern element, entering our limits here. To our knowledge, this is its southernmost station thus far reported. Canadian. (Th)

8. Polygonum cascadenae sp. nov. ined. Annuum; caulis 0.4-1.5 dm. altus, internodi breves; folia 5-15 mm. longa, oblanceolata, oblonga, obovata vel lineari-oblonga, sessilia; inflorescentia denissima, 4-5 floribus axillaribus; perianthia alba vel rosaceo-tincta; costa distincta; pedicellis erectis; stamina 8, antheris purpureis, filamentis basi dilatatis; achaenia 3 angulata, 2 mm. longa, ovoidea vel ovoidea-oblonga, laevia, nigrescentia, inclusa vel paullo exserta.

Annual, variable in size and habit, glabrous or slightly scurfy, light green and wiry; stem 0.4 dm. to 1.5 dm. tall, angled, ridged or roughened between angles, red or reddish, simple and erect or divergently branching at and above the base, internodes short or slightly elongated; nodes somewhat enlarged and covered by the reddish-brown bases of the ochreae; ochreae transparent and lacerate above, 2 mm. long; leaves 5 mm. to 15 mm. long, oblanceolate, oblong or obovate to broadly linear-oblong, sessile, not greatly reduced in size upwards, numerous, apex acute, margins revolute, quite evenly distributed up the stem from the base; inflorescence consisting of axillary clusters, each generally with 4 or 5 flowers giving a congested appearance the entire length of the stem; perianth white or pinkish with a broad pink to reddish or sometimes narrow greenish band up each lobe; pedicels erect, 2 mm. long; stamens 8, included; filaments white, conspicuously widened at the base; anthers purple; style 3 parted almost to the base, included, 6 mm. long; achene triquetrous, 2 mm. long, ovoid or ovoid-oblong, not constricted at the apex, black, smooth, shining, included or sometimes slightly exserted.

Type in Herbarium of Oregon State College, No. 62089. Collected on south slope of Fairview Mountain, Calapooya Range, Lane County, Oregon, Sept. 28, 1947, William H. Baker No. 5129.

Other specimens examined; Crater Lake, Klamath County, Oregon, 1936, Anderson and Simpson No. 116 (OSC); Meadow on South Fork of McKenzie River, 22 miles above Bridge, Lane County, Oregon, July 11, 1934,

Henderson No. 16698 (UO); South slope Fairview Mountain, Calapooya Range, Lane County, Oregon, September 17, 1946, W. H. Baker No. 3339 (Herb. W.H.B.).

This species was first collected by the author in 1946, more material being obtained in 1947. It appears to be a late-flowering species at this altitude (1800 m.) where it grows on rocky slopes. It is found growing also in like situations on the east slope of adjacent Bohemia Mountain. The known range is from McKenzie Pass to Crater Lake in the Cascades, and in the Calapooya Range.

Previous collections of this plant have been confused with other species of Polygonum. It belongs to the sub-genus Avicularia, and is allied to Polygonum Nuttallii Small, from which it differs in having broader leaves, shortened internodes, flowers more numerous in the leaf-axils and occurring in all the axils of the stem, calyx not green but white or pinkish with a broad pink or reddish or sometimes greenish band up each lobe, achenes not constricted.

15. PORTULACACEAE. Purslane Family.

Perennial with stem arising from a globose corm.....
1. Claytonia
 Annual or perennial from a rootstalk or fibrous root....
2. Montia

1. Claytonia (Gron.) L.

1. Claytonia lanceolata Pursh. Spring beauty. Very common in early spring appearing very soon after the snow recedes. It grows on the north slope under Mountain hemlock and in openings on both the north and south slope. It is particularly abundant on the Bohemia-Fairview saddle. Hudsonian. (Cr)

2. Montia L.

Perennials; stem leaves free or nearly so
 Stem leaves 2, opposite.....1. M. sibirica
 Stem leaves several, alternate....2. M. flagellaris
 Annuals; stem leaves perfoliate.....3. M. perfoliata

1. Montia sibirica (L.) Howell. Candy flower. Fairly common in moist places on northwest slope. Transition. (H)

2. Montia flagellaris (Bong.) Robins. Long-branched montia. Common on rocky northeast slope. This plant is ordinarily a Coast Range plant. This is a first record for the region. Transition and Canadian. (H)

3. Montia perfoliata (Donn.) How. Miner's lettuce. North slope on moist shaded hillsides; fairly common. Humid Transition. (Th)

16. CARYOPHYLLACEAE. Pink Family.

Sepals free, or united only at the base

Petals 2-lobed.....3. Stellaria

Petals entire

Stipules present.....1. Spergularia

Stipules none.....2. Arenaria

Sepals united into a tube.....4. Silene

1. Spergularia J. & C. Presl.

1. Spergularia rubra (L.) J. & C. Presl. Pink matweed. Common in dry ground of northwest slope. Introduced from Europe. (Th)

2. Arenaria L.

Leaves narrowly linear, stiff; plants glandular-hairy...

.....1. A. formosa

Leaves ovate to lanceolate, soft; plants not glandular-

hairy.....2. A. macrophylla

1. Arenaria formosa Fisch. Slender sandwort. Rather scarce on Bohemia saddle. It is found on the high peaks of the Cascades and eastward. Hudsonian. (Ch)

2. Arenaria macrophylla Hook. Large-leaved sandwort. Common in woods of west slope. Transition to Hudsonian. (H)

3. Stellaria L.

1. Stellaria crispa C. & S. Crisped chickweed. Infrequent on moist shaded hillsides, north slope. Canadian. (H)

4. Silene L.

1. Silene campanulata Wats. Bell-shaped catchfly. Very common at summit. This is a plant of the Southern element and is reported this far north for the first time. It is common in the dry woods of southern Douglas and Josephine counties and southward to California. Transition and Canadian. (H)

17. RANUNCULACEAE. Buttercup Family.

- Pistils numerous, 1-ovuled; fruit an achene
 Stem leaves 3 in a whorl.....1. Anemone
 Stem leaves alternate, or none
 Leaves simple, palmately lobed.....2. Trautvetteria
 Leaves ternately compound.....3. Thalictrum
 Pistils few, 2-to many-ovuled; fruit a follicle or a berry
 Flowers irregular
 Upper sepal spurred at base; petals 4.....4. Delphinium
 Upper sepal hood-like; petals 2.....5. Aconitum
 Flowers regular
 Petals spurred at base.....6. Aquilegia
 Petals not spurred
 Leaves simple.....7. Caltha
 Leaves compound.....8. Actaea

1. Anemone L.

- Stem leaves simple.....1. A. deltoidea
 Stem leaves compound.....2. A. Lyallii

1. Anemone deltoidea Hook. Wind-flower. Very abundant in moist upland woods of northwest slope. Canadian extending into Hudsonian. (Cr)

2. Anemone Lyallii Britt. Lyall's anemone. Scattered in woods of northwest slope. Canadian. (Cr)

2. Trautvetteria Fisch. & Mey.

1. Trautvetteria grandis Nutt. False bug-bane. Common in marshy ground at base of St. Peter's Rock near Three Star Mine. Canadian and Hudsonian. (H)

3. Thalictrum L.

1. Thalictrum occidentale Gray. Meadow-rue. Growing in a shady clump of pine on northwest slope, also common along moist roadside thickets of Utopian Way. Canadian and Hudsonian. (H)

4. Delphinium L.

Roots forming irregular tubers

Mature follicles widely recurving; leaves usually twice palmately divided or toothed.....1. D. Menziesii

Mature follicles contiguous, or spreading only at the tips; leaves generally pedately parted into narrow, mostly entire lobes.....2. D. depauperatum

Roots elongated, fascicled.....3. D. glareosum

1. Delphinium Menziesii DC. Field larkspur. Fairly common along roadside to summit. Transition and Canadian. (H)

2. Delphinium depauperatum Nutt. Dwarf larkspur. Rather scarce in dry open ground near summit. This plant ranges east of the Cascades to the Rocky Mountains. It is a representative of the Eastern element in our flora, and it has not previously been reported from this area, although Applegate (6, p. 257) reports it from Crater Lake. Hudsonian. (H)

3. Delphinium glareosum Greene. Thickets and open hillsides in moist ground of south slope. Appears to be closely related to D. Menziesii and may be only a form. Further study should be made of this species. Hudsonian. (H)

5. Aconitum L.

1. Aconitum Howellii A. Nels. Aconite. Common around marshes and springs. Bulblet bearing in the leaf axils. Canadian. (H)

6. Aquilegia L.

1. Aquilegia formosa Fisch. Columbine. Growing on north slope near edge of melting snow. Widely distributed in wet places. Transition to Hudsonian. (H)

7. Caltha L.

1. Caltha biflora DC. White marsh marigold. A common marsh plant growing near Musick Mine. Hudsonian. (H)

8. Actaea L.

1. Actaea arguta Nutt. Western baneberry. Shady northwest slope; not common. Humid Transition to Canadian. (H)

18. BERBERIDACEAE. Barberry Family.

Shrubs; leaves evergreen, spiny.....1. Berberis
Herbs; leaves not as above
Leaflets 3; flowers in a spike.....2. Achlys
Leaflets many; flowers in a raceme or panicle.....
.....3. Vancouveria

1. Berberis L.

1. Berberis nervosa Pursh. Mountain Oregon grape. Open woods of west slope; fairly common. Humid Transition. (Ph)

2. Achlys DC.

1. Achlys triphylla (Sm.) DC. Vanilla-leaf. Abundant in shaded rocky soil of northwest slope, reaching to 5600 ft. Chiefly Humid Transition but reaches its upper limits in the Hudsonian. (Cr)

3. Vancouveria Morr. and Dec.

1. Vancouveria hexandra (Hook.) Morr. and Dec. Inside-out flower. Shady woods northwest slope; common. Humid Transition and Canadian. (Cr)

19. FUMARIACEAE. Bleeding-heart Family.

1. Dicentra Bernh.

1. Dicentra formosa (Andr.) DC. Bleeding heart. Fairly common in moist woods and along road to summit of the mountain. Humid Transition. (Cr)

20. CRUCIFERAE. Mustard Family.

- Pod short, flattened, a silicle.....1. Thlaspi
 Pod much longer than broad, a silique
 Flowers yellow, cream colored, or orange
 Some of the leaves deeply cleft or pinnately lobed
 Pods with a distinct beak.....2. Brassica
 Pods beakless
 Valves of the pods nerveless.....3. Radicula
 Valves of the pods nerved.....4. Barbaraea
 All the leaves entire or merely toothed.....
5. Erysimum
 Flowers white, pink or purple
 Stem arising from a tuberous rootstalk.....
6. Dentaria
 Stem not from a rootstalk.....7. Arabis

1. Thlaspi L.

1. Thlaspi alpestre L. Perennial penny-cress.
 Common on open north and northwest slopes growing among
 rocks. Hudsonian. (H)

2. Brassica L.

Stem leaves clasping.....1. B. campestris
 Stem leaves not clasping.....2. B. arvensis

1. Brassica campestris L. Yellow mustard. Musick
 Guard Station; not common. Introduced from Europe. (Th)

2. Brassica arvensis (L.) Ktze. Charlock. Musick
 Guard Station; not common. Introduced from Europe. (Th)

3. Radicula Hill.

1. Radicula curvisiliqua (Hook.) Greene. Yellow
 cress. Marshy ground around Musick Mine; quite common.
 Upper Sonoran and Transition. (H)

4. Barbaraea R. Br.

1. Barbaraea orthoceras Ledeb. var. dolichocarpa
 Fern. Winter cress. Along Sharps Creek Road and in a
 marsh at Musick Mine; fairly common. Upper Sonoran and
 Transition. (H)

5. Erysimum L.

1. Erysimum capitatum (Dougl.) Greene. Orange wall-flower. Growing along trail on northwest slope; common. Upper Sonoran and Transition. (H)

6. Dentaria L.

1. Dentaria tenella Pursh var. plucherrima (Greene) Detl. Large toothwort. North slope at very edge of snow line; common. Humid Transition. (Cr)

7. Arabis L.

1. Arabis Drummondii Gray. Drummond's rock cress. Scattered along west slope near Utopian Way. Canadian and Hudsonian. (H)

21. CRASSULACEAE. Stone-crop Family.

1. Sedum L.

Petals distinct to base

Leaves spatulate, glaucous.....1. S. spathulifolium

Leaves not spatulate, not glaucous..2. S. Douglasii

Petals united below.....3. S. oregonensis

1. Sedum spathulifolium Hook. Broad-leaved stone-crop. Common on rocks of southeast slope. Transition. (Ch)

2. Sedum Douglasii Hook. Douglas' stone-crop. Rather rare at summit. Transition and Canadian. (Ch)

3. Sedum oregonensis (Wats.) Peck. Creamy stone-crop. Growing on dry rocky outcroppings on north slope; common. Hudsonian. (Ch)

22. SAXIFRAGACEAE. Saxifrage Family.

Herbs

Stamens 5 or fewer

Stamens 3 or 2; petals 4, linear; flowers purple....
.....1. Tolmiea

Stamens 5

Petals cleft, lobed or toothed.....2. Mitella

Petals entire

Placentae axial.....3. Boykinia

Placentae parietal or nearly basal.....
.....4. Heuchera

Stamens 10

Placentae axial; ovary 2-loculed.....5. Saxifraga

Placentae parietal; ovary 1-loculed

Petals cleft, lobed or toothed

Petals white or pink; styled normally 3, clawed

.....6. Lithophragma

Petals becoming red; styles normally 2, sessile

.....7. TellimaPetals entire, almost linear.....8. Tiarella

Shrubs

Leaves opposite

Plant low, spreading or trailing.....9. WhippleaPlant erect, 1 to 3 m. tall.....10. PhiladelphusLeaves alternate.....11. Ribes1. Tolmiea T. and G.

1. Tolmiea Menziesii (Pursh) T. and G. Youth-on-age. Growing about a spring on Utopian Way, abundant in moist places and along streams. Humid Transition. (H)

2. Mitella L.Petals white, 3-cleft at apex.....1. M. trifida

Petals green, pinnately cleft into narrowly-linear divisions

Leaves oblong to ovate, with scattered white hairs...

.....3. M. ovalisLeaves round-cordate, mainly glabrous..2. M. Breweri

1. Mitella trifida Graham. Three-toothed bishop's cap. Rocky soil at summit east of the old lookout; common. Hudsonian. (H)

2. Mitella Breweri Gray. Brewer's bishop's cap. Moist slope at high altitudes north side of the mountain; quite common. Upper Canadian and Hudsonian. (H)

3. Mitella ovalis Greene. Small bishop's cap. Common in wet places around springs on west side. Humid Transition. (H)

3. Boykinia Nutt.Stipules reduced to bristles.....1. B. elataStipules scarious or leaf-like.....2. B. major

1. Boykinia elata (Nutt.) Greene. Slender boykinia. Fairly common in wet places around springs and along stream banks. Humid Transition. (Cr)

2. Boykinia major Graf. Large boykinia. Rather local growing in marshy ground near the Three Star Mine at the base of St. Peter's Rock. Humid Transition. (Cr)

4. Heuchera L.

1. Heuchera micrantha Dougl. var. glaberrima (Rydb.) com. nov. North slope, rock cliff just below the lookout tower. This is the glabrous form which is very common in the Cascades of northern Oregon and in the Columbia Gorge. Humid Transition to Hudsonian. (H)

5. Saxifraga L.

Low tufted plants with perennial branches, densely covered with small leaves; flowers orange-spotted.....

.....1. S. bronchialis
Plants not tufted, not as above

Leaves all basal.....2. S. rufidula

Leaves not all basal

Plants with roundish leaves, usually doubly toothed

.....3. S. Mertensiana

Plants with spatulate leaves, toothed above the

middle.....4. S. ferruginea

1. Saxifraga bronchialis L. var. austromontana (Weig.) Piper. Matted saxifrage. At high altitudes on rocks of northwest slope at the base of a cliff; not common. Hudsonian. (Ch)

2. Saxifraga rufidula (Small) Macoun. Red-woolly saxifrage. Moist rocky north slope; not common. Hudsonian. (H)

3. Saxifraga Mertensiana Bong. Merten's saxifrage. North slope growing on wet cliffs; common. Hudsonian. (H)

4. Saxifraga ferruginea Graham. Rusty saxifrage. Very common growing in moist ground on the northwest slope. Hudsonian. (H)

6. Lithophragma Nutt.

1. Lithophragma parviflorum (Hook.) Nutt. Ragged star-flower. Open grassy hillside on the south slope; common in the early spring. Transition. (H)

7. Tellima R. Br.

1. Tellima grandiflora (Pursh) Dougl. Fringe-cups. Fairly common northwest slope. Humid Transition. (H)

8. Tiarella L.

Leaves simple, toothed.....1. T. unifoliata
Leaves compound, 3 leaflets.....2. T. trifoliata

1. Tiarella unifoliata Hook. Cool-wort. Common in moist woods at the juncture of the Sharps Creek Road and the Utopian Way. Canadian. (H)

2. Tiarella trifoliata L. Three-leaved cool-wort. Common in woods at lower elevations. Humid Transition. (H)

9. Whipplea Torr.

1. Whipplea modesta Torr. Whipple-vine. Common in open woods along Sharps Creek Road. Humid Transition. (Ch)

10. Philadelphus L.

1. Philadelphus Lewisii Pursh. Mock orange. Occurs on south slope; infrequent. This form grows east of the Cascade mountains. It is reported from this area for the first time. Humid Transition to Canadian. (Ph)

11. Ribes L.

Stems without spines or prickles

Flowers bell-shaped, pink or red, showy.....

.....1. R. sanguineum

Flowers saucer-shaped, greenish, inconspicuous.....

.....2. R. bracteosum

Stems with spines and sometimes prickles

Calyx spreading or saucer-shaped; berry with gland-tipped hairs.....

.....3. R. lacustre

Calyx bell-shaped or cylindrical; berry with sharp,

unequal prickles.....4. R. binominatum

1. Ribes sanguineum Pursh. Red-flowering currant.
Infrequent along west slope near Sharps Creek Road.
Humid Transition. (Ph)

2. Ribes bracteosum Dougl. Stinking black currant.
South bank of City Creek at base of Fairview Mountain;
not common. Humid Transition and Canadian. (Ph)

3. Ribes lacustre (Pers.) Poir. Swamp currant.
Common on north slope where it is the main undercover.
Hudsonian.

4. Ribes binominatum Heller. Siskiyou gooseberry.
Scattered along roadside below the summit. This station
is the first record of the plant from Lane County. It
has been reported previously from southern Douglas
County. This species is a representative of the Southern
element in our flora. Canadian. (Ph)

23. ROSACEAE. Rose Family.

Shrubs or trees

Fruits enclosed in an urn-shaped, globose receptacle..

.....1. Rosa

Fruits not enclosed as above

Ovary inferior; fruit a pome

Fruits blue-black; leaves simple; flowers in
racemes.....2. Amelanchier

Fruits red; leaves compound; flowers in corymbs...

.....3. Sorbus

Ovary not inferior

Pistil 1.....4. Prunus

Pistil more than 1

Fruit dry, a follicle.....5. Holodiscus

Fruit fleshy, of aggregate drupelets.....

.....6. Rubus

Herbs

Flowers very small, borne in plume-like panicles,
plants dioecious.....7. Aruncus

Flowers larger, not borne in plume-like panicles,
usually perfect.

Flowers white; fruit fleshy.....8. Fragaria

Flowers yellow; fruit dry.....9. Potentilla

1. Rosa L.

1. Rosa gymnocarpa Nutt. Wood rose. Scattered throughout woods of the northwest slope at lower elevations. Transition and Canadian. (Ph)

2. Amelanchier Medic.

1. Amelanchier florida Lindl. Service berry. Roadside northwest slope; not common. Humid Transition. Occasional plants found above 5000 feet. (Ph)

3. Sorbus (Tourn.) L.

Leaves toothed almost the entire length...1. S. sitchensis
Leaves toothed above the middle or near the apex.....
.....2. S. occidentalis

1. Sorbus sitchensis Roem. Mountain ash. Occasional on west slope. Mainly Canadian but sometimes approaches to lower Hudsonian on warm open slopes. (Ph)

2. Sorbus occidentalis (Wats.) Greene. Small mountain ash. Common on north slope near summit. This is a shrub of the higher elevations. Hudsonian. (Ph)

4. Prunus L.

1. Prunus emarginata (Dougl.) Walp. Wild cherry. Growing on the north slope. A shrub forming dense thickets on open hillsides. The leaves, twigs and inflorescences are quite glabrous which is characteristic of this species. This constitutes the first record of this plant west of the Cascades, the common form here being P. emarginata var. erecta which has the leaves thin and tomentose on the under surface, and takes the form of a small tree instead of a shrub. Hudsonian. (Ph)

5. Holodiscus Maxim.

Plant erect; leaves minutely hairy beneath.....
.....1. H. discolor
Plant diffuse; leaves glandular-dotted beneath.....
.....2. H. glabrescens

1. Holodiscus discolor (Pursh) Maxim. Ocean spray. Fairly common on south slope along Sharps Creek Road. Transition. (Ph)

2. Holodiscus glabrescens (Greene) Hel. Dwarf ocean spray. Rather scarce on east slope near summit. Entering our area from the drier regions to the east. Not previously reported from the area west of the Cascades. Boreal. (Ph)

6. Rubus L.

Stems creeping or trailing

Stems unarmed, not prickly

Leaves compound, with 3 to 5 leaflets....1. R. pedatus

Leaves merely 3- to 5-lobed.....2. R. lasiococcus

Stems prickly.....3. R. vitifolius

Stem erect

Flowers red, rarely pinkish; fruit yellowish orange,

rarely dark red.....4. R. spectabilis

Flowers white

Leaves simple, palmately lobed; fruit red.....

.....5. R. parviflorus

Leaves compound-pinnate; fruit black.....

.....6. R. leucodermis

1. Rubus pedatus Smith. Trailing raspberry. Very common on northwest slope. It grows with R. lasiococcus here, from which it differs by the presence of compound leaves, 3 to 5 leaflets, and glabrous fruit. Open woods of the Canadian and Hudsonian. (Ch)

2. Rubus lasiococcus Gray. Common, growing with R. pedatus. Northwest slope, open woods in shady humus soil. Canadian and Hudsonian. (Ch)

3. Rubus vitifolius C. and S. Wild blackberry. West slope near an old mine shaft on Utopian Way; rather uncommon. Humid Transition. (H)

4. Rubus spectabilis Pursh. Salmon-berry. A shrub of lower elevations along the roadside; not common. Humid Transition. (H)

5. Rubus parviflorus Nutt. Thimbleberry. Uncommon. Summit of the mountain. This was a very dwarfed specimen, the plant being only about 3 dc. tall. Transition, extending into Hudsonian. (H)

6. Rubus leucodermis Dougl. Western blackcap. Common in open woods of north slope. Transition. (H)

7. Aruncus L.

1. Aruncus sylvester Kost. Goats beard. Fairly common on shady north slope. Transition. (H)

8. Fragaria L.

1. Fragaria bracteata Heller. Wood strawberry. Common in moist woods. West slope along Utopian Way. Transition. (H)

9. Potentilla L.

Leaves palmately compound; leaflets all from the summit of the petiole.....1. P. gracilis

Leaves pinnate; leaflets more or less scattered on an elongated rachis

Leaflets ovate, simply toothed.....2. P. glandulosa

Leaflets deeply cleft or incised

Herbage green.....3. P. Drummondii

Herbage silvery.....4. P. Breweri

1. Potentilla gracilis Dougl. Five-finger. Rather abundant on warm south slope. Humid Transition. (H)

2. Potentilla glandulosa Lindl. Sticky cinquefoil. Growing in rocky soil of south slope near summit; fairly common. Canadian. (H)

3. Potentilla Drummondii Lehm. Drummond's cinquefoil. Common in yard of Musick Mine property. Hudsonian. (H)

4. Potentilla Breweri Wats. Brewer's cinquefoil. Grows in marshes on north side. Canadian. (H)

24. LEGUMINOSAE. Pea Family.

Leaves palmately compound

Leaflets 5 or more, entire.....1. Lupinus

Leaflets 3 (ours), not entire.....2. Trifolium

Leaves pinnately compound

Tendrils none.....3. Lotus

Tendrils usually present

Style filiform, ending in a hairy, capitate stigma

.....4. Vicia

Style flattened, hairy only on the upper surface...

.....5. Lathyrus

1. Lupinus (Tourn.) L.

- Plants short, low; herbage silky.....1. L. aridus
 Plants tall, erect; herbage green, pubescence thin or
 glabrous, sometimes silvery villous
 Lower leaves long petioled at flowering time; stem
 suffrutescent at the base.....2. L. albifrons
 Lower leaves not long petioled; stem not suffrutescent
 Keel more or less ciliate on the upper margins; stem
 simple.....3. L. latifolius
 Keel not ciliate; stem branched
 Keel bent upwards and long exserted; banner acute
 at the apex.....4. L. albicaulis
 Keel little bent and hardly at all exserted; banner
 obtuse at the apex.....5. L. Andersonii

1. Lupinus aridus Dougl. var. Torreyi (Gray) C. P. Sm. Torrey's lupine. Fairly common, dry ground, south-west slope. This form is the one most common on the east slope of the Cascades from Sun Pass throughout western Klamath County. Upper Sonoran and Transition. (H)

2. Lupinus Andersonii Wats. Anderson's lupine. Common along northwest slope in humus soil. Reaches its northern limit in southern Lane County. Arid Transition and Canadian. (H)

3. Lupinus latifolius Agardh var. subalpinus (Pip. & Rob.) C. P. Sm. Alpine lupine. Growing along Sharps Creek Road; not common. Hudsonian. (H)

4. Lupinus albicaulis Dougl. White-stemmed lupine. Shady banks and open woods on north slope; common. Humid Transition. (H)

5. Lupinus albifrons Benth. var. flumineus C. P. Sm. White-leaved lupine. Dry open hillside on west slope below the Fairview lookout tower; infrequent. Arid Transition. (H)

2. Trifolium L.

- Stems creeping, rooting at the nodes.....1. T. repens
 Stems not creeping, nor rooting at the nodes
 Rachis of the head prolonged beyond the flowers.....
3. T. Kingii
 Rachis bearing flowers to the apex, not prolonged.....
2. T. Howellii

1. Trifolium repens L. White clover. Very common. Introduced from Europe. (H)

2. Trifolium Howellii Wats. Howell's clover. Common on both north and west slopes, in marshes and along roadsides. A northern extension of the range of this plant. Reported previously from moist slopes in mountain woods only as far north as Jackson and Josephine counties. Humid Transition. (H)

3. Trifolium Kingii Wats. King's clover. On an open ridge in the woods, Bohemia-Fairview saddle; scattered. Not previously reported this far north. Applegate (6, p. 279) lists it from Crater Lake National Park. It has also been collected, also, in the southern Siskiyou and in the Warner Mountains of Lake County. This is the first record for west of the Cascades in Lane County. Canadian. (H)

3. Lotus L.

1. Lotus crassifolius (Benth.) Greene. Pink trefoil. Northwest slope, in rocky soil; not common. Arid Transition. (H)

4. Vicia L.

Leaves thin; pods puberulent.....1. V. californica
Leaves firm; pods glabrous.....2. V. americana

- 1. Vicia californica Greene. California vetch. West slope, in open woods; occasional. A common plant in the southern counties of Oregon Transition. (H)

2. Vicia americana Muhl. American vetch. West slope, edge of woods; common. Transition. (H)

a. Vicia americana Muhl. var. truncata (Nutt.) Brew. Marsh on north side of mountain; not uncommon. Transition. (H)

5. Lathyrus L.

Flowers purple.....2. L. Nuttallii
Flowers white or ochroleucus.....1. L. nevadensis

1. Lathyrus nevadensis Wats. Nevada pea. Growing on west slope along roadside; not common. Transition. (H)

2. Lathyrus Nuttallii Wats. Nuttall's pea. West slope; fairly common. Transition. (H)

25. LINACEAE. Flax Family.

1. Linum L.

1. Linum Lewisii Pursh. Blue flax. North slope, rocky soil on open hillside; common. A characteristic species from the arid regions to the east. It has not previously been reported from as far north as Lane County in western Oregon, although it grows in the Siskiyou Mountains and in southern Jackson County. (H)

26. OXALIDACEAE. Oxalis Family.

1. Oxalis L.

1. Oxalis oregana Nutt. Wood sorrel. Very common; forming ground cover on forest floor of northwest slope. Humid Transition to Canadian. (Cr)

27. CELASTRACEAE. Burning Bush Family.

1. Pachistima Raf.

1. Pachistima Myrsinites (Pursh) Raf. Oregon box-wood. Not uncommon along Sharps Creek Road. Transition to Hudsonian. (Ph)

28. ACERACEAE. Maple Family.

1. Acer L.

Leaves large, 1-3 cm. broad; flowers borne in racemes;
fruit hispid on the body.....1. A. macrophyllum

Leaves small, 4-7 cm. broad, flowers borne in corymbs;
fruit glabrous

Leaves 7- to 9-lobed; wings of fruit spreading at
right angles to the stalk.....2. A. circinatum

Leaves 3- to 5-lobed; wings of fruit ascending.....
.....3. A. Douglasii

1. Acer macrophyllum Pursh. Large-leaved maple. North slope for a short distance up Crystal Creek; not common. Humid Transition. (Ph)

2. Acer circinatum Pursh. Vine maple. Moist woods near base of northeast slope; common. Humid Transition to Canadian. (Ph)

3. Acer Douglasii Hook. Dwarf maple. Rather infrequent in rocky soil of north slope. Upper Canadian. (Ph)

29. HYPERICACEAE. St. John's Wort Family.

1. Hypericum L.

Low annual, forming mats; flowers minute, 6 mm. wide....

.....1. H. anagalloides
Tall perennial, erect; flowers large, 20 mm. wide.....

.....2. H. perforatum

1. Hypericum anagalloides C. and S. Water St. John's wort. Common marsh plant of north side of mountain. Transition to Hudsonian. (H)

2. Hypericum perforatum L. St. John's Wort. Very abundant on Bohemia saddle. Naturalized from Europe and a very troublesome weed in some sections. (H)

30. VIOLACEAE. Violet Family.

1. Viola L.

Stem creeping and prostrate; leaves evergreen.....

.....1. V. sempervirens

Stem not creeping, erect; leaves not evergreen

Leaves deeply dissected into narrow segments.....

.....2. V. Sheltonii

Leaves not dissected, merely serrate or crenate.....

.....3. V. glabella

1. Viola sempervirens Greene. Evergreen violet. Open woods on west and north slopes; fairly common. Humid Transition. (H)

2. Viola Sheltonii Torr. Shelton's violet. Dry rocky ground on Bohemia-Fairview saddle, also in similar situations on North Fairview saddle. This violet is quite common early in the spring just after the snow melts. Canadian. (H)

3. Viola glabella Nutt. Wood violet. Common on wooded slope east side of the mountain, and along Utopian Way. Canadian. (H)

31. ONAGRACEAE. Evening Primrose Family.

Parts of the flower in 4's; fruit a capsule

Seeds with a tuft of hairs at one end...1. Epilobium

Seeds without tuft of hairs

Calyx tube absent; flowers small.....3. Gayophytum

Calyx tube present; flowers showy.....2. Godetia

Parts of the flower in 2's; fruit bur-like..4. Circaea

1. Epilobium L.

Flowers showy; petals spreading, 15-18 mm. long, entire

.....1. E. angustifolium

Flowers small; petals not spreading, 3-10 mm. long, cleft

Annuals; stigma 4-cleft.....2. E. paniculatum

Perennials; stigma entire

Mostly lowland plants, 3 to 9 dm. or more tall.....

.....3. E. adenocaulon

Mostly mountain plants, less than 3 dm. tall

Stem simple but tufted; flowers nodding.....

.....4. E. alpinum

Stem only one from the base; flowers not nodding..

.....5. E. Hornemannii

1. Epilobium angustifolium L. Fireweed. Open hill-sides of north slope; common. Transition to Hudsonian. (H)

2. Epilobium paniculatum Nutt. Tall willow herb. Common in open woods of west slope and along Utopian Way. Transition. (Th)

3. Epilobium adenocaulon Hausskn. Common willow herb. Wet ground along Utopian Way and at Musick Mine; very common. Transition. (H)

4. Epilobium alpinum L. Alpine willow herb. Very common at high altitudes on north slope. Hudsonian. (H)

5. Epilobium Hornemannii Reichenb. Hornemann's willow herb. Common at high elevations on north slope and in shady places along west slope. Hudsonian. (H)

2. Godetia Spach.

1. Godetia amoena (Lehm.) G. Don. Wild Godetia. Growing on a rock slide along Utopian Way; not common. Humid Transition. (Th)

3. Gayophytum Juss.

Seeds glabrous.....1. G. diffusum
Seeds minutely appressed-pubescent....2. G. lasiospermum

1. Gayophytum diffusum T. and G. Spreading gayophytum. Northwest side of mountain and around Musick Mine on the south side; fairly common. A plant of the dry arid regions east of the Cascades. This is an extension of range. Transition. (Th)

2. Gayophytum lasiospermum Greene var. Hoffmanii Munz. Hair-seeded gayophytum. South and west slope on dry ground; scattered. It overlaps with the previous species and like it is a representative of the Eastern element in our flora. This is a new locality for the plant. Transition. (Th)

4. Circaea L.

1. Circaea pacifica Asch. and Magn. Enchanter's nightshade. Moist shady woods of west slope; fairly common. Transition. (Cr)

32. UMBELLIFERAE. Parsley Family.

Fruits linear, several times as long as wide..1. Osmorhiza
Fruits oblong or roundish

Fruits with hooked bristles.....2. Sanicula
Fruits smooth, not as above

Flowers yellow (ours).....3. Lomatium
Flowers white, pinkish or purple

Low plants, usually under 15 cm. tall...6. Orogenia
Plants 6 dm. or more in height, (often much taller)

Fruits winged

Plants 1 to 2 m. tall; flowers white.....

.....4. Heracleum

Plants smaller, usually under 1 m. tall;

flowers (of ours) purple.....5. Leptotaenia

Fruits not winged.....7. Ligusticum

1. Osmorhiza Raf.

Fruit bristly on the ribs.....1. O. nuda
 Fruit glabrous.....2. O. occidentalis

1. Osmorhiza nuda Torr. var. divaricata (Nutt.)
 Jeps. Common sweet cicely. Common on north slope.
 Canadian. (H)

2. Osmorhiza occidentalis Torr. Western sweet cicely.
 On north slope and summit; common. Overlaps with O. nuda
 var. divaricata but extends to higher altitudes.
 Canadian to Hudsonian. (H)

2. Sanicula L.

1. Sanicula septentrionalis Greene. Snake-root.
 Local on summit, dry rocky ground. Canadian. (H)

3. Lomatium Raf.

Mature fruit about 15 mm. long.....1. L. Martindalei
 Mature fruit about 6 mm. long.....2. L. Hallii

1. Lomatium Martindalei C. & R. Martindale's hog
 fennel. Summit of mountain and on rock slides of north
 slope. Grows in the same habitat as L. Hallii at summit.
 Hudsonian. (H)

2. Lomatium Hallii (Wats.) C. & R. Hall's hog
 fennel. Not uncommon but rather restricted to summit of
 the mountain and for a short distance down hillside of
 east slope. Canadian. (H)

4. Heracleum L.

1. Heracleum lanatum Michx. Cow parsnip. Utopian
 Way and in moist situations or in mountain marshes; not
 uncommon. Hudsonian. (Cr)

5. Leptotaenia Nutt.

1. Leptotaenia dissecta Nutt. Lace-leaved Lepto-
 taenia. Summit of mountain, on dry rocky ground; common.
 Canadian and Hudsonian. (Cr)

6. Orogenia Wats.

1. Orogenia fusiformis Wats. Mountain orogenia. On south slope, Bohemia-Fairview saddle, also on north slope, North Fairview saddle; common in early spring. Canadian. (H)

7. Ligusticum L.

1. Ligusticum apiifolium (Nutt.) Gray. Celery-leaved lovage. Open gravelly soil of north slope; common. Humid Transition. (H)

33. GARRYACEAE. Silk Tassel Family.

1. Garrya Dougl.

1. Garrya Fremontii Torr. Bear brush. Scattered along Utopian Way and on northwest slope at occasional stations. Transition. (Ph)

34. CORNACEAE. Dogwood Family.

1. Cornus L.

1. Cornus canadensis L. Bunch-berry. Open woods of northeast slope; fairly common. Canadian. (H)

35. ERICACEAE. Heath Family.

Ovary superior

Herbs (sometimes shrubby at base)

Plants with green leaves

Flowers in corymbs or umbels; filaments dilated

at or below the middle.....1. Chimaphila

Flowers in racemes; filaments not dilated.....

.....2. Pyrola

Plants without green leaves.....3. Hypopitys

Shrubs

Flowers large, very showy, over 2 cm..4. Rhododendron

Flowers small, under 1 cm.

Calyx becoming enlarged and fleshy; bark not

reddish.....5. Gaultheria

Calyx small and dry; bark red.....6. Arctostaphylos

Ovary inferior.....7. Vaccinium

1. Chimaphila Pursh

Leaves wider above the middle.....1. C. umbellata
 Leaves wider below the middle.....2. C. Menziesii

1. Chimaphila umbellata (L.) Nutt. Prince's pine.
 In woods of northwest and western slopes; common.
 Canadian. (Ch)

2. Chimaphila Menziesii (R. Br.) Spreng. Menzies'
 prince's pine. Common on west slope. Canadian. (Ch)

2. Pyrola L.

Style straight, erect; flowers in a one-sided raceme....

.....1. P. secunda
 Style curved downward; flowers not as above
 Leaves green throughout, orbicular.....2. P. bracteata
 Leaves white-veined, elliptic to ovate.....
3. P. picta

1. Pyrola secunda L. One-sided wintergreen. Very
 common in dense shade east side of Utopian Way, and
 scattered along north slope. Canadian. (H)

2. Pyrola bracteata Hook. Leathery shin-leaf.
 Common in shady woods of north slope along Utopian
 Way. Canadian. (H)

3. Pyrola picta Smith. White-veined shin-leaf.
 Scattered stations on northeast slope, also growing on
 west slope trail. Canadian. (H)

3. Hypopitys Adans.

1. Hypopitys fimbriata (Gray) Howell. Fringed
 pinesap. In coniferous woods at base of mountain; rather
 rare. Canadian. (Cr)

4. Rhododendron L.

1. Rhododendron macrophyllum G. Don. Rhododendron.
 A common shrub on hillsides of western slope and along
 Utopian Way. Principally Humid Transition but reaching
 above 5000 feet in higher mountains of the Cascades. (Ph)

5. Gaultheria L.

Leaves 3 cm. or less long; fruit scarlet..G. ovatifolia
 Leaves 5 to 12 cm. long; fruit black.....G. Shallon

1. Gaultheria ovatifolia Gray. Slender gaultheria.
 Moist open woods on west slope; fairly common. Canadian.
 (Ch)

2. Gaultheria Shallon Pursh. Salal. Shaded woods
 of north side of the mountain; common. Humid Transition.
 (Ph)

6. Arctostaphylos Adans.

1. Arctostaphylos nevadensis Gray. Pine-mat
 manzanita. Forming dense mats along Sharps Creek Road;
 fairly common. Hudsonian. (Ch)

7. Vaccinium L.

Tall shrubs, 1 to several m.

Leaves entire except sometimes in young growth

Berry red.....1. V. parvifolium

Berry blue-black.....2. V. ovalifolium

Leaves toothed.....3. V. membranaceum

Low shrubs, rarely more than 1 or 2 dm.4. V. scoparium

1. Vaccinium parvifolium Sm. Red huckleberry.
 On north side near base of mountain; fairly common.
 Humid Transition. (Ph)

2. Vaccinium ovalifolium Sm. Tall blue huckleberry.
 Woods of north slope; very common. Canadian. (Ph)

3. Vaccinium membranaceum Dougl. Mountain huckle-
 berry. North slope in humus rocky soil; very abundant.
 Widely distributed in this area and much prized for its
 fruit. Canadian. (Ph)

4. Vaccinium scoparium Leiberg. Small red huckle-
 berry. Middle altitudes on north side of mountain;
 common. Canadian. (Ch)

36. PRIMULACEAE. Primrose Family.

1. Trientalis L.

1. Trientalis latifolia Hook. Starflower. Woods of west slope; very common. Humid Transition and Canadian. (Cr)

37. GENTIANACEAE. Gentian Family.

1. Gentiana L.

1. Gentiana calycosa Griseb. Blue gentian. Subalpine meadows and shaded rocky soil of moist north slope; common. Hudsonian. (H)

38. APOCYNACEAE. Dogbane Family.

Corolla tube about 3 times the length of calyx.....
1. A. androsaemifolium
 Corolla tube about twice the length of calyx.....
2. A. medium

1. Apocynum androsaemifolium L. Dogbane. South slope along Musick Mine Road; not common. Transition. (Cr)

2. Apocynum medium Greene var. vestitum (Greene) Woods. Intermediate dogbane. South slope; not common. This variety, though reported from southern Jackson and Josephine counties, has not previously been reported from Lane County. Upper Sonoran and Transition. (Cr)

39. POLEMONIACEAE. Phlox Family.

Leaves alternate, pinnately compound, leaflets entire;
 corolla campanulate.....1. Polemonium
 Leaves simple, often finely cut or deeply lobed, some-
 times entire; corolla various
 Calyx not ruptured by the growing capsule.....
6. Collomia
 Calyx ruptured by the growing capsule.
 Corolla salverform, contracted at throat.....
2. Phlox
 Corolla tubular, funnelform, or sometimes salverform,
 throat not contracted
 Calyx lobes unequal, sharp-pointed.....
5. Navarretia

Calyx lobes equal, rarely sharp-pointed
 Perennials or biennials; leaves compound or
 pinnately cleft.....3. Gilia
 Annuals; leaves simple, entire...4. Microsteris

1. Polemonium L.

1. Polemonium carneum Gray. Jacob's ladder. At summit of mountain, growing among rocks and on rock shelves of north side. Canadian to Hudsonian. (H)

2. Phlox L.

1. Phlox diffusa Benth. var. longistylis Wherry. Mountain phlox. North slope in rocky soil; fairly common. Hudsonian. (Ch)

3. Gilia R. and P.

Stems woody at base.....3. G. Nuttallii
 Stems herbaceous

Corolla blue; inflorescence dense, head-like.....

.....1. G. capitata

Corolla scarlet, rarely pinkish or white, never blue; inflorescence open.....2. G. aggregata

1. Gilia capitata Sims. Field gilly-flower. On road leading to summit, and on south and southwest slopes, growing with G. aggregata. Transition. (Th)

2. Gilia aggregata (Pursh) Spreng. Scarlet gilia. Very common on south and southwest slopes. This is one of the most strikingly beautiful plants found on the mountain. It is common east of the Cascades, but is here recorded for the first time in our region. Canadian. (H)

3. Gilia Nuttallii Gray. Nuttall's gilia. Rocky soil of north slope, and along Musick Mine road on south slope; common. A common plant of the Blue and Steens Mts. of Eastern Oregon. This is an interesting extension of range into Western Oregon. Hudsonian. (H)

4. Microsteris Greene.

Corolla 9 to 12 mm. long.....1. M. gracilis
 Corolla under 7 mm. long.....2. M. humilis

1. Microsteris gracilis (Dougl.) Greene. Pink microsteris. Dry soil, Bohemia saddle, Utopian Way, and on road to summit. Transition. (Th)

2. Microsteris humilis (Dougl.) Greene. Low microsteris. Dry hillsides on south slope near Musick Mine; not common. Transition. (Th)

5. Navarretia Ruiz, & Pav.

1. Navarretia divaricata (Torr.) Greene. Short-stemmed navarretia. Dry hillside along the road to the summit, south slope local. This plant has not been previously reported from west of the Cascade Mountains. It is reported by Peck (88, p. 581) from Wallowa and Wheeler counties in Oregon and by Applegate (6, p. 293) from Crater Lake National Park. Canadian. (Th)

6. Collomia Nutt.

Leaves, at least the lower ones, not entire.....

.....1. C. heterophylla
Leaves entire

Corolla pink, about 1 cm. long.....2. C. aristella

Corolla salmon-colored, 1.5 to 3 cm. long.....

.....3. C. grandiflora

1. Collomia heterophylla Hook. Vari-leaved collomia. Growing in open woods along Utopian Way; fairly common. Humid Transition. (Th)

2. Collomia grandiflora Dougl. Large-flowered collomia. Local situations on south slope of Fairview Mountain near Bohemia saddle, open dry hillside. Transition. (Th)

3. Collomia aristella (Gray) Rydb. Bristle-tipped collomia. Roadsides and open woods, south and southwest slopes; occasional. Canadian. (Th)

40. HYDROPHYLLACEAE. Water-leaf Family.

Style entire.....4. Romanzoffia

Style 2-cleft

Flowers solitary in the leaf axils.2. Nemophila

Flowers in head-like or scorpioid cymes, not as above

Flowers in head-like clusters....1. Hydrophyllum

Flowers in scorpioid cymes.....3. Phacelia

1. Hydrophyllum Tourn.

Inflorescence more or less open; flowers generally white; leaf lobes acute at the apex..1. H. Fendleri
 Inflorescence congested; flowers blue; leaf lobes obtuse at the apex.....2. H. occidentale

1. Hydrophyllum Fendleri (Gray) Hel. var. albifrons (Gray) Macbr. White water-leaf. Moist soil on north slope; fairly common. Arid Transition and Canadian. (H)

2. Hydrophyllum occidentale Gray. Western water-leaf. West side of mountain and on northeast slope, common in moist woods and along streams. Humid Transition and Canadian. (H)

2. Nemophila Nutt.

1. Nemophila parviflora Dougl. Wood nemophila. Moist shady locations along City Creek, common on south slope. Humid Transition. (Th)

3. Phacelia Juss.

1. Phacelia heterophylla Pursh. Vari-leaved phacelia. Along dry roadside to the summit; common. Transition. (H)

4. Romanzoffia Cham.

1. Romanzoffia sitchensis Bong. Mist maidens. Fairly common on west rocky slopes of north side. Canadian and Hudsonian. (H)

41. BORAGINACEAE. Borage Family.

Nutlets with prickles on the margins.....1. Hackelia
 Nutlets without prickles.....2. Cryptantha

1. Hackelia Opiz.

1. Hackelia floribunda (Lehm.) Johnst. Stickseed. On west slope along road to summit; not common. A new locality for this plant. It has been previously reported from the Wallowa Mountains of Oregon. (H)

2. Cryptantha Lehm.

1. Cryptantha Hendersonii (Nels.) Piper. Large-flowered cryptantha. Near summit of the mountain just below the lookout; not common. (Gilkey, July 11, 1941) Transition. (Th)

42. LABIATAE. Mint Family.

Flowers in close spike-like clusters; upper pair of stamens longer than the lower.....1. Agastache
Flowers in axillary, interrupted clusters; upper pair of stamens shorter than the lower.....2. Stachys

1. Agastache Clayt.

1. Agastache Urticifolia (Benth.) Ktze. Hyssop. Locally abundant along Sharps Creek Road on open southwest slope. An interesting appearance of this species in the region. It is common throughout eastern Oregon in dry woods and on open slopes. The plant is also reported from eastern Curry County. Arid Transition. (H)

2. Stachys L.

1. Stachys rigida Nutt. Hedge-nettle. Only one station. Growing at the summit. Canadian. (Cr)

43. SCROPHULARIACEAE. Figwort Family.

Upper lip of the corolla not helmet-shaped

Corolla nearly regular; stamens 2

Corolla rotate; leaves opposite, all cauline.....

.....4. Veronica

Corolla campanulate; leaves mostly basal; the few

cauline leaves alternate.....5. Synthyris

Corolla irregular, strongly 2-lipped; stamens 4 or 5 (one sterile)

Stamens 5, one sterile

Sterile filament long, about equalling the other stamens.....2. Penstemon

Sterile filament not developed, but represented by a gland or scale attached to the upper side of the corolla.....1. Collinsia

Stamens 4, all fertile.....3. Mimulus

Upper lip of the corolla helmet-shaped
 Anther cells unequal; bracts very often showy
 Upper lip of the corolla much exceeding the lower;
 calyx usually 2-cleft.....6. Castilleja
 Upper lip of the corolla but little exceeding the
 lower; calyx mostly evenly 4-lobed.....
7. Orthocarpus
 Anther cells equal; bracts not showy...8. Pedicularia

1. Collinsia Nutt.

1. Collinsia parviflora Dougl. Small innocence.
 Dry ground along Utopian Way; common. Transition. (Th)

2. Penstemon Mitch.

Inflorescence compound; seeds winged; anthers always
 woolly.....5. P. nemorosus
 Inflorescence simple or nearly so; seeds wingless;
 anthers either glabrous or woolly
 Tall herbaceous plants; leaves membranous.....
1. P. procerus
 Low half-shrubby plants, leaves leathery
 Flowers purple
 Leaves mostly obtuse.....2. P. Cardwellii
 Leaves oval to spatulate or roundish
3. P. Davidsonii
 Flowers crimson.....4. P. rupicola

1. Penstemon procerus Dougl. Tall penstemon. South
 side of road below lookout tower; common. Hudsonian. (H)

2. Penstemon Cardwellii Howell. Cardwell's
 penstemon. Frequent along roadside on west slope.
 Hudsonian. (Ch)

3. Penstemon Davidsonii Greene. Davidson's
 penstemon. Growing at summit on rocks and cliffs. This
 species inhabits the high mountains of the Cascade Range.
 Hudsonian. (Ch)

4. Penstemon rupicola How. Crimson penstemon.
 Found only at summit. Hudsonian. (Ch)

5. Penstemon nemorosus (Dougl.) Trautv. Turtle-
 head. Moist woods of northwest slope; common. Canadian
 and Hudsonian. (H)

3. Mimulus L.

Flowers yellow

- Stem weak, leaves slimy-glandular.....1. M. moschatus
 Stem erect, leaves not as above.....2. M. guttatus
 Flowers rose or reddish.....3. M. Breweri

1. Mimulus moschatus Dougl. Musk. Common in moist places along Utopian Way. Transition. (H)

2. Mimulus guttatus DC. Common monkey-flower. Growing beside a spring along Utopian Way; not common. Humid Transition and Canadian. (H)

3. Mimulus Breweri (Greene) Cov. Brewer's monkey-flower. Open hillside near Musick Mine; not common. Not previously known to occur in this region. This is an extension of the range of this plant from east of the Cascades. Canadian and Hudsonian. (Th)

4. Veronica L.

Perennial

- Racemes all axillary.....1. V. americana
 Racemes one, terminal.....2. V. serpyllifolia
 Annual.....3. V. arvensis

1. Veronica americana (Raf.) Schwein. Common speedwell. West slope along Utopian Way near small spring, very common in moist situations. Transition. (Ch)

2. Veronica serpyllifolia L. Thyme-leaf speedwell. Growing in marsh near Musick Mine; common. Transition. (H)

3. Veronica arvensis L. Corn speedwell. Common in open woods about springs on Utopian Way, west slope. Introduced from Europe. Transition. (Th)

5. Synthyris Benth.

1. Synthyris reniformis Benth. Spring Queen. Woods, west slope of mountain; very common early in the growing season. Humid Transition. (H)

6. Castilleja Mutis.

Leaves entire, glabrous.....1. C. miniata
 Leaves cleft into linear lobes, somewhat hairy.....
2. C. hispida

1. Castilleja miniata Dougl. Common paintbrush.
 Open southeast slope at high elevations; very common.
 Transition to Hudsonian. (H)

2. Castilleja hispida Benth. Indian paintbrush.
 Growing along Utopian Way; common. Transition. (H)

7. Orthocarpus Nutt.

1. Orthocarpus imbricatus Torr. Mountain owls-
 clover. Very common at summit and on northwest slope.
 This is a very striking and beautiful plant of the high
 mountains. Hudsonian. (Th)

8. Pedicularis L.

Leaves lanceolate, doubly toothed.....3. P. racemosa
 Leaves pinnately divided; flowers yellowish-white
 Upper lip of the corolla forming a slender inrolled
 beak.....2. P. contorta
 Upper lip of the corolla not forming an inrolled beak
1. P. flavida

1. Pedicularis flavida Penn. Indian warrior. North
 slope just below edge of the melting snow; not common.
 Canadian and Hudsonian. (H)

2. Pedicularis contorta Benth. Hillside at Lead
 Crystal Mine, moist marshy ground; rare. (Sidney A. King,
 May 27, 1934.) Hudsonian. (H)

3. Pedicularis racemosa Dougl. Mountain figwort.
 Fairly common in shaded woods growing in moist humus soil
 of northwest slope. Hudsonian. (H)

44. OROBANCHACEAE. Broom-rape Family.

1. Orobanche L.

1. Orobanche fasciculata Nutt. Naked broom-rape.
 Rare along Utopian Way. Transition to Canadian. (Cr)

45. PLANTAGINACEAE. Plantain Family.

1. Plantago L.

1. Plantago lanceolata L. English plantain. Very common on summit and on northwest slope. A widespread weed. Introduced from Europe. (H)

46. RUBIACEAE. Madder Family.

Flowers pink, surrounded by involucre.....2. Sherardia
Flowers not pink, not involucre.....1. Galium

1. Galium L.

Leaves 6 to 8 in a whorl

Leaves linear-spatulate; flowers white...1. G. Aparine

Leaves elliptic-lanceolate; flowers greenish-white...

.....2. G. triflorum

Leaves 4 in a whorl

Annual; leaves often reduced to 2 at the upper nodes,
or if 4, 1 pair shorter than other...4. G. bifolium

Perennial; leaves always 4 at a node....3. G. oreganum

1. Galium Aparine L. Annual bed-straw. Shady woods of northwest slope; very common. Transition. (Th)

2. Galium triflorum Michx. Fragrant bed-straw. Open woods near Musick Guard Station; common. Transition. (H)

3. Galium oreganum Britt. Northern wild licorice. On road to summit; common. Canadian. (H)

4. Galium bifolium Wats. Twin-leaved bed-straw. Wet ground of south slope, early; common. Canadian. (Th)

2. Sherardia L.

1. Sherardia arvensis L. Field madder. Dry ground along Sharps Creek Road below lookout. (Gilkey, July 11, 1941). Introduced from Europe. (Th)

47. CAPRIFOLIACEAE. Honeysuckle Family.

Leaves simple

Flowers tubular or funnellform

Shrubs, erect or climbing

Flowers zygomorphic; fruit red or black, berry-like

.....1. Lonicera

Flowers actinomorphic; fruit white, berry-like....

.....2. Symphoricarpos

Vine, prostrate or creeping; flowers in pairs.....

.....3. Linnaea

Flowers rotate.....4. Viburnum

Leaves compound.....5. Sambucus

1. Lonicera L.

Climbing shrubs; flowers orange-red....1. L. ciliosa

Erect shrubs; flowers white.....2. L. utahensis

1. Lonicera ciliosa (Pursh) Poir. Climbing honeysuckle. Bohemia saddle; not uncommon. Transition. (Ph)

2. Lonicera utahensis Wats. Utah honeysuckle. Common locally along Utopian Way, also on Bohemia saddle, with small patches on southwest slope near summit. This is a species of the Wallowa Mountains and eastward, and has not previously been reported from our area. A good example of discontinuous distribution. Hudsonian. (Ph)

2. Symphoricarpos L.

Erect shrub; corolla densely villous within..1. S. albus

Creeping or decumbent shrub; corolla scarcely pubescent.

.....2. S. mollis

1. Symphoricarpos albus (L.) Blake. Snowberry. At lower altitudes on mountain; common. Transition. (Ph)

2. Symphoricarpos mollis Nutt. Creeping snowberry. At summit; common. Transition. (Ch)

3. Linnaea L.

1. Linnaea borealis L. var. americana (Forbes) Rehder. Twinflower. In rich humus soil of forest floor along Utopian Way; common. Humid Transition and Canadian. (Ch)

4. Viburnum L.

1. Viburnum ellipticum Hook. Western wayfaring tree. Open woods and thickets on west slope and along Utopian Way; not common. Humid Transition. (Ph)

5. Sambucus L.

Inflorescence flat-topped; fruit blue...1. S. coerulea
Inflorescence pyramidal; fruit red.....2. S. callicarpa

1. Sambucus coerulea Raf. Blue elderberry. Northwest slope along Utopian Way; scattered. Transition. (Ph)

2. Sambucus callicarpa Greene. Red elderberry. Edge of receding snowbank, north slope; not common. Humid Transition to Hudsonian. (Ph)

48. VALERIANACEAE. Valerian Family.

1. Valeriana L.

1. Valeriana sitchensis Bong. Mountain valerian. Northeast slope at 5800 feet, moist places. Hudsonian. (H)

49. CUCURBITACEAE. Gourd Family.

1. Echinocystis T. and G.

1. Echinocystis oreganus Cogn. Wild cucumber. Open west slope; rare. Transition. (Cr)

50. CAMPANULACEAE. Bell-flower Family.

1. Campanula L.

Flowers dark blue; leaves nearly sessile.....
.....1. C. prenanthoides
Flowers pale blue; leaves petioled..2. C. Scouleri

1. Campanula prenanthoides Dur. Slender blue-bell. Rocky soil along Utopian Way on northwest slope infrequent. Humid Transition. (H)

2. Campanula Scouleri Hook. Pale blue-bell. Sharps Creek Road; common. Humid Transition and Canadian. (H)

51. COMPOSITAE. Sunflower Family.

Flowers all ligulate; juice milky

Pappus plumose.....1. Hypochaeris

Pappus not plumose

Heads solitary; leaves all basal.....2. Agoseris

Heads several; cauline leaves present...3. Hieracium

Flowers all tubular, or heads composed of both tubular and ligulate flowers

Pappus of hairs or bristles

Heads with both ray and disk flowers

Leaves mostly opposite.....13. Arnica

Leaves alternate

Ray flowers yellow

Involucre bracts usually narrow, in 1 or 2 even series.....15. Senecio

Involucre bracts in several series, usually overlapping.....14. Raplopappus

Ray flowers not yellow

Involucre bracts narrow, usually in an even series, sometimes 2; rays narrow, numerous5. Erigeron

Involucre bracts in several series, broader, generally overlapping; rays fewer.....4. Aster

Heads with disk flowers only

Flowers white or whitish

Leaves prickly.....16. Cirsium

Leaves not prickly

Pappus bristles of staminate flowers club-shaped.....6. Antennaria

Pappus bristles not as above.....7. Anaphalis

Flowers bright yellow

Leaves opposite.....13. Arnica

Leaves alternate

Heads few-flowered.....12. Luina

Flowers numerous.....15. Senecio

Pappus none

Flowers white

Ray flowers none.....8. Adenocaulon

Ray flowers present

Heads numerous; rays 4 or 5.....9. Achillea

Heads solitary; rays numerous...10. Chrysanthemum

Flowers yellowish or greenish.....11. Artemisia

1. Hypochaeris L.

1. Hypochaeris radicata L. false dandelion.
Occasional along roadside on north slope. Introduced
from Europe. (H)

2. Agoseris Raf.

Flowers orange; leaves entire or slightly toothed.....
.....1. A. aurantiaca
Flowers yellow; leaves sharply toothed or deeply cleft..
.....2. A. laciniata

1. Agoseris aurantiaca (Hook.) Greene. Burnt-
orange dandelion. Roadside near summit. Hudsonian. (H)

2. Agoseris laciniata (Nutt.) Greene. Tall false
dandelion. Utopian Way; rare. Humid Transition. (H)

3. Hieracium L.

Flowers white.....1. H. albiflorum
Flowers yellow
Plant 20 cm. or less; basal leaves glabrous.....
.....4. H. gracile
Plant much taller; leaves pubescent
Involucral bracts narrowly linear.....
.....5. H. cynoglossoides
Involucral bracts broadly linear.3. H. Parryi

1. Hieracium albiflorum Hook. White-flowered hawk-
weed. Sharps Creek Road; common. Transition. (H)

2. Hieracium cynoglossoides Arv. var. nudicaule
Gray. Naked-stemmed hawkweed. Open gravelly north
slope; local. Canadian and Hudsonian. (H)

3. Hieracium Parryi Zahn. Parry's hawkweed. South
slope in open; not common. Canadian. (H)

4. Hieracium gracile Hook. Alpine hawkweed. North
slope just below summit; rare. Hudsonian. (H)

4. Aster L.

Stems very leafy to top; leaves thin, cottony-pubescent
beneath, margins entire or nearly so.....
.....1. A. ledophyllus

Stems not so leafy; leaves leathery, harsh-pubescent,
margins sharply toothed.....2. A. radulinus

1. Aster ledophyllus Gray. Cascade aster. North
slope, Champion Creek-Sharps Creek Divide; common.
Hudsonian. (H)

2. Aster radulinus Gray. Rough-leaved aster.
Fairly common along Utopian Way. Transition. (H)

5. Erigeron L.

Heads lilac, pink, or blue

Leaves relatively large, usually broadly lance-shaped..

.....1. E. Aliceae

Leaves relatively small, usually numerous and narrow...

.....2. E. foliosus

Heads white.....3. E. cascadiensis

1. Erigeron Aliceae How. Alice's erigeron. Common
at summit and on northwest slope in gravelly soil.
Hudsonian. (H)

2. Erigeron foliosus Nutt. var. confinis (How.) Jeps.
Leafy daisy. Summit near old lookout station; fairly
common. A new locality for this plant which is common
farther south. This is one of the species found commonly
along the Rogue River and in the southern counties of
Oregon. It grows on dry slopes in both Josephine and
Curry Counties. Arid Transition. (H)

3. Erigeron cascadiensis Heller. Cascade erigeron.
Summit of east slope, growing on rocks and in crevices.
This is a very rare plant which has been collected only
a few times. This is apparently the most northern col-
lection recorded to this date. It has a very local dis-
tribution in the Cascades or in the foothills west of
the Cascades from Hershberger Mountain north to the
Calapooya Mountains. It is common also on the summit
of neighboring Bohemia Mountain above 5900 feet.
Hudsonian. (H)

6. Antennaria Gaertn.

1. Antennaria rosea Greene. Rosy everlasting.
Fairly common on west slope. It appears in our region
from the summit of the Cascade Mountains. Hudsonian. (H)

7. Anaphalis DC.

1. Anaphalis margaritacea (L.) B. and H. var. subalpina Gray. Alpine pearly everlasting. On open hillsides south slope; common. Hudsonian. (H)

8. Adenocaulon Hook.

1. Adenocaulon bicolor Hook. Pathfinder. North slope, growing in shady woods; common. Humid Transition to Canadian. (H)

9. Achillea L.

1. Achillea Millefolium L. var. lanulosa (Nutt.) Pip. Western yarrow. Rocky soil, north slope; abundant. Sometimes with pink rays. Hudsonian. (H)

10. Chrysanthemum L.

1. Chrysanthemum leucanthemum L. var. pinnatifidum Lec. & Lam. Ox-eye daisy. Dry ground along edge of road to summit, south slope; not common. Introduced from Europe. (H)

11. Artemisia L.

1. Artemisia vulgaris L. var. ludoviciana (Nutt.) Jeps. Common wormwood. Occasional on south and east slopes. A species from Eastern Oregon not previously known to occur west of the Cascades. Arid Transition. (H)

12. Luina Benth.

1. Luina stricta (Greene) Robins. Rainiera. Growing in rocky soil of northwest slope, and on Elephant Saddle; scattered. This is an interesting extension of this plant southward as it has not previously been reported south of Mount Hood in Oregon and was originally thought to be an endemic of the state of Washington. Canadian and Hudsonian. (H)

13. Arnica L.

Stems glabrous or nearly so, not glandular.....
1. A. latifolia
 Stems glandular and sticky throughout. 2. A. diversifolia

12. Luina Benth.

1. Luina stricta (Greene) Robins. Rainiera.
Growing in rocky soil of northwest slope, and on Elephant Saddle; scattered. This is an interesting extension of this plant southward as it has not previously been reported south of Mount Hood in Oregon and was originally thought to be an endemic of the state of Washington. Canadian and Hudsonian. (H)

13. Arnica L.

Stems glabrous or nearly so, not glandular.....
.....1. A. latifolia
Stems glandular and sticky throughout...2. A. diversifolia

1. Arnica latifolia Bong. Broad-leaved arnica.
Growing in humus soil of north slope; common. Hudsonian.
The shade forms differ considerably from the sun forms.
(H)

2. Arnica diversifolia Greene. Sticky arnica.
Common in open woods of north slope. This is the species so common on the east slope of the Cascades. This is the first record for Western Oregon. Hudsonian. (H)

14. Haplopappus Cass.

1. Haplopappus Hallii Gray. Dry ground, growing at summit of northwest slope of the mountain; common locally. This species has previously been reported as a narrow endemic on the bluffs of the Columbia River in Northern Oregon. Our plant needs considerable study. It is probably an undescribed species. There are a number of characters which do not agree with the above named plant. Hudsonian. (H)

15. Senecio L.

Stem leaves pinnately divided or compound.....
.....1. S. Harfordii
Stem leaves not as above, often toothed
Stems leafy throughout.....2. S. triangularis
Stems few-leaved or naked above.....3. S. integerrimus

1. Senecio Harfordii Greene. Harford's senecio. Fairly common on west slope. This is a southern extension of the range of this plant. It is most common around Mt. Hood but is reported by Peck (88, p. 778) to reach the McKenzie Pass. Canadian. (H)

2. Senecio triangularis Hook. Spear-head senecio. Very common on moist north slope. Hudsonian. (H)

3. Senecio integerrimus Nutt. Tall western senecio. Growing on south side of road on saddle nearly to the summit; scattered stations. Hudsonian. (H)

16. Cirsium Scop.

1. Cirsium americanum (Gray) Robs. Slender mountain thistle. Open summit of mountain; rather rare. Hudsonian. (H)

SUMMARY OF PLANTS ON FAIRVIEW MOUNTAIN

Three hundred fifteen different species of plants are known to grow on Fairview Mountain. The largest families are Compositae (16 genera, 27 species), Gramineae (12 genera, 23 species), Saxifragaceae (11 genera, 22 species), Rosaceae (9 genera, 19 species) and Scrophulariaceae (8 genera, 18 species). Some other important families with the total number of species are as follows: Polygonaceae (14), Leguminosae (14), Ericaceae (14), Liliaceae (12), Ranunculaceae (11), Onagraceae (10), Umbelliferae (9), Cruciferae (8) and Caprifoliaceae (8). The 315 species represent close to 10 percent of the total of 3203 species listed by Peck (89) for the state of Oregon. Fifty-one families are represented in the flora of the mountain, or 43 percent of the 118 families that occur in Oregon. Considering the extremely limited area collected this appears to be a fairly diverse flora.

TABLE 3

Tabular Summary of Plants

Groups	Families	Genera	Species
Pteridophytes	1	9	11
Gymnosperms	3	7	9
Monocotyledons	5	29	55
Dicotyledons	<u>42</u>	<u>138</u>	<u>240</u>
Totals	51	183	315

PHYSIOGRAPHY AND TOPOGRAPHY

Iron Mountain is located in the Rogue River Range, on the Coquille-Rogue River Divide in Coos-Curry counties. The mountain is 15 air miles from the Pacific ocean and is directly east of Port Orford, Oregon. It is 10 miles north of the Rogue River and is the highest peak in the area, reaching an elevation of 4000 feet.

The boundaries of the mountain are limited as follows: the north slope to Sucker Creek Canyon at 3000 feet; northwest slope to Copper Mountain Canyon at 2000 feet; south slope to McCurdy Camp at 2700 feet; south slope to Bonanza Basin and the canyon of Boulder Creek at 2500 feet; southeast slope to Ophir-Iron Mountain saddle at 3500 feet; east slope to the south fork of Rock Creek at 2000 feet.

The drainage pattern for the mountain is as follows: the south slope is drained by Boulder Creek and Foster Creek; the east slope by the North and South Fork of Rock Creek; the north slope by Sucker Creek; and the west slope by the South Fork of Elk River.

The geologic formations are great intrusive masses of granitic rocks bordered by metamorphics: slates, serpentines and marbles, with some older lavas, generally referred to as greenstones. In general they are Paleozoic

and Mesozoic in age. In addition there are many basic intrusive masses of such rocks as peridotites.

The topography of the region is broken and rugged due to excessive dissection and the nature of the formations, which are apparently old and heavily metamorphosed. The whole pattern is a maze of ridges and valleys, giving a very confusing topographic picture (85, p. 50-51).

CLIMATE

Iron Mountain is situated in a region which has a marine climate, a relatively high winter precipitation in the form of rain or snow, a high summer temperature, fairly moderate winter temperature, low summer precipitation, and a long growing season.

The nearest weather stations are located at Port Orford and Gold Beach on the Pacific Ocean. There are no weather records available for Iron Mountain.

The prevailing winds are westerly, blowing inland from the ocean. The annual rainfall of the area is approximately 70 inches, but may be higher on Iron Mountain because of higher altitudes. Most of the rainfall occurs from October to May. The summer precipitation during the three months of June, July and August is only 3 inches.

The growing season is comparatively long, ranging from 238 days at Gold Beach to 286 days at Port Orford. It is estimated that Iron Mountain has a growing season from 160 to 180 days.

The snowfall during the winter months is usually quite heavy and some years deep drifts are present until the middle of June.

THE LIFE ZONES OF IRON MOUNTAIN

On Iron Mountain, only the Canadian and Transition zones are represented, since the summit is only 4000 feet in elevation. A few plants grow here that inhabit the Hudsonian zone in the Cascades, e.g., Penstemon rupicola, Lomatium Martindalei, Pleum pratense, etc. This is mentioned to show that the boundaries of life zones are not level altitudinal lines. It is not unusual for some species to grow from near sea level to timber lines.

Canadian Zone

The Canadian Zone extends from about 3000 to 4000 feet on Iron Mountain. There is no sharp line of division between it and the Transition Zone. Over half of the plants represented here grow in both the Canadian and Transition zones. The Canadian is the least well defined of all the life zones, and its recognition is dependent on the presence of certain indicator plants, Pinus monticola, Pinus contorta, Clintonia uniflora, Xerophyllum tenax, Anemone deltoidea and Acer Douglasii being the most important. The presence of any one of these species in an area might not be very significant but when they all occur it is a very good indication of the Canadian Zone.

The following species are found principally or wholly in the Canadian Zone and could be considered indicators of this zone on Iron Mountain.

<i>Polypodium vulgare</i> var. <i>columbianum</i>	<i>Streptopus amplexifolius</i>
<i>Cheilanthes gracillima</i>	<i>Horkelia sericata</i>
<i>Cheilanthes siliquosa</i>	<i>Sisyrinchium idahoense</i>
<i>Cryptogramma acrostichoides</i>	<i>Cypripedium californicum</i>
<i>Pinus monticola</i>	<i>Habenaria sparsiflora</i>
<i>Pinus contorta</i>	<i>Habenaria unalaschensis</i>
<i>Picea Breweriana</i>	<i>Listera caurina</i>
<i>Juniperus sibirica</i>	<i>Corallorhiza striata</i>
<i>Melica Geyeri</i>	<i>Corallorhiza Mertensiana</i>
<i>Phleum alpinum</i>	<i>Calypso bulbosa</i>
<i>Hierochloe occidentalis</i>	<i>Quercus Sadleriana</i>
<i>Scirpus criniger</i>	<i>Quercus vaccinifolia</i>
<i>Lysichitum americanum</i>	<i>Montia flagellaris</i>
<i>Juncus effusus</i>	<i>Arenaria Nuttallii</i> var. <i>gregaria</i>
<i>Narthecium californicum</i>	<i>Arenaria macrophylla</i>
<i>Xerophyllum tenax</i>	<i>Silene campanulata</i>
<i>Zygadenus Fremontii</i>	<i>Anemone deltoidea</i>
<i>Tofieldia occidentalis</i>	<i>Anemone Adamsiana</i>
<i>Lilium parvum</i>	<i>Coptis laciniata</i>
<i>Clintonia uniflora</i>	<i>Sedum laxum</i>
<i>Disporum Hookeri</i>	<i>Saxifraga Mertensiana</i>

<i>Tiarella unifoliata</i>	<i>Gaultheria ovatifolia</i>
<i>Amerlanchier pallida</i>	<i>Arctostaphylos nevadensis</i>
<i>Trientalis arctica</i>	<i>Vaccinium membranaceum</i>
<i>Lotus oblongifolius</i> var. <i>Torreyi</i>	<i>Gentiana Menziesii</i>
<i>Acer Douglasii</i>	<i>Phlox diffusa</i> var. <i>longistylis</i>
<i>Ceanothus pumilus</i>	<i>Penstemon rupicola</i>
<i>Viola glabella</i>	<i>Penstemon Rattanii</i>
<i>Viola cuneata</i>	<i>Valeriana sitchensis</i> var. <i>Scouleriana</i>
<i>Lomatium macrocarpum</i>	<i>Hieracium Cynoglossoides</i>
<i>Lomatium Martindalei</i>	<i>Antennaria suffrutescens</i>
<i>Garrya buxifolia</i>	<i>Antennaria rosea</i>
<i>Chimaphila umbellata</i>	<i>Rudbeckia californica</i>
<i>Chimaphila Menziesii</i>	<i>Luina hypoleuca</i>
<i>Pyrola secunda</i>	<i>Arnica parviflora</i>
<i>Pyrola aphylla</i>	<i>Arnica cernua</i>
<i>Pyrola bracteata</i>	<i>Senecio canus</i>
<i>Pyrola dentata</i>	
<i>Pyrola picta</i>	
<i>Hypopitys latisquama</i>	
<i>Hypopitys fimbriata</i>	
<i>Allotropa virgata</i>	
<i>Ptersopora andromedea</i>	
<i>Newberrya congesta</i>	
<i>Pleuricospora fimbriolata</i>	

The Transition Zone

The Humid and Arid Transition zones are both represented at elevations generally below 3000 feet. The most characteristic tree of the Humid Transition is Pseudotsuga taxifolia but Tsuga heterophylla is also present. The tree best representing the Arid Transition Zone is Libocedrus decurrens. Pinus ponderosa and Pinus Jeffreyi are also both present in this zone.

A chaparral belt extends along a wide area on the east and south slopes. This begins in the Transition Zone but extends upwards into the Canadian on the south slope. Some of the area about the summit is also covered with brush, some of which is made up of the same constituent plants. Sometimes scattered and occasional trees are present, such as Pinus monticola, Pinus Lambertiana, Pinus ponderosa, and Pinus attenuata (on ridges). The principal shrubs on these brushy hillsides include:

Arctostaphylos patula	Castanopsis chrysophylla
Arctostaphylos nevadensis	Lithocarpus densiflorus (shrub)
Arctostaphylos columbiana	Ceanothus pumilus
Arctostaphylos viscosissima	Rhamnus californica var. occidentalis
Arctostaphylos canescens	Garrya buxifolia
Quercus Sadleriana	Umbellularia californica (shrubby form)
Quercus vaccinifolia	

The following plants are typical of the Transition Zone on the mountain.

<i>Polystichum munitum</i>	<i>Aralia californica</i>
<i>Pseudotsuga taxifolia</i>	<i>Perideridia oregana</i>
<i>Libocedrus decurrens</i>	<i>Angelica arguta</i>
<i>Chamaecyparis Lawsoniana</i>	<i>Rhododendron occidentale</i>
<i>Festuca megalura</i>	<i>Gaultheria Shallon</i>
<i>Agrostis exarata</i>	<i>Arbutus Menziesii</i>
<i>Carex exsiccata</i>	<i>Phacelia corymbosa</i>
<i>Carex obnupta</i>	<i>Trichostema lanceolatum</i>
<i>Juncus bufonius</i>	<i>Mimulus moschatus</i>
<i>Calochortus Tolmiei</i>	<i>Veronica americana</i>
<i>Smilacina racemosa</i>	<i>Lonicera hispidula</i>
<i>Disporum Smithii</i>	<i>Madia Madioides</i>
<i>Montia sibirica</i>	<i>Petasites speciosa</i>
<i>Ranunculus occidentalis</i>	<i>Arnica cordifolia</i>
<i>Berberis nervosa</i>	<i>Collomia heterophylla</i>
<i>Mitella ovalis</i>	<i>Arctostaphylos columbiana</i>
<i>Heuchera micrantha</i>	<i>Convolvulus polymorphus</i>
<i>Tellima grandiflora</i>	<i>Galium triflorum</i>
<i>Tiarella trifoliata</i>	<i>Satureja Douglasii</i>
<i>Whipplea modesta</i>	<i>Galium Bolanderi</i>
<i>Lotus micranthus</i>	<i>Campanula prenanthoides</i>
<i>Viola sempervirens</i>	<i>Sambucus coerulea</i>
<i>Epilobium adenocaulon</i>	<i>Gnaphalium thermale</i>

THE FLORAL ELEMENTS

The plants of the area are made up for the most part of species coming from two different floral provinces, - the Northern element which extends southward along the chain of coastal mountains, and the Southern element which extends northward from California. Another small but interesting segment of the flora is made up of the narrow endemics which make up a moderately high percentage of the plants of the region.

The Northern Element

The Northern element includes many species that are common on Iron Mountain and grow principally northward to Alaska. Nine species reach their southern limit in our region and are not known to occur in California. The list of these species follows:

<i>Erythronium oregonum</i>	<i>Hypopitys latisquama</i>
<i>Montia flagellaris</i>	<i>Gaultheria ovatifolia</i>
<i>Angelica arguta</i>	<i>Trientalis arctica</i>
<i>Ligusticum apiifolium</i>	<i>Phlox diffusa</i> var. <i>longistylis</i>
<i>Pyrola bracteata</i>	

The Southern Element

This is by far the most important and largest element in the flora of Iron Mountain. The plants

of this element are predominantly of Californian origin. The Rogue River situated 10 miles south of the region forms an effective barrier to the plants of the Southern element. Jepson (55, p. 3) makes the following statement, "Of the various features which distinguish the northern margins of the California province, the Rogue River is one of greatest importance as defining by a mainly physiological barrier the botanical boundary of the California province northward. There are a large number of species of Washington and Oregon which extend south to, or nearly to, the Rogue River, while a large number of species of California extend north to, or nearly to, the Rogue River. A number of species, to be sure, cross the Rogue but extend northward only a short distance. Similarly a number of Oregon species cross the Rogue but extend southward only a limited distance. The Rogue, in addition, therefore, as to such species, represents a mean of the physical conditions in a transition area".

The 60 species listed below are plants that either reach their known northern limit on Iron Mountain or, for the most part, do not extend any great distance beyond the mountain. This list consists of 20% of the total flora of Iron Mountain.

<i>Festuca californica</i>	<i>Sedum laxum</i>
<i>Scirpus criniger</i>	<i>Whipplea modesta</i>
<i>Carex debiliiformis</i>	<i>Ribes glutinosum</i>
<i>Narthecium californicum</i>	<i>Ribes cruentum</i>
<i>Zygadenus Fremontii</i>	<i>Amelanchier pallida</i>
<i>Veratrum insolitum</i>	<i>Holodiscus discolor</i> var. <i>delnortensis</i>
<i>Lilium parvum</i>	<i>Lotus crassifolius</i>
<i>Lilium pardalinum</i>	<i>Lotus oblongifolius</i>
<i>Disporum Hookeri</i>	<i>Vicia californica</i>
<i>Trillium rivale</i>	<i>Lathyrus californica</i>
<i>Cypripedium californicum</i>	<i>Polygala californica</i>
<i>Quercus chrysolepis</i>	<i>Sidalcea malvaeflora</i> var. <i>californica</i>
<i>Quercus Sadleriana</i>	<i>Aralia californica</i>
<i>Quercus vaccinifolia</i>	<i>Perideridia oregana</i>
<i>Lithocarpus densiflorus</i>	<i>Garrya buxifolia</i>
<i>Arenaria Nuttallii gregaria</i>	<i>Hypopitys fimbriata</i>
<i>Silene campanulata</i>	<i>Rhododendron occidentale</i>
<i>Anemone Adamsiana</i>	<i>Arctostaphylos canescens</i>
<i>Berberis Piperiana</i>	<i>Gentiana Menziesii</i>
<i>Vancouveria planipetala</i>	<i>Convolvulus polymorphus</i>
<i>Umbellularia californica</i>	<i>Phacelia corymbosa</i>
<i>Streptanthus tortuosus</i> var. <i>orbiculatus</i>	<i>Monardella villosa</i>
<i>Erysimum concinnum</i>	<i>Synthyris reniformis</i> var. <i>cordata</i>
<i>Dentaria californica</i>	<i>Penstemon Rattanii</i>
<i>Chrysamphora californica</i>	

Castilleja pruinosa

Boschniakia Hookeri

Galium Bolanderi

Campanula prenanthoides

Hieracium Bolanderi
var. Torreyi

Erigeron foliosus
var. confinis

Antennaria suffrutescens

Rudbeckia californica

Arnica parviflora

Senecio Bolanderi

Senecio canus

Endemic Species

Endemic species can be divided into two groups, - broad endemics with a rather wide distribution within a local area; or narrow endemics with a very limited range often confined to a single station or to several associated stations. Narrow endemics can be divided into those which have evolved in the region within recent times and have not had the opportunity to have become widespread; and relict species, persisting in a locality that is specifically concerned. This group comprises about 3% of the flora of Iron Mountain. Most of these species are probably relicts because the area is one of considerable geologic age. It would seem that they would have had ample time to spread. However, the factors of outstanding climatic and physiological barriers, which are present here, are probably more important to relict endemism than is age or size or area.

The following species occur in limited areas sometimes known from only a few stations or covering a very limited area in extent.

Picea Breweriana

Iris innominata

Saxifraga Howellii

Horkelia sericata

Rhamnus californica
var. *occidentalis*

Ceanothus pumilus

Arctostaphylos viscosissima

Arnica cernua

Cirsium acanthodontum

Quercus Sadleriana

INTRODUCED SPECIES

The introduced species consist of 10% of the total flora on Iron Mountain. This compares very favorably with the percent of introduced species in the state. It was found that the adventive species in the state of Oregon approximate 10% also. This estimate is based on those species listed as introduced, in A Manual of the Higher Plants of Oregon, by Morton E. Peck.

Twenty-nine species were collected, of which a large proportion were found at Smith Claim Cabins, growing in and about the yard. The influence of a human habitation of this type is very great. All the adventive species are of European origin. Only 9 are monocotyledons, and all of these are grasses. The two largest families present are Compositae and Cruciferae, each with 5 species represented. On the basis of duration, 55% are perennials and 45% are annuals. A list of these species follows:

<i>Bromus tectorum</i>	<i>Agrostis tenuis</i>
<i>Bromus mollis</i>	<i>Capsella Bursa-pastoris</i>
<i>Dactylis glomerata</i>	<i>Camelina microcarpa</i>
<i>Lolium perenne</i>	<i>Brassica campestris</i>
<i>Aira caryophyllea</i>	<i>Erysimum repandum</i>
<i>Holcus lanatus</i>	<i>Rubus laciniatus</i>

Hypericum perforatum

Prunella vulgaris

Verbascum Blattaria

Polypogon monspeliensis

Anthoxanthum odoratum

Rumex Acetosella

Rumex conglomeratus

Rumex obtusifolius

Spergularia rubra

Lepidium perfoliatum

Plantago lanceolata

Plantago major

Hypochaeris radicata

Chrysanthemum leucanthemum
var. pinnatifidum

Senecio vulgaris

Senecio sylvaticus

Cirsium lanceolatum

BIOLOGICAL SPECTRUM

The Biological Spectrum of Iron Mountain was ascertained in the same manner as that of Fairview Mountain. Since an explanation of Raunkiaer's Method was given in another part of this paper a detailed account is not repeated here. Also, because many of the plants on this mountain grow in both the Transition and Canadian zones, positive allocation to one or the other could not be made. Therefore, no evaluation of the vegetation correlating the life forms with the life zones was attempted.

TABLE 4

The Biological Spectrum of Iron Mountain Compared with the Normal Spectrum, Fairview Mountain and Several other Regions

Region	Percentage of Species				
	Ph	Ch	H	Cr	Th
Iron Mountain	17	6	43	22	9
Fairview Mountain	14	6	54	18	8
Normal Spectrum	46	9	26	6	13
Cascades (Oregon)	10	9	35	37	7
Blue and Wallowa Mts.	12	11	48	24	2
Mount Rainier	12	8	51	18	9

The vegetation of the mountain is dominantly hemicryptophytic and cryptophytic. Life forms with perennating buds protected by the substratum are best adapted to meet the climatic factors of the region. The $H / Cr = 65\%$, which is the lowest total percent of any of the known spectra in the northwest. A comparison with the normal spectrum indicates that it is double the normal number. The therophytes are slightly below normal. The general reduction in phanerophytes and chamaephytes would indicate a more severe climate than the world average.

A comparison with several mountains in the northwest gives us a good correlation with just enough variation to show a milder climate than is present in the other regions. The total of the hemicryptophytes and cryptophytes, 65%, can be compared with Fairview Mountain 72%, Cascade Mountains (Oregon) 72%, Blue and Wallowa Mountains 72%, and Mount Rainier 69%. The general reduction in the H / Cr , with an increase in phanerophytes and a very slight increase in therophytes on Iron Mountain would probably indicate the influence of a marine climate. The mountain is situated 15 air miles from the ocean with small or practically no mountain barriers between.

It will be noted that in making a comparison with Fairview Mountain, there is 3% increase in phanerophytes; a 7% decrease in hemicryptophytes and cryptophytes; a 1% increase in therophytes, all of which would tend to show the influence of a modified climate due to Iron Mountain's reduced elevation and its geographical location in the Coast Mountains.

EXTENSIONS IN RANGE

Plants on Iron Mountain which are considered new distributional records comprise a total of 41 species. This equals 14% of the plants collected on the mountain. The relatively high percentage is very likely due to the considerable number of California plants which extend for only a short distance across the Rogue. The mountain had not been collected previously and many of the plants had, heretofore, been known only as far north as the south side of the Rogue River. It has been demonstrated that many of these species cross the Rogue and grow on the north side of the Rogue River as well. This does not in any way impair the importance of the Rogue River as a physiological barrier. Of the plants which are recorded as range extensions, 85% are from the Southern element.

Two species, Penstemon rupicola and Vaccinium membranaceum, not previously known to occur in the Coast Range, grow on Iron Mountain. These plants are both common in the Cascade Mountains, but are not found in the Siskiyou Mountains of Southern Oregon. This is of interest because a number of Cascade Range plants which are absent from the Coast Range appear again in the Siskiyou. Penstemon rupicola is found

on several coastal peaks south of Iron Mountain. The writer has collected it also on Snow Camp Mountain in central Curry County. It is not known to occur in California. It has previously been mentioned that the plants of Iron Mountain are, for the most part, from the north or the south. Only a few plants that enter our region are from the Cascades.

Each plant in the following list is designated by a letter symbol suggesting probable origin of the species. (N) signifies the Northern element; (S) the Southern or California element; (E) the Eastern element.

<i>Picea Breweriana</i> (S)	<i>Saxifraga Howellii</i> (S)
<i>Scirpus criniger</i> (S)	<i>Amelanchier pallida</i> (S)
<i>Narthecium californicum</i> (S)	<i>Holdiscus discolor</i> var. <i>delnortensis</i> (S)
<i>Trillium rivale</i> (S)	<i>Horkelia sericata</i> (S)
<i>Iris innominata</i> (S)	<i>Lathyrus californica</i> (S)
<i>Quercus Sadleriana</i> (S)	<i>Polygala californica</i> (S)
<i>Quercus vaccinifolia</i> (S)	<i>Acer Douglasii</i> (E)
<i>Arenaria Nuttallii</i> var. <i>gregaria</i> (S)	<i>Rhamnus californica</i> var. <i>occidentalis</i> (S)
<i>Anemone Adamsiana</i> (S)	<i>Ceanothus pumilus</i> (S)
<i>Berberis Piperiana</i> (S)	<i>Sidalcea malvaeflora</i> var. <i>californica</i> (S)
<i>Vancouveria planipetala</i> (S)	<i>Viola cuneata</i> (S)
<i>Streptanthus tortuosus</i> var. <i>orbiculatus</i> (S)	<i>Garrya buxifolia</i> (S)
<i>Sedum laxum</i> (S)	

Arctostaphylos viscosissima (S)	Galium Bolanderi (S)
Vaccinium membraceum (E)	Hieracium Bolanderi (S)
Gentiana Menziesii (S)	Antennaria suffrutescens (S)
Convolvulus polymorphus (S)	Antennaria rosea (E)
Phlox diffusa longistylis (N)	Arnica parviflora (S)
Phacelia corymbosa (S)	Arnica cernua (S)
Synthyris reniformis var. cordata (S)	Senecio canus (S)
Penstemon rupicola (E)	
Cirsium acanthodontum (S)	



Fig. 4. Iron Mountain, east slope

ANNOTATED CATALOGUE OF PLANTS

PTERIDOPHYTA. Ferns and Fern-allies.

1. POLYPODIACEAE. Fern Family.

Indusium present

Sori marginal, covered by the revolute portion of the leaf

Fronds of two kinds

Sterile leaf blades simple pinnate....4. StruthiopterisSterile leaf blades 2-3 pinnate....8. Cryptogramma

Fronds alike

Plants with fan-shaped pinnules....5. Adiantum

Plants with pinnules not as above

Plants large and stout; fronds usually solitary
.....6. PteridiumPlants small and slender; fronds generally
clustered.....7. Cheilanthes

Sori not marginal, borne on the veins

Sori longer than broad

Sori small, oblong or lunate.....3. AthyriumSori large, chain-like.....9. WoodwardiaSori round.....2. PolystichumIndusium wanting.....1. Polypodium1. Polypodium L.1. Polypodium vulgare L. var. occidentale Hook.
Licorice fern. Common on rock outcrops of north slope
near summit. Humid Transition to Canadian. (Cr)a. Polypodium vulgare L. var. columbianum Gilbert.
Mountain licorice fern. Among rocks on northwest slope
near summit; fairly common. Canadian. (Cr)2. Polystichum Roth.1. Polystichum munitum (Kaulf.) Presl. Common sword
fern. Along Rock Creek on east slope at Smith Claim;
very common. Humid Transition. (H)a. Polystichum munitum (Kaulf.) Presl. var. imbricans
(D. C. Eaton) Maxon. Imbricated sword fern. On east
slope along Rock Creek, rocky northwest slope, and on
the summit under rocks; common. Humid Transition to
Canadian. (H)

b. Polystichum munitum (Kaulf.) Presl. var. incisoserratum (D. C. Eaton) Underw. Open east slope along Rock Creek; rare. Humid Transition. (H)

3. Athyrium Roth.

1. Athyrium Filix-femina (L.) Roth. Lady fern. East slope growing beside a spring; common. Transition and Canadian. (H)

4. Struthiopteris Scop.

1. Struthiopteris spicant (L.) Weis. Deer-fern. Common along springs and water courses in deep shade. East slope near Smith Mine at a spring, also on shady southeast slope. Humid Transition. (H)

5. Adiantum L.

1. Adiantum pedatum L. var. aleuticum Rupr. Western maidenhair fern. East slope along Rock Creek at Smith Claim; fairly common. Humid Transition and Canadian. (Cr)

6. Pteridium Scop.

1. Pteridium aquilinum (L.) Kuhn. var. pubescens Underw. Western bracken. Along banks of Rock Creek at Smith Claim in moist woods; very common. Humid Transition. (Cr)

7. Cheilanthes Sw.

Fronds densely tomentose beneath.....1. C. gracillima
Fronds glabrous on both surfaces.....2. C. siliquosa

1. Cheilanthes gracillima D. C. Eaton. Lace-fern. On rock ledges at summit, also in like situations on south and southeast slopes; not uncommon. Canadian. (H)

2. Cheilanthes siliquosa Maxon. Oregon cliff-brake. Common on dry hillsides, east and southwest slope. Canadian. (H)

8. Cryptogramma R. Br.

1. Cryptogramma acrostichoides R. Br. American parsley-fern. Northwest slope near summit, among rocks; also common on steep rocky hillsides overlooking Boulder Creek on south slope. Canadian. (H)

9. Woodwardia J. E. Smith

1. Woodwardia fimbriata J. E. Smith. Giant chain-fern. Creek bottoms on southwest slope; occasional. Arid Transition. (H)

2. EUISETACEAE. Horsetail Family.

1. Equisetum L.

1. Equisetum Telmateia Ehrh. Giant horsetail. Along moist roadside margins at Smith Claim on Rock Creek, east slope; fairly common. Humid Transition. (Cr)

3. SELAGINELLACEAE. Selaginella Family.

1. Selaginella Beauv.

1. Selaginella Wallacei Hieron. Wallace's selaginella. On mossy rocks in open woods on south slope; also common at summit. Transition to Canadian. (Ch)

SPERMATOPHYTA. Seed Plants.

CLASS GYMNOSPERMAE. Cone-bearing plants.

4. TAXACEAE. Yew Family.

1. Taxus L.

1. Taxus brevifolia Nutt. Western Yew. East slope along banks of Rock Creek at Smith Claim; occasional. Humid Transition and Canadian. (Ph)

5. PINACEAE. Pine Family.

Leaves in fascicles, 2 to 5 in a bundle...1. Pinus
Leaves solitary, opposite or whorled, scattered along the branch

Branchlets smooth; leaves persistent when dried, bracts exceeding the scales.....2. Pseudotsuga
Branchlets roughened by the persistent leaf bases; leaves deciduous when dried, scales longer than the bracts

Leaves narrowed to a short petiole....3. Tsuga
Leaves sessile on a woody base.....4. Picea

1. Pinus L.

Leaves 5 in a fascicle

Cones 1.5 to 2 dm. long.....1. P. monticola

Cones 3 to 5 dm. long, or more.....2. P. Lambertiana

Leaves 2 or 3 in a fascicle

Leaves 3 in a fascicle

Cones asymmetrical, persistent and remaining closed

.....3. P. attenuata

Cones symmetrical, deciduous and opening at maturity

Cones 7 to 15 cm. long; prickles of the cone short
and broad, turning outward....4. P. ponderosa

Cones 15 to 30 cm. long; prickles of the cone long
and narrow, turning inward....5. P. Jeffreyi

Leaves 2 in a fascicle.....6. P. contorta

1. Pinus monticola Dougl. Western white pine.
The characteristic tree at higher elevations on the
mountain. Common on west slope, as well as extending
up the southeast slope to the summit; very common at
all stations. Canadian. (Ph)

2. Pinus Lambertiana Dougl. Sugar pine. Most
common on south slope but extending around to east
slope in scattered stands. The largest tree on the
mountain. This is probably as far west as it extends
in this region. Transition and Lower Canadian. (Ph)

3. Pinus attenuata Lemm. Knob-cone pine. On
southwest slope and at summit but to be noted on all
high dry ridges in this region; common but rare at
higher elevations. Humid Transition. (Ph)

4. Pinus ponderosa Dougl. Western yellow pine.
On east slope along trail to the Smith place; not common.
It has not been reported west of the Rogue River
Mountains. Arid Transition. (Ph)

5. Pinus Jeffreyi Murr. Jeffrey's pine. High
dry ridges on south and southeast slopes, at higher
elevations than P. ponderosa. It is present here on
the very fringe of its range, not having been reported
either to west or north of our area. Upper Arid
Transition and Canadian. (Ph)

6. Pinus contorta Dougl. var. Murrayana (Balf.) Engelm. Lodge-pole pine. On summit of ridge immediately south of Iron Mountain. Its range extends no farther west than this station in our region. It is here in all probability that transitional forms occur which indicate a close relationship with P. contorta (Coast pine). Our species is so different at higher altitudes that it seems best to give it at least varietal status. The species is rare above 3000 ft. but our record was taken at nearly 4000 ft. Canadian. (Ph)

2. Pseudotsuga Carr.

1. Pseudotsuga taxifolia (Lamb.) Britt. Douglas fir. Very common at all stations on the mountain, extending up the slopes to the summit. The characteristic tree of the Humid Transition Zone. (Ph)

3. Tsuga (Engl.) Carr.

1. Tsuga heterophylla (Raf.) Sarg. Western hemlock. Abundant on lower east slope and along Rock Creek at Smith Claim. A climax tree in the coastal Humid Transition Zone. Common in the Canadian Zone of the Rogue River Mountains but does not occur in the Siskiyou to the south of our area. (Ph)

4. Picea Link.

1. Picea Breweriana Wats. Weeping spruce. Common on north and west slopes near summit. The occurrence of this rare tree on the mountain is very interesting. It has not previously been reported from the Rogue River Mountains although the habitat is identical to those in the Siskiyou and Chetco ranges where it has been found. This species usually grows at elevations above 4000 feet. It is the rarest American spruce. Canadian. (Ph)

6. CUPRESSACEAE. Cypress Family.

Cones woody; leaves scale-like

Cones oblong; scales oblong, imbricated; leaves appearing to be in whorls of four...1. Libocedrus

Cones globose; scales shield or wedge-shaped; leaves in pairs.....2. Chamaecyparis

Cones fleshy, berry-like.....3. Juniperus

1. Libocedrus Endl.

1. Libocedrus decurrens Torr. Incense cedar. Present on east slope and on southeast slope along Steffans Meadow trail; scattered. The characteristic tree of the Arid Transition Zone. (Ph)

2. Chamaecyparis Lawsoniana Parl. Port Orford cedar. On all slopes and up to the summit at 4000 feet. Port Orford cedar is one of our more valuable lumber trees. Humid Transition to Canadian. (Ph)

3. Juniperus sibirica Burgsd. Dwarf juniper. A low shrub found on west and south slopes. Common on all dry stony sterile ridges in this area. Canadian. (Ch)

CLASS ANGIOSPERMS. Flowering Plants.

MONOCOTYLEDONEAE.

7. GRAMINEAE. Grass Family.

Spikelets with perfect flowers at the base

Spikelets with several to many flowers

Inflorescence a panicle

Glumes shorter than the lemma; awn apical and straight or none at all....Tribe 1. Festuceae

Glumes longer than the lemma; awn dorsal, bent and twisted.....Tribe 3. Aveneae

Inflorescence a spike.....Tribe 2. Hordeae

Spikelets with one perfect flower.Tribe 4. Agrostideae

Spikelets with perfect flowers at the top.....

.....Tribe 5. Phalarideae

Tribe 1. Festuceae

Lemmas keeled on the back

Spikelets strongly compressed, crowded in dense, one-sided clusters.....5. Dactylis

Spikelets not as above

Lemmas awned from a minutely two-toothed apex.....

.....1. Bromus

Lemmas awnless; spikelets small not over 8 mm. long.

.....4. Poa

- Lemmas rounded on the back (slightly keeled toward the summit in Festuca and some species of Bromus)
 Glumes papery; upper florets sterile folded about each other.....6. Melica
 Glumes not papery; upper florets perfect
 Nerves of the lemma converging at the apex
 Lemmas entire, awned from the tip or pointed.....2. Festuca
 Lemmas awned from a minutely two-toothed apex.....1. Bromus
 Nerves of the lemma not converging, lemma awnless....3. Glyceria

Tribe 2. Hordeae

- Spikelet 1 at each joint of the rachis...8. Lolium
 Spikelets more than 1 at each joint of the rachis.....7. Elymus

Tribe 3. Aveneae

- Spikelets with 1 perfect flower, the other staminate....11. Holcus
 Spikelets with 2 or more perfect flowers
 Lemmas bidentate, awned from above the middle.....9. Trisetum
 Lemmas acute, awned from below the middle.....10. Aira

Tribe 4. Agrostideae

- Inflorescence spike-like, very dense and compact
 Glumes short awned.....14. Phleum
 Glumes long awned.....13. Polypogon
 Inflorescence not spike-like.....12. Agrostis

Tribe 5. Phalarideae

- Lower florets staminate; spikelets brown and shining....15. Hierochloe
 Lower florets sterile; spikelets green or yellowish
 Sterile lemmas reduced to awnless bracts.....17. Phalaris
 Sterile lemmas elongated, villous and awned.....16. Anthoxanthum

1. Bromus L.

Introduced annuals

- Awns 6 to 9 mm. long.....2. B. mollis
 Awns 20 to 30 mm. long.....1. B. tectorum
 Native perennial.....3. B. vulgaris

1. Bromus tectorum L. Downy cheat grass. Open hillside on east slope; very common. Introduced from Europe. (Th)

2. Bromus mollis L. Soft cheat grass. Dry roadside on south slope. Introduced from Europe. (Th)

3. Bromus vulgaris (Hook.) Shear. Narrow-flowered brome-grass. Open woods and dry hillsides on east slope; common. Humid Transition. (H)

2. Festuca L.

Plants annual; stamen usually one.....1. F. megalura
 Plants perennial; stamens three

Blades narrow 2.5 mm. wide or less; sheaths glabrous

.....2. F. rubra
 Blades 3 to 6 mm. wide; sheaths villous at the throat

.....3. F. californica

1. Festuca megalura Nutt. Western six-weeks fescue. Dry open hillside on east slope; quite common. Humid Transition. (Th)

2. Festuca rubra L. Red fescue. Open ground and hillsides on east slope; scattered. Transition to Canadian. (H)

3. Festuca californica Vas. California fescue. Found on dry open hillside of east slope; occasional. Transition. (H)

3. Glyceria R. Br.

Lemmas 7-nerved.....1. G. elata

Lemmas 5-nerved.....2. G. pauciflora

1. Glyceria elata (Nash) Hitchc. Tall manna-grass. Marshy ground along Rock Creek at Smith Claim on east slope; infrequent. Transition to Canadian. (H)

2. Glyceria pauciflora Presl. Few-flowered manna-grass. Wet swampy ground on south slope; local in this type of habitat. Transition. (H)

4. Poa L.

Lemma with web-like hairs at the base.....1. P. rhizomata
 Lemma without web-like hairs.....2. P. secunda

1. Poa rhizomata Hitch. Timber bluegrass. Common on dry open hillside of east slope. Humid Transition and Canadian. (Cr)

2. Poa secunda Presl. Sandberg's bluegrass. Found only at summit; fairly rare. Arid Transition to Canadian. (H)

5. Dactylis L.

1. Dactylis glomerata L. Orchard-grass. On roadside below Smith Claim on east slope local. Introduced from Europe. (H)

6. Melica L.

Glumes narrow; lemmas acuminate.....1. M. subulata
 Glumes broad; lemmas obtuse.....2. M. Geyeri

1. Melica subulata (Griseb.) Scribn. Alaska onion-grass. Fairly common on east slope. Transition to Canadian. (H)

2. Melica Geyeri Munro. Geyer's onion-grass. Dry open woods on east slope; rather scarce. Canadian. (H)

7. Elymus L.

1. Elymus glaucus Buckl. Western rye-grass. Open woods along banks of Rock Creek on east slope. Transition. (H)

8. Lolium L.

1. Lolium perenne L. English rye-grass. On south slope in road; not common. Introduced from Europe. (H)

9. Trisetum Pers.

1. Trisetum canescens Buckl. Tall trisetum. Common in open woods of east slope. Transition. (H)

10. Aira L.

1. Aira caryophyllea L. Silvery hair-grass. In yard of Smith Claim on the east slope; common in dry open ground. Introduced from Europe. (Th)

11. Holcus L.

1. Holcus lanatus L. Velvet grass. Along roadside at Smith Claim on east slope; quite common. Introduced from Europe. (H)

12. Agrostis L.

- Palea present, well developed.....1. A. tenuis
 Palea wanting, or minute
 Plants with rhizomes.....2. A. Hallii
 Plants without rhizomes.....3. A. exarata

1. Agrostis tenuis Sibth. Colonial bent-grass. Low moist ground along Rock Creek at Smith Claim; common. Probably introduced from Europe. (H)

2. Agrostis Hallii Vas. Hall's bent-grass. Common in open woods on south slope. Humid Transition. (H)

3. Agrostis exarata Trin. Western bent-grass. East slope on moist ground along Rock Creek at Smith Claim; fairly common. Humid Transition. (H)

13. Polypogon Desf.

1. Polypogon monspeliensis (L.) Desf. Annual beard-grass. Roadside on Coquille-Rogue River divide; quite abundant locally. Introduced from Europe. (Th)

14. Phleum L.

1. Phleum alpinum L. Alpine timothy. Moist ground on west slope near summit; rare. Canadian. (H)

15. Hierochloa R. Br.

1. Hierochloa occidentalis Buckl. Western vanilla-grass. Present on east slope along banks of Rock Creek at Smith Claim; occasional. Canadian. (H)

16. Anthoxanthum L.

1. Anthoxanthum odoratum L. Sweet vernal grass. East slope along banks of Rock Creek at Smith Claim, also on dry open hillside on south slope; frequent. Introduced from Europe. (H)

17. Phalaris L.

1. Phalaris arundinacea L. Reed canary-grass. Common in local situations on east slope along Rock Creek. Confined to wet marshy ground. Transition to Canadian. (Cr)

8. CYPERACEAE. Sedge Family

Flowers monocious or dioecious; achenes enclosed in a sac (perigynium).....2. Carex

Flowers perfect; achenes not enclosed in a sac; perianth bristles present (in ours).....1. Scirpus

1. Scirpus (Tourn.) L.

Bristles 4, barbs pointed downward.....1. S. microcarpus

Bristles 6 to 10, barbs pointed upward or bristles nearly smooth.....2. S. criniger

1. Scirpus microcarpus Presl. Small-fruited bulrush. Marshy swale along Rock Creek on east slope. Transition. (Cr)

2. Scirpus criniger Gray. Fringed bulrush. South and east slopes at springs and on wet marshy or swampy ground. Canadian. (Cr)

2. Carex (Rupp.) L.

Stigmas 3; achenes 3-angled

Style continuous with the achene, hardened and persistent; beak of the peryginium tapering, 1.5 to 2 mm. long, deeply bidentate.....1. C. exsiccata

Style jointed with the achene, withering and deciduous, peryginium abruptly beaked and short bidentate

Lower bracts short sheathing.....2. C. amplifolia

Lower bracts long sheathing, about equalling the culm.....3. C. debiliformis

Stigmas 2; achenes lenticular

Lateral spikes sessile, ovoid; peryginium winged, tapering into a beak one-third the length of the whole, beak bidentate.....4. C. festivella

Lateral spikes peduncled, cylindric, peryginium not winged, abruptly and minutely beaked, beak entire..

.....5. C. obnupta

1. Carex exsiccata Bailey. Western inflated sedge. Moist soil of a dried up pond on south slope; common. Humid Transition. (Cr)

2. Carex amplifolia Boott. Ample-leaved sedge. East slope along Rock Creek; fairly common. Transition. (H)

3. Carex debiliformis Mack. Weak-stemmed sedge. This is perhaps the commonest sedge on the mountain. It is particularly abundant on the east slope in marshy ground along Rock Creek at Smith Claim. Transition. (Cr)

4. Carex festivella Mack. Mountain meadow sedge. East slope, marshy ground along Rock Creek at Smith Claim; scattered. Transition. (H)

5. Carex obnupta Bailey. Slough sedge. Wet creek bottom on south slope; very common. Humid Transition. (Cr)

9. ARACEAE. Arum Family.

1. Lysichitum americanum Hulten & St. John. Yellow skunk cabbage. Swampy ground on southwest slope, along a creek at a trail crossing; occasional. Canadian. (Cr)

10. JUNCACEAE. Rush Family.

- Leaf-sheaths open; capsule 1- or 3-celled, many seeded;
 stems usually pithy.....1. Juncus
 Leaf-sheaths closed; capsule 1-celled, 3-seeded; stems
 hollow.....2. Luzula

1. Juncus L.

Lower leaf of the inflorescence appearing like a
 continuation of the stem, inflorescence therefore
 appearing lateral.....1. J. effusus

Lower leaf not as above; inflorescence therefore
 appearing terminal

Plants perennial, with simple stems....2. J. ensifolius

Plants annual; stems branching.....3. J. bufonius

1. Juncus effusus L. Common rush. East slope along
 Rock Creek below Smith Claim; very common. Canadian.
 (Cr)

2. Juncus ensifolius Wiks. Three-stamened rush.
 East slope along road to summit; common. Transition to
 Canadian. (Cr)

3. Juncus bufonius L. Toad rush. Low marshy ground
 at Smith Claim on east slope. Humid Transition. (Th)

2. Luzula DC.

Flowers in a loose panicle, solitary on the end of the
 branches.....1. L. parviflora

Flowers congested into spikes or head-like clusters....

.....2. L. campestris

1. Luzula parviflora (Ehrh.) Desv. Small-flowered
 wood-rush. Common on east slope above Rock Creek on
 wooded hillsides. Humid Transition to Canadian. (H)

2. Luzula campestris (L.) D. C. Common wood-rush.
 Very common at all stations, from the lower elevations to
 summit. Transition to Canadian. (H)

11. LILIACEAE. Lily Family.

Fruit a capsule

Leaves whorled (or some alternate in Lilium)All leaves in one whorl of 3.....14. Trillium

Leaves in several whorls, or some alternate.....

.....8. Lilium

Leaves not whorled

Plants with rhizomes

Leaves broad, heavily nerved, elliptic; flowers
paniculate.....5. Veratrum

Leaves narrow or grass-like; flowers racemose

Leaves few, entire, equitant

Flowers yellow.....1. NartheciumFlowers white.....3. TofieldiaLeaves grass-like, very numerous, serrulate, not
equitant.....2. Xerophyllum

Plants with bulbs

Flowers in umbels.....6. Brodiaea

Flowers not in umbels

Leaves broad, not grass-like

Leaves only 2, broad, appearing basal.....

.....9. Erythronium

Leaves several to many, not basal; stem leafy

.....8. Lilium

Leaves narrow, appearing grass-like

Flowers showy; perianth segments unlike.....

.....7. Calochortus

Flowers small; perianth segments alike.....

.....4. Zygadenus

Fruit a berry

Plants with leafy stems

Flowers drooping, axillary or terminal

Flowers axillary.....13. Streptopus

Flowers terminal, 1 to 2 at end of stem.....

.....12. Disporum

Flowers erect, racemose or paniculate.....

.....11. SmilacinaPlants with few leaves, mostly basal...10. Clintonia1. Narthecium Moeh.

1. Narthecium californicum Baker. California bog-asphodel. Marshy ground on east slope along road to summit; common. This plant has not hitherto been recorded from as far north as Coos County. It is a representative of the California element in the flora of the region. Canadian. (Cr)



Fig. 5. Veratrum insolitum Jepson
southeast slope of Iron Mountain

2. Xerophyllum Michx.

1. Xerophyllum tenax (Pursh) Nutt. Bear-grass. East slope, along Rock Creek at Smith Claim, also on hillsides on south slope; very common. Canadian. (H)

3. Tofieldia Huds.

1. Tofieldia occidentalis Wats. Western tofieldia. Common in all mountain marshes. Found on east slope along road to summit and growing in marshy ground at McCurdy Camp. Canadian. (Cr)

4. Zygadenus Michx.

1. Zygadenus Fremontii Torr. Fremont's star lily. Dry ground, on open south slope. A definite representative of the California element. It is found throughout the Coast Range from the mouth of the Coquille River to Southern California. Canadian in our region. (Cr)

5. Veratrum L.

1. Veratrum insolitum Jeps. Siskiyou false hellebore. Open brushy hillsides on east and south slopes. A representative of the Southern element in our flora. Humid transition to Canadian. (Cr)

6. Brodiaea Sm.

1. Brodiaea coronaria (Salisb.) Jeps. Harvest lily. Dry open hillsides on southwest slope; common. This plant ranges from Vancouver Island to Southern California along the Pacific Coast. Humid Transition. (Cr)

7. Calochortus Pursh.

1. Calochortus Tolmiei Hook & Arn. Oregon mariposa lily. Roadside along Middle Elk Road at Smith Claim along Rock Creek on east slope, also quite common on south slope; dry open hillsides. Transition. (Cr)

8. Lilium L.

Flowers erect, perianth parts only slightly recurved; anthers 3 mm. long.....1. L. parvum
Flowers nodding; perianth parts revolute to below the middle.

Perianth 4 to 5 cm. long; anthers 5 to 6 mm. long;
 ovary 9 to 12 mm. long.....2. L. columbianum
 Perianth 5 to 8 cm. long; anthers 10 to 15 mm. long;
 ovary 20 to 25 mm. long.....3. L. pardalinum

1. Lilium parvum Kell. Small tiger lily. East slope, along Rock Creek at Smith Claim; occasional. As far north as this species occurs. It represents the Southern element in our flora.

2. Lilium columbianum Hans. Columbia lily. Open woods on the east slope above Rock Creek. The most common lily of this genus. It is found from British Columbia to northern California. Humid Transition to Canadian. (Cr)

3. Lilium pardalinum Kell. Leopard lily. Quite common along streams and at springs. On southwest slope at McCurdy Camp and along banks of Rock Creek at Smith Claim on east slope, also common at numerous springs on the mountain. Transition to Canadian. (Cr)

9. Erythronium L.

1. Erythronium oregonum Appleg. Giant fawn lily. East slope at Smith Claim on Rock Creek; common. Road-sides to summit and in open woods where it is very numerous early in the season. It rarely occurs south of our region and is to be considered as a representative of the Northern element.

10. Clintonia Raf.

1. Clintonia uniflora (Schult.) Kunth. Queen's cup. Growing at spring of east slope at Smith Mine; not common. Canadian. (Cr)

11. Smilacina Desf.

Inflorescence a few-flowered raceme...1. S. sessilifolia
 Inflorescence a many-flowered panicle...2. S. racemosa

1. Smilacina sessilifolia (Baker) Nutt. Small false Solomon's seal. Common on east slope along Rock Creek at Smith Claim. Humid Transition and Canadian. (Cr)

2. Smilacina racemosa (L.) Desf. Large false Solomon's seal. Summit and on the east slope along Rock Creek below Smith Claim; frequent. Humid Transition. (Cr)

12. Disporum Salisb.

Flowers white; stigma 3-lobed at apex.....1. D. Smithii
 Flowers green; stigma entire.....2. D. Hookeri

1. Disporum Smithii (Hook.) Piper. Fairy lanterns.
 Woods and along streams on east slope; not common.
 Humid Transition. (Cr)

2. Disporum Hookeri (Torr.) B. & H. Hooker's Fairy bells. East and south slopes growing on dry wooded hillsides; very common. It is found from Douglas County to central California. This plant is a representative of the Southern element in our area. Canadian. (Cr)

13. Streptopus Michx.

1. Streptopus amplexifolius (L.) DC. Twisted stalk.
 East slope growing along Rock Creek in marshy ground; not common. Canadian. (Cr)

14. Trillium L.

Leaves nearly sessile.....1. T. ovatum
 Leaves distinctly petioled.....2. T. rivale

1. Trillium ovatum Pursh. Wood lily. East slope on Smith Claim up to summit, in open woods; frequent.
 Humid Transition and Canadian. (Cr)

2. Trillium rivale Wats. Brook wood lily. Woods along Rock Creek below Smith Claim on east slope and on wooded hillsides of south slope. This species reaches its northern limits in our area. It represents the Southern element in the flora.

12. IRIDACEAE. Iris Family.

Styles petal-like; stems terete.....1. Iris
 Styles filiform; stems flattened.....2. Sisyrinchium

1. Iris L.

1. Iris sp. Apparently a hybrid. Yellow iris. Dry open woods, on hillsides of south and east slopes. (Cr)

2. Sisyrinchium L.

1. Sisyrinchium idahoense Bickn. Idaho blue-eyed grass. Occasional in wet places on south slope. This species is found more commonly east of the Cascades but appears sparingly in the coastal mountains. Canadian. (H)

13. ORCHIDACEAE. Orchid Family.

Plants with green foliage leaves present

Stamens 2; lower lip large and inflated...1. Cypripedium

Stamen 1

Leaf and flower solitary.....6. Calypso

Leaves two to many; flowers many

Leaves 2, opposite, borne near middle of stem.....

.....4. Listera

Leaves several, alternate or basal

Flowers spurred.....2. Habenaria

Flowers not spurred.....3. Goodyera

Plants with leaves reduced to scales.....5. Corallorhiza

1. Cypripedium L.

1. Cypripedium californicum Gray. California lady's slipper. East slope along Rock Creek at Smith Claim, also at site of spring on a hillside overlooking Rock Creek; extremely rare. This is one of our largest and most beautiful lady's slippers. It appears to range just north of our station, but is limited to the Siskiyou-Rogue Mountains in our area. Canadian. (Cr)

2. Habenaria Willd.

Leaves basal; stem leaves bract-like, usually withered by flowering time

Spur about equalling lip.....1. H. unalaschensis

Spur twice as long as lip.....2. H. elegans

Leaves not basal; stems leafy; leaves not withered at

flowering time.....3. H. sparsiflora

1. Habenaria unalaschensis (Spreng.) Wats. Alaska bog orchid. Dry ground in woods of south slope and near summit; common. Canadian. (Cr)

2. Habenaria elegans (Lindl.) Boland. Slender rein orchid. Dry open woods at Smith Claim on east slope, and in woods of south slope; common. Transition. (Cr)

3. Habenaria sparsiflora Wats. Sparse-flowered bog orchid. Along roadside in mountain marshes with Ledum and Chrysamphora, east slope; fairly common. Canadian. (Cr)

3. Goodyera R. Br.

1. Goodyera decipiens (Hook.) St. John & Const. Rattlesnake plantain. Dense woods at almost all stations and elevations; common. Transition to Canadian in our area. (H)

4. Listera R. Br.

1. Listera caurina Piper. Northwestern twayblade. In woods of southeast slope; not common. Canadian. (Cr)

5. Corallorhiza R. Br.

Lip purple-striped; spur none.....1. C. striata
Lip purple, not striped; spur present..2. C. Mertensiana

1. Corallorhiza striata Lindl. Striped coral root. Woods on south slope; infrequent. Canadian. (Cr)

2. Corallorhiza Mertensiana Bong. This is the common coral root in our area. Woods of southeast slope. Canadian. (Cr)

6. Calypso Salisb.

1. Calypso bulbosa (L.) Oakes. Angel slipper. Woods above Smith Claim on Rock Creek, east slope, and on mossy rocks along Boulder Creek in Bonanza Basin, south slope. Canadian. (Cr)

Subclass DICOTYLEDONEAE

14. BETULACEAE. Birch Family

Fruit a nut, enclosed in a leafy involucre....1. Corylus
Fruit a woody cone, involucre none.....2. Alnus

1. Corylus L.

1. Corylus californica (A. DC.) Rose. Western hazel. Roadside along Middle Elk Road on Coquille-Rogue River Divide; common. Humid Transition. (Ph)

2. Alnus Hill

1. Alnus rubra (Regel.) Rydb. Red alder. East slope along Rock Creek at Smith Claim; very common. Humid Transition. (Ph)

15. FAGACEAE. Oak Family.

Fruit an acorn in an open scaly cup

Staminate catkins drooping, loosely-flowered; pistillate flowers borne above the staminate catkins in axillary clusters, or solitary.....1. Quercus

Staminate catkins erect, densely-flowered; pistillate flowers borne at the base of the staminate catkins

.....2. Lithocarpus
Fruit 1-3 nuts enclosed in a spiny bur-like involucre

.....3. Castanopsis

1. Quercus L.

Tall shrub or tree.....1. Q. chrysolepis

Low shrubs

Leaves 6 to 12 cm. long.....2. Q. Sadleriana

Leaves 2 to 3 cm. long.....3. Q. Vaccinifolia

1. Quercus chrysolepis Liebm. Canyon oak. Dry open hillsides on south slope. This oak represents the Southern element in our flora. The writer has found it growing as far north as Paradise Camp north of the Umpqua River. It is known in Douglas, Curry, and Josephine counties within the state of Oregon, and ranges south nearly throughout California. Transition. (Ph)

2. Quercus Sadleriana R. Br. Sadler's oak. South slope on dry open hillsides. This rare oak is limited to the Siskiyou and Rogue River mountains, and is thus a narrow endemic. It has the most restricted range of any oak on the Pacific Coast. Another representative of the Southern element in our region. Canadian. (Ph)

3. Quercus Vaccinifolia Kell. Huckleberry or holly oak. South and west slopes to the summit. Usually considered limited to the Siskiyou of Josephine and Curry counties in Oregon and to the Trinity and southern Sierra Nevadas in California. It is quite common throughout the Rogue River Mountains, however, and the writer has found numerous stations for it in Douglas County. Canadian. (Ph)

2. Lithocarpus Blume.

1. Lithocarpus densiflora (H. & A.) Rehd. Tanbark Oak. East slope on hillside above Middle Elk Road at Smith Claim on Rock Creek; also south slope near summit. It is a shrub at this elevation. Tanbark Oak represents the Southern element in our flora, and is common from Douglas County southward. Lower Canadian and Transition. (Ph)

3. Castanopsis Spach.

1. Castanopsis chrysophylla (Dougl.) A. DC. Giant Chinquapin. South slope on open hillside, and on west slope near summit; very common. Canadian and Humid Transition. (Ph)

16. LORANTHACEAE. Mistletoe Family.

1. Arceuthobium Marsch-Bieb.

Plants parasitic on Pinus attenuata.....1. A. americanum
Plants parasitic on Tsuga heterophylla..2. A. Tsugense

1. Arceuthobium americanum Nutt. Pine mistletoe. Fairly common on southwest slope, growing parasitically on Pinus attenuata. Humid Transition. (Ph)

2. Arceuthobium Tsugense (Rosend.) G. N. Jones. Hemlock Mistletoe. East slope at Smith Claim on Rock Creek, growing on Tsuga heterophylla; occasional. Humid Transition. (Ph)

17. ARISTOLOCHIACEAE. Dutchman's Pipe Family.

1. Asarum L.

1. Asarum caudatum Lindl. Wild Ginger. Moist shady woods on south slope, usually along stream banks; fairly common. Transition and Canadian. (Cr)

18. POLYGONACEAE. Buckwheat Family.

- Leaves with stipules wanting; flowers involucrate.....
1. Eriogonum
 Leaves with stipules present and sheath-like; flowers
 not involucrate
 Sepals 6, unequal; stigmas tufted.....2. Rumex
 Sepals 5, equal; stigmas capitate.....3. Polygonum

1. Eriogonum Michx.

1. Eriogonum nudum Dougl. Naked Eriogonum. Southwest slope to summit; occasional. Transition and Upper Sonoran.

2. Rumex L.

- Plants small; leaves hastate.....1. R. Acetosella
 Plants coarse; leaves not hastate
 Margins of inner perianth parts entire.....
2. R. conglomeratus
 Margins of inner perianth parts with teeth or
 bristles.....3. R. obtusifolius

1. Rumex Acetosella L. Sour Dock. Roadside at Smith Claim on east slope; common. Introduced from Europe. (Cr)

2. Rumex conglomeratus Murr. Clustered Dock. Roadside on east slope along Rock Creek. Introduced from Europe. (H)

3. Rumex obtusifolius L. Broad-leaved Dock. Growing along Middle Elk Road on Coquille-Rogue River Divide, also on east slope along Rock Creek at Smith Claim; common. Introduced from Europe. (H)

3. Polygonum L.

1. Polygonum spargulariaeforme Meisn. Fall Knotweed. Dry hillsides on southwest slope; occasional. Transition. (Th)

19. PORTULACACEAE. Purslane Family.

1. Montia L.

- Stem leaves 2, opposite.....1. M. sibirica
 Stem leaves several, alternate
 Petals 12 to 14 mm. long; stem leaves broadly ovate
 or obicular.....2. M. flagellaris
 Petals 7 to 8 mm. long; stem leaves linear to
 oblanceolate.....3. M. parvifolia

1. Montia sibirica (L.) Howell. Candy flower.
 Growing along Rock Creek at Smith Claim on east slope;
 common. Transition. (H)

2. Montia flagellaris (Bong.) Robins. Long-branched
 montia. East slope, growing on rock cliff near summit.
 Ranges from Curry County north to Alaska, and represents
 the Northern element in our flora. Hitherto it has been
 recorded only from the coastal region. The writer first
 collected it in the Cascades in the survey of Fairview
 Mountain in the Calapooya Range, as noted in another part
 of this paper. Canadian. (H)

3. Montia parvifolia (Moc.) Greene. Small-leaved
 montia. East slope, growing on wet hillside below a
 spring, also on moist rock overlooking Smith Claim on
 Rock Creek. Somewhat similar to the preceding, but much
 more common and with wider distribution. Humid Transi-
 tion and Canadian. (H)

20. CARYOPHYLLACEAE. Pink Family.

- Sepals free or united only at the base
 Stipules present.....1. Spergularia
 Stipules none.....2. Arenaria
 Sepals united into a tube.....3. Silene

1. Spergularia J. & C. Presl.

1. Spergularia rubra (L.) J. & C. Presl. Pink mat-
 weed. East slope, growing in yard of Smith Claim along
 Rock Creek. Introduced from Europe. (Th)

2. Arenaria L.

Leaves narrowly linear, stiff; plants glandular-hairy throughout.....1. A. Nuttallii
 Leaves ovate to lanceolate, soft; plants not glandular-hairy.....2. A. macrophylla

1. Arenaria Nuttallii Pax. var. gregaria (Hel.) Jeps. On high rocky ridges of south slope; not common. This variety is found in Southern Josephine and Curry counties in our limits, and represents the Southern element. Canadian. (Ch)

2. Arenaria macrophylla Hook. Large-leaved sandwort. Open woods on south slope; common. Canadian. (H)

3. Silene L.

1. Silene campanulata Wats. Bell-shaped catchfly. Dry ridges on south slope; occasional. This is a plant of the Southern element. It ranges as far north as Lane County in Oregon and south into Mendocine County in California. Canadian. (H)

21. NYMPHAEACEAE. Water-lily Family.

3. Nymphaea (Tourn.) L.

1. Nymphaea polysepala Engl. Western yellow pond-lily. In pond on southwest slope at McCurdy Camp. Has a rather wide distribution in ponds and lakes from low to considerably high altitudes. Canadian here. (Cr)

22. RANUNCULACEAE. Buttercup Family.

Pistils numerous, 1-ovuled; fruit an achene
 Petals present.....1. Ranunculus
 Petals absent; sepals petal-like.....2. Anemone
 Pistils few, 2 to many-ovuled; fruit a follicle
 Petals spurred, showy.....3. Aquilegia
 Petals not spurred, linear.....4. Coptis

1. Ranunculus (Tourn.) L.

1. Ranunculus occidentalis Nutt. Western buttercup. Moist ground on south and east slopes, growing along Rock Creek at Smith Claim; common. Humid Transition. (H)

2. Anemone L.

Stem leaves simple..... A. deltoidea
 Stem leaves compound..... A. Adamsiana

1. Anemone deltoidea Hook. Wind-flower. South-west slope along Boulder Creek in moist open woods; fairly common. Canadian. (Cr)

2. Anemone Adamsiana East. Adam's anemone. Open woods south slope, also east slope at Smith's Claim on Rock Creek; abundant in early spring. One of the first plants to blossom on the mountain. This windflower is limited to the Siskiyou and Rogue River Mountains. Canadian. (Cr)

3. Aquilegia (Tourn.) L.

1. Aquilegia formosa Fisch. Columbine. East slope on hillside above Smith Claim, also on south slope and along banks of Rock Creek; This species is found up to the summit at 4000 feet; abundant. Canadian. (Cr)

4. Coptis Salisb.

1. Coptis laciniata Gray. Western gold-thread. South slope along Boulder Creek in Bonanza Basin and on east slope at Smith Claim on Rock Creek; common. Canadian. (Cr)

23. BERBERIDACEAE. Barberry Family.

Shrubs; leaves evergreen, spiny.....1. Berberis
 Herbs; leaves not as above
 Leaflets 3; flowers in a spike.....2. Achlys
 Leaflets many; flowers in a panicle.....3. Vancouveria

1. Berberis L.

Leaflets 9 to 17, appearing palmately veined.....
1. B. nervosa
 Leaflets 5 to 9, strongly netted-veined, under surface
 densely papillose.....2. B. Piperiana

1. Berberis nervosa Pursh. Mountain Oregon grape. Common in heavily wooded areas on east slope. Humid Transition. (Ph)

2. Berberis Piperiana (Abr.) Peck. Piper's Oregon grape. East slope; common on open hillsides and banks. First record of this species in Coos County. It appears to be the most common species in the Siskiyou and Rogue River Mountains, except for Berberis nervosa, and apparently it entirely replaces B. aquifolium in our limits. Arid Transition to Canadian. (Ph)

2. Achlys DC.

1. Achlys triphylla (Sm.) DC. Vanilla-leaf. East slope, on edge of a marsh along Rock Creek. Very abundant, forming dense patches in deep coniferous woods nearly to summit. Humid Transition to Canadian. (Cr)

3. Vancouveria Morr. & Dec.

Panicle glabrous; leaves thin..... V. hexandra
Panicle glandular-pubescent; leaves thick.....
..... V. planipetala

1. Vancouveria hexandra (Hook.) Morr. & Dec. Inside-out-flower. East slope, marshy ground along Rock Creek. This is the first report of this plant from the Rogue River Mountains in Coos County. It ranges from Curry County south into California, and would logically be expected in our region. Humid Transition. (Cr)

2. Vancouveria planipetala Calloni. Small-flowered inside-out-flower. East slope, marshy ground along Rock Creek. This is the first time the plant has been reported from the Rogue River Mountains in Coos County. It ranges from Curry County south into California and could be expected to make an appearance in our region. Humid Transition. (Cr)

24. LAURACEAE. Laurel Family.

1. Umbellularia Nutt.

1. Umbellularia californica Nutt. California laurel. South and southwest slopes; fairly common. In our area on the mountain this species assumes a shrubby form and never reaches tree size. It is known to range from Douglas County southward into California, consequently is considered a species of the Southern element. Humid Transition to Canadian. (Ph)

25. CRUCIFERAE. Mustard Family.

Pod short, less than twice as long as broad, a silicle

Silicle distinctly flattened

Seeds only 1 to each cell.....1. Lepidium

Seeds many in each cell.....2. Capsella

Silicle strongly inflated.....3. Camelina

Pod over four times longer than broad, a silique

Flowers yellow, cream colored, or orange

Some of the leaves deeply cleft or pinnately lobed

Pods with a distinct beak.....4. Brassica

Pods beakless, or nearly so.....5. Descurainia

All of the leaves entire or merely toothed.....

.....6. Erysimum

Flowers white, pink or purple

Leaves all with petioles present.....7. Dentaria

Stem leaves auriculate-clasping; flowers purplish..

.....8. Streptanthus

1. Lepidium (Tourn.) L.

1. Lepidium perfoliatum L. Yellow-flowered pepper-grass. East slope, yard of Smith Claim on Rock Creek. This species grows abundantly in eastern Oregon and is occasionally adventive in western Oregon. Introduced from Europe. (Th)

2. Capsella Medic.

1. Capsella Bursa-pastoris (L.) Medic. Shepherd's purse. East slope, yard of Smith Claim on Rock Creek. A very common weed. Introduced from Europe. (Th)

3. Camelina Crantz.

1. Camelina microcarpa Andrez. Hairy false flax. East slope, yard of Smith Claim on Rock Creek. This species is found mainly in eastern Oregon but is sparingly introduced in western Oregon. Native of Europe. (Th)

4. Brassica L.

1. Brassica campestris L. Yellow mustard. East slope, in yard of Smith Claim on Rock Creek. An abundant weed introduced from Europe. (Th)

5. Descurainia Webb & Barth.

1. Descurainia pinnata (Walt.) Britt. var. filipes Gray. Tansy-mustard. East slope, in yard of Smith Claim on Rock Creek. Dry ground mainly in eastern Oregon. This species may be adventive in our region. (Th)

6. Erysimum (Tourn.) L.

Annual; pods 1 mm. wide.....1. E. repandum
 Biennial; pods 2 mm. wide.....2. E. concinnum

1. Erysimum repandum L. Bushy wallflower. East slope, in yard of Smith Claim on Rock Creek. Very common in Eastern Oregon, sparingly introduced in southern Oregon west of the Cascades. Introduced from Europe. (Th)

2. Erysimum concinnum East. Coast wallflower. South slope on Rogue River Divide. This species is a fairly common coastal wallflower in Curry County where it grows on hillsides and open slopes. It is considered a member of the California element in our flora. Humid Transition. (H)

7. Dentaria L.

1. Dentaria californica Nutt. California toothwort. Moist open hillsides on east slope along Coquille-Rogue River Divide. This species ranges from Coos County, Oregon to Mendocino County, California. It represents the Southern element in the flora of our region. Transition. (Cr)

8. Streptanthus Nutt.

1. Streptanthus tortuosus Kell. var. orbiculatus (Greene) H. M. Hall. Twisted streptanthus. Rock slides on east slope near summit. The first record of its occurrence north of Rogue River in Coos County. Canadian. (Th)

26. SARRACENIACEAE. Pitcher-plant Family.

1. Chrysamphora Greene

1. Chrysamphora californica (Torr.) Greene. California pitcher-plant. Very abundant at all stations on the mountain in marshy and boggy ground. It occurs on the southwest slope at McCurdy Camp in a very large

marsh and is very common at Smith Claim on Rock Creek. It is a member of the Southern element in our flora, ranging from Lincoln County south to northern California. Canadian here. (Cr)

27. CRASSULACEAE. Stonecrop Family.

1. Sedum L.

Flowers yellow.....1. S. spathulifolium
Flowers pink or reddish.....2. S. laxum

1. Sedum spathulifolium Hook. Broad-leaved stonecrop. High dry rocky ridges on south slope and on southeast slope along trail to Brushy Mountain. Ours is the first record of this plant growing north of the Rogue River. It is much more common in southern Curry County. Canadian. (Ch)

28. SAXIFRAGACEAE. Saxifrage Family.

Herbs

Stamens 5 or fewer

Stamens 3 or 2; petals 4, linear; flowers purple...
.....1. Tolmiea

Stamens 5

Petals cleft, lobed or toothed.....2. Mitella

Petals entire

Placentae axial.....3. Boykinia

Placentae parietal or nearly basal.4. Heuchera

Stamens 10

Placentae axial, ovary 2-loculed.....5. Saxifraga

Placentae parietal; ovary 1-loculed

Petals cleft, lobed or toothed.....6. Tellima

Petals entire, almost linear.....7. Tiarella

Shrubs

Leaves opposite.....8. Whipplea

Leaves alternate.....9. Ribes

1. Tolmiea T. and G.

1. Tolmiea Menziesii (Pursh) T. and G. Youth-on-age. Along Rock Creek on east slope, and at a spring near Smith Mine; not uncommon. Humid Transition and Canadian. (H)

2. Mitella L.

1. Mitella ovalis Greene. Small bishop's cap.
Along small creek on wooded southeast slope; common.
Humid Transition. (H)

3. Boykinia Nutt.

1. Boykinia elata (Nutt.) Greene. Slender boykinia.
East slope along banks of Rock Creek at Smith Claim;
abundant. Humid Transition. (Cr.)

4. Heuchera L.

1. Heuchera micrantha Dougl. Small-flowered alum-
root. Common on rock cliffs along Coquille-Rogue River
Divide. Humid Transition. (H)

5. Saxifraga L.

Leaves orbicular to reniform; doubly dentate.....

Leaves ovate to oblong, cuneate at the base, coarsely
and evenly crenate.....

1. S. Mertensiana

2. S. Howellii

1. Saxifraga Mertensiana Bong. Merten's saxifrage.
South slope, on mossy rocks along Boulder Creek in Bo-
nanza Basin; very common. Canadian. (H)

2. Saxifraga Howellii Greene. Howell's saxifrage.
South slope, on wet mossy rocks along Boulder Creek in
Bonanza Basin; quite common. A very rare and local spe-
cies, whose type locality is on the Coquille River in
Oregon. Apparently limited to Coquille and Rogue River
watersheds in our region. Has been collected rarely. (H)

6. Tellima R. Br.

1. Tellima grandiflora (Pursh) Dougl. Fringe-cups.
Common on wet cliffs and hillsides near springs and
watercourses on Coquille-Rogue River Divide. Humid Trans-
ition. (H)

7. Tiarella L.

Leaves simple, toothed.....1. T. unifoliata
Leaves compound, 3 leaflets.....2. T. trifoliata

1. Tiarella unifoliata Hook. Cool-wort. East slope along Rock Creek at Smith Claim; abundant. Canadian. (H)

2. Tiarella trifoliata L. Three-leaved cool-wort. Along Rock Creek at Smith Claim on east slope; common. A representative of the Northern element in our flora, ranging from the coastal region of Central Oregon northward to Alaska and into Asia. Ours is perhaps the extreme southern limit of its distribution. Humid Transition. (H)

8. Whipplea Torr.

1. Whipplea modesta Torr. Whipple-vine. East and southeast slopes on wooded hillsides; common. A representative of the Southern element in our flora, reaching its northern limit in the Olympic Peninsula. Humid Transition (Ch)

9. Ribes L.

Stems without spines or prickles

Flowers bell-shaped, rose-pink, showy.....

1. R. glutinosum

Flowers saucer-shaped, greenish, inconspicuous.....

2. R. bracteosum

Stems bearing spines at the nodes.....3. R. cruentum

1. Ribes glutinosum Benth. South slope along Boulder Creek in Bonanza Basin, also common along Rock Creek and near summit on east slope; frequent. This species ranges into Southern Oregon from California. It differs from R. sanguineum in lighter-colored flowers, and leaves without ventral tomentum. Humid Transition. (Ph)

2. Ribes bracteosum Dougl. Stinking black currant. East slope along Rock Creek below Smith Claim, and south slope along banks of Boulder Creek in Bonanza Basin. Canadian. (Ph)

3. Ribes cruentum Greene. Shiny-leaved gooseberry. Open hillsides along Middle Elk Road on Coquille-Rogue River Divide. This species represents the Southern element in our region, occurring on dry mountain ridges as far north as Lane County. Transition. (Ph)

29. ROSACEAE. Rose Family.

Shrubs

Fruits enclosed in an urn-shaped, globose receptacle

.....1. Rosa

Fruits not enclosed as above

Ovary inferior; fruit a pome.....2. Amelanchier

Ovary not inferior

Fruit dry, a follicle.....3. Holodiscus

Fruit fleshy, an aggregate of drupelets.....

.....4. Rubus

Herbs.....5. Horkelia

1. Rosa L.

1. Rosa gymnocarpa Nutt. Wood rose. Wooded hillsides along Rock Creek above Smith Claim on east slope; scattered. Transition and Canadian. (Ph)

2. Amelanchier Medic.

1. Amelanchier pallida Greene. Pale serviceberry. Growing at summit and also in thickets on east slope on hillsides above Rock Creek; occasional. This is the first record of the plant from Coos County. It extends into our region from the Siskiyou Mountains where it is more common.

3. Holodiscus Maxim.

1. Holodiscus discolor (Pursh) Maxim. Ocean spray. Open hillsides on east and southwest slopes; common. Transition. (Ph)

a. Holodiscus discolor (Pursh) Maxim. var. delnortensis Ley. Del Norte ocean spray. Fairly common on dry rocky summits. This plant ranges from northern California to southern Oregon in the Siskiyou Mountains. This is the first record of its occurrence in the Rogue River Mountains but it would be expected in our region. Canadian. (Ph)

4. Rubus L.

- Stems creeping or trailing.....1. R. vitifolius
 Stem erect
 Flowers red, rarely pinkish; fruit yellowish orange,
 rarely dark red.....2. R. spectabilis
 Flowers white
 Leaves simple, palmately lobed; fruit red.....
3. R. parviflorus
 Leaves compound-pinnate; fruit black
 Leaflets usually 3, lanate beneath; stems hollow,
 very glaucous; fruit deciduous at maturity.....
4. R. leucodermis
 Leaflets laciniate; stems not glaucous; fruit
 persistent at maturity.....5. R. laciniatus

1. Rubus vitifolius C. & S. Wild blackberry.
 Common along Rock Creek and roadsides on Coquille-Rogue
 River Divide. Humid Transition. (H)

2. Rubus spectabilis Pursh. Salmon-berry. East
 slope along banks of Rock Creek; fairly common. Humid
 Transition and Coastal Canadian. (H)

3. Rubus parviflorus Nutt. Thimbleberry. Common
 along Rock Creek near Smith Claim. Humid Transition.
 (H)

4. Rubus leucodermis Dougl. Western blackcap.
 Along banks of Rock Creek on east slope and on hillsides,
 Coquille-Rogue River Divide at junction of the Middle
 Elk Road; common. Transition. (H)

5. Rubus laciniatus Willd. Evergreen blackberry.
 At Smith Mine on east slope. Common throughout western
 Oregon where it is an escape from cultivation. (H)

5. Horkelia C. & S.

1. Horkelia sericata Wats. Dry ridges and summits
 of south slope; fairly common. It is known only from
 southwestern Oregon and adjacent California. This is
 probably the northern limit for this species although it
 is common in Curry County farther south on high dry
 ridges and sterile flats. The distribution of this spe-
 cies is very limited and it is thus a narrow endemic.
 Canadian. (H)

30. LEGUMINOSAE. Pea Family.

Leaves palmately compound

Stamens all free.....1. Thermopsis

Stamens not all free

Leaflets 5 or more, entire.....2. Lupinus

Leaflets 3 (in ours), not entire.....3. Trifolium

Leaves pinnately compound

Foliage conspicuously glandular-dotted; leaves with only 3 leaflets.....4. Psoralea

Foliage not glandular-dotted; leaves usually with more than 3 leaflets

Tendrils none.....5. Lotus

Tendrils usually present

Style filiform, ending in a hairy, capitate stigma6. Vicia

Style flattened, hairy only on the upper surface..7. Lathyrus

1. Thermopsis R. Br.

1. Thermopsis gracilis How. Slender thermopsis. South slope, on a roadside cut, and along Middle Elk Road on east slope, dry open hillsides; occasional. Humid Transition. (H)

2. Lupinus (Tourn.) L.

1. Lupinus albicaulis Dougl. White-stemmed lupine. South and southwest slopes, in open woodlands; infrequent. Humid Transition. (H)

3. Trifolium L.

Annual; involucre not deeply cleft; flowers light pink..

.....1. T. microcephalum

Perennial; involucre deeply cleft; flowers purple.....

.....2. T. Willdenovii

1. Trifolium microcephalum Pursh. Woolly clover. Open rock slide along south slope; occasional. Transition. (Th)

2. Trifolium Willdenovii Lehm. Marsh clover. East slope, in yard of Smith Claim on Rock Creek. This is the common coastal clover but it also occurs inland; not common. Humid Transition. (H)

4. Psoralea L.

1. Psoralea physodes Dougl. California tea. Roadside along Middle Elk Road on Coquille-Rogue River Divide; infrequent. Humid Transition. (H)

5. Lotus L.

Annuals; flowers 1 or 2, axillary

Calyx tube 1 mm. long, teeth shorter than the tube;

 pods constricted between the seeds...1. L. micranthus

Calyx tube 1.5 to 2 mm. long, teeth twice as long as

 the tube; pods not constricted.....2. L. americanus

Perennials; flowers in umbels

Flowers pinkish or purplish, 1 cm. or more long; leaves nearly glabrous

Stem strongly fistulose; leaves glaucous; flowers 8

 to 30; peduncles shorter than the leaves.....

.....3. L. crassifolius

Stem not fistulose; leaves not glaucous; flowers 5

 to 10; peduncles at least equal to the leaves....

.....4. L. stipularis

Flowers yellowish, less than 1 cm. long; leaves

 canescent.....5. L. oblongifolius

1. Lotus micranthus Benth. Slender trefoil. In yard of Smith Claim along Rock Creek on east slope; fairly common. Humid Transition. (Th)

2. Lotus americanus (Nutt.) Bisch. Spanish clover. Southeast slope along Steffans Meadow trail, and on hillside in open woods along edge of Rock Creek below Smith Claim, east slope; common. Humid Transition. (Th)

3. Lotus crassifolius (Benth.) Greene. Pink trefoil. Dry open woods of south slope; rare. This species barely reaches the state of Washington at its northern limit. It is more common southward into California. Arid Transition. (H)

4. Lotus stipularis Greene var. subglaber Ottl. Thicket trefoil. Open south slope and roadside banks above Rock Creek on east slope; very common. This trefoil is more common than the preceding species in our limits and northward into Washington. It is often mistaken for L. crassifolius. Arid Transition. (H)

5. Lotus oblongifolius Greene var. Torreyi (Gray) Ottl. East slope in moist and marshy places along Rock Creek and its tributaries; common. This species represents the Southern element in our flora. It reaches its northern limit in Lane County. Canadian. (H)

6. Vicia L.

1. Vicia californica Greene. California vetch. East slope along Rock Creek at Smith Claim; common. This plant comes into Oregon from California and reaches its northern limit in southern Lane County. Arid transition. (H)

7. Lathyrus L.

1. Lathyrus californicus Wats. California pea. East slope along Rock Creek at lower end of Smith Claim. Quite common along watercourses. Our region is probably the northern limit of its range. Transition. (H)

31. POLYGALACEAE. Milkwort Family.

1. Polygala (Tourn.) L.

1. Polygala californica Nutt. California milkwort. Thickets and dry hillsides on south and southwest slopes; scattered. Enters our limits from California. This is probably as far north as this species ranges. Arid Transition. (H)

32. ANACARDIACEAE. Cashew Family.

1. Rhus L.

1. Rhus diversiloba T. and G. Poison oak. Not common at this elevation but a small patch was noted on a rock slide on northwest slope. Humid Transition. (Ph)

33. ACERACEAE. Maple Family.

1. Acer L.

Leaves 7- to 9-lobed; wings of fruit spreading at right angles to the stalk.....1. A. circinatum
 Leaves 3- to 5-lobed; wings of fruit ascending.....
2. A. Douglasii

1. Acer circinatum Pursh. Vine maple. Hillside along Middle Elk Road on Coquille-Rogue River Divide; frequent. Humid Transition to Canadian. (Ph)

2. Acer Douglasii Hook. Dwarf maple. Brushy hillsides below summit on north and east slopes; fairly common. Canadian. (Ph)

34. RHAMNACEAE. Buckthorn Family.

Flowers yellowish green; fruit berry-like..1. Rhamnus
 Flowers blue or white; fruit a capsule.....2. Ceanothus

1. Rhamnus (Tourn.) L.

1. Rhamnus californica Esch. var. occidentalis
 How. Coffee Berry. Common ground cover on all open slopes and hillsides in this area. East slope along edge of wooded hillside, southeast slope and at summit. This is its first report from northern Curry and southern Coos counties, and this may well be the northern limit of its range. Endemic to the Siskiyou and Rogue River Mountains. A representative of the California element. Arid Transition. (Ph)

2. Ceanothus L.

Tall erect shrub.....1. C. integerrimus
 Prostrate shrub forming mats.....2. C. pumilus

1. Ceanothus integerrimus H. & A. Deer brush. South slope, forming thickets on hillside and along roads; occasional. Transition. (Ph)

2. Ceanothus pumilus Green. Dwarf ceanothus. South and southwest slopes up to summit, forming dense mats. Previously known only from the Siskiyou Mountains where it apparently supplants C. prostratus, and is a narrow endemic. The type locality is "Oh hillsides near Waldo, Oregon, April 1892. Thomas Howell".

35. MALVACEAE. Mallow Family.

1. Sidalcea Gray.

1. Sidalcea malvaeflora Gray var. californica (Gray) Jeps. Mallow sidalcea. Roadside along Middle Elk Road on Coquille-Rogue River Divide and on east slope along Rock Creek below Smith Claim; quite common. This plant is a coastal species that comes into our area. It occurs from Curry County southward to California, and is a representative of the Southern element in the flora of our region. Transition. (H)

36. HYPERICACEAE. St. John's Wort Family.

1. Hypericum L.

1. Hypericum perforatum L. St. John's wort. Roadside Middle Elk Road along Coquille-Rogue River Divide; common. Introduced from Europe. (H)

37. VIOLACEAE. Violet Family.

Stem creeping and prostrate; leaves evergreen.....

.....1. V. sempervirens
Stem not creeping, erect; leaves not evergreen

Flowers yellow; leaves cordate....2. V. glabella

Flowers purple and white; leaves cuneate.....

.....3. V. cuneata

1. Viola sempervirens Greene. Evergreen violet. Southwest slope at McCurdy Camp; common. Humid Transition. (H)

2. Viola glabella Nutt. Wood violet. East slope along Rock Creek at Smith Claim; fairly common. Canadian. (H)

3. Viola cuneata Wats. Wedge-leaved violet. Dry open woods and thickets on south and southwest slopes up to summit; common. This violet is found only in the mountains of Coos, Curry and Josephine counties in Oregon and in the northern counties of California. Our record is the first one for Coos County and the Rogue River Mountains.

38. ONAGRACEAE. Evening Primrose Family.

1. Epilobium L.

Flowers showy; petals spreading, 15-18 mm. long, entire

.....1. E. angustifolium
Flowers small; petals not spreading, 3-10 mm. long,
cleft

Annuals; stigma 4-cleft

Herbage nearly glabrous; petals 5 to 7 mm. long.....

.....2. E. paniculatum

Herbage crisped puberulent; petals 3 to 4 mm. long..

.....3. E. minutum

Perennials; stigma entire; plants 3 to 9 dm. tall.....

.....4. E. adenocaulon

1. Epilobium angustifolium L. Fireweed. Common on east slope along Rock Creek at Smith Claim. Transition to Canadian. (H)

2. Epilobium paniculatum Nutt. Tall willow herb. East slope along roadside at Smith Claim on Rock Creek; quite common. Transition. (Th)

3. Epilobium minutum Lindl. Small-flowered willow herb. East slope, on roadside bank along edge of Rock Creek above Smith Claim; very common. Transition. (Th)

4. Epilobium adenocaulon Hausskn. Common willow herb. East slope, roadside ditch near a spring, moist ground; not common. Transition. (H)

39. ARALIACEAE. Ginseng Family.

1. Aralia L.

1. Aralia californica Wats. California spikenard. Along Middle Elk Road on Coquille-Rogue River Divide; occasional. Transition. A species of the Southern element in our flora. (H)

40. UMBELLIFERAE. Parsley Family.

- Flowers yellow.....1. Lomatium
 Flowers white
 Fruits winged, strongly flattened dorsally
 Low plants; leaves basal.....1. Lomatium
 Tall plants; cauline leaves present.....
 2. Angelica
 Fruits not winged; not flattened dorsally
 Leaflets linear, few.....3. Perideridia
 Leaflets broader, ternate, deeply incised.....
 4. Ligusticum

1. Lomatium Raf.

- Flowers white.....1. L. macrocarpum
 Flowers yellow
 Leaves triternate; mature fruit about 10 mm. long;
 wings narrower than the body....2. L. triternatum
 Leaves bipinnate; mature fruit about 15 mm. long;
 wings as wide as the body.....3. L. Martindalei

1. Lomatium macrocarpum (Nutt.) C. & R. Gray
 hog fennel. Common on high dry rocky ridges and slopes
 from 3700 to 4000 feet. Canadian here. (H) This
 species is rare west of the Cascades, but more common
 to the east of our region.

2. Lomatium triternatum (Pursh) C. & R. Narrow-
 leaved hog fennel. On north and south slopes near
 summit. Canadian. (H)

3. Lomatium Martindalei C. & R. Martindale's
 hog fennel. Along south slope and at summit. This
 plant occurs in the high Cascades and on the summits
 of the peaks in the Coast Range, especially farther
 south. Canadian. (H)

2. Angelica L.

1. Angelica arguta Nutt. Shining angelica. East
 slope thickets along Rock Creek at Smith Claim. This
 species ranges as far south as Josephine County in
 Oregon. It is a member of the Northern element in our
 flora. Transition. (H)

3. Perideridia Reichb.

1. Perideridia oregana (Nutt.) Math. Oregon false caraway. Southwest slope along Steffans Meadow trail, and growing in dry meadows on south slope; abundant. A plant of the Southern element, it is not known from Washington, although it is found in the Willamette Valley.

4. Ligusticum L.

1. Ligusticum apiifolium (Nutt.) Gray. Celery-leaved lovage. South slope and along Rock Creek at Smith Claim on east slope. This species ranges as far south as southern Curry County. It is a plant of the Northern element in our flora.

41. GARRYACEAE. Silk Tassel Family.

1. Garrya Dougl.

1. Garrya buxifolia A. Gray. Box-leaved garrya. West slope near summit, and south slope on dry open hillside. This is the northern known limit for this plant. Canadian. (Ph)

42. CORNACEAE. Dogwood Family.

1. Cornus L.

1. Cornus Nuttallii Aud. Western flowering dogwood. Common on east slope just below summit, also one tree growing on a hillside at junction of the Middle Elk Road, Coquille-Rogue River Divide. Humid Transition to Canadian in our region. (Ph)

43. ERICACEAE. Heath Family.

Ovary superior

Herbs or sometimes shrubby at base

Plants with green leaves

Flowers in corymbs or umbels; filaments dilated at or below the middle.....1. Chimaphila

Flowers in racemes; filaments not dilated.....

.....2. Pyrola

- Plants without green leaves
 Style conspicuously long-exserted..2. Pyrola
 Style not long-exserted
 Petals none; plant red and white striped.....
3. Allotropa
 Petals present
 Petals distinct, nearly to the base
 Plant yellowish; ovary 4 to 5 loculed.....
4. Hypopitys
 Plant whitish; ovary 1 loculed.....
5. Pleuricospora
 Petals united, almost to the tip
 Plant reddish; ovary 4 to 5 loculed.....
6. Pterospora
 Plant white; ovary 1 loculed.7. Newberrya
 Shrubs or trees
 Shrubs
 Petals distinct.....8. Ledum
 Petals united
 Flowers large, very showy, over 2 cm.....
9. Rhododendron
 Flowers small, under 1 cm.
 Calyx becoming enlarged and fleshy; bark not
 reddish.....10. Gaultheria
 Calyx small and dry; bark red.11. Arctostaphylos
 Trees.....12. Arbutus
 Ovary inferior.....13. Vaccinium

1. Chimaphila Pursh.

- Leaves wider above the middle.....1. C. umbellata
 Leaves wider below the middle.....2. C. Menziesii

1. Chimaphila umbellata Nutt. Prince's pine. East and south slopes, in dense shady woods, also on west slope nearly to summit; common. Canadian. (Ch)

2. Chimaphila Menziesii (R. Br.) Spreng. Menzies' prince's pine. Woods along trail on south slope; infrequent. Canadian. (Ch)

2. Pyrola L.

- Plants with green leaves
 Style straight, erect; flowers in a one-sided raceme
1. P. secunda
 Style curved downward; flowers not as above
 Flowers red or pinkish.....2. P. bracteata

- Flowers yellowish white
 Leaves white-veined, elliptic to ovate.....
3. P. picta
 Leaves green or only very slightly white-veined,
 lanceolate to oblanceolate....4. P. dentata
 Plants with leaves reduced to bracts only
 Flowers red or pinkish.....5. P. aphylla
 Flowers yellowish white.....4. P. dentata

1. Pyrola secunda L. One-sided wintergreen. Open woods on south slope; not common. Canadian. (H)

2. Pyrola bracteata Hook. Leathery shin-leaf. Woods of south and southwest slopes; quite common. Our area is near the southern range of this species, but it grows northward to British Columbia. Canadian. (H)

3. Pyrola picta Smith. White-veined shin-leaf. Dry open coniferous woods of south slope; very common. Canadian. (H)

4. Pyrola dentata Smith. Toothed shin-leaf. Southwest slope, in woods near Boulder Creek on Parker Claim, also on east slope at spring below look-out station; very common. Canadian. (H)

a. Pyrola dentata Smith var. integra Gray. Entire-leaved shin-leaf. Hillside above Middle Elk Road on Coquille-Rogue River Divide; fairly rare. This plant differs from the above in having entire leaves, or sometimes the leaves are reduced or even wanting in this variety. Canadian. (H)

5. Pyrola aphylla Smith. Leafless wintergreen. Open woods of south and southwest slopes; occasional. This species has a very wide distribution but is apparently never abundant. Canadian. (H)

3. Allotropia T. & G.

1. Allotropia virgata T. & G. Barber pole. Coniferous woods on south and southeast slopes; occasional. This plant grows in colonies. Canadian. (Cr)

4. Hypopitys Adans.

Leaves entire or only slightly erose...1. H. latisquama
 Leaves distinctly erose, the upper fimbriate.....
2. H. fimbriata

1. Hypopitys latisquama Rydb. Broad-leaved pinesap. Coniferous woods on southeast slope and on south slope along trail to summit; rare. This species barely reaches California. It is a plant of the Northern element. Canadian. (Cr)

2. Hypopitys fimbriata Gray. Fringed pinesap. Open coniferous woods on south and east slopes; rare. A plant of the Southern element. It has never been recorded from the state of Washington. Canadian. (Cr)

5. Pleuricospora Gray.

1. Pleuricospora fimbriolata Gray. Fimbriate pinesap. Coniferous woods of south slope; rare. Canadian. (Cr)

6. Pterospora Nutt.

1. Pterospora andromedia Nutt. Dry coniferous woods on west slope near summit; rare. The plant grows in colonies and dies after flowering. Canadian. (Cr)

7. Newberrya Torr.

1. Newberrya congesta Torr. Newberrya. South slope along Steffans Meadow trail. Rare in dense coniferous woods. This plant is very seldom collected. It forms large colonies in locations where it occurs. Canadian. (Cr)

8. Ledum L.

1. Ledum columbianum Piper. Labrador tea. Common in marshes on east slope and on southwest slope at McCurdy Camp. It is found in locations that are quite boggy, growing with Chrysamphora californica. Humid Transition and Canadian. (Ph)

9. Rhododendron L.

Flowers white or pink; stamens 5.....1. R. occidentale
Flowers rose-purple, except in forma album; stamens 10
.....2. R. macrophyllum

1. Rhododendron occidentale (T. & G.) Gray. Western azalea. Southwest slope at McCurdy Camp and on south slope. Also quite common along banks of Rock Creek above Smith Claim. This beautiful shrub occurs as far north as the mouth of the Umpqua River along the coast. It ranges farther inland southward in California. Humid Transition. (Ph)

2. Rhododendron macrophyllum G. Don. Rhododendron. This is one of the commonest shrubs at upper elevations. East and south slopes almost to summit, and on southwest slope at McCurdy Camp. Humid Transition to Canadian. (Ph)

a. Rhododendron macrophyllum G. Don forma album Rehder. White rhododendron. This rare and beautiful form, of which only one plant has been found on the mountain, is well worth cultivation. Southwest slope. Canadian. (Ph)

10. Gaultheria L.

Leaves 3 cm. or less long; fruit scarlet.....

1. G. ovatifolia

Leaves 5 to 12 cm. long; fruit black.....

2. G. Shallon

1. Gaultheria ovatifolia Gray. Slender gaultheria. Southwest slope on saddle between Iron Mountain and Ranger Peak, open west slope nearly to summit, and open woods on south slope. Reaches its known southern limit in the Siskiyou Mountains of Oregon. Canadian. (Ch)

2. Gaultheria Shallon Pursh. Salal. Woods on east slope above Smith Claim, and on west slope; very common. Humid Transition. (Ph)

11. Arctostaphylos Adans.

Low matted or creeping shrubs.....1. A. nevadensis

Erect bushy shrubs

Young twigs with coarse blackish glandular hairs....

2. A. columbiana

Young twigs without black glandular hairs

Branchlets glandular

Leaves dense, more than twice as long as wide....

3. A. viscosissima

Leaves not dense, about twice as long as wide....

4. A. patula

Branchlets not glandular.....5. A. canescens

1. Arctostaphylos nevadensis A. Gray. Pine-mat manzanita. West slope near summit, also south slope in open coniferous woods; fairly common. Occurs near coast in Curry County. Canadian. (Ch)
 2. Arctostaphylos columbiana Piper. Brushy hillsides on south slope; common. The most common and widespread manzanita in our region. Humid Transition. (Ph)
 3. Arctostaphylos viscosissima Peck. Viscid manzanita. Much branched shrub, 6 to 12 dm. high; branchlets slender, dense, pubescent, hairs short spreading and very glandular; leaves narrow elliptic or linear oblong or oblanceolate, very mucronate, dense viscid-pubescent or nearly glabrous in age, 2 to 3 cm. long; petioles 5 mm. long or leaves nearly sessile; panicles small, 2 to 6 divisions, minutely glandular; bracts pubescent, 2 to 4 mm. long; pedicels glabrous, 2 to 5 mm. long; corolla pink 4 to 5 mm. long; fruit globose or depressed globose, 4 to 5 mm. wide; nutlets sometimes joined together in pairs. Dry open woods on south slope. Type: Peck 8974, from dry rocky summit of Bald Mountain, 5 miles east of mouth of Euchre Creek, Curry County, Oregon, July 26, 1919. Our collection on Iron Mountain is the first since the type collection. Ours was the first collection of flowers, since the type was in fruiting condition. Bald Mountain is approximately 12 miles due west of Iron Mountain and in the same range of mountains. A wider distribution of this interesting plant is to be expected as the region is explored more intensively. Canadian. (Ph)
 4. Arctostaphylos patula Greene. Green manzanita. Dry open hillside on south slope; occasional patches. Has a very wide range but is not abundant in our area. Canadian. (Ph)
 5. Arctostaphylos canescens Eastw. Hoary manzanita. West slope near summit; fairly common. Ranges from Douglas County southward to California, overlapping with A. columbiana in this region. Humid Transition. (Ph)
12. Arbutus L.
1. Arbutus Menziesii Pursh. Madrono. Hillside, southwest slope, and along Middle Elk Road on Coquille-Rogue River Divide; occasional. Humid Transition. (Ph)

13. Vaccinium L.

Leaves evergreen.....1. V. ovatum

Leaves not evergreen

Leaves entire except on young growth; berry bright

red.....2. V. parvifolium

Leaves sharply serrate; berry dark red to black.....

.....3. V. membranaceum

1. Vaccinium ovatum Pursh. Evergreen huckleberry.
Common on southwest slope, forming thickets. Canadian.
(Ph)

2. Vaccinium parvifolium Smith. Red huckleberry.
Very common on all slopes nearly to summit. Canadian
here. (Ph)

3. Vaccinium membranaceum Dougl. Mountain huckle-
berry. Abundant on north slope below summit, the only
station recorded on this mountain. Not previously known
from the coast mountains, though common in the Cascades.
Canadian. (Ph)

44. PRIMULACEAE. Primrose Family.

1. Trientalis L.

Leaves acute, clustered at summit of stem.....

.....1. T. latifolia

Leaves obtuse, scattered along stem or both scattered
and clustered.....2. T. arctica

Trientalis latifolia Hook. Broad-leaved star-flower.
Open woods on south slope, roadside marshes and along
banks of Rock Creek on east slope; fairly common. Widely
distributed. Canadian. (Cr)

Trientalis arctica Fisch. Northern star-flower.
East slope along Rock Creek, in wet boggy area with
Chrysamphora californica. Representative of the Northern
element, and reaches probably its southern limit in Curry
County.

45. GENTIANACEAE. Gentian Family.

1. Gentiana L.

1. Gentiana Menziesii Griseb. Spreading gentian. East slope along roadside near summit; west slope; and southwest slope at McCurdy Camp. Principally a coastal species, formerly limited to Curry County. This is its first record from the Rogue River Mountains and Coos County. Canadian here. (H)

46. APOCYNACEAE. Dogbane Family.

1. Apocynum L.

1. Apocynum androsaemifolium L. Dogbane. Open brushy west and southwest slopes near summit; not common. A species with a very wide distribution. Transition to Canadian. (Cr)

47. CONVULVULACEAE. Morning-glory Family.

1. Convolvulus polymorphus Greene. Pale morning-glory. East slope above Smith Claim and along Middle Elk Road on Coquille-Rogue River Divide; rare. This species enters our limits from northern California, and has a rather spotty distribution in Oregon. It is common along the Rogue River between Agness and Illahe, is reported from Deschutes Canyon at Maupin, Wasco County, and the writer has collected it in the Warner Mountains, Lake County, Oregon. Arid Transition. (Cr)

48. POLEMONIACEAE. Phlox Family.

Perennial; corolla 15 to 20 mm. wide.....1. Phlox
Annual; corolla 5 to 8 mm. wide.....2. Collomia

1. Phlox diffusa Benth. var. longistylis Wher. Mountain Phlox. Open coniferous woods on southeast slope and on east slope near summit; occasional. This is the common phlox of the high Cascade Mountains from Lane County northward, and this is its southernmost record in the Coast Range. It probably intergrades into typical Phlox diffusa southward in the Siskiyou Mountains, intermediate regions must be studied more intensively, since the range of the numerous varieties is too imperfectly known. Canadian. (Ch)

2. Collomia heterophylla Hook. Vari-leaved collomia. Hillside above Middle Elk Road on east slope, open woods; common. Humid Transition. (Th)

49. HYDROPHYLLACEAE. Water-leaf Family.

1. Phacelia Juss.

1. Phacelia corymbosa Jepson. Dry open hillside on south slope; occasional. The distribution of this California plant in Oregon is not well known. Arid Transition. (H)

50. BORAGINACEAE. Borage Family.

1. Cryptantha Lehm.

1. Cryptantha Hendersoni (Nels.) Piper. Large-flowered cryptantha. East slope, yard of Smith Claim on Rock Creek; not common. Transition. (Th)

51. LABIATAE. Mint Family.

Nutlets distinctly united below, attached on the inside; stamens long exserted, curved.....1. Trichostema
Nutlets almost separate; attached at the base; stamens not as above
Calyx teeth conspicuously unequal.....2. Prunella
Calyx teeth nearly equal
Plants creeping; flowers axillary.....3. Satureja
Plants erect; flowers in dense terminal heads.....
.....4. Monardella

1. Trichostema L.

1. Trichostema lanceolatum Benth. Vinegar weed. Dry open hillsides on south slope, covering large areas in open grassy meadows. Arid Transition. (Th)

2. Prunella L.

1. Prunella vulgaris L. Heal-all. Moist ground along Rock Creek at Smith Claim on east slope; common. Introduced from Europe. (H)

3. Satureja L.

1. Satureja Douglasii (Benth.) Brig. Oregon tea. Southwest slope along Steffans Meadow trail. Transition. (Ch)

4. Monardella Benth.

1. Monardella villosa Benth. var. subserrata (Greene) Epl. Coyote mint. East slope on summit of Coquille-Rogue River Divide. Known as far north as the Umpqua River Valley; quite common in the Rogue River Valley just to the south of Iron Mountain.

52. SCROPHULARIACEAE. Figwort Family.

Upper lip of the corolla helmet-shaped.....6. Castilleja
Upper lip of the corolla not helmet-shaped

Corolla nearly regular

Anther-bearing stamens 5.....1. Verbascum

Anther-bearing stamens 2

Corolla rotate; leaves opposite, all cauline.....

.....4. Veronica

Corolla campanulate; leaves mostly basal; the few cauline leaves alternate.....5. Synthyris

Corolla irregular, strongly 2-lipped; stamens 4, or if 5, one sterile

Stamens 5, one sterile.....2. Penstemon

Stamens 4, all fertile.....3. Mimulus

1. Verbascum L.

1. Verbascum Blattaria L. Moth mullein. Open meadow on southwest slope along Steffans Meadow trail; quite common. Introduced from Europe. (H)

2. Penstemon Mitch.

Flowers rose-pink to reddish.....1. P. rupicola
Flowers lavender to bluish.....2. P. Rattanii

1. Penstemon rupicola How. Rocky point on south slope, also on west slope and at the summit. This species has previously been known only from the Cascades. It has not been reported from the Siskiyou Mountains, although the writer has collected it on high mountain peaks as far south as Snow Camp Mountain in central Curry County. Canadian. (Ch)

2. Penstemon Rattanii Gray. Rattan's penstemon. Open south slope on gravelly hillside, and east slope along Middle Elk Road, Coquille-Rogue River Divide; occasional colonies. This species does not range much further north than our region, but is not uncommon in the southern Coast Mountains. The writer has collected it on Snow Camp Mountain in central Curry County. Canadian. (Ch)

3. Mimulus L.

Annual; corolla 8 to 12 mm. long, purple spot in the middle of the lower lip.....1. M. Alsinoides
Perennial; corolla 1.5 to 2 cm. long, purple spot
not present.....2. M. moschatus

1. Mimulus Alsinoides Dougl. Baby monkey-flower. East slope, on face of moist cliff; not common. Canadian here. (Th)

2. Mimulus moschatus Dougl. Musk flower. East slope, in roadside ditch and along Rock Creek at Smith Claim; widespread in wet places. Transition. (H)

4. Veronica L.

1. Veronica americana. Common speedwell. Moist ground along slow running streams on south slope; common. Transition. (Ch)

5. Synthyris Benth.

1. Synthyris reniformis Benth. var. cordata Gray. North slope near summit; common. This species is very different in appearance from typical S. reniformis. It has unusually long leaves, in many cases twice as long as wide. The flowers in general are larger and more showy and a much deeper blue. The plant ranges from northern California to Josephine, Curry and Douglas counties in Oregon. This form is the only one found in our area. It has not been collected previously from the Rogue River Mountains. Humid Transition to Canadian. (H)

6. Castilleja Mutis.

1. Castilleja pruinosa Fern. Frosted paintbrush. Common on all slopes, nearly to summit. Ranges into Curry County from California, but does not occur much farther north than our area. Humid Transition. (H)

53. OROBANCHACEAE. Broom-rape Family.

Base of the stamen filaments with a tuft of hairs;
flowers numerous, borne on a cone-like spike.....

.....1. Boschniakia
Base of the stamen filaments not hairy; flowers soli-
tary on long slender peduncles.....2. Orobanche

1. Boschniakia C. A. Mey.

1. Boschniakia strobilacea Gray. Ground-cone. Along Steffans Meadow trail in pure stand of Arbutus Menziesii, also near summit, on roots of Arctostaphylos canescens. This species is found in southern Oregon and adjacent California. Humid Transition to Canadian. (Cr)

2. Orobanche L.

1. Orobanche uniflora L. Broom-rape. East slope, on moist cliff; rare. Only one plant was found. This species has a wide distribution but is not common. Canadian here. (Cr)

54. PLANTAGINACEAE. Plantain Family.

1. Plantago L.

Leaves long-lanceolate.....1. P. lanceolata
Leaves broadly ovate.....2. P. major

1. Plantago lanceolata L. English plantain. East slope along Rock Creek at Smith Claim; common. Introduced from Europe. (H)

2. Plantago major L. Common plantain. East slope in yard at Smith Claim; common. Introduced from Europe. (H)

55. RUBIACEAE. Madder Family.

1. Galium L.

Leaves mostly 6 to a whorl.....1. G. triflorum
 Leaves 4 to a whorl.....2. G. Bolanderi

1. Galium triflorum Michx. Fragrant bed-straw.
 East slope at roadside marsh and along Rock Creek at
 Smith Claim; quite common. Transition. (H)

2. Galium Bolanderi Gray. Bolander's bed-straw.
 South slope along Steffans Meadow trail, and east
 slope in woods along Rock Creek; common. This is an
 extension of the range of this plant northward.
 Transition. (H)

56. CAPRIFOLIACEAE. Honeysuckle Family.

Leaves simple

Shrubs, erect or climbing

Flowers irregular; fruit a red berry..1. Lonicera

Flowers regular; fruit a white berry.....2. Symphoricarpos

Vine, prostrate or creeping; flowers in pairs.....3. Linnaea

Leaves compound.....4. Sambucus

1. Lonicera L.

1. Lonicera hispidula Dougl. Pink honeysuckle.
 On hillside along Middle Elk Road, Coquille-Rogue
 River Divide; not common. The species ranges from
 the Rogue River Valley north to Washington. Several
 varieties are recorded from southern Oregon, south
 into the coast ranges of California. Humid Transition.
 (Ph)

2. Symphoricarpos L.

1. Symphoricarpos mollis Nutt. Creeping snowberry.
 Along roadside on Middle Elk Road, Coquille-Rogue
 River Divide; occasional. Transition. (Ch)

3. Linnaea L.

1. Linnaea borealis L. var. americana (Forbes) Rehder. Open woods on south slope and along Rock Creek at Smith Claim on east slope. Humid Transition and Canadian. (Ch)

4. Sambucus L.

1. Sambucus coerulea Raf. Blue elderberry. Along Middle Elk Road on Coquille-Rogue River Divide, forming thickets; not common. Transition. (Ph)

57. VALERIANACEAE. Valerian Family.

1. Valeriana sitchensis Bong. var. Scouleri (Rydb.) Piper. Scouler's mountain valerian. South slope, on moist banks. Canadian. (H)

58. CAMPANULACEAE. Bell-flower Family.

1. Campanula L.

Flowers dark blue; leaves nearly sessile.....
.....1. C. prenanthoides
Flowers pale blue; leaves petioled.2. C. Scouleri

1. Campanula prenanthoides Dur. Slender blue-bell. East slope along road to summit and along Middle Elk Road, also on dry open hillsides; very common. This species is of California origin. It is known only as far north as west central Oregon. Humid Transition. (H)

2. Campanula Scouleri Hook. Pale blue-bell. Common on hillsides in dry woods on east slope along Middle Elk Road. Humid Transition to Canadian. (H)

59. COMPOSITAE. Sunflower Family.

Flowers all strap shaped; juicy milky

Pappus plumose.....1. Hypochaeris

Pappus bristles not plumose

Heads solitary; leaves all basal....2. Agoseris

Heads several; cauline leaves present.....

.....3. Hieracium

Flowers all tubular or heads composed of both tubular
and strap-shaped flowers

Heads with both strap-shaped and tubular flowers
present

Pappus of hairs or bristles

Leaves opposite.....18. Arnica

Leaves alternate

Ray flowers yellow.....19. Senecio

Ray flowers purple, bluish, pinkish or white
(ours)

Involucre bracts in one series; basal leaves
very large, not appearing at flowering
time, stem leaves bract-like.....
.....16. Petasites

Involucre bracts not in one series; leaves
normal

Involucre bracts narrow, usually in an even
series, sometimes two; rays narrow,
numerous.....5. Erigeron

Involucre bracts in several series, broader,
generally overlapping the rays; fewer
than above

Disk-flowers yellow.....4. Aster

Disk-flowers white to purple.....
.....6. Sericocarpus

Pappus with few scales, or awns or none

Ligules yellow

Pappus crown-like, of short chaffy teeth.....
.....12. Wyethia

Pappus not of chaffy teeth

Bracts of the involucre enfolding the outer
achenes.....13. Madia

Bracts not enfolding the achenes

Heads cone-shaped; disk-flowers intermingled
with conspicuous short shaffy bracts.....
.....11. Rudbeckia

Heads not cone-shaped; disk flowers without
intermingled chaffy bracts.....
.....14. Eriophyllum

Ligules white (ours).....15. Chrysanthemum

Heads with flowers all tubular

Pappus of hairs or bristles

Flowers purple or whitish

Leaves prickly; flowers purplish.....
.....20. Cirsium

Leaves not prickly; flowers whitish

- Involucre bracts equal, one series.....
 17. Luina
 Involucre bracts unequal, in several series
 Dioecious
 Pappus bristles of the staminate flowers
 club-shaped..... 7. Antennaria
 Pappus bristles alike, not as above.....
 8. Anaphalis
 Monoecious..... 9. Gnaphalium
 Flowers bright yellow
 Leaves opposite.....18. Arnica
 Leaves alternate.....19. Senecio
 Pappus none; flowers white.....10. Adenocaulon

1. Hypochaeris L.

1. Hypochaeris radicata L. False dandelion. Roadside weed on east slope along Rock Creek; introduced from Europe. (H)

2. Agoseris Raf.

1. Agoseris laciniata (Nutt.) Greene. Tall false dandelion. Dry open hillside on south slope; not common. (H)

3. Hieracium L.

- Flowers white.....1. H. albiflorum
 Flowers yellow
 Involucre copiously glandular-pubescent; bracts narrowly linear.....2. H. Cynoglossoides
 Involucre glabrous or nearly so; bracts broadly linear, obtuse or acute.....3. H. Bolanderi

1. Hieracium albiflorum Hook. White-flowered hawkweed. East slope, open woods and roadsides along Rock Creek, and fairly common in all open woods. Transition. (H)

2. Hieracium Cynoglossoides Arv.-Touv. Hound's tongue hawkweed. South slope on dry ridges and in open woods. Canadian. (H)

3. Hieracium Bolanderi Gray. Bolander's hawkweed. The first record of this species as far north as Coos County. Dry hillside on east slope. Common in Josephine County, southward into California. Transition. (H)

4. Aster L.

1. Aster radulinus Gray. Rough-leaved aster. Hillside along Middle Elk Road on Coquille-Rogue River Divide; common. Transition. (H)

5. Erigeron L.

1. Erigeron foliosus Nutt. var. confinis (How.) Jepson. West and south slopes below summit, in open coniferous woods; scattered. This species ranges from Mt. Jefferson in Oregon to the Trinity Mountains of California. At the summit of Iron Mountain is found the low hairy form discussed by Cronquist (26, p. 282), as belonging to the above species and variety. Arid Transition to Canadian. (H)

6. Sericocarpus Nees.

1. Sericocarpus rigidus Lindl. Rigid white-topped aster. Hillside along Middle Elk Road, Coquille-Rogue River Divide. Transition. (H)

7. Antennaria Gaertn.

Heads solitary; stems shrubby.....1. A. suffrutescens
Heads several in a cluster; not shrubby. 2. A. rosea

1. Antennaria suffrutescens Greene. Shrubby everlasting. Dry open hillside on south slope; common. Found only in Southwestern Oregon. Previously reported only from Josephine County. Canadian.

2. Antennaria rosea Greene. Rosy everlasting. Found only at one station on summit. This is its first record from the Rogue River Mountains, though the species has previously been reported from the Siskiyou. Canadian. (H)

8. Anaphalis DC.

1. Anaphalis margaritacea (L.) B. & H. Pearly everlasting. East slope along road at Smith Claim, also on dry open hillsides; very common. Canadian. (H)

9. Gnaphalium L.

1. Gnaphalium thermale E. Nels. Slender cudweed. Common on dry open ground along Middle Elk Road, Coquille-Rogue River Divide. Transition. (H)

10. Adenocaulon Hook.

1. Adenocaulon bicolor Hook. Pathfinder. Woods along trail on south slope, and in roadside marsh below Smith Claim on Rock Creek, east slope; common. Humid Transition to Canadian. (H)

11. Rudbeckia L.

1. Rudbeckia californica Gray. California cone-flower. East slope on hillsides in marshy and boggy ground, also west slope in wet places about springs. This species represents the Southern element in our flora, and extends northward to the Umpqua River Valley. (H)

12. Wyethia Nutt.

1. Wyethia angustifolia (DC) Nutt. Mule-ears. Dry open hillsides on southeast slope; not common. Transition. (H)

13. Madia Molina

Perennial.....1. M. Madioides
Annual

Heads small, 3 to 4 mm. broad.....2. M. exigua

Heads larger, 5 to 7 mm. broad.....3. M. dissitiflora

1. Madia Madioides (Nutt.) Greene. Woodland tarweed. Woods on southeast slope; common. Humid Transition. (H)

2. Madia exigua (Smith) Greene. Little tarweed. Dry ground along trails and roadsides and in open woods, particularly Middle Elk Road on Coquille-Rogue River Divide. Transition. (Th)

3. Madia dissitiflora (Nutt.) T. & G. Common tarweed. Along Middle Elk Road on Coquille-Rogue River Divide. Canadian. (Th)

14. Eriophyllum Lag.

1. Eriophyllum lanatum (Pursh) Forbes var. Achil-laeoides (Gray) Jeps. Oregon sunshine. South slope along Middle Elk Road on Coquille-Rogue River Divide; common. Transition. (H)

15. Chrysanthemum L.

1. Chrysanthemum leucanthemum L. var. pinnatifidum Lec. & Lam. Ox-eye daisy. Roadside along Middle Elk Road on Coquille-Rogue River Divide; occasional. Introduced from Europe. (H)

16. Petasites (Tourn.) Hill

1. Petasites speciosa (Nutt.) Piper. Western coltsfoot. East slope along Rock Creek at Smith Claim, and south slope along Boulder Creek in Bonanza Basin. Humid Transition. (Cr)

17. Luina Benth.

1. Luina hypoleuca Benth. Silver-back. Rocks and cliffs at summit. Canadian. (H)

18. Arnica L.

Ray flowers none.....1. A. parviflora

Ray flowers present

Basal and lower cauline leaves cordate.....

.....2. A. cordifolia

Basal leaves ovate, cuneate to subcordate.....

.....3. A. cernua

1. Arnica parviflora Gray. Small-flowered arnica. Dry open woods on south and east slopes, and on north slope near summit; common. This is its first record as far north as Coos County. Canadian. (H)

2. Arnica cordifolia Hook. Heart-leaved arnica. East slope on dry open hillside; scarce. Transition. (H)

3. Arnica cernua Howell. Nodding arnica. Dry open woods on southwest slope; rare. This is a very interesting species of narrow distribution, known only from the mountains of Josephine and Curry counties. Canadian. (H)

19. Senecio (Tourn.) L.

Annual

Involucre bracts black-tipped.....1. S. vulgaris

Involucre bracts not black-tipped.....2. S. sylvaticus

Perennial

Leaves orbicular to ovate; dentate, incised, or lobed; herbage glabrous.....3. S. Bolanderi

Leaves nearly orbicular to narrowly obovate, entire or few-toothed above; herbage densely white-tomentose, or upper surface of the leaves sometimes nearly glabrous.....4. S. canus

1. Senecio vulgaris L. Common groundsel. East slope, in yard of Smith Claim; common. Introduced from Europe. (Th)

2. Senecio sylvaticus L. Wood groundsel. East slope along Middle Elk Road. Dry ground, open wooded hillside s and thickets. Introduced from Europe. (Th)

3. Senecio Bolanderi Gray. Bolander's senecio. East slope in moist roadside meadow. A species of the Southern element in our flora. Canadian. (H)

4. Senecio canus Hook. Gray senecio. Dry open ground on south and southwest slopes; very common. A variable species which presents several perplexing forms. Southern element. Canadian. (H)

20. Cirsium (Tourn.) Hill

Involucre bracts all prickly-tipped..C. lanceolatum
Involucre bracts not all prickly-tipped, some scarious-tipped

Bracts prickly-margined.....2. C. acanthodontum
Bracts not prickly-margined.....3. C. edule

1. Cirsium lanceolatum (L.) Scop. Common bull thistle. East slope, dry ground along Rock Creek; not common. Introduced from Europe. (H)

2. Cirsium acanthodontum Blake. Nelson's thistle. Southeast slope along trail to Hell's Half Acre; common. This is a narrow endemic known previously only from the lower Rogue River Canyon to the coast. It is very common in the Rogue River Mountains, and the writer has collected it on Snow Camp Mountain in central Curry County. Transition to Canadian.

3. Cirsium edule Nutt. Edible thistle. East slope along roadside, on moist ground in open woodland; common. Transition to Canadian. (H)

SUMMARY OF THE PLANTS OF IRON MOUNTAIN

Three hundred species and varieties of plants are known from Iron Mountain. Additions probably will be made as it is collected more thoroughly. The largest families present are Compositae (20 genera, 32 species), Ericaceae (13 genera, 29 species), Gramineae (17 genera, 26 species), Liliaceae (14 genera, 19 species), Saxifragaceae (9 genera, 13 species), Polypodiaceae (9 genera, 13 species), Cruciferae (8 genera, 9 species), Leguminosae (9 genera, 12 species). Other important families with total number of species are as follows: Rosaceae (10), Pinaceae (9), Orchidaceae (9), Scrophulariaceae (8), Cyperaceae (7).

The 300 species amount to nearly 10% of the total listed by Peck for the state of Oregon. Fifty nine families are represented in the flora of Iron Mountain, or 50% of the total that occur in Oregon. Like Fairview Mountain, this has a fairly diverse and well represented flora.

TABLE 5
Tabular Summary of Plants

Groups	Families	Genera	Species
Pteridophyta	3	11	15
Gymnospermae	3	8	13
Monocotyledoneae	7	44	69
Dicotyledoneae	<u>46</u>	<u>130</u>	<u>203</u>
Totals	59	183	300

TABLE

A Comparison of the Flora of the Two Mountains

List of Plants	Fairview Mountain	Iron Mountain
POLYPODIACEAE		
1. <i>Adiantum pedatum aleuticum</i>	X.....	X.....
2. <i>Athyrium americanum</i>	X.....	
3. <i>Athyrium filix-femina</i>	X.....	X.....
4. <i>Cheilanthes gracillima</i>	X.....	X.....
5. <i>Cheilanthes siliquosa</i>		X.....
6. <i>Cryptogramma acrostichoides</i>	X.....	X.....
7. <i>Cystopteris fragilis</i>	X.....	
8. <i>Dryopteris dilatata</i>	X.....	
9. <i>Polypodium vulgare columbianum</i> ...X.....		X.....
10. <i>Polypodium vulgare occidentale</i> ...X.....		X.....
11. <i>Polystichum Lonchitis</i>	X.....	
12. <i>Polystichum munitum</i>	X.....	X.....
13. <i>Polystichum munitum imbricans</i>		X.....
14. <i>Polystichum munitum inciso-serratum</i>		X.....
15. <i>Pteridium aquilinum pubescens</i>X.....		X.....
16. <i>Struthiopteris spicant</i>	X.....	X.....
17. <i>Woodwardia fimbriata</i>		X.....
EQUISETACEAE		
18. <i>Equisetum Telmateia</i>		X.....
SELAGINELLACEAE		
19. <i>Selaginella Wallacei</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
TAXACEAE		
20. <i>Taxus brevifolia</i>	X.....	X.....
PINACEAE		
21. <i>Abies amabilis</i>	X.....	
22. <i>Abies grandis</i>	X.....	
23. <i>Picea Breweriana</i>		X.....
24. <i>Pinus attenuata</i>		X.....
25. <i>Pinus contorta</i>		X.....
26. <i>Pinus Jeffreyi</i>		X.....
27. <i>Pinus Lambertiana</i>		X.....
28. <i>Pinus monticola</i>	X.....	X.....
29. <i>Pinus ponderosa</i>		X.....
30. <i>Pseudotsuga taxifolia</i>	X.....	X.....
31. <i>Tsuga heterophylla</i>	X.....	X.....
32. <i>Tsuga Mertensiana</i>	X.....	
CUPRESSACEAE		
33. <i>Chamaecyparis Lawsoniana</i>		X.....
34. <i>Chamaecyparis nootkatensis</i>	X.....	
35. <i>Juniperus sibirica</i>		X.....
36. <i>Libocedrus decurrens</i>	X.....	X.....
GRAMINEAE		
37. <i>Aira caryophyllea</i>		X.....
38. <i>Agrostis aequivalvis</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
39. <i>Agrostis exarata</i>	X.....	X.....
40. <i>Agrostis Hallii</i>		X.....
41. <i>Agrostis tenuis</i>		X.....
42. <i>Anthoxanthum odoratum</i>		X.....
43. <i>Avena fatua</i>	X.....	
44. <i>Bromus marginatus</i>	X.....	
45. <i>Bromus mollis</i>		X.....
46. <i>Bromus polyanthus</i>	X.....	
47. <i>Bromus tectorum</i>		X.....
48. <i>Bromus vulgaris</i>		X.....
49. <i>Calamagrostis canadensis</i>	X.....	
50. <i>Cinna latifolia</i>	X.....	
51. <i>Dactylis glomerata</i>		X.....
52. <i>Elymus glaucus</i>	X.....	X.....
53. <i>Elymus virescens</i>	X.....	
54. <i>Festuca californica</i>		X.....
55. <i>Festuca megalura</i>	X.....	X.....
56. <i>Festuca occidentalis</i>	X.....	
57. <i>Festuca rubra</i>		X.....
58. <i>Festuca viridula</i>	X.....	
59. <i>Glyceria elata</i>		X.....
60. <i>Glyceria pauciflora</i>		X.....
61. <i>Hierochloe occidentalis</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
62. <i>Holcus lanatus</i>		X.....
63. <i>Lolium perenne</i>		X.....
64. <i>Melica Geyeri</i>		X.....
65. <i>Melica subulata</i>	X.....	X.....
66. <i>Muhlenbergia filiformis</i>	X.....	
67. <i>Poa annua</i>	X.....	
68. <i>Poa compressa</i>	X.....	
69. <i>Poa epilis</i>	X.....	
70. <i>Poa gracillima</i>	X.....	
71. <i>Poa rhizomata</i>	X.....	X.....
72. <i>Poa secunda</i>		X.....
73. <i>Phalaris arundinacea</i>		X.....
74. <i>Phleum aplanum</i>		X.....
75. <i>Polypogon monspeliensis</i>		X.....
76. <i>Sitanion Hystrix</i>	X.....	
77. <i>Trisetum canescens</i>		X.....
78. <i>Trisetum cernuum</i>	X.....	

CYPERACEAE

79. <i>Carex ablata</i>	X.....	
80. <i>Carex amplifolia</i>		X.....
81. <i>Carex debiliformis</i>		X.....
82. <i>Carex exsiccata</i>		X.....
83. <i>Carex festivella</i>	X.....	X.....

List of Plants	Fairview Mountain	Iron Mountain
84. <i>Carex Kelloggii</i>	X.....	
85. <i>Carex laeviculmis</i>	X.....	
86. <i>Carex Mertsessii</i>	X.....	
87. <i>Carex obnupta</i>		X.....
88. <i>Carex pachystachya</i>	X.....	
89. <i>Carex spectabilis</i>	X.....	
90. <i>Carex subfusca</i>	X.....	
91. <i>Scirpus criniger</i>		X.....
92. <i>Scirpus microcarpus</i>		X.....
ARACEAE		
93. <i>Lysichitum americanum</i>		X.....
JUNCACEAE		
94. <i>Juncus bufonius</i>		X.....
95. <i>Juncus effusus</i>	X.....	
96. <i>Juncus effusus exiguus</i>		X.....
97. <i>Juncus ensifolius</i>	X.....	X.....
98. <i>Juncus Mertensianus</i>	X.....	
99. <i>Luzula campestris</i>	X.....	X.....
100. <i>Luzula parviflora</i>	X.....	X.....
LILIACEAE		
101. <i>Brodiaea coronaria</i>		X.....
102. <i>Calochortus Lobbii</i>	X.....	
103. <i>Calochortus Tolmiei</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
104. <i>Clintonia uniflora</i>	X.....	X.....
105. <i>Disporum Hookeri</i>		X.....
106. <i>Disporum oreganum</i>	X.....	
107. <i>Disporum Smithii</i>		X.....
108. <i>Erythronium grandiflorum pallidum</i> .X.....		
109. <i>Erythronium klamathense</i>	X.....	
110. <i>Erythronium oregonum</i>		X.....
111. <i>Lilium columbianum</i>		X.....
112. <i>Lilium pardalinum</i>		X.....
113. <i>Lilium parvum</i>		X.....
114. <i>Lilium washingtonianum</i>	X.....	
115. <i>Narthecium californicum</i>		X.....
116. <i>Smilacina racemosa</i>	X.....	X.....
117. <i>Smilacina sessilifolia</i>	X.....	X.....
118. <i>Streptopus amplexifolius</i>	X.....	X.....
119. <i>Tofieldia occidentalis</i>		X.....
120. <i>Trillium ovatum</i>	X.....	X.....
121. <i>Trillium rivale</i>		X.....
122. <i>Veratrum insolitum</i>	X.....	X.....
123. <i>Xerophyllum tenax</i>	X.....	X.....
124. <i>Zygadenus Fremontii</i>		X.....
IRIDACEAE		
125. <i>Iris innominata</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
126. <i>Sisyrinchium idahoense</i>		X.....
ORCHIDACEAE		
127. <i>Calypso bulbosa</i>		X.....
128. <i>Corallorhiza maculata</i>	X.....	
129. <i>Corallorhiza Mertensiana</i>	X.....	X.....
130. <i>Corallorhiza Striata</i>		X.....
131. <i>Cypripedium californicum</i>		X.....
132. <i>Goodyera decipiens</i>	X.....	X.....
133. <i>Habenaria elegans</i>		X.....
134. <i>Habenaria saccata</i>	X.....	
135. <i>Habenaria sparsiflora</i>		X.....
136. <i>Habenaria unalaschensis</i>	X.....	X.....
137. <i>Listera caurina</i>	X.....	X.....
138. <i>Listera convallarioides</i>	X.....	
SALICACEAE		
139. <i>Salix lasiandra</i>	X.....	
140. <i>Salix Scouleriana</i>	X.....	
141. <i>Salix sitchensis</i>	X.....	
BETULACEAE		
142. <i>Alnus rubra</i>		X.....
143. <i>Alnus sinuata</i>	X.....	
144. <i>Corylus californica</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
FAGACEAE		
145. <i>Castanopsis chrysophylla</i>	X.....	X.....
146. <i>Lithocarpus densiflora</i>		X.....
147. <i>Quercus chrysolepis</i>		X.....
148. <i>Quercus Sadleriana</i>		X.....
149. <i>Quercus vaccinifolia</i>		X.....
LORANTHACEAE		
150. <i>Arceuthobium americanum</i>		X.....
151. <i>Arceuthobium campylopodum</i>		X.....
ARISTOLOCHIACEAE		
152. <i>Asarum caudatum</i>	X.....	X.....
POLYGONACEAE		
153. <i>Eriogonum compositum</i>	X.....	
154. <i>Eriogonum nudum</i>	X.....	X.....
155. <i>Eriogonum umbellatum</i>	X.....	
156. <i>Polygonum Austinae</i>	X.....	
157. <i>Polygonum bistortoides</i>	X.....	
158. <i>Polygonum cascadense</i>	X.....	
159. <i>Polygonum Douglasii</i>	X.....	
160. <i>Polygonum minimum</i>	X.....	
161. <i>Polygonum Newberryi</i>	X.....	
162. <i>Polygonum Nuttallii</i>	X.....	
163. <i>Polygonum phytolaccaefolium</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
164. <i>Polygonum sperulariaeforme</i>		X.....
165. <i>Rumex Acetosella</i>	X.....	X.....
166. <i>Rumex conglomeratus</i>		X.....
167. <i>Rumex obtusifolius</i>	X.....	X.....
168. <i>Rumex occidentalis</i>	X.....	
PORTULACACEAE		
169. <i>Claytonia lanceolata</i>	X.....	
170. <i>Montia flagellaris</i>	X.....	X.....
171. <i>Montia parvifolia</i>		X.....
172. <i>Montia perfoliata</i>	X.....	
173. <i>Montia sibirica</i>	X.....	X.....
CARYOPHYLLACEAE		
174. <i>Arenaria formosa</i>	X.....	
175. <i>Arenaria macrophylla</i>	X.....	X.....
176. <i>Arenaria Nuttallii gregaria</i>		X.....
177. <i>Silene campanulata</i>	X.....	X.....
178. <i>Spergularia rubra</i>	X.....	X.....
179. <i>Stellaria crispa</i>	X.....	
NYMPHAEACEAE		
180. <i>Nymphaea polysepala</i>		X.....
RANUNCULACEAE		
181. <i>Aconitum Howelli</i>	X.....	
182. <i>Actaea arguta</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
183. <i>Anemone Adamsiana</i>		X.....
184. <i>Anemone deltoidea</i> .,.....	X.....	X.....
185. <i>Anemone Lyallii</i>	X.....	
186. <i>Aquilegia formosa</i>	X.....	X.....
187. <i>Caltha biflora</i>	X.....	
188. <i>Coptis laciniata</i>		X.....
189. <i>Delphinium depauperatum</i>	X.....	
190. <i>Delphinium glareosum</i>	X.....	
191. <i>Delphinium Menziesii</i>	X.....	
192. <i>Ranunculus occidentalis</i>		X.....
193. <i>Thalictrum occidentale</i>	X.....	
194. <i>Trautvetteria grandis</i>	X.....	
BERBERIDACEAE		
195. <i>Achlys triphylla</i>	X.....	X.....
196. <i>Berberis nervosa</i>	X.....	X.....
197. <i>Berberis Piperiana</i>		X.....
198. <i>Vancouveria hexandra</i>	X.....	X.....
199. <i>Vancouveria planipetala</i>		X.....
LAURACEAE		
200. <i>Umbellularia californica</i>		X.....
FUMARIACEAE		
201. <i>Dicentra formosa</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
CRUCIFERAE		
202. <i>Arabis Drummondii</i>	X.....	
203. <i>Barbarea othoceras dolichocarpa</i> ...	X.....	
204. <i>Brassica arvensis</i>	X.....	
205. <i>Brassica campestris</i>	X.....	X.....
206. <i>Descurainia pinnata filipes</i>		X.....
207. <i>Camelina microcarpa</i>		X.....
208. <i>Capsella Bursa-pastoris</i>		X.....
209. <i>Dentaria californica</i>		X.....
210. <i>Dentaria tenella pulcherrima</i>	X.....	
211. <i>Erysimum capitatum</i>	X.....	
212. <i>Erysimum concinnum</i>		X.....
213. <i>Erysimum repandum</i>		X.....
214. <i>Lepidium perfoliatum</i>		X.....
215. <i>Radicula curvisiliqua</i>	X.....	
216. <i>Streptanthus tortuosus orbiculatus</i>		X.....
217. <i>Thlaspi alpestre</i>	X.....	
SARRACENIACEAE		
218. <i>Chrysamphora californica</i>		X.....
CRASSULACEAE		
219. <i>Sedum Douglasii</i>	X.....	
220. <i>Sedum laxum</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
221. <i>Sedum Oregonensis</i>	X.....	
222. <i>Sedum spathulifolium</i>	X.....	X.....
SAXIFRAGACEAE		
223. <i>Boykinia elata</i>	X.....	X.....
224. <i>Boykinia major</i>	X.....	
225. <i>Heuchera micrantha</i>		X.....
226. <i>Heuchera micrantha glaberrima</i>	X.....	
227. <i>Lithophragma parviflorum</i>	X.....	
228. <i>Mitella Breweri</i>	X.....	
229. <i>Mitella diversifolia</i>	X.....	
230. <i>Mitella ovalis</i>	X.....	X.....
231. <i>Mitella trifida</i>	X.....	
232. <i>Philadelphus Lewisii</i>	X.....	
233. <i>Ribes binominatum</i>	X.....	
234. <i>Ribes bracteosum</i>	X.....	X.....
235. <i>Ribes cruentum</i>		X.....
236. <i>Ribes lacustre</i>	X.....	
237. <i>Ribes glutinosum</i>		X.....
238. <i>Ribes sanguineum</i>	X.....	
239. <i>Saxifraga bronchialis austro-</i> <i>montana</i>	X.....	
240. <i>Saxifraga ferruginea</i>	X.....	
241. <i>Saxifraga Howellii</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
242. <i>Saxifraga Mertensiana</i>	X.....	X.....
243. <i>Saxifraga rufidula</i>	X.....	
244. <i>Tellima grandiflora</i>	X.....	X.....
245. <i>Tiarella trifoliata</i>	X.....	X.....
246. <i>Tiarella unifoliata</i>	X.....	X.....
247. <i>Tolmiea Menziesii</i>	X.....	X.....
248. <i>Whipplea modesta</i>	X.....	X.....
ROSACEAE		
249. <i>Amelanchier florida</i>	X.....	
250. <i>Amelanchier pallida</i>		X.....
251. <i>Aruncus sylvester</i>	X.....	
252. <i>Fragaria bracteata</i>	X.....	
253. <i>Holodiscus discolor</i>	X.....	X.....
254. <i>Holodiscus discolor delnortensis</i>		X.....
255. <i>Holodiscus glabrescens</i>	X.....	
256. <i>Horkelia sericata</i>		X.....
257. <i>Potentilla Breweri</i>	X.....	
258. <i>Potentilla Drummondii</i>	X.....	
259. <i>Potentilla glandulosa</i>	X.....	
260. <i>Potentilla gracilis</i>	X.....	
261. <i>Prunus emarginata</i>	X.....	
262. <i>Rosa gymnocarpa</i>	X.....	X.....
263. <i>Rubus laciniatus</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
264. <i>Rubus lasiococcus</i>	X.....	
265. <i>Rubus leucodermis</i>	X.....	X.....
266. <i>Rubus parviflorus</i>	X.....	X.....
267. <i>Rubus pedatus</i>	X.....	
268. <i>Rubus spectabilis</i>	X.....	X.....
269. <i>Rubus vitifolius</i>	X.....	X.....
270. <i>Sorbus occidentalis</i>	X.....	
271. <i>Sorbus sitchensis</i>	X.....	
LEGUMINOSAE		
272. <i>Lathyrus californicus</i>		X.....
273. <i>Lathyrus nevadensis</i>	X.....	
274. <i>Lathyrus Nuttallii</i>	X.....	
275. <i>Lotus americanus</i>		X.....
276. <i>Lotus crassifolius</i>	X.....	X.....
277. <i>Lotus micranthus</i>		X.....
278. <i>Lotus oblongifolius Torreyi</i>		X.....
279. <i>Lotus stipularis subglaber</i>		X.....
280. <i>Lupinus albicaulis</i>	X.....	X.....
281. <i>Lupinus albifrons flumineus</i>	X.....	
282. <i>Lupinus Andersonii</i>	X.....	
283. <i>Lupinus aridus Torreyi</i>	X.....	
284. <i>Lupinus latifolius subalpinus</i>	X.....	
285. <i>Psoralea physodes</i>		X.....

List of Plants	Fairview Mountain	Iron Mountain
286. <i>Thermopsis gracilis</i>		X.....
287. <i>Trifolium Howellii</i>	X.....	
288. <i>Trifolium Kingii</i>	X.....	
289. <i>Trifolium microcephalum</i>		X.....
290. <i>Trifolium repens</i>	X.....	
291. <i>Trifolium Willdenovii</i>		X.....
292. <i>Vicia americana</i>	X.....	
293. <i>Vicia americana truncata</i>	X.....	
294. <i>Vicia californica</i>	X.....	X.....
LINACEAE		
295. <i>Linum Lewisii</i>	X.....	
OXALIDACEAE		
296. <i>Oxalis oregana</i>	X.....	
POLYGALACEAE		
297. <i>Polygala californica</i>		X.....
ANACARDIACEAE		
298. <i>Rhus diversiloba</i>		X.....
CELASTRACEAE		
299. <i>Pachistima Myrsinites</i>	X.....	
ACERACEAE		
300. <i>Acer circinatum</i>	X.....	X.....
301. <i>Acer Douglasii</i>	X.....	X.....
302. <i>Acer macrophyllum</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
RHAMNACEAE		
303. <i>Ceanothus integerrimus</i>	X.....	
304. <i>Ceanothus pumilus</i>	X.....	
305. <i>Rhamnus californica occidentalis</i>	X.....	
MALVACEAE		
306. <i>Sidalcea malvaeflora californica</i>	X.....	
HYPERICACEAE		
307. <i>Hypericum anagalloides</i>	X.....	
308. <i>Hypericum perforatum</i>	X.....	X.....
VIOLACEAE		
309. <i>Viola cuneata</i>		X.....
310. <i>Viola glabella</i>	X.....	X.....
311. <i>Viola sempervirens</i>	X.....	X.....
312. <i>Viola Sheltonii</i>	X.....	
ONAGRACEAE		
313. <i>Circaea pacifica</i>	X.....	
314. <i>Epilobium adenocaulon</i>	X.....	X.....
315. <i>Epilobium alpinum</i>	X.....	
316. <i>Epilobium angustifolium</i>	X.....	X.....
317. <i>Epilobium Hornemannii</i>	X.....	
318. <i>Epilobium minutum</i>		X.....
319. <i>Epilobium paniculatum</i>	X.....	X.....
320. <i>Gayophytum diffusum</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
321. Gayophytum lasiospermum Hoff- mannii.....	X.....	
322. Godetia amoena.....	X.....	
ARALIACEAE		
323. Aralia californica.....		X.....
UMBELLIFERAE		
324. Angelica arguta.....		X.....
325. Heracleum lanatum.....	X.....	
326. Leptotaenia dissecta.....	X.....	
327. Ligusticum apiifolium.....	X.....	X.....
328. Lomatium Hallii.....	X.....	
329. Lomatium macrocarpum.....		X.....
330. Lomatium Martindalei.....	X.....	X.....
331. Lomatium triternatum.....		X.....
332. Orogenia fusiformis.....	X.....	
333. Osmorhiza nuda divaricata.....	X.....	
334. Osmorhiza occidentalis.....	X.....	
335. Perideridia oregana.....		X.....
336. Sanicula septentrionalis.....	X.....	
GARRYACEAE		
337. Garrya buxifolia.....		X.....
338. Garrya Fremontii.....	X.....	

List of Plants	Fairview Mountain	Iron Mountain
CORNACEAE		
339. <i>Cornus canadensis</i>	X.....	
340. <i>Cornus Nuttallii</i>		X.....
ERICACEAE		
341. <i>Arbutus Menziesii</i>		X.....
342. <i>Arctostaphylos canescens</i>		X.....
343. <i>Arctostaphylos columbiana</i>		X.....
344. <i>Arctostaphylos nevadensis</i>	X.....	X.....
345. <i>Arctostaphylos patula</i>		X.....
346. <i>Arctostaphylos viscossisima</i>		X.....
347. <i>Allotropa virgata</i>		X.....
348. <i>Chimaphila Menziesii</i>	X.....	X.....
349. <i>Chimaphila umbellata</i>	X.....	X.....
350. <i>Gaultheria ovatifolia</i>	X.....	X.....
351. <i>Gaultheria Shallon</i>	X.....	X.....
352. <i>Hypopitys latisquama</i>		X.....
353. <i>Hypopitys fimbriata</i>	X.....	X.....
354. <i>Ledum columbianum</i>		X.....
355. <i>Newberrya congesta</i>		X.....
356. <i>Pleuricospora fimbriolata</i>		X.....
357. <i>Pterospora andromedia</i>		X.....
358. <i>Pyrola aphylla</i>		X.....
359. <i>Pyrola bracteata</i>	X.....	X.....

List of Plants	Fairview Mountain	Iron Mountain
360. <i>Pyrola dentata</i>		X....
361. <i>Pyrola dentata integra</i>		X....
362. <i>Pyrola picta</i>	X.....	X....
363. <i>Pyrola secunda</i>	X.....	X....
364. <i>Rhododendron macrophyllum</i>	X.....	X....
365. <i>Rhododendron macrophyllum album</i>		X....
366. <i>Rhododendron occidentale</i>		X....
367. <i>Vaccinium membranaceum</i>	X.....	X....
368. <i>Vaccinium ovalifolium</i>	X.....	
369. <i>Vaccinium ovatum</i>		X....
370. <i>Vaccinium parvifolium</i>	X.....	X....
371. <i>Vaccinium scoparium</i>	X.....	
PRIMULACEAE		
372. <i>Trientalis arctica</i>		X....
373. <i>Trientalis latifolia</i>	X.....	X....
GENTIANACEAE		
374. <i>Gentiana calycosa</i>	X.....	
375. <i>Gentiana Menziesii</i>		X....
APOCYNACEAE		
376. <i>Apocynum androsaemifolium</i>	X.....	X....
377. <i>Apocynum medium vestitum</i>	X.....	
CONVOLVULACEAE		
378. <i>Convolvulus polymorphus</i>		X....

List of Plants	Fairview Mountain	Iron Mountain
POLEMONIACEAE		
379. <i>Collomia aristella</i>	X.....	
380. <i>Collomia grandiflora</i>	X.....	
381. <i>Collomia heterophylla</i>	X.....	X.....
382. <i>Gilia aggregata</i>	X.....	
383. <i>Gilia capitata</i>	X.....	
384. <i>Gilia Nuttallii</i>	X.....	
385. <i>Microsteris gracilis</i>	X.....	
386. <i>Microsteris humilis</i>	X.....	
387. <i>Navarretia divaricata</i>	X.....	
388. <i>Phlox diffusa longistylis</i>	X.....	X.....
389. <i>Polemonium carneum</i>	X.....	
HYDROPHYLLACEAE		
390. <i>Hydrophyllum Fendleri albifrons</i>	X.....	
391. <i>Hydrophyllum occidentale</i>	X.....	
392. <i>Nemophila parviflora</i>	X.....	
393. <i>Phacelia corymbosa</i>		X.....
394. <i>Phacelia heterophylla</i>	X.....	
395. <i>Romanzoffia sitchensis</i>	X.....	
BORAGINACEAE		
396. <i>Cryptantha Hendersonii</i>	X.....	X.....
397. <i>Hackelia floribunda</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
LABIATAE		
398. <i>Agastache urticifolia</i>	X.....	
399. <i>Monardella villosa suberrata</i>		X....
400. <i>Prunella vulgaris</i>		X....
401. <i>Satureja Douglasii</i>		X....
402. <i>Stachys rigida</i>	X.....	
403. <i>Trichostema lanceolatum</i>		X....
SCROPHULARIACEAE		
404. <i>Castilleja hispida</i>	X.....	
405. <i>Castilleja miniata</i>	X.....	
406. <i>Castilleja pruinosa</i>		X....
407. <i>Collinsia parviflora</i>	X.....	
408. <i>Mimulus alsinoides</i>		X....
409. <i>Mimulus Breweri</i>	X.....	
410. <i>Mimulus guttatus</i>	X.....	
411. <i>Mimulus moschatus</i>	X.....	X....
412. <i>Orthocarpus imbricatus</i>	X.....	
413. <i>Pedicularis contorta</i>	X.....	
414. <i>Pedicularis flavida</i>	X.....	
415. <i>Pedicularis racemosa</i>	X.....	
416. <i>Penstemon Cardwellii</i>	X.....	
417. <i>Penstemon Davidsonii</i>	X.....	
418. <i>Penstemon nemorosa</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
419. <i>Penstemon procerus</i>	X.....	
420. <i>Penstemon Rattanii</i>		X....
421. <i>Penstemon rupicola</i>	X.....	X....
422. <i>Synthyris reniformis</i>	X.....	
423. <i>Synthyris reniformis cordata</i>		X....
424. <i>Verbascum Blattaria</i>		X....
425. <i>Veronica americana</i>	X.....	X....
426. <i>Veronica arvense</i>	X.....	
427. <i>Veronica serpyllifolia</i>	X.....	
OROBANCHACEAE		
428. <i>Boschniakia Hookeri</i>		X....
429. <i>Orobanche fasciculata</i>	X.....	
430. <i>Orobanche uniflora</i>		X....
PLANTAGINACEAE		
431. <i>Plantago lanceolata</i>	X.....	X....
432. <i>Plantago major</i>		X....
RUBIACEAE		
433. <i>Galium aparine</i>	X.....	
434. <i>Galium bifolium</i>	X.....	
435. <i>Galium Bolanderi</i>		X....
436. <i>Galium kamtschaticum oreganum</i>	X.....	
437. <i>Galium triflorum</i>	X.....	
438. <i>Sherardia arvensis</i>	X.....	

List of Plants	Fairview Mountain	Iron Mountain
CAPRIFOLIACEAE		
439. <i>Linnaea borealis americana</i>	X.....	X....
440. <i>Lonicera ciliosa</i>	X.....	
441. <i>Lonicera hispidula</i>		X....
442. <i>Lonicera utahensis</i>	X.....	
443. <i>Sambucus callicarpa</i>	X.....	
444. <i>Sambucus coerulea</i>	X.....	X....
445. <i>Symphoricarpos albus</i>	X.....	
446. <i>Symphoricarpos mollis</i>	X.....	X....
447. <i>Viburnum ellipticum</i>	X.....	
VALERIANACEAE		
448. <i>Valeriana sitchensis</i>	X.....	
449. <i>Valeriana sitchensis</i> Scouleri.....		X....
CUCURBITACEAE		
450. <i>Echinocystis oreganus</i>	X.....	
CAMPANULACEAE		
451. <i>Campanula prenanthoides</i>	X.....	X....
452. <i>Campanula</i> Scouleri.....	X.....	X....
COMPOSITAE		
453. <i>Achillea Millefolium lanulosa</i>	X.....	
454. <i>Adenocaulon bicolor</i>	X.....	X....
455. <i>Agoseris aurantiaca</i>	X.....	
456. <i>Agoseris laciniata</i>	X.....	X....

List of Plants	Fairview Mountain	Iron Mountain
457. <i>Anaphalis margaritacea</i>		X....
458. <i>Anaphalis margaritacea subalpina</i> ...X.....		
459. <i>Antennaria rosea</i>	X.....	X....
460. <i>Antennaria suffrutescens</i>		X....
461. <i>Arnica cernua</i>		X....
462. <i>Arnica cordifolia</i>		X....
463. <i>Arnica diversifolia</i>	X.....	
464. <i>Arnica latifolia</i>	X.....	
465. <i>Arnica parviflora</i>		X....
466. <i>Artemisia vulgaris ludoviciana</i>X.....		
467. <i>Aster ledophyllus</i>	X.....	
468. <i>Aster radulinus</i>	X.....	X....
469. <i>Chrysanthemum leucanthemum pinati-</i> <i>fidum</i>	X.....	X....
470. <i>Cirsium acanthodontum</i>		X....
471. <i>Cirsium americanum</i>	X.....	
472. <i>Cirsium edule</i>		X....
473. <i>Cirsium lanceolatum</i>		X....
474. <i>Erigeron Aliceae</i>	X.....	
475. <i>Erigeron cascadiensis</i>	X.....	
476. <i>Erigeron foliosus confinis</i>	X.....	X....
477. <i>Eriophyllum lanatum achillaeoides</i>		X....
478. <i>Gnaphalium thermale</i>		X....

List of Plants	Fairview Mountain	Iron Mountain
479. Haplopappus Hallii.....	X.....	
480. Hieracium albiflorum.....	X.....	X.....
481. Hieracium Bolanderi.....		X.....
482. Hieracium cynoglossoides.....		X.....
483. Hieracium cynoglossoides nudicauleX.....		
484. Hieracium gracile.....	X.....	
485. Hieracium Parryi.....	X.....	
486. Hypochaeris radicata.....	X.....	X.....
487. Luina hypoleuca.....		X.....
488. Luina stricta.....	X.....	
489. Madia dissitiflora.....		X.....
490. Madia exigua.....		X.....
491. Madia madioides.....		X.....
492. Petasites speciosa.....		X.....
493. Rudbeckia californica.....		X.....
494. Senecio Bolanderi.....		X.....
495. Senecio canus.....		X.....
496. Senecio Harfordii.....	X.....	
497. Senecio integerrimus.....	X.....	
498. Senecio sylvaticus.....		X.....
499. Senecio triangularis.....	X.....	
500. Senecio vulgaris.....		X.....
501. Sericocarpus rigidus.....		X.....
502. Wyethia angustifolia.....		X.....

SUMMARY OF COMBINED STUDY

Fairview Mountain and Iron Mountain are strategically located geographically and climatically, the former in a region where certain southern species find their northern limit and several species their southern limit. The latter is situated in an area high in endemic species and long considered the last outpost in Oregon of a predominantly Californian flora.

Three of the Merriam life zones are recognized on Fairview Mountain, -the Hudsonian, Canadian, and Transition. Only two life zones are acknowledged on Iron Mountain, -the Canadian and Transition.

The flora of Fairview Mountain consists of species representing three different floral provinces. These can be divided into the Northern element, Southern element, and Eastern element. The Northern element is predominant, equaling 14%; while the Southern and Eastern element each equals 8%. The class of plants which have a continuous range in three directions, equals 70% of the species. The plants of Iron Mountain are made up mostly of species coming from two different floral provinces, the Northern element and the Southern element. Another small segment of the population consists of the endemic species. The Eastern element

comprises only 2%. By far the largest group of plants represents the Southern element with 20% of the total flora. The Northern element equals 3%. The narrow endemics also equal 3%. The plants which have a continuous range in three directions equal 72%.

The plants adventive to Fairview Mountain equal 5%, which is below the average for the state of Oregon. The introduced plants of Iron Mountain consist of 10% of the total flora, which is equal to the state average.

The Biological Spectrum was determined for both mountains according to the Raunkiaer Method. These spectra were in turn compared with each other, and with other regions in the northwest to obtain a statistical measurement of climate based on the plant life. The climate of both mountains is predominantly cryptophytic and hemi-cryptophytic. It was found in making a comparison of Iron Mountain with Fairview Mountain that the former had a reduction of 7% in hemi-cryptophytes and cryptophytes; a 3% increase in phanerophytes and a 1% increase in therophytes. This indicates the influence of a modified coastal climate due to proximity of the ocean.

For a number of species in the flora of both mountains, the present study has revealed extensions in range. These species, for the most part, have

entered the region from typically different floral provinces. New distributional records for Fairview Mountain total 15%. The Eastern element contributes 47%; the Southern element 35%; and the Northern element 18%. New distributional records for Iron Mountain total 14%. The Southern element contributes 85% of the species; the Eastern element 15%; while the Northern element does not contribute a single record.

The flora of Fairview Mountain includes 315 species of plants, of which 95% appear to be indigenous. The largest families are Compositae, 27 species; and Gramineae, 23 species. Ten per cent of the total flora of Oregon is represented, and 43% of the families listed for the state are present. The flora of Iron Mountain consists of 300 species and varieties of plants, 90% of which are native. The largest families are the Compositae, 32 species; Ericaceae, 29 species; and Gramineae, 26 species. The flora includes approximately 10% of the species of the state. Fifty per cent of the families are represented. As indicated by the annotated catalogues included in this study, both mountains exhibit a significantly diverse flora within the comparatively narrow limits of the areas to which this investigation

was confined.

Polygonum cascadense, a species new to science, was described from Fairview Mountain. It belongs to the subgenus *Avicularia* of the family Polygonaceae.

The study of the two mountains was based on extensive field collections made over a period of years by the author, supplemented by such published data, as existed, the latter consisting largely of general or casual comments of little definitive value. Keys to the families, genera, and species were prepared and the plants were listed in the catalogue with notes on abundance, range, and habitat of the various species. The zonal distribution and life form of each plant was also indicated.

BIBLIOGRAPHY

1. Abrams, LeRoy. An illustrated flora of the Pacific States. Stanford University, California, Stanford University Press, Vol. 1, 1923. 538 p., Vol. 2, 1944. 635p.
2. Achey, D. M. A revision of the section Gymnocaulis of the genus Orobanche. Bulletin of the Torrey Botanical Club 60:441-451, 1933.
3. Adams, J. E. A systematic study of the genus Arctostaphylos Adans. Journal Elisha Mitchell Society 56:1-62, 1940.
4. Applegate, Elmer I. The genus Erythronium; a taxonomic and distributional study of the western North American species. Madrona 3:58-113, 1935.
5. Applegate, Elmer I. Plants of the Lava Beds National Monument, California. The American Midland Naturalist 19:334-368, 1938.
6. Applegate, Elmer I. Plants of Crater Lake National Park. The American Midland Naturalist 23:497-572, 1939.
7. Bailey, Vernon. The mammals and life zones of Oregon. United States Department of Agriculture, Bureau of Biological Survey, North American Fauna No. 55, 1936. 416p.
8. Baird, Viola B. Wild violets of North America. Berkeley, California, University of California Press. 1942. 225p.
9. Baker, William H. A key to the flora of Fairview Mountain. Unpublished master's thesis, Oregon State College, Corvallis, Oregon. 1942. 197p.
10. Baker, William H. Ferns of Fairview Mountain, Calapooya Range, Oregon. American Fern Journal 38:89-91, 1948.
11. Baker, William H. and Yancey, Robert. The biological spectra of the natural regions of Oregon. Unpublished mss.

12. Barkley, F. A. A monographic study of Rhus and its intermediate allies in North and Central America. Annals of the Missouri Botanical Garden 24:265-498, 1937.
13. Benson, G. T. The trees and shrubs of western Oregon. Contributions from the Dudley Herbarium of Stanford University 2:1-170, 1930.
14. Benson, Lyman. A treatise on the North American Ranunculi. The American Midland Naturalist 40:1-261, 1948.
15. Berger, A. A taxonomic review of currants and gooseberries. New York Agricultural Experiment Station Technical Bulletin 109:1-118, 1924.
16. Bowerman, Mary L. The flowering plants and ferns of Mount Diablo, California. Berkeley, California, The Gillick Press. 1944. 290p.
17. Bowers, Nathan A. Cone-bearing trees of the Pacific Coast. New York, Whittlesey House, McGraw-Hill Book Company. 1942. 169p.
18. Braun-Blanquet, J. Plant sociology. New York, McGraw-Hill Book Company. 1932. 439p.
19. Carter, W. R. and Newcombe, C. F. Preliminary catalog of the flora of Vancouver and the Queen Charlotte Islands. Victoria, British Columbia, Report of the Provincial Museum of Natural History. 1921.
20. Compton, Gladys. A revisional study of the species Erigeron foliosus Nutt. Southern California Academy of Science Bulletin 33:50-54, 1934.
21. Constance, Lincoln. A systematic study of the genus Eriophyllum Lag. University of California Publications in Botany 18:69-135, 1937.
22. Constance, Lincoln. The genus Hydrophyllum L. The American Midland Naturalist 27:710-731, 1942.
23. Constance, Lincoln. The genus Nemophila. University of California Publications in Botany 19:341-398, 1941.

24. Cooke, William B. Flora of Mount Shasta. The American Midland Naturalist 23:497-572, 1940.
25. Coulter, J. M. and Rose, J. N. Monograph of the North American Umbelliferae. Contributions from the United States National Herbarium 7:1-258, 1900.
26. Cronquist, Arthur. Revision of the North American species of *Erigeron*, north of Mexico. Brittonia 6:121-302, 1947.
27. Detling, LeRoy E. The genus *Dentaria* in the Pacific states. American Journal of Botany 23:570-576, 1936.
28. Detling, LeRoy E. A revision of the North American species of *Descurainia*. The American Midland Naturalist 22:481-520, 1939.
29. Eastwood, Alice. A revision of *Arctostaphylos*. Leaflets of western Botany 1:105-127, 1934.
30. Eliot, W. A. Forest trees of the Pacific coast. New York, G. P. Putnam's Sons, 1938. 565p.
31. Epling, Carl. Monograph of the genus *Monardella*. Annals of the Missouri Botanical Garden 12:1-106, 1925.
32. Ewan, Joseph. A synopsis of the North American species of *Delphinium*. University of Colorado Studies, Series D (Physical and Biological Sciences) 2:55-244, 1945.
33. Fernald, M. L. The North American species of *Anemone*, section *Anemonathea*. Rhodora 30:180-188, 1928.
34. Foster, R. C. A cytotaxonomic survey of the North American species of *Iris*. Contributions of the Gray Herbarium 119:1-82, 1937.
35. Frye, T. C. Ferns of the northwest. Portland, Oregon, Metropolitan Press, 1934. 177p.
36. Frye, T. C. and Rigg G. B. Elementary flora of the northwest. Chicago, American Book Co., 1914. 256p.

37. Gates, R. R. A systematic study of the North American genus Trillium. Annals of the Missouri Botanical Garden 4:43-92, 1917.
38. Galway, Desma H. North American species of Smilacina. The American Midland Naturalist 33:644-666, 1945.
39. Gilkey, Helen M. Handbook of northwest flowering plants. Portland, Oregon, James, Kerns and Abbot Co., 1947. 413p.
40. Gill, L. S. Arceuthobium in the United States. Connecticut Academy of Arts and Sciences Transactions 32:111-245, 1935.
41. Grant, Adele L. A monograph of the genus Mimulus. Annals of the Missouri Botanical Garden 11:99-388, 1924.
42. Greenman, J. M. Monograph of the north and central American species of the genus Senecio. Annals of the Missouri Botanical Garden 2:573-626, 1915; 3:85-194, 1916; 4:15-36, 1917; 5:37-108, 1918 (Not yet completed).
43. Hall, Harvey M. The genus Haplopappus. Washington D. C. Carnegie Institution of Washington, Publication No. 389, 1928. 391p.
44. Henry, J. K. The flora of southern British Columbia. Toronto, W. J. Gage and Co., 1915. 363p.
45. Hitchcock, A. S. Manual of the grasses of the United States. United States Department of Agriculture, Miscellaneous Publication 200, 1935. 1040p.
46. Hitchcock, C. Leo. A revision of the Drabas of western North America. University of Washington Publications in Biology 11:1-132, 1941.
47. Hitchcock, C. Leo. Revision of the North American species of Godetia. Botanical Gazette 89:321-361, 1930.
48. Hitchcock, C. Leo. The genus Lepidium in the United States. Madrona 3:265-320, 1936.

49. Hitchcock, C. Leo and Maguire, Bassett. A revision of the North American species of Silene. University of Washington Publications in Biology 13:1-73, 1947.
50. Hoover, Robert F. A revision of the genus Brodiaea. The American Midland Naturalist 22:551-574, 1939.
51. Howell, John Thomas. Studies in Ceanothus. Leaflets of Western Botany 2:228-240, 1940.
52. Howell, Thomas. A flora of Northwest America. Portland, Oregon, Author, 1903. 792p.
53. Jepson, W. L. Revision of the California species of Arctostaphylos. Madrona 1:76-96, 1922.
54. Jepson, W. L. A flora of California. Berkeley, Student's Cooperative Society, University of California, 1909-1943. Vol. 1, 578p. (less 1-32); Vol. 2, 1-684p; Vol. 3, 17-464p. (not yet completed).
55. Jepson, W. L. A manual of the flowering plants of California. San Francisco, Williams Printing Co., 1925. 1238p.
56. Johnson, A. M. Revision of the North American species of the section Boraphila of the genus Saxifraga. Studies in Biological Sciences, University of Minnesota 4:1-110, 1919.
57. Johnston, I. M. Restoration of the genus Hackelia. Contributions of the Gray Herbarium 68:43-48, 1923.
58. Johnston, I. M. Studies in the Boraginaceae. - IV. The North American species of Cryptantha. Contributions of the Gray Herbarium 74:1-114, 1925.
59. Jones, G. N. A botanical survey of the Olympic Peninsula, Washington. University of Washington Publications in Biology 5:1-286, 1936.
60. Jones, G. N. The flowering plants and ferns of Mount Rainier. University of Washington Publications in Biology 7:1-192, 1938.
61. Jones, G. N. A monograph of the genus Symphoricarpos. Journal of the Arnold Arboretum 21: 201-252, 1940.

62. Jones, G. N. A synopsis of the North American species of Sorbus. Journal of the Arnold Arboretum 20:1-43, 1939.
63. Jones, G. N. American species of Amelanchier. University of Illinois Biological Monographs 20:1-126, 1946.
64. Keck, David D. Revision of Horkelia and Ivesia. Lloydia 1:75-142, 1938.
65. Keck, David D. A revision of the genus Orthocarpus. Bulletin of the California Academy of Sciences 16:517-571, 1927.
66. Keck, David D. Studies in Penstemon - VIII. A cytotaxonomic account of the section Spermunculus. The American Midland Naturalist 33:128-206, 1945.
67. Kirkwood, J. E. Northern Rocky Mountain trees and shrubs. Stanford University, California, Stanford University Press, 1930. 340p.
68. Larisey, Mary M. A revision of the North American species of the genus Thermopsis. Annals of the Missouri Botanical Garden 27:245-258, 1940.
69. Lawrence, Donald B. Some features of the vegetation of the Columbia River gorge with special reference to asymetry in forest trees. Ecological Monographs 9:219-257.
70. Lint, Harold and Epling, Carl. A revision of Agastache. The American Midland Naturalist 33:207-230, 1945.
71. MacKenzie, Kenneth K. North American Cariceae. New York, New York Botanical Garden, 1940. 539p.
72. Maguire, Bassett. A monograph of the genus Arnica. Brittonia 4:386-527, 1943.
73. Mathias, Mildred E. A revision of the genus Lomatium. Annals of the Missouri Botanical Garden 25:225-297, 1938.

74. Merriam, C. Hart. Life zones and crop zones in the United States. United States Department of Agriculture, Division of Biological Survey, Bulletin 10, 1898. 79p.
75. McDermott, L. F. An illustrated key to the North American species of Trifolium. San Francisco, 1910.
76. McDonald, E. S. The life-forms of the flowering plants of Indiana. The American Midland Naturalist 18:687-773, 1937.
77. McDougall, W. B. Plant ecology. Philadelphia, Lea and Febiger, 1941. 285p.
78. Muenscher, W. C. The flora of Whatcom county, state of Washington. Ithaca, New York, Author, 1941.
79. Munz, P. A. The North American species of Orobanche, section Myzorrhiza. Bulletin of the Torrey Botanical Club 57:611-624, 1930.
80. Munz, P. A. Studies in Onagraceae VIII, the subgenera Hartmannia and Gauropsis of the genus Oenothera. The genus Gayophytum. American Journal of Botany 19:755-778, 1932.
81. Munz, P. A. A revision of the genus Boisduvalia (Onagraceae). Darwiniana 5:124-152, 1941.
82. Newsom, V. M. A revision of the genus Collinsia. The Botanical Gazette 87:260-301, 1929.
83. Northcraft, Richard D. The biological spectrum of the summer flora on a mountain in Coahuila. Contributions from the Dudley Herbarium 3:306-312, 1944.
84. Ottley, Alice M. A revision of the California species of Lotus. University of California Publications in Botany 10:189-305, 1923.
85. Oregon State System of Higher Education. Physical and Economic Geography of Oregon. Salem, Oregon, 1940. 319p.

86. Ownbey, Marion. A monograph of the genus Calochortus.
Annals of the Missouri Botanical Garden 27:371-560,
1940.
87. Payson, Edwin Blake. The North American species of
Aquilegia. Contribution from the United States
National Herbarium 20:133-157, 1918.
88. Peck, Morton E. More new plants from Oregon.
Torreya 32:147-153, 1932.
89. Peck, Morton E. A manual of the higher plants of
Oregon. Portland, Oregon, Binfords and Mort, 1941.
866p.
90. Pennell, Francis W. "Veronica" in North and South
America. Rhodora 23:1-22, 29-41, 1921.
91. Pennell, Francis W. A revision of Synthyris and
Besseya. Proceedings of the Academy of Natural
Sciences of Philadelphia 85:77-106, 1933.
92. Pennell, Francis W. Scrophulariaceae of the North-
western United States II. Pedicularis of the
group Bracteosae. Bulletin of the Torrey Botani-
cal Club 61:441-448, 1934.
93. Petrak, F. Die Nordamerikanischen arten der gattung
Cirsium. Bot. Centbl. Beihefte 35:223-567, 1917.
94. Piper, C. V. Flora of the state of Washington. Con-
tributions of the United States National Herbarium
11:1-637, 1906.
95. Piper, C. V. and Beattie, R. K. Flora of the north-
west coast. Lancaster, Pennsylvania, New Era
Printing Co., 1915. 418p.
96. Pool, R. J. Flowers and flowering plants. New York,
McGraw-Hill Book Co., 2nd ed., 1941. 428p.
97. Raunkaier, C. The life forms of plants and statis-
tical plant geography. Clarendon Press, Oxford,
1934. 632p.
98. Reichinger, K. H. Jr. The North American species of
Rumex. Field Museum of Natural History, Botani-
cal Series 17:1-151, 1937.

99. Rollins, Reed C. The genus Arabis in the Pacific Northwest. Research Studies of the State College of Washington 4:1-52, 1936.
100. Rosendahl, C. O., Butters, F. K. and Lakela, Olga. A monograph of the genus Heuchera. Minnesota Studies in Plant Science 2:1-180, 1936.
101. Rossbach, Ruth P. Spergularia in North and South America. Rhodora 42:105-143, 158-193, 203-213, 1940.
102. Roush, Eva M. Fling. A monograph of the genus Sidalcea. Annals of the Missouri Botanical Garden 18:117-244, 1931.
103. Rydberg, P. A. A monograph of the North American Potentilleae. Memoirs from the Department of Botany of Columbia University 2:1-221, 1898.
104. Sharsmith, Helen K. Flora of the Mount Hamilton Range of California. The American Midland Naturalist 34:289-367, 1945.
105. Small, John K. A monograph of the North American species of the genus Polygonum. Memoirs from the Department of Botany of Columbia University 1:1-183, 1895.
106. Smiley, F. J. A report upon the boreal flora of the Sierra Nevada of California. University of California Publication in Botany 9:1-423, 1921.
107. Smith, C. P. A distributional catalogue of the Lupines of Oregon. Contributions from the Dudley Herbarium of Stanford University 1:1-55, 1927.
108. Smith, Warren D. The geology and mineral resources of Lane County, Oregon. State of Oregon, Department of Geology and Mineral Resources, Bulletin 11, 1938.
109. Stearn, William Thomas. Epimedium and Vancouveria (Berberidaceae), a monograph. Journal of the Linnean Society, Botany 51:409-535, 1938.
110. St. John, Harold and Warren, F. A. The plants of Mt. Rainier National Park, Washington. The American Midland Naturalist 18:952-985, 1937.

111. Stokes, Susan G. The genus Eriogonum. A preliminary study based on geographic distribution. San Francisco, 1936. 124p.
112. Sudworth, George B. Forest trees of the Pacific Slope. Washington D. C., Government Printing Office, 1908. 44lp.
113. Sweetser, Albert R. and Kent, Mary E. Key and flora; some of the common flowers of Oregon. New York, Ginn and Co., 1908. 157p.
114. Trelease, William. The species of Epilobium occurring north of Mexico. Annual Report of the Missouri Botanical Garden 2:69-117, 1891.
115. Vail, Anna M. A study of the genus Psoralea in America. Bulletin of the Torrey Botanical Club 21:91-119, 1894.
116. Weaver, John E. and Clements, Frederic E. Plant ecology. New York, McGraw-Hill Book Co., 1938. 60lp.
117. Weber, William A. A taxonomic and cytological study of the genus Wyethia, family Compositae, with notes on the related genus Balsamorhiza. The American Midland Naturalist 35:400-452, 1946.
118. Weigand, Karl M. A revision of the genus Listera. Bulletin of the Torrey Botanical Club 26:157-171, 1899.
119. Wheeler, Louis C. Notes on Plantago in the Pacific States. The American Midland Naturalist 20:331-333, 1938.
120. Wherry, Edgar T. Phloxes of Oregon. Proceedings of the Academy of Natural Sciences of Philadelphia 90:133-140, 1938.
121. Wherry, Edgar T. Review of the genera Collomia and Gymnosteris. The American Midland Naturalist 31:211-231, 1944.
122. Wherry, Edgar T. The genus Polemonium in America. The American Midland Naturalist 27:741-760, 1942.

123. White, T. G. A preliminary revision of the genus Lathyrus in North and Central America. Bulletin of the Torrey Botanical Club 21:444-458, 1894.
124. Wolf, C. B. The North American species of Rhamnus. Monograph of the Rancho Santa Ana Botanical Garden, Botany Series 1:1-136, 1938.
125. Woodson, Robert E. Jr. Studies in the Apocynaceae I. Annals of the Missouri Botanical Garden 17: 83-212, 1930.
126. Wynd, F. Lyle. The botanical features of the life zones of Crater Lake National Park. The American Midland Naturalist 25:324-347, 1941.
127. Wynd, F. Lyle. The flora of Crater Lake. The American Midland Naturalist 17:881-949, 1936.