SMALL FRUIT GERMPLASM COLLECTIONS IN THE PACIFIC NORTHWEST

July 21 through August 13, 1985

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INTRODUCTION

A restricted germplasm base is an often cited problem in many cultivated crop species with regard to genetic vulnerability and the potential for improvement of traits such as quality, yield, pest resistance, and adaptation (10). Cultivated small fruit crops such as blueberries (Vaccinium spp.), strawberries (Fragaria spp.), currants and gooseberries (Ribes spp.), and blackberries and raspberries (Rubus spp.) all fall into this catagory in that present cultivars are all derived from a relatively small number of original wild progenitor clones (3,5,7,8). The striking improvements that have been made in all these crops attest to the very high level of heterozygosity which is inherent in these species.

The Pacific Northwest of the United States and Canada is an area rich in diversity of small fruit species which with the exception of Fragaria, have never been exploited in improvement programs to a significant degree. Altogether, 13 Vaccinium, 3 Fragaria, 10 Rubus, and 32 Ribes species are native to this region (4,9). The majority of these species are adapted to upland soils and some are drought resistant, maturing a full crop of fruit during the rainless summers in the region.

The objective of these collections was to collect representative population samples of all Fragaria, Ribes, Rubus, and Vaccinium species native to the Pacific Northwest for maintenance at the National Clonal Germplasm Repository at Corvallis and for utility in breeding programs.

MATERIALS AND METHODS

The collections were made between July 21 and August 13, 1985. Therefore it was only possible in this time frame to collect from a portion of the region. The central and southern Cascades and Siskiyous and Coast Range in Oregon, and the Mt. Adams area and Olympic penisula in Washington were chosen for this expedition. Collection locations were confined largely to national forests with one on state forest land, and one in Olympic National Park. U.S. Forest Service recreation maps were used in locating and identifying most sites. United States Forest Service roads proved quite adequate to access most locations.

Elevations of locations were determined by altimeter, however these should be considered approximate, since reference points for calibration were not available in some areas. Slope and aspect were determined by planeometer and compass, respectively. Latitude and longitude were determined from U.S. Forest Service and other maps by the staff at the Clonal Repository at Corvallis, OR.

Population collections of seeds were strongly emphasized, however, representative or elite clonal accessions were included in certain instances, along with representative herbarium samples of most species. With the limited time available for collecting and the geographic area to

be covered, detailed descriptions of accessions were not usually feasible in the field. This quickly became evident after describing the fruiting characteristics of one population of Vaccinium parvifolium (BL-17) (data presented in Table 3 in the results). In so far as possible all accessions were characterized for fruit size and quality. Additional data is available from herbarium specimens for many accessions.

Species designations were as circumscribed by previous authors as follows: Fragaria, Ribes, Rubus, minor genera, and associated flora according to Hitchcock and Cronquist (4); and Vaccinium according to Shultz (9). Locations were identified by a prefix made up of the first letter of the last name of the collectors involved (i.e., BLJ for Ballington/Luby/Jahn) followed by a location number and an additional number for each individual accession within a location (i.e., BLJ-1-1 indicates accession one at location one).

Fruit and clonal accessions were labelled, placed in plastic bags, and then packed in ice in ice chests until they were returned to the clonal repository at Corvallis for seed extraction, drying, and storage, or placement in intermittent mist propagation beds in a greenhouse (clonal accessions). Herbarium specimens were pressed at the end of each day of collecting.

Carefully harvested population samples of fruit of five Vaccinium species, V. chamissonis, V. deliceosum, V. membranaceum, V. ovalifolium, and V. parvifolium, were shipped to North Carolina State University for anthocyanin analysis. The results of this study are presented separately (2).

RESULTS AND DISCUSSION

The individual location and accession descriptions are as follows:

Location BLJ-1. Willamette National Forest, Oregon.
Followed U.S. Forest Service Rd. 1993 by Cougar Reservoir in the national forest. Took FS 556 off 1993. The location consisted of roadbanks and the woods edge on the right side of 556. Elevation, 1500 m; aspect, southwest; slope, 20°; latitude, 44° 00' N; longitude, 122° 10' W. Canopy species in the woods, predominately Abies, Tsuga, and Pseudotsuga. Fruit species on the location included Vaccinium chamissonis, V. membranaceum, V. ovalifolium and Rubus lasiococcus and R. ursinus. Collected July 21, 1985.

BLJ-1-1 Vaccinium chamissonis Bongard.
Clone to 1.2 m tall, smaller in overall aspect than adjacent V. ovalifolium, but otherwise very similar. Stems reddish; fruits green, corolla usually still attached. Collected two suckers for establishment in pots, along with herbarium specimens.

Location BLJ-2 Willamette National Forest, Oregon.
U.S. Forest Service Rd. 1993, for 3.2 km from Trailhead TR 3526/ TR 3311. The location consisted of roadsides and shoulders and included widespread populations of Fragaria virginiana var. glauca and F. vesca. Elevation, ranging from 1350-1450 m; aspect, east; slope, variable; latitude, 44° 00' N; longitude, 122° 20' W. Collected July 21, 1985.

BLJ-2-1 Fragaria virginiana var. glauca (S. Wats.) Staudt.
Population collection of open-pollinated fruit, collected along the roadside, beginning at the trailhead and continuing for about 35 m up the road. Fruit and plants typical for the species. Seeds.

BLJ-2-2 Fragaria virginiana var. glauca (S. Wats.) Staudt.
Population collection of open-pollinated fruit, starting about 1.5 km up 1993 from the trailhead and continuing for about 35 m on the shoulder of the road. Fruits in this sample had reasonably good firmness. This population was especially variable for fruit size and degree of sunkeness of seeds, with some plants with fine size for this species. Seeds.

BLJ-2-3 Fragaria vesca L.
Population collection of open-pollinated fruit. Population sympatric with BLJ-2-2. Good size fruit, plants typical. Seeds.

Location BLJ-3 Siuslaw National Forest, Oregon.
Forest Service Rd. 156 (3289), off OR 36, 2.2 km west of Deadwood, OR. Followed 156 for 0.9 km. The location included both roadsides. A creek paralleled the road on the right. Fairly heavily wooded on both sides. Elevation, 120 m; aspect, east; slope, essentially none along areas sampled; latitude, 44° 00' N; longitude 123° 50' W

Canopy dominated by Acer macrophyllum and Alnus rubra. The shrub layer included abundant Acer circinatum, Rubus procerus, R. parviflorus, R. spectabilis, Sambucus racemosa, and Corylus cornuta var. californica. Fruit already gone from Rubus spectabilis. Collected July 22, 1985.

BLJ-3-1 Rubus parviflorus Nutt.
Population collection of O.P. fruit. Seeds.

BLJ-3-2 Sambucus racemosa L.
Small population collection of O.P. fruit. Seeds.

BLJ-3-3 Corylus cornuta var. californica (DC) Sharp.
Herbarium speciman collected.

Location BLJ-4 Siuslaw National Forest, Oregon.
3.2 km up U.S. Forest Service Rd. 156, off OR 36. The location was partly open on both roadsides, along a creek. Elevation, 150 m; aspect, generally south; slope, none essentially; latitude, 44° 15' N; longitude, 123° 40' W. Canopy species, Acer macrophyllum, Alnus rubra, Pseudotsuga menziesii, Tsuga heterophylla, and Thuja plicata in the edge of the woods. On the roadbanks, extensive colonies of Rubus ursinus and R. parviflorus occurred. Collected July 22, 1985.

BLJ-4-1 Rubus ursinus Cham. & Schlecht.
Population collection of fruit. Plants typical for the species. Fruit variable, up to 2.5 cm long, fine quality. Seeds.

Location BLJ-5 Siuslaw National Forest, Oregon.
6.4 km up U.S. Forest Service Rd. 156, off OR 36. The location was partly open, on both roadsides. Elevation, 280 m; aspect, southeast; latitude, 44° 00' N; longitude, 123° 50' W. Canopy species, Acer macrophyllum, Pseudotsuga menziesii, and occasional Thuja plicata. Subcanopy mainly Acer circinatum. Rubus ursinus, and R. parviflorus were extensive, and R. leucodermis occasional. Collected July 22, 1985.

BLJ-5-1. Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population collection of O.P. fruit. Seeds.

3 km further down FS Rd. 156. Roadbank above the road in the edge of the woods. Elevation, 330 m; aspect, southeast; slope, 35°. Tree associates same as BLJ-5 location, plus scattered Castinopsis chrysophylla. Vaccinium ovatum and Gaultheria shallon occurred in the shrub layer, along with several V. parvifolium. Fruit still green on V. ovatum. Two herbarium specimens of V. ovatum Pursh. collected.

Location BLJ-6 Siuslaw National Forest, Oregon.
11 km up road 156, off OR 36. Clearcut on left side of road, burned-over 3 to 4 years ago. Elevation, 300 m; aspect, southeast; slope, very steep (45°+); latitude, 44° 20' N; longitude, 123° 40' W. Tree species regenerating on the site mainly Pseudotsuga menzesii and Alnus rubra with scattered Castinopsis chrysophylla, Acer circinatum, and Cornus nuttalllii. Gaultheria shallon, Vaccinium ovatum, Rubus ursinus, and Ceanothus spp. widespread, along with scattered V. parvifolium and Rhododendron macrophyllum. An excellent inland location for V. ovatum (fruit still green).
Collected July 22, 1985.

BLJ-6-1 Vaccinium parvifolium Sm.
Population collection of O.P. fruit from the limited number of fruiting plants on the site. Seeds.

BLJ-6-2 Vaccinium parvifolium Sm.
Select clone, very fruitful this year. Plant over 3 m tall, almost columnar growth. Good size fruit. Cuttings and herbarium samples collected.

BLJ-6-3 Vaccinium ovatum Pursh.
Cuttings from regrowth on the very large old plants regenerating after the fire.

Location BLJ-7 Siuslaw National Forest, Oregon.
Left off OR 36 at Brickerville on Rd 1706 for 6.4 km. The location consisted of roadsides in fairly dense, mature forest near the north fork of the Siuslaw River. Elevation, 60 m; latitude, 44° 05' N; longitude 123° 10' W. Canopy tree species Alnus rubra, Thuja plicata, Pseudotsuga menziesii, and Acer macrophyllum. Subcanopy species, Acer circinatum and Corylus cornuta var. californica. Rubus parviflorus and R. spectabilis were very abundant, and V. parvifolium scattered. Little fruit remaining on R. spectabilis. Collected July 22, 1985.

BLJ-7-1 Vaccinium parvifolium Sm.
Small population sample of O.P. fruit. Fine fruit size. Seeds.

BLJ-7-2 Rubus spectabilis Pursh.
Small population sample of O.P. fruit. A good percentage already dried up. Seeds.

Location BLJ-8 Siuslaw National Forest, Florence, OR.
Left off US 101 north of Florence onto Forest Service Rd 794 to Sutton Campground, then right on FS Rd 793 to the camping area. Elevation variable, 10-30 m; latitude, 44° 00' N; longitude, 124° 00' W. Collected July 22, 1985.

BLJ-8-1 Vaccinium uliginosum L.
Extensive population in a bog on both sides of Rd 793, just beyond turn on 794. Population makes up 90% cover on the left

of the road, much less on the right, total about 0.4 hectares. Phenology directly related to water level; plants on higher ground with green but almost full size fruit, while others near the present water level just blooming. Stems 0.4-0.7 m tall, flowers and fruit mostly in pairs. Elevation approximately 10 m. Cuttings and herbarium specimums collected.

BLJ-8-2 Malus fusca (Raf.) Schneid.
Trunks to 5.0 m tall, fruit green, small pyriform, and in clusters. Herbarium speciman collected. (Fruit collected by Dr. Richard Bell, January 1986.)

Dune trail along the ridge in section D of the campground; elevation approximately 30 m; aspect generally east.

BLJ-8-3 Vaccinium ovatum Pursh.
Cuttings and open-pollinated fruit collected. Earliest-ripening clone on the site. Fruit black. Cuttings and seeds.

BLJ-8-4 and BLJ-8-5 Vaccinium ovatum Pursh.
Cuttings collected from two clones with immature but glaucous fruit.

Back to main area of campground. Elevation 8-10 m.

BLJ-8-6 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit from throughout the campground. Fruit color varied from orange to red. Seeds.

Overnight at Sutton Campground.

Location BLJ-9 Siuslaw National Forest, Oregon.
Took US 101 from Florence to Mapleton. Turned right across bridge in Mapleton on OR 5036 for 4.6 km to Forest Service Rd 831. Left on FS 831 for 1.8 km. The location encompassed both roadsides. Elevation, 200 m; aspect, southeast; latitude, 44° 00' N; longitude, 123° 50' W. Major tree associates in woods edge, Pseudotsuga menziesii and Alnus rubra. Rubra spectabilis common along the roadsides (fruit already gone). Rubus parviflorus was scattered, and R. leucodermis and R. ursinus occasional. Collected July 23, 1985.

BLJ-9-1 Rubus leucodermis Dougl. ex Torr. & A. Gray.
Open-pollinated fruit collected from the eight clones growing on the site. Typical for the species. Seeds.

(Note: Thus far R. leucodermis found only as scattered individuals on a site, as opposed to occurring in large populations.)

BLJ-9-2 Rubus ursinus Cham. & Schlecht.
Population collection of open-pollinated fruit - collected at 25 fruits per clone. Plants typical for the species. Seeds.

BLJ-9-3 Rubus parviflorus Nutt.
Population collection of open-pollinated fruit. There was a good deal of apparent variability in fruit size on this site. Seeds.

Location BLJ-10 Siuslaw National Forest, Oregon.
Forest Service Rd 831, 1.3 km above BLJ-9 and near FS Rd 832. The location included a wooded roadbank and an adjacent clearcut. The clearcut was burned about 2 years ago, so trees and shrubs were just beginning to regenerate. Elevation, 250 m; slope, 40%. Predominant canopy species in wooded area Pseudotsuga menziesii. Ribes was common on the east slope, and Vaccinium on the south slope. Collected July 23, 1985.

BLJ-10-1 Ribes sanguineum Pursh.
Population collection of open-pollinated fruit. Seeds and herbarium specimens.

BLJ-10-2 Vaccinium ovatum Pursh.
Cuttings from a representative clone growing in the clearcut.

Along FS Rd 831 - General elevational range 200-350 m Vaccinium ovatum was the most abundant Vaccinium, but only scattered. Vaccinium parvifolium was localized, generally in areas at around 200 m elevation. Ribes sanguineum was scattered all along and above the road, very often in inaccessible locations. Rubus parviflorus, R. ursinus, and R. spectabilis were generally abundant. Rubus ursinus had already been harvested locally. The fruit was already gone on R. spectabilis. Rubus procerus also occurred all along the road, but was not dominant as it was in the valleys. Rubus leucodermis occurred only as occasional plants.

Location BLJ-11 Siuslaw National Forest, Oregon.
Forest Service Rd 48, 3.8 km beyond where Rd 5036 becomes Rd 48. The location covered the upper portion of a clearcut along the margin of a Pseudotsuga menziesii forest. Elevation, 360 m; aspect, southeast; slope 30°; latitude, 44° 00' N; longitude 123° 50' W. Scattered plants of Vaccinium ovatum (fruit green) and V. parvifolium occurred in the clearcut and woods edge, along with Rhododendron macrophyllum. Collected July 23, 1985.

BLJ-11-1 Vaccinium parvifolium Sm.
Population sample of open-pollinated fruit, collected at 25 berries/plant. Plants were quite variable for fruit size and color (light pink to medium orange-red). Seeds.

Location BLJ-12 Siskiyou National Forest, Oregon.
Roadsides in partial shade above Elk Creek, on Forest Service Rd 33, 3.0 km south of the entrance to Siskiyou National Forest. Elevation, 170 m; aspect, west; slope, 45°; latitude, 42° 00' N; longitude, 124° 00' W. Main canopy species Alnus rubra. A fairly extensive population of Rubus leucodermis occurred on the site, along with scattered R. parviflorus and Ribes sanguineum. Collected July 23, 1985.

BLJ-12-1 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population collection of open-pollinated fruit, collected at 25 fruits per clone. This was an elite population, with fruit size equal to commercial black raspberry cultivars. The fruits on a number of plants were elongated with many drupelets. Fruits were not noticeablly seedy. Seeds.

BLJ-12-2 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Open-pollinated fruit from one elite clone, with very large-elongated-shaped fruit of good quality. Primocanes to 3.3 m tall. Seeds. (Tip layers also collected in January 1986.)

BLJ-12-3 Ribes sanguineum Pursh.
Small population collection of open-pollinated fruit. Seeds.

Location BLJ-13 Siskiyou National Forest, Oregon.
Left off Forest Service Rd 3300 onto FS 3730 to Illahe Campground on a terrace above the Rogue River in Siskiyou Nat'l Forest. Generally, open woodland. Elevation, 130 m; latutude, 42° 40' N; longitude, 123° 20' W. Major tree canopy associates, Pseudotsuga menziesii, Thuja plicata, Umbellaria californica, Lithocarpus densiflorus, and Arbutus menziesii, along with occasional Acer macrophyllum, Fraxinus sp., and Alnus rubra. Vaccinium ovatum was dominant in the understory and along the woods edge. Ribes spp. scattered in open areas. Collected July 23, 1985.

BLJ-13-1 Vaccinium ovatum Pursh.
Population collection of open-pollinated fruit. Fruit just starting to ripen. The population was quite variable for fruit size, degree of glaucousness, and shape. Approximately 50% of the plants ripening on this date had blue fruit. Stems up to 2.3 m tall. Seeds.

BLJ-13-2 Ribes cruentum Greene.
Small population of open-pollinated fruit. Stems thorny at the nodes. Fruit spherical, olive green with light stripes on the veins, 0.9-1.6 cm diameter; covered with short stiff spines; flavor, mild and pleasant; corolla persistent on the fruit. Seeds and herbarium speciman

BLJ-13-3 Vitis californica
Herbarium speciman and cuttings from a representative clone growing along the bank of the river below the campground.

BLJ-13-4 Crataegus douglasii var. suksdorfii (Lindl.).
Open-pollinated fruit from one clone growing on the first terrace above the river. Seeds and herbarium speciman.

BLJ-13-5 through BLJ-13-7 Vaccinium ovatum Pursh.
Cuttings from three blue-fruited clones located along the roadside in the campground.

Overnight at Illahe Campground.

From Illahe Campground back to Rd 33, then left on Rd 2308, off Rd 33. Vaccinium ovatum was scattered along the road, and quite abundant where moisture conditions were more favorable.

Location BLJ-14 Siskiyou National Forest, Oregon.
Both roadsides along side road 260, approximately 0.2 km off Forest Service Rd 2308. Elevation, 510 m; aspect, south to east (road curves); slope, 35° (below road); latitude, 42° 30' N; longitude, 124° 00' W. Dominant canopy species Pseudotsuga menziesii. Mid-story with Umbellaria californica, Castinopsis chrysophylla, and Arbutus menziesii. Small fruit genera scattered throughout, but Vaccinium ovatum dominant in the understory. Collected July 24, 1985.

BLJ-14-1 Vaccinium ovatum Pursh.
Seedlings growing out of a rotten log at the edge of the woods.

BLJ-14-2 Ribes cruentum Greene.
Open-pollinated fruit from a single plant growing by the roadside. Fruit larger than BLJ-13-2. Seeds.

BLJ-14-3 Corylus cornuta var. californica (DC) Sharp.
Herbarium speciman from one plant. Large size fruit, short husk; otherwise typical.

BLJ-14-4 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Herbarium specimans from both the typical glaucous-leaved and caned form of the species and the form with nonglaucous stems and leaves. There also often appears to be less wax on the fruit of nonglaucous plants.

BLJ-14-5 Rubus ursinus Cham. & Schlect.
Small population collection of open-pollinated fruit from the scattered plants growing along the road. Plants and fruit typical. Seeds.

BLJ-14-6 Rubus parviflorus Nutt.
Small population collection of open-pollinated fruit. Seeds.

BLJ-14-7 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population sample of open-pollinated fruit. Seeds.

BLJ-14-8 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population sample of open-pollinated fruit made up of 25 fruits/clone. Seeds.

BLJ-14-9 Vaccinium ovatum Pursh.
Cuttings from one productive plant. Fruit still green, but glaucous.

Location BLJ-15 Siskiyou National Forest, Oregon.
Side road 150, to right, off U.S. Forest Service Rd 3517 (Rd 150 goes to Raspberry Mountain). Elevation, 730-780 m; aspect, south to east; slope, 45°-65°; latitude, 42° 10' N; longitude, 124° 00' W. Open woodland and dry, fairly barren slopes and roadsides. Main canopy species Tseudotsuga menziesii, with Umbellaria californica in the sub-canopy. Arctostaphylos and Ceanothus species were common, and Ribes cruentum, and Rubus leucodermis scattered. Fragaria vesca was very common on the east flank of Raspberry Mountain, but the fruit was already gone. Collected July 24, 1985.

(Collections at approx. 0.3 km up Rd 150: 730 m elev., south aspect, 45° slope; roadsides.)

BLJ-15-1 Ribes cruentum Greene.
Population collection of open-pollinated fruit, collected at 25 fruits/plant. Seeds.

(Collections 1.6 km up Rd 150, at road's end in a clearcut, at Raspberry Mountain; 780 m elev., east aspect, 65° slope.)

BLJ-15-2 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population collection of open-pollinated fruit, collected at 25 fruits/plant. This included fruit from typical glaucous-leaved and stemmed plants, plants with nonglaucous leaves and stems, a few plants with glaucous leaves and stems but albino fruit, and one plant with both albino fruit and nonglaucous leaves and stems. The nonglaucous phase of the species was much more common on this site than on BLJ-14. Seeds.

BLJ-15-3 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Open-pollinated fruit and stem cuttings collected from one clone with albino fruit and glaucous stems and leaves. Seeds and cuttings.

BLJ-15-4 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Second population collection of open-pollinated fruit on Raspberry Mountain. Seeds.

BLJ-15-5 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Open-pollinated fruit and stem cuttings from a clone with albino fruit and nonglaucous stems and leaves. Seeds and cuttings.

Headed for Gold Beach on the coast after leaving site BLJ-15, then took Hwy 101 from Gold Beach to Brookings. At Brookings headed back east into the Siskiyous on Cty. Rd. 784. Next took Forest Service 1376 into Siskiyou National Forest, and F.S. Rd 3917 to Quail Mountain Prairie. Quail Mountain Prairie was a very dry site and scattered plants of V. ovatum were the only species of interest. From Quail Mountain Prairie headed toward the Vulcan Lake Trailhead at the entrance to Kalmiaopsis Wilderness on F.S. Rd. 3917.

Location BLJ-16 Siskiyou National Forest, Oregon.

Just outside entrance to Kalmiopsis Wilderness at the Vulcan Lake Trailhead on U.S. Forest Service Rd 3917. The location covered about 2.4 km down FS Rd 3917 from the trailhead. Elevation, 1160 m; aspect, north, generally; slope, 35° on the average; latitude, 42° 10' N; longitude, 123° 20' W. Overall, very rocky, very thin soil, with scattered trees and shrubs. The canopy species included mainly Pinus monticola and Calocedrus decurreus, with occasional Pinus contorta, Pinus ponderosa, and Pseudotsuga menziesii. One portion of the site as an apparent seepage slope which included a very large population of Darlingtonia californica and scattered clones of Rhododendron occidentale and Kalmiaopsis leachiana. One low-growing suckering to sometimes almost stoloniferous form of Vaccinium, bearing red fruit, was widespread on the location. On the very poorest sites the plants were no bigger than V. scoparium, while some clones were up to 0.7 m tall. This material appeared to be closest to V. parvifolium, which had adapted to the thin rocky soils on the location. The flavor of the Vaccinium fruits on this site were sweet and mild, in contrast to the typical acid flavor of V. parvifolium. Collected July 24, 1985.

BLJ-16-1 prob. Vaccinium parvifolium Sm.
Population collection of open-pollinated fruit. Seeds.

BLJ-16-2 prob. Vaccinium parvifolium Sm.
Small representative plant.

BLJ-16-3 through BLJ-16-5 prob. Vaccinium parvifolium Sm.
Cuttings from three representative plants. Also collected herbarium specimens from two of these.

Overnight at Vulcan Lake Trailhead.

July 25, 1985. Heading down FS Rd 1909, stopped 11.2 km below Vulcan Lake Trailhead. Elevation, 860 m; aspect, east; slope, 20°. Roadsides with Pseudotsuga menziesii, Castinopsis chrysophylla, and Lithocarpus densiflorus. Vaccinium ovatum occurred both above and below this stop, and much of Rd 3917 appeared to be a good site for this species. Its drought resistance was noteworthy. Rubus leucodermis did not appear to occur above 500 m elevation in this area.

BLJ-16-6 Vaccinium ovatum Pursh.
Herbarium specimen from one representative plant.

Also collected one herbarium specimen of Castinopsis chrysophylla, designated as BLJ-16, on this site.

Headed back to Brookings to buy a tire to replace one that blew out on Quail Prairie Mountain the day before. Dr. Jahn left the expedition at this point to return to Corvallis and prepare for his trip to Scandinavia.

Location BL-17 Jedediah Smith Redwoods State Park, California.
Five km northeast of the junction of US 101 and US 199, on 199. The location consisted of roadsides and the wood's edge in a valley along the Smith River. Elevation, 30 m approx.; latitude, 41° 50' N; longitude, 123° 40' W. Canopy species predominantly Sequoia sempervirens. Vaccinium parvifolium and V. ovatum dominated the understory along the road. Both these species appeared fairly shade tolerant, however V. parvifolium appeared more productive in fairly heavy shade. Fruit was still green on V. ovatum. With the south side of Hwy 199 serving as a transect, 33 consecutive plants of V. parvifolium were evaluated subjectively for intensity of red skin color, fruit size, fruit firmness, fruit removal force, crop, leaf disease reaction (esp. powdery mildew), and number of basal nodes on lateral current season branches bearing fruits (Table 3). Collected July 25, 1985.

BL-17-1 Vaccinium parvifolium Sm.
Population collection of open-pollinated fruit, collected at 25 fruits/plant. Seeds.

Took US 199 up into southern Oregon. Along the road where it followed the middle fork of the Smith River in California, V. ovatum was generally abundant.

At Cave Junction, Oregon, turned off US 199 onto State Road 46. Then turned onto Forest Service Rd 4613 from SR 46. Noted that Vaccinium ovatum, Rubus leucodermis and Ribes cruentum occurred along both roadsides.

Location BL-18 Siskiyou National Forest, Oregon.
7.7 km up Forest Service Rd 4612, off SR 46 (headed toward Williams). The location consisted of roadsides (mainly roadbanks) for about 0.5 km along the road essentially in full sun. Elevation, 1300 m; aspect, southwest; slope, 45° (above and below the road); latitude, 42° 10' N; longitude, 123° 30' W. Canopy species in the vicinity included mainly Pseudotsuga menziesii and Calocedrus decurrens. Ceanothus spp., Holodiscus discolor, Rubus parviflorus, scattered Rubus leucodermis, and a population of Fragaria vesca represented the shrub and herbaceous zones, respectively. Collected July 25 1985.

BL-18-1 Fragaria vesca L.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

BL 18-2 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population collection of O.P. fruit. The entire population on this site was the nonglaucous phase. Seeds.

BL-18-3 Ribes lobbi A. Gray.
Open-pollinated fruit and herbarium specimens from two plants. Seeds.

BL-18-4 Ribes sp. (currant).
Herbarium specimen collected.

Along FS Rd 4613 beyond the BL-18 location, noted scattered plants of Sambucus cerulea, Fragaria vesca, and Rubus ursinus. Turned onto FS Rd 070 off 4613. Ribes sp. (currants), abundant along both 4613 and 070.

Location BL-19 Siskiyou National Forest, Oregon.
From FS Rd 070, turned onto FS Rd 4611 for 1.8 km. Elevation, 1440 m; aspect, northwest. Fairly open roadsides. Canopy species mainly Pseudotsuga menziesii and Calocedrus decurrens. Ribes spp. abundant, Prunus emarginata scattered. Collected July 25, 1985.

BL-19-1 Prunus emarginata (Dougl.) Walp.
Herbarium specimen collected.

BL-19-2 Ribes lobbi A. Gray.
Population collection of open-pollinated fruit. Seeds.

From BL-19 headed toward Crater Lake National Park. Vaccinium scoparium was quite abundent in the eastern portion of Rogue River National Forest on Hwy 62, as you approach the Park, and continued into the Park on Pinus contorta sites.

Overnight at campground in Crater Lake National Park.

Morning of July 26. Consulted with naturalist Ronald Warfield at the headquarters of Crater Lake National Park on sites for small fruit genera in the surrounding area.

Vaccinium scoparium was abundant along Hwy 62 between Annie Springs and the west entrance to the Park. In this area it appeared to prefer partially open spots in Abies magnifica var. shastensis forests.

Location BL-20 Rogue River National Forest, Oregon.
South onto FS Rd 60 from Hwy 62, to Huckleberry Mountain. The location was scattered along FS Rd 60. Elevation, 1300-1550 m; aspect, variable; slope, less than 5°-20°; latitude, 42° 10' N; longitude, 123° 00'-W. Collected July 26, 1985.

BL-20-1 Vaccinium scoparium Lebig.
Population collection of open-pollinated fruit, from a very open Pinus contorta stand. Elevation, 1310 m; less than 5° slope. Fruit very scattered. Seeds.

Junction, FS Rd 800, 2.4 km down FS Rd 60: Old clearcut on the right in the corner on 800. Elevation, 1530 m; aspect, south; slope, 20°. Canopy species regenerating include Tsuga and Abies spp., and Pinus ponderosa. Arctostaphylos and Ceanothus spp. were common in the shrub layer, along with Vaccinium membranaceum. Rubus ursinus, Rubus leucodermis and Rubus parviflorus were scattered, and Ribes lobbii and Ribes cruentum occasional. Fragaria virginiana var. glauca and the Rubus lasicoccus were abundant, and Fragaria vesca occasional among herbaceous species.

BL-20-2 Fragaria virginiana var. glauca (S. Wats.) Staudt.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

Location BL-21 Rogue River National Forest, Oregon.
3.0 km up FS Rd 800, off FS Rd 60. Steep slopes above the road in open woodland. Elevation, 1600 m; aspect, east; slope, 45°, latitude, 42° 30' N; longitude, 123° 10' W. Fragaria vesca was abundant on and above the roadside and Vaccinium membranaceum in the open woods just above the road. Fragaria virginiana var. glauca, Rubus ursinus, and Ribes spp. also occurred. Collected July 26, 1985.

BL-21-1 Fragaria vesca L.
Population collection of open-pollinated fruit. Extensive population. Plants typical for the species. Seeds.

BL-21-1 Fragaria virginiana var. glauca (S.Wats.) Staudt.
Small population collection of open-pollinated fruit. Plants typical, good size fruit. Herbarium specimen also. Seeds.

BL-21-3 Vaccinium membranaceum Dougl.
Population sample of open-pollinated fruit. Generally very few berries/plant. Plants low growing (0.3-0.6 m) and suckering. Mummy berry present on fruit. Seeds.

Location BL-22 Rogue River National Forest, Oregon.
6.2 km up FS Rd 800, off FS Rd 60. Open woodland, for about 0.5 km along the road on the right. Elevation, 1580 m; aspect, east; slope, 20°; latitude, 42° 50' N; longitude, 122° 30' W. Canopy tree species included Pseudotsuga menziesii, and Tsuga and Abies spp. Acer glabrum was scattered in the subcanopy. Vaccinium membranaceum was abundunt, and Ceanothus spp., Pachistima myrsinites, Rubus ursinus, Fragaria virginiana var. glauca, and Ribes spp. scattered. Collected July 26, 1985.

BL-22-1 Vaccinium membranaceum Dougl.
Population collection of open-pollinated fruit (mostly from plants near the road where snow melt had apparently occurred first). Plants 0.6-1.0 m tall, typical for the species. Fruit dull black with slight bloom, quite variable size. Mummy berry fairly widespread on the fruit. Fruit sample also sent back to N.C. State University for anthocyanin analysis. Seeds.

The entire FS Rd 800 loop was an excellent location for V. membranaceum and Ribes spp., outside the zones where Pinus contorta predominated. Where P. contorta dominated, V. scoparium was always fairly common.

Headed north toward Diamond Lake on Hwy 138 from Crater Lake N.P., then turned left off 138 onto 230.

Location BL-23 Umpqua National Forest, Oregon., Boundary Springs Trail. To get to the Boundary Springs Trail, followed Rd 230 for 5.1 km to the Boundary Springs Scenic Area primitive road (on the left), and followed the road for 6.4 km to the trailhead. Trailhead is just across the Rogue River, and the trail followed the right flank of the river. Elevation, 1550-1600 m; aspect, east generally; slope, variable (mostly 30°). Pinus contorta was the dominant tree on the ridge top above the river. Four Vaccinium species were found along the trail, none with ripe fruit. Ribes lobbi was abundant on dry slopes on the first third of the trail. Collected July 26, 1985.

BL-23-1 Vaccinium caespitosum Michx.
Herbarium specimen collected from a colony growing in the first cove to the right off the river. Growing with V. scoparium. No ripe fruit.

BL-23-2 Vaccinium scoparium Lebig.
Herbarium specimen. Fruit still green. This species was generally abundant along the trail. On east facing slopes in the shade, stems were up to 0.3 m tall. Two phases of the species were noted on this location, one with glaucous leaves and the other with nonglaucous, slightly yellowish-green leaves. In some areas this species made a complete ground cover. It was occasionally sympatric with V. membranaceum.

BL-23-3 Vaccinium membranaceum Dougl.
Herbarium specimens. Fruit still green. Mainly found on lower slopes nearer the river, and in at least partial shade. Leaves of some plants appeared subglaucous.

BL-23-4 Vaccinium uliginosum L.
Herbarium specimen. Fruit green. Numerous colonies in a bog between the river and small streams from the springs. Typical for the species.

Location BL-24 Umpqua National Forest, Oregon.

Low boggy areas on both roadsides on Rd 230, 0.8 km west of the junction with Rd 138 and continuing intermittently for about 1.6 km. Elevation, 1630 m; slope, less than 5°. The location consisted of extensive colonies of Vaccinium uliginosum growing under a canopy of predominantly Pinus contorta. Scattered plants of V. scoparium and Fragaria virginiana var. glauca also occurred on the site. Collected July 26, 1985.

BL-24-1 Vaccinium uliginosum L.
Herbarium specimen collected. Plants typical for the species. Fruit still green.

Overnight at Diamond Lake Campground.

From the Crater Lake area took Hwy 62 east. Entered Winema National Forest on west side road 531. Rubus parviflorus and Ribes spp. were abundant on the west side of 531.

Location BL-25 Winema National Forest, Oregon.

Turned north onto FS Rd 3633 off 531 for 0.3 km. Elevation, 1590 m; aspect, south; slope, 10°; latitude, 43° 00' N; longitude, 121° 30' W. The location consisted of very open woodland with scattered Pinus ponderosa, Pseudotsuga menziesii, and some young Pinus contorta as major tree species. Ribes spp. were very abundant throughout the area. Fragaria virginiana var. glauca was also abundant and F. vesca scattered. Ceanothus prostratus was scattered as a groundcover. Collected July 27, 1985.

BL 25 1 Ribes cereum Dougl.
Population collection of open-pollinated fruit. Fruit just starting to ripe. Herbarium sample also. Seeds.

BL-25-2 Ribes viscosissimum var. hallii Janez.
Herbarium specimen. Fruit still immature.

BL-25-3 Ribes lobbi A. Gray.
Herbarium specimen.

BL-25-4 Ribes cereum Dougl.
Open-pollinated fruit from one early-ripening clone. Herbarium specimen also.

0.8 km further down FS 3633, scattered V. membranaceum on left side of the road in mature forest area. Elevation, 1600 m. Very extensive Ribes spp. populations in this general area, especially in open areas.

Location BL-26 Winema National Forest, Oregon.

Roadside and roadbank on the right side of FS Rd 3633, 7.5 km down the road beyond location BL-25. Elevation, 1830 m; aspect, southwest; slope, 20°. Extensive population of Fragaria virginiana var. glauca growing among young Pinus contorta on the roadbank and just above. Some seepage in the area. Collected July 27, 1985.

BL-26-1 Fragaria virginiana var. glauca (S. Wats.) Staudt.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

0.5 km beyond location BL-26 turn right on FS Rd 3661 toward Four-Mile Lake.

Location BL-27 Winema National Forest, Oregon.
1.6 km up FS Rd 3661 (from jct. with 3633). The location included both roadsides in cutover woodland with both upland and seasonally boggy areas, leading down to a marsh on the right. Elevation, 1810 m; aspect, northwest; slope, 10°. The few remaining trees were largely Pseudotsuga menziesii and Pinus contorta, Vaccinium scoparium was very abundant, especially on higher areas and V. caespitosum on more moist sites. Vaccinium uliginosum was abundant in wet sites and in the marsh. There were also scattered clones of low growing V. membranaceum. All four Vaccinium species appeared to be infested with a blight on this site. Fragaria virginiana var. glauca was also abundant, along with Gaultheria humifusa. Occasional plants of a decumbent Ribes species were also present. Collected July 27, 1985.

BL-27-1 Vaccinium scoparium Lebig.
Population collection of open-pollinated fruit. Plants up to 0.4 m tall on this site. Seeds.

BL-27-2 Fragaria virginiana var. glauca (S. Wats.) Staudt.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

BL-27-3 Gaultheria humifusa (Grah.) Rydb.
Small population collection of open-pollinated fruit. This species forms a very low dense evergreen mat, with red berries. It appeared to be restricted to moist sites, but in this situation made a very nice groundcover.

BL-27-4 Vaccinium membranaceum Dougl.
Herbarium specimen from a representataive plant. Very little fruit on this species this year on this site.

BL-27-5 Ribes sp.
Herbarium specimen from a representative plant of this decumbent, apparently stoloniferous unidentified species.

BL-27-6 Vaccinium caespitosum Michx.
Herbarium specimen from a representative plant. Fruit still green.

BL-27-7 Vaccinium uliginosum L.
Herbarium specimen from a representative plant. Fruit still green.

From Four-Mile Lake Road returned to FS 3633/3661 junction, then took FS 3650 to parking area for McGlaughin Mountain Trail.

Location BL-28 Winema National Forest, Oregon.

Freye Lake at the end of a side trail off McGlaughin Mtn. Trail. Elevation, 1920 m. The location included dry shady woods along the majority of the trail. Near the lake Vaccinium scoparium was growing under scattered Tsuga heterophylla. A small number of plants of V. membranaceum and V. caespitosum occurred near the lake margin. Occasional Ribes sp. occurred along the trail. Collected July 27, 1985.

BL-28-1 Ribes sp.

Herbarium specimen from an unidentified species with decumbent stems and prickly fruit.

Back to FS Rd 3661 from the McGlaughin Mtn. Trail. Noted scattered plants of Ribes viscosissimum var. hallii Jancz. and Vaccinium membranaceum in open woods on the hillside along 3661.

Location BL-29 Winema National Forest, Oregon.

0.2 km above US 140 on FS Rd 3661, at the junction of 3661 and side road 010. Elevation, 1590 m; aspect, east; slope, 12°. The location consisted of roadsides and open meadow above the road with scattered Abies grandis, Ribes, and Ceanothus spp., and abundant Fragaria vesca and F. virginiana var. glauca. No fruit remaining on F. virginiana var. glauca. Collected July 27, 1985.

BL-29-1 Fragaria vesca L.

Population sample of open-pollinated fruit. Typical for the species. Seeds.

US 140 to US 97 toward East Lake in Newberry Crater. Noted abundant Ribes cereum along US 97 between Collier State Park and Chemult. Scattered plants of other Ribes spp. also. Then right on FS Rd 2125 off US 97 toward Paulina and East Lake. Basically Pinus contorta forest with scattered Prunus ponderosa as you near Paulina and East Lake. Vaccinium scoparium occurred again along the road between Paulina and East Lake in the Newberry Crater area, along with occasional Ribes viscosissimum var. hallii.

Overnight at Hot Springs Campground by East Lake.

Location BL-30 Deschute National Forest, Oregon.

Hot Springs Campground by East Lake in Newberry Crater. Elevation, 2100 m; aspect, east generally; slope, 10°. Main canopy species on slopes away from the lake Pinus contorta, even up the lower reaches of lava flows. Vaccinium scoparium scattered over the area under P. contorta. Fragaria virginiana var. glauca also widely scattered, but a fairly large population above the hot springs by the lake. Scattered plants of Ribes cereum, along with two Potentilla species, also occurred on the site. Collected July 28, 1985.

BL-30-1 Vaccinium scoparium Lebig.
Herbarium specimen from a representative plant. Very little fruit. Some fruit appears to be drying up.

BL-30-2 Potentilla glandulosa Lindl.
Herbarium specimen from a representative plant.

BL-30-3 Potentilla sibbaldi .
Herbarium specimen from a representative plant. Very diminutive species, forming a tight mat, small, attractive blue-green foliage. Potentially good groundcover plant.

BL-30-4 Fragaria virginiana var. glauca (S. Wats.) Staubt.
Population collection of open-pollinated fruit. Collected from the population growing among Juncus sp. in a moist area by the lake, above the hot springs. Fruit still green away from this area. Typical for the species. Seeds.

FS Rd 2125 back to US 97. Then follow US 97 to the entrance to Lava Cave Visitors Center.

Location BL-31 Deschute National Forest, Oregon.
The location was the trough (caved in portion) between the entrancesto Lava Cave, at Lava Cave Visitor's Center. Elevation, 1450 m; latitude, 43° 40' N; longitude, 121° 20' W. This was a unique habitat for the area. The site included small populations of Rubus idaeus var. melanolasius, largely by the walk, but with occasional plants growing out of the side wall, and Ribes inerme near the cave entrance. Tree associates included Salix sp. and Prunus virginiana. Collected July 28, 1985.

BL-31-1 Rubus idaeus var. melanolasius Fochs.
Small population collection of open-pollinated fruit, from the few plants with ripe fruit. Plants not over 0.7 m tall. Herbarium specimen collected also. Seeds.

BL-31-2 Ribes inerme Rydb.
Small population collection of open-pollinated fruit. Fruit globular, reddish, just starting to ripen. Straggling plant to 2.0 m tall on this site; one spine basal to each leaf. Herbarium specimen collected also. Seeds.

Location BL-32 Deschute National Forest, Oregon.
Left on FS Rd 1831 off US 97 to the parking lot for the trail to Benham Falls on the Deschute River. The collection location includes trailsides along the river, both above and below the falls. Elevation, 1400 m; aspect, east; slope, variable; latitude 43° 45' N; longitude, 121° 30' W. Canopy species include Salix and Alnus by the river, and mainly Pinus ponderosa with occasional Pseudotsuga menziesii and Pinus contorta in open woodland away from the river. Ribes cereum was abundant along the trail; Amelanchier alnifolia was

scattered in moist sites near the river; Rubus leucodermis was also scattered along the trail; and occasional Rubus parviflorus near the river. This was reported to be a previous collection site for Rubus idaeus var. melanolasius, but none were found during this expedition. Collected July 28, 1985.

BL-32-1 Ribes cereum Dougl.
Population sample of open-pollinated fruit at 10 berries/plant. The population was quite variable for fruit color (light orange to scarlet) and fruit size. Seeds.

BL-32-2 Ribes inerme Rydb.
Small sample of open-pollinated from several plants growing at the water's edge. The fruit was overripe and starting to shrivel, purple-black in color. Herbarium sample collected also. Seeds.

BL-32-3 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Small population sample of open-pollinated fruit, from the few plants with fruit that developed. Seeds.

BL-32-4 Rubus parviflorus Nutt.
Small population sample from about six plants growing near the river's edge. Seeds.

BL-32-5 Amelanchier alnifolia Nutt.
Population sample of open-pollinated fruit. Generally good-sized fruit. Herbarium specimen collected also. Seeds.

Back to US 97, then to Sun River Resort. Took Rd 40 at Sun River west toward Rd 45; then North on Rd 45 toward Rd 46. Took Rd 46 west toward Mt. Batchelor.

Location BL-33 Deschute National Forest, Oregon.
Margins of Todd Lake (Todd Lake Rd., to right off Rd 46). Elevation, 2050 m; latitude, 44° 00' N; longitude, 121° 40' W. Canopy trees, mainly Abies spp. Vaccinium caespitosum abundant near the lake margin in light to fairly heavy shade. Vaccinium scoparium abundant both around the lake margin and above the margin. Vaccinium uliginosum abundant along streams leading into the lake, as well as boggy areas at the upper end of the lake. Phyllodoce empetriformis was associated with V. caespitosum and V. scoparium around the lake margin, and Kalmia polifolia with V. uliginosum. Collected July 28, 1985.

BL-33-1 Vaccinium caespitosum Michx.
Herbarium specimens from representative plants. Fruit green.

BL-33-2 Vaccinium uliginosum L.
Herbarium specimens from representative plants. Fruit green.

BL-33-3 Vaccinium scoparium Lebig.
Herbarium specimen from a representative plant. Fruit green.

BL-33-4 prob. Vaccinium caespitosum x scoparium
Herbarium specimen and plant collected.

Overnight at Elk Lake Campground, near Mt. Batchelor. Scattered V. scoparium colonies around the campground.

Morning of July 29, to Sisters, OR to consult with District Resource Officer at Sisters District U.S. Forest Service Ranger Office, on potential locations for small fruit species.

Left Sisters, Or on OR 242. Heading west on OR 242, V. membranaceum and V. caespitosum first appeared at around 1530 m elevation (15.5 km west of Sisters).

Location BL-34 Deschute National Forest, Oregon.
Seasonal bog on the edge of a lava flow, along the Pacific Coast Trail, headed south from Lava Lake Trailhead (off Hwy 242). The bog is located on the right side of the trail (approx. 1.2 km down from the Trailhead). Elevation, 1700 m; slope, less than 5°. Canopy species mainly Abies lasiocarpa. Vaccinium scoparium was abundant, V. caespitosum, V. deliceosum, V. membranaceum, and V. uliginosum scattered. Phyllodoce empetriformis was a common associate and Gaultheria humifusa common. Collected July 29, 1985.

BL-34-1 Vaccinium deliceosum Piper.
Herbarium specimen from a representative plant. Stems 8-20 cm tall. The few fruits, still green.

BL-34-2 Vaccinium caespitosum Michx.
Herbarium specimen from a vigorous plant. Fruit green.

Trailside, back down the trail:

BL-34-3 Vaccinium deliceosum Piper.
Herbarium specimen from a 0.3 m plant. One of a number of plants along the trail. Fruit green.

BL-34-4 Vaccinium caespitosum Michx.
Herbarium specimen from a representative plant. Fruit green.

BL-34-5 Unidentified Vaccinium clone.
Plant resembles a miniature V. membranaceum. Old stems to 0.8 m. Herbarium specimen collected.

BL-34-6 Vaccinium membranaceum Dougl.
Herbarium specimen from a representative plant.

Location BL-35 Willamette National Forest, Oregon.

OR 242 headed west from McKenzie Pass to Craig Lake on the left side of the highway. The location consisted of the trail from Craig Lake to Huckleberry Lake. Elevation, 1700 m on the average; aspect, generally south; slope, variable, 0°10°, depending on individual site along the trail; latitude, 43° 30' N; longitude, 122° 30'W. Collected July 29, 1985.

Margin of Craig Lake: Vaccinium uliginosum, V. caespitosum, V. membranaceum, V. scoparium, and V. myrtillus. Stems on V. caespitosum occasionally to 0.3 m on this site.

About 30 m off Hwy 242 along the trail noted scattered colonies of V. deliceosum at the edge of the woods; growing with Phyllodoce empetriformis in one instance. The fruit was still green. Vaccinium membranaceum was also present. The Vaccinium species on the site had been heavily broused.

Approximately 80 m up the trail, Vaccinium deliceosum and V. scoparium were very abundant at the woods' edge. Vaccinium membranaceum was scattered and V. caespitosum occasional. One V. membranaceum variant, with nonshiny leaves and stems to 0.8 m, appeared to be a hybrid.

BL-35-1 Vaccinium membranaceum Dougl. hybrid.
Herbarium specimen collected.

BL-35-2 Vaccinium membranaceum Dougl.
Herbarium specimen collected from a representative plant.

BL-35-3 Vaccinium deliceosum Piper.
Herbarium specimen collected from a representative plant.

Continuing along the trail, more colonies of the above Vaccinium species were encountered, especially V. scoparium and V. deliceosum (green fruit), along with large colonies of V. caespitosum.

Further up the trail, there occurred a small meadow, bordered by predominantly Abies and Tsuga spp. on the right and an old lava flow on the left. At the woods' edge V. deliceosum and V. caespitosum were abundant, with V. caespitosum extending into the meadow. At the far end of the meadow, the first of a number of colonies of apparent V. deliceosum x membranaceum hybrids was discovered.

BL-35-4 Vaccinium deliceosum x membranaceum
Stoloniferous, stems to 0.6 m tall, leaves glaucous, still blooming. Appears to be a very extensive, mature colony. Herbarium specimen and suckers collected.

BL-35-5 Vaccinium deliceosum x membranaceum
Herbarium specimen collected from a clone growing further up the trail in the channel of a seasonal stream.

BL-35-6 Vaccinium deliceosum Piper.
Typical for the species; stems 0.2-0.5 m tall. Fruit just starting to ripen. Fairly good fruit set. Colony growing on a raised terrace where a seasonal stream crosses the trail. Herbarium specimen collected.

BL-35-7 Vaccinium deliceosum Piper.
Small population sample of open-pollinated fruit. Fruit generally only partly ripe. Seeds.

Proceeded on to Huckleberry Lake. Canopy trees in the area adjacent to the lake were primarily Abies and Tsuga spp. and Pinus contorta. Vaccinium uliginosum occurred at the edge of the water, with V. deliceosum in the zone just above V. uliginosum, and V. membranaceum still further from the edge. Vaccinium scoparium and V. caespitosum were common further up under the trees. Fruit was green on all species. (Good fruit crop - worth returning later for harvest.)

BL-35-8 Vaccinium deliceosum x membranaceum
Stems to 0.5 m tall, clone growing in shade at the lower end of the lake. Herbarium specimen and suckers collected.

BL-35-9 Vaccinium deliceosum x membranaceum
Low-growing, very broad-leaved segregate. Herbarium specimen and suckers collected.

BL-35-10 Vaccinium membranaceum Dougl.
Herbarium specimen from a typical, representative plant.

Returned along the trail to Craig Lake.

BL-35-11 Vaccinium myrtillus L.
Clone growing out of a rocky bank, about 15 m off Hwy 242, along the trail. Stems to 0.2 m tall. Herbarium specimen and suckers collected.

BL-35-12 Vaccinium myrtillus L.
Fairly large colony, with individual stems scattered. Stems 0.1-0.2 m tall. Colony located about 35 m above Craig Lake, growing in the trail. Suckers collected.

Location BL-36 Willamette National Forest, Oregon.
Turned off Hwy 242 to Scott Lake. The location included the margins and slopes immediate to the lake. Elevation, 1650 m; aspect, north; slope, 25°. Open woodland with a predominantly Pinus contorta overstory. Vaccinium membranaceum, V. scoparium, V. caespitosum, and V. deliceosum were common in the woods to near the lake margin. Fragaria virginiana var. glauca was fairly common, and Sorbus occasional. Collected July 29, 1985.

BL-36-1 Vaccinium membranaceum Dougl.
Glaucous-leaved introgressant with V. deliceosum. Stems to 0.5 m. Herbarium specimen collected.

BL-36-2 Vaccinium membranaceum Dougl.
Typical clone for the species; growing in the vicinity of BL-36-1. Herbarium specimen collected.

BL-36-3 Vaccinium deliceosum Piper.
Leaves less glaucous than usual; possible intgrogressant with V. membranaceum. Stems 0.5 m tall. Herbarium specimen collected.

BL-36-4 Vaccinium membranaceum Dougl.
Introgressant with V. deliceosum. Stems to 0.8 m tall. No fruit in 1985. Herbarium specimen collected.

Location BL-37 Willamette National Forest, Oregon.
Trail to Benson Lake. Elevation, 1650-1800 m; aspect, north; slope, variable; latitude, 43° 30' N; longitude, 122° 30' W. Canopy species along the trail, mainly Abies and Tsuga. Abundant Vaccinium membranaceum on higher, more upland areas along the trail, and both V. membranaceum and V. deliceosum were found in more moist areas, and around the lake. Vaccinium deliceosum appeared concentrated along a seasonal stream channel from the lake, but was occasionally found on upland areas. Species hybrids were fairly common, but always appeared where both parent species also occurred. Fruit was green on the collection date, but would be worth returning for. A few plants of V. myrtillus were also present. Collected July 29,-1985.

Top of first slope on the trail, above the parking lot; Vaccinium scoparium, V. membranaceum, and V. membranaceum x deliceosum hybrids and introgressants. Elevation, 1650 m; slope, 10°.

BL-37-1 Vaccinium membranaceum Dougl.
Subglaucous-leaved introgressant with V. deliceosum. Stems to 0.4 m tall. Herbarium specimen collected.

BL-37-2 Vaccinium deliceosum x membranaceum
Glaucous-leaved plant growing by the trail. Stems 0.4 m tall, at present. Plants appears weak and slightly deformed. Herbarium specimen collected.

BL-37-3 Vaccinium membranaceum Dougl.
Typical for the species. Stems 0.3-0.5 m tall. Herbarium specimen collected.

BL-37-4 and BL-37-5 Vaccinium deliceosum x membranaceum
Subglaucous leaves. Stems to 0.5 m tall. Herbarium specimens collected.

Upland, typical V. membranaceum habitat, further down the trail. Slope, 25°.

BL-37-6 Vaccinium deliceosum x membranaceum
Mature clone, covering 30 square meters. Stems to 0.5 m tall. Herbarium specimen and suckers collected.

BL-37-7 Vaccinium deliceosum x membranaceum
Clone covering 8 square meters. Stems to 0.5 m tall. Herbarium specimen and suckers collected.

Downhill, in vicinity of stream channel, heavier shade and more moist habitat. Elevation, 1760 m; aspect, northeast; slope, 10°.

BL-37-8 and BL-37-9 Vaccinium deliceosum Piper.
Apparent introgressants with V. membranaceum. Stems to 0.4 m tall. Herbarium specimen collected.

BL-37-10 Vaccinium deliceosum Piper.
Typical for the species. Herbarium specimen collected.

BL-37-11 Vaccinium deliceosum Piper.
Typical for the species. Suckers collected.

BL-37-12 Vaccinium deliceosum x membranaceum
Herbarium specimen collected.

Up the slope above the stream channel. Aspect, southwest; slope, 30°.

BL-37-13 Vaccinium myrtillus L.
One single plant, stoloniferous, stems to 0.4 m tall. Herbarium specimen and suckers collected.

At margin of Benson Lake. Elevation, 1800 m; aspect, southwest.

BL-37-14 Vaccinium membranaceum Dougl.
Introgressant with V. deliceosum. Stems to 0.5 m tall. Herbarium specimen collected.

BL-37-15 Vaccinium deliceosum Piper.
Introgressant with V. membranaceum. Herbarium specimen collected.

Trailside, coming back down, about 30 m above the parking lot. Elevation, 1650 m; slope, 15°.

BL-37-16 Vaccinium myrtillus L.
Small clone, stoloniferous, stems to 0.1 m tall. No fruit. Herbarium specimen collected.

Overnight at Scott Lake Campground, off Hwy 242.

Location BL-38 Deschute National Forest, Oregon.
1.6 km down FS Rd 138 (toward Corbett State Park) off US 20 from Sisters, OR. Elevation, 450 m; aspect, east; latitude, 43° 50' N; longitude, 122° 20' W. Slope above the road on the right. Canopy species mainly Abies spp. and Pseudotsuga menziesii. Rubus ursinus and Rosa sp. were scattered and Vaccinium membranaceum fairly common. Collected July 30, 1985.

BL-38-1 Vaccinium membranaceum Dougl.
Population collection of open-pollinated fruit (most fruit still green). Mummy berry bad on the fruit. Seeds, herbarium specimen, and suckers collected.

Location BL-39 Deschute National Forest, Oregon
0.8 km up FS Rd 500 to the left off FS Rd 138. The location includes both roadsides and 18 m from Link Lake (on the right). Elevation, 1530 m; aspect, east mostly; slope, variable; latitude, 43° 50' N; longitude, 121° 50' W. Fairly open woodland and clearcut on the left. Main canopy species Pseudotsuga menziesii with scattered Pinus monticola and Pinus contorta. Vaccinium membranaceum and its apparent introgressants with V. deliceosum were abundant in the open woodland and clearcut areas, and V. uliginosum scattered along the shore of a small peninsula. An extremely extensive Fragaria virginiana var. glauca population was scattered along roadsides and roadbanks. Ribes lacustre was scattered on the site, especially near the lake. Collected July 30, 1985.

BL-39-1 Vaccinium membranaceum Dougl.
Small population collection of open-pollinated fruit. Fruit only scattered, and just beginning to ripen. Mummy berry and witches broom were found scattered through the population. Seeds.

BL-39-2 Ribes lacustre (Pers.) Poir.
Population collection of open-pollinated fruit. Fruit black, slightly hairy. Stems prickly, up to 5 spines/node, plants sprawling and rooting at nodes, or upright to 1 m tall. Herbarium specimen collected also. Seeds.

BL-39-3 Vaccinium membranaceum Dougl.
Glaucous-leaved, prob. V. deliceosum introgressant. Suckering widely, stems to 0.4 m tall. Fruit green. Plant growing about 2 m up a logging road to left off Rd 500. Herbarium specimen and suckers collected.

BL-39-4 Vaccinium membranaceum Dougl.
Subglaucous leaves, prob. V. deliceosum introgressant. Suckering widely, stems to 0.5 m tall. Fruit green. Plant growing about 10 m up the logging road off Rd 500. Herbarium specimen and suckers collected.

BL-39-5 Vaccinium membranaceum Dougl.
Dwarfish, 0.5 m tall, suckering, colony covered 6 m^2. Leaf undersurface glaucous. Fruit small, purplish. Colony growing at the top of the ridge. Herbarium specimen collected.

BL-39-6 Vaccinium membranaceum Dougl.
Herbarium specimen from a plant typical for the species.

Intersection of FS Rd 500 and FS Rd 730, to the right on 500 for 0.6 km, and then left on 730 for 0.8 km.

BL-39-7 Fragaria virginiana var. glauca (S.Wats.) Staudt.
Population sample of open-pollinated fruit. Skin color of the fruit generally pale red. Quite variable for peduncle length, fruit size, and fruit shape. Little disease was apparent. Seeds.

Back to US 20, then take FS Rd 12 off 20.

Location BL-40 Deschute National Forest, Oregon.
FS Rd 1230, 5.4-7.0 km from the junction with FS 12. Elevation, 1130 m; aspect, north; slope, 25°. The location included roadsides and a clearcut. Canopy species along the road, Pinus ponderosa and Pseudotsuga menziesii. Fragaria vesca and F. virginiana var. glauca were abundant by the roadside and establishing in the clearcut. The fruit was gone on both species. Rubus ursinus was scattered along the roadside and in the clearcut. Collected July 30, 1985.

BL-40-1 Rubus ursinus Cham. & Schlect.
Population collection of open-pollinated fruit. Seeds.

Location BL-41 Deschute National Forest, Oregon.
FS Rd 1230, 9 km above FS Rd 12. Elevation, 1300 m; aspect, northeast. The location is along the roadbank on the left, with Fragaria vesca, F. virginiana var. glauca, Rubus ursinus, and R. parviflorus (very dwarfed). Fruit on F. vesca only on this date. Collected July 30, 1985.

BL 41 1 Fragaria vesca L.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

BL-41-2 Prunus emarginata (Dougl.) Walp.
Herbarium specimen from a representative plant. Fruit starting to ripen.

Location BL-42 Deschute National Forest, Oregon.
Trail to Cabot Lake from the end of FS Rd 1230. Elevation, variable but around 1650 m average; aspect, north to northeast; slope, 30°-45°; latitude, 43° 30' N; longitude, 121° 30' W. Canopy species mainly Pseudotsuga menziesii and Abies spp., with scattered Pinus monticola and Pinus contorta. Vaccinium membranaceum was generally abundant in shade or part shade on both sides of the trail. The crop was variable and ripe fruit was most abundant about 1.6 km up the trail. No other Vaccinium species was observed. Collected July 30, 1985.

BL-42-1 Vaccinium membranaceum Dougl.
Population of open-pollinated fruit. Plants and leaves typical for the species. Fruit often fairly glaucous. Mummy berry and witches broom present. Herbarium specimen also collected. Seeds.

Back to US 20, via FS 1230 and FS 12.

About 1.6 km west of Santian Pass on US 20 in Willamette National Forest, noted an extensive population of Vaccinium uliginosum in a bog.

Overnight at Coldwater Cove Campground on Clear Lake.

Took US 20 to OR 22, then north on 22, and then onto FS Rd 2223, and right on FS Rd 2207.

Location BL-43 Willamette National Forest, Oregon.
8.6 km up FS Rd 2207, off FS Rd 2223. Old clearcut on both sides of the road, above Opal Lake. Elevation, 1160 m; aspect, east to southeast; slope, variable, 45°+; latitude, 44° 30' N; longitude, 122° 10' W. The collection location covered about 0.4 km along the road. Abies spp., Pseudotsuga menziesii, and Tsuga spp. were regenerating in the clearcut. Alnus rubra and Salix spp. were common by the roadsides and in moist coves. Vaccinium membranaceum probably made up approximately 50% cover on most exposed ridges in the clearcut above the road. Vaccinium ovalifolium made up about 20% cover in the same area. Vaccinium chamissonis occurred mainly as scattered plants. Rubus spectabilis and R. parviflorus were abundant and R. ursinus scattered. Rubus spectabilis ranged from past peak ripeness to just past bloom, depending on aspect along the road. Rubus parviflorus was still green. Ribes bracteosum was common in moist coves (the fruit still green). Acer circinatum, Menziesia ferruginea, Sorbus spp., Sambucus cerulea, and Sambucus racemosa were also common associates. Collected July 31, 1985.

BL-43-1 Vaccinium chamissonis Bongard.
Open-pollinated fruit from one clone. Fruit very light blue; size range 5-9 mm. 50% ripe. Herbarium specimen collected also. Seeds.

BL-43-2 Vaccinium chamissonis Bongard.
Herbarium sample collected from a second representative clone.

BL-43-3 Ribes bracteosum Dougl.
Herbarium specimen from a representative clone (fruit collected later by Otto Jahn). Seeds.

BL-43-4 Rubes spectabilis Pursh.
Population collection of open-pollinated fruit. Almost completely yellow fruited forms on this site. Seeds.

BL-43-5 Vaccinium membranaceum Dougl.
Population collection of open-pollinated fruit. Fruit often subglaucous. Plants 0.6-1.6 m tall. Herbarium sample collected also. Seeds.

BL-43-6 Vaccinium ovalifolium Sm.
Population collection of open-pollinated fruit. All fruit glaucous blue. Plants 1.0-1.6 m tall. Herbarium sample collected also. Seeds.

BL-43-7 Vaccinium chamissonis Bongard.
Open-pollinated fruit and a herbarium specimen collected. Typical for the species. Seeds.

BL-43-8 Sambucus racemosa L.
Population sample of open-pollinated fruit. Seeds.

Later collections on the site by Otto Jahn: Sept. 9, 1985.

BL-43-9 Sorbus scopulina var. Cacaetensis (Jones) Hitch.
Open-pollinated fruit. Seeds.

BL-43-10 Sorbus sitchensis var. grayi (Wenzig) C. Hitche.
Open-pollinated fruit. Seeds.

BL-43-11 Sambucus cerulea Raf.
Open-pollinated fruit. Seeds.

Location BL-44 Willamette National Forest, Oregon.
FS Rd 2207, 11.5 km from the junction with FS RD 2223. Elevation, 1000 m; aspect, south to southeast; latitude, 44° 30' N; longitude, 122° 00' W. Scattered plants of Rubus leucodermis occurred on the roadbanks for about 2.1 km. Collected July 31, 1985.

BL-44-1· Rubus leucodermis (Dougl.) ex. Torr. & A. Gray
Population collection of open-pollinated fruit. Excellent fruit size, average fruit quality. Seeds.

Location BL-45 Willlamette National Forest, Oregon.
FS Rd 2207, 13.6 km from the junction with FS Rd 2233. Elevation, 1000 m; aspect, south to southeast. The location includes roadbanks along FS Rd 2207 for about 1.9 km, with scattered clones of Rubus ursinus. Collected July 31, 1985.

BL-45-1 Rubus ursinus Cham. & Schlect.
Population collection of open-pollinated fruit. Plants and fruit typical for the species. Seeds.

Along FS Rd 2207, Rubus ursinus was very common below 1000 m elevation. Vaccinium parvifolium did not appear to occur above 1000 m elevation in this area.

Took FS Rd 125, to right off FS Rd 2207, 19.5 km beyond location BL 45, then turned onto FS Rd 126.

Location BL-46 Willamette National Forest, Oregon.
Junction of FS Rd 126 and FS Rd 133. The location was a steep slope above the roadbank on the right. Elevation, 1000 m; aspect, east; slope, 45°; latitude, 44° 20' N; longitude, 122° 10' W. Open woodland with Tsuga sp. and Calocedrus decurrens in the canopy. Shrub layer dominated by Rhododendron macrophyllum. Gaultheria shallon formed a groundcover under the taller shrubs. Vaccinium species included scattered V. ovalifolium and V. parvifolium with occasional V. membranaceum. Collected July 31, 1985.

BL-46-1 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit. Plants 1.0-1.6 m tall. Fruit glaucous, excellent firmness, picks without tearing. Seeds.

Fruit anthocyanin sample collected also.

BL-46-2 Vaccinium ovalifolium Sm.
Open-pollinated fruit sample from a select clone with very large size glaucous blue fruit and high productivity. Plant 1.3 tall. Herbarium specimen collected also. Seeds.

BL-46-3 Vaccinium parvifolium Sm.
Small population collection of open-pollinated fruit. Seeds.

Back to FS Rd 2223, headed south toward Tumble Lake.

Location BL-47 Willamette National Forest, Oregon.
8.9 km up FS Rd 2223 off OR 22, near Detroit, OR. ELevation, 1000 m; aspect, southeast; slope, 35°; latitude, 45° 40' N; longitude, 122° 05' W. The location encompassed roadsides with Alnus rubra, Acer circinatum, Vaccinium ovalifolium, some Rubus parviflorus, Rubus spectabilis, Ribes bracteosum, and Menziesia ferruginea. Collected July 31, 1985.

BL-47-1 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

BL-47-2 Ribes bracteosum Dougl.
Herbarium specimen collected from a representative plant.

Turned on FS Rd 520, off FS Rd 2223, 4.0 km beyond location BL-47.

Location BL-48 Willamette National Forest, Oregon.
0.8 km down FS Rd 520, off Fs Rd 2223 (just below Knutson Saddle). Elevation, 1500 m; aspect, southeast; slope, 30°; latitude, 43° 10' N; longitude, 121° 30' W. Old clearcut with scattered young Tsuga, Abies, and Pseudotsuga menziesii. The location included an extensive Vaccinium membranaceum population (approx. 30% cover) and scattered plants of V. ovalifolium. Only a small percentage of V. membranaceum plants had fruit, but many of the fruiting plants had a good crop. There was very little fruit on V. ovalifolium. The site also included scattered plants of Rubus ursinus (fruit green) and Amelanchier alnifolia (just starting to ripen). The location should be worth further study and sampling for V. membranaceum. Collected July 31, 1985.

BL-48-1 Vaccinium membranaceum Dougl.
Population collection of open-pollinated fruit, collected from both sides of the road. Fruit generally subglaucous, fairly large size. Plants 0.8-1.3 m tall. Herbarium specimen collected also. Seeds.

Overnight at Detroit Lake State Park Campground.

Location BL-49 Willamette National Forest, Oregon.
Left off OR 22 on FS Rd 2261 (Twin Meadows Rd) for 0.8 km. Elevation, 820 m; aspect, west; slope, 5°-10°; latitude, 44° 30' N; longitude, 122° 10' W. The location included both roadside, and especially on the right in a disturbed parking area. Main canopy species Pseudotsuga menziesii. Three Vaccinium spp. and one apparent hybrid were identified, along with scattered Fragaria virginiana var. glauca, and Gautheria ovatifolia. Rhododendron macrophyllum was abundant above the bank on the left. Collected August 1, 1985.

BL-49-1 Vaccinium myrtillus L.
Small population sample of open-pollinated fruit (fruit very sparse). Population covering over 1650 m^2, mainly under the trees on the right. Stems 13-20 cm tall. Fruit very small, reddish-purple when collected, pendant. Herbarium specimen collected also. Seeds.

BL-49-2 Vaccinium hybrid.
Low-growing plant, to about 15 cm tall, stoloniferous. Leaves mainly elliptic, 1.0-1.5 cm wide by 1.5-2.0 cm long, margin serrulate. Twigs green, angled. Fruit purplish black, with a slight bloom. Fruit held erect like V. membranaceum, 5-7 mm dia. Herbarium specimen collected.

BL-49-3 Gaultheria ovatifolia Gray.
Small population sample of open-pollinated fruit (fruit partially ripe). Herbarium specimen also collected. Seeds.

BL-49-4 Vaccinium membranaceum Dougl.
Open-pollinated fruit and a herbarium specimen from one clone that had dark-red fruit on the collection date. Clone suckering, to 1.0 m tall, and covering about 16 m^2. Seeds.

Occasional Vaccinium parvifolium also occurred on the site, but very little fruit.

Vaccinium membranaceum was scattered all along FS Rd 2261, along with scattered colonies of V. myrtillus for at least 3.2 km down the road.

Location BL-50 Willamette National Forest, Oregon
Junction, FS Rd 2261 and Rd 310, 3.8 km down FS Rd 2261. Elevation, 1100 m; aspect, south to southwest; slope, less than 5°; latitude, 44° 30' N; longitude, 122° 00' W. The location included both roadsides under scattered Abies, Tsuga, and Pinus contorta. Fragaria virginiana var. glauca was abundant all along the roadsides along with scattered Rubus ursinus. The site included a diverse population of Vaccinium spp., including Vaccinium caespitosum, V. myrtillus, V. chamissonis, and V. membranaceum. Vaccinium caespitosum had stems up to 0.5 m tall, obovate to spatulate leaves, and sparse green fruit. No V. parvifolium was found on the site. Collected August 1, 1985.

BL-50-1 Vaccinium chamissonis Bongard.
Population sample of open-pollinated fruit. Plants quite productive. Fruit glaucous blue, 5-10 mm dia. Fruit presentation, fully erect to 45° from horizontal. Stems 0.6-0.8 (1.3) m tall. Herbarium specimens collected from seven plants on the site. Fruit sample also collected for anthocyanin analysis. Seeds.

Due to the variability in the population, this would be a good location for further study on comparisons between V. chamissonis and V. ovalifolium.

BL-50-2 Fragaria virginiana var. glauca (S.Wats.) Staudt.
Population sample of open-pollinated fruit. Fairly variable for fruit size. Seeds.

BL-50-3 Vaccinium hybrid.
Small open-pollinated fruit and herbarium sample from a low-growing but apparently crown-forming clone. Stems 45 cm tall. Leaves elliptic to elliptic-ovate, tip acuminate, margin serrulate, 1.0-1.7 cm wide, 2.0-3.0 cm long, glaucous above and below. Fruit reddish-purple with some bloom, 8-12 mm dia. Seeds.

Took Parrish Lake Rd off OR 22. Vaccinium spp. very abundant along the first 4.8 km along the road. Vaccinium myrtillus occurred along the roadbank in a new clearcut, 0.5 km off OR 22.

Location BL-51 Willamette National Forest, Oregon.
8.2 km up Parrish Lake Rd off OR 22. Elevation, 1040 m; aspect, south; slope, less than 5°; latitude, 44° 30' N; longitude, 122° 10' W. The location includes roadsides and the woods edge (mainly on the right). Main canopy species Abies spp. and Pseudotsuga menziesii. The site includes an extensive population of Vaccinium myrtillus. This population was more fruitful than the one at BL-49, especially on the older stems. The site also included scattered V. ovalifolium, V. chamissonis, V. membranaceum, and Rubus ursinus. Collected August 1, 1985.

BL-51-1 Vaccinium myrtillus L.
Population collection of open-pollinated fruit. Stems 10-13 cm tall. Fruit reddish-purple, 4-7 mm diameter, nice flavor. Herbarium specimen collected also. Seeds.

BL-51-2 prob. V. myrtillus x chamissonis derivative.
Stems to about 0.2 m tall. Leaves elliptic, acute at tip, 7-12 mm wide, 14-20 mm long, serrulate margin. Fruit reddish-purple, 7.0 mm dia., mediocre flavor. Stems reddish on the upper side. Herbarium specimen collected.

BL-51-3 Vaccinium membranaceum Dougl.
Population sample of fruit from apparent red-fruited clones (or perhaps only partially ripe). Herbarium specimen collected also. Seeds.

BL-51-4 Vaccinium membranaceum Dougl.
Population sample of fruit from plants typical for the species. Herbarium specimen collected also. Seeds.

BL-51-5 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit. Large glaucous-blue fruit, good firmness. Herbarium specimen collected also. Seeds.

BL-51-6 Vaccinium membranaceum Dougl.
Open-pollinated fruit and stem cuttings from an elite clone, growing on top of the roadbank 8.0 km up Parrish Lake Rd (off Hwy 22). Plant 0.8 m, crown-forming at present. Heavy crop of large reddish-purple fruit, giving the plant a highly ornamental appearance. Flavor fairly poor. Herbarium specimen collected also. Cuttings and seeds.

Back to OR 22, then west. Vaccinium myrtillus and scattered V. parvifolium noted just after turning onto FS Rd 11. Vaccinium myrtillus was also abundant in a clearcut 6.9 km up FS Rd 11.

Took FS Rd 1161 off FS Rd 11. Rubus spectabilis scattered along the road (both red and yellow fruited forms).

Very large Vaccinium membranaceum population along Rd 11 and Rd 1161, but very little fruit in 1985. Location worth visiting again.

Location BL-52 Willamette National Forest, Oregon.
End of Iron Mountain Road off Hwy 20. Elevation, 1370 m; aspect, northwest; slope, variable; latitude, 44° 20' N; longitude, 122° 10' W. The location includes a clearcut and the beginning of the trail up to the peak. Picea and Abies spp. were regenerating in the clearcut. Vaccinium membranaceum was very abundant in the clearcut, and Fragaria virginiana var. glauca along the trail. Another major location for both these species. Collected August 1, 1985.

BL-52-1 Vaccinium membranaceum Dougl.
Population collection of open-pollinated fruit. Plants 0.8-1.3 m tall. Typical for the species. Seeds.

BL-52-2 Fragaria virginiana var. glauca (S.Wats.) Staudt.
Large population collection of open-pollinated fruit. Quite variable for fruit size, fruit shape, and skin color (pale to scarlet). Seeds.

Location BL-53 Willlamette National Forest, Oregon .
House Rock National Forest Campground on FS Rd 2044 off Hwy 20. The campground is in a valley by Sheep Creek. Latitude, 44° 30' N; longitude, 122° 00' W. Canopy trees, mature Tsuga heterophylla and Pseudotsuga menziesii. Subcanopy dominated by Acer circinatum. Alnus rubra and Acer macrophyllum also common. The site contained an extensive population of Vaccinium parvifolium, and scattered Rubus spectabilis. Gaultheria shallon was very abundant as a robust groundcover. Collected August 1, 1985.

BL-53-1 Vaccinium parvifolium Sm.
Population collection of open-pollinated fruit. Typical for the species. A separate fruit population sample also collected for anthocyanin analysis. Seeds.

Overnight at House Rock Campground.

Back to Corvallis on August 2nd, to deliver collected materials to the National CLonal Germplasm Repository and pick up supplies for the next 2 weeks.

Location BL-54 Siuslaw National Forest, Oregon.
Cascade Head Research Area, 3.4 km west of US 101 on FS Rd 1861. Elevation, 530 m; aspect, southwest; slope, essentially flat. Canopy species mainly Picea sitchensis, Tsuga heterophylla, and Alnus rubra. Rubus spectabilis and R. parviflorus were abundant, and Vaccinium parvifolium scattered. Collected August 3, 1987.

BL-54-1 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit, collected along both roadsides. Stems mostly 2-4 m tall. Fruit mostly amber in color, but red-fruited clones were scattered through the population. Some of the red fruit turned red-black when dead ripe. Much of the fruit had decayed, probably due to Botrytis. Seeds.

Location BL-55 Siuslaw National Forest, Oregon.
Cascade Head Reserve Scenic Area, along the Nature Conservancy Trail. Elevation, 330 m; latitude, 45° 00' N; longitude, 123° 30' W. Canopy species, mostly intermediate age Tsuga heterophylla and Picea sitchensis, with some Alnus rubra. Rubus spectabilis, R. parviflorus, and Vaccinium parvifolium were abundant in dense to moderate shade. No Vaccinium ovatum was noted. Collected August 3, 1985.

BL-55-1 Rubus spectabilis Pursh.
Population sample of open-pollinated fruit, collected along both sides of the trail. Stems 2-4 m tall. Red-fruited forms made up about 5% of the population. Seeds.

BL-55-2 Vaccinium parvifolium Sm.
Population sample of open-pollinated fruit. Plants 3-5 m tall. Fruit typical for size, color, and firmness. Seeds.

Location BL-56 Siuslaw National Forest, Oregon.
7.2 km up FS Rd 14 (Mt. Hebo Rd) from OR 22. Elevation, 600 m; slope 0°-10°. Major canopy species Picea sitchensis. Dense to moderate shade. Abundant Rubus spectabilis and Vaccinium parvifolium. Collected August 3, 1985.

BL-56-1 Rubus spectabilis Pursh.
Small population collection of open-pollinated fruit.This was the end of the fruiting season and much of the fruit was partially decaying and still hanging on the plant. Seeds.

Location BL-57 Siuslaw National Forest, Oregon.
Top of Mt. Hebo, 13.7 km up FS Rd 14 (from OR 22). Elevation, 1000 m; slope, variable, 0°-20°; latitude, 45° 10' N; longitude, 123° 30' W. 'Bald' with scattered Abies procera. Rubus spectabilis was abundant and R. parviflorus and R. ursinus common. The red-fruited form of R. spectabilis made up 30-50% of the population. Vaccinium ovalifolium and/or V. chamissonis, and V. parvifolium

depauperate due to wind and/or cold. Fragaria virginiana and Fragaria chiloensis, and apparent introgressants among these species were also present. Collected August 3, 1985.

BL-57-1 Rubus spectabilis Pursh.
Population sample of open-pollinated fruit from red-fruited clones. Seeds.

BL-57-2 Rubus spectabilis Pursh.
Population sample of open-pollinated fruit from amber-fruited clones. Seeds.

BL-57-3 Vaccinium ovalifolium Sm. and/or Vaccinium chamissonis Bongard. Small population sample of open-pollinated fruit and herbarium specimen collected. Seeds.

BL-57-4 Fragaria virginiana Duch.
Small population collection of open-pollinated fruit. Seeds.

BL-57-5 Fragaria virginiana Duch.
Runner plants and herbarium specimen collected. Runners.

BL-57-6 Fragaria chiloensis Duch. or introgressant forms.
Runner plants and herbarium specimen collected. Runners.

This was an excellent location for further study of Fragaria chiloensis and F. virginiana in an area of sympatry, and apparent introgression. The site should be visited in mid-July to collect Fragaria fruit.

It would probably also be worthwhile to revisit this location in early August to collect fruit of Vaccinium ovalifolium.

August 5, 1985. North on I-5 from Corvallis, OR, to Vancouver, WA. Right on WA 14 in Vancouver toward Carson, WA.

Corylus cornuta var. Californica was scattered along WA 14.

Left on Rd 30, off WA 14, at Carson to Wind River Ranger Station. Consulted with resource officer at Wind River Ranger Station on locations for small fruit species.

Location BL-58 Gifford Pinchot National Forest, Washington.
1.7 km up FS Rd 4101 from Wind River Ranger Station. Elevation, 700 m; aspect, variable; latitude, 46° 00' N; longitude, 122° 00' W. Roadbanks with a canopy of mature Pseudotsuga menziesii and subcanopy with widespread Acer circinatum and Corylus cornuta var. Californica. Rubus leucodermis and R. ursinus were scattered along the roadside. Collected August 5, 1985.

BL-58-1 Rubus leucodermis Dougl. ex. Torr. & Gray.
Population sample of open-pollinated fruit. Typical for the species. Seeds.

BL-58-2 Rubus ursinus Cham. & Schlect.
Small population sample of open-pollinated fruit. Typical for the species. Seeds.

FS Rd 41 from Wind River Forest Nursery. Vaccinium parvifolium and Corylus cornuta var. Californica scattered along the road.

Location BL-59 Gifford Pinchot National Forest, Washington.
13.1 km up FS Rd 41 from Wind River Forest Nursery. Elevation, 1040 m; aspect, south; slope, 25°; latitude, 46° 00' N; longitude, 122° 00' W. Very old clearcut with young Pseudotsuga menziesii and scattered Acer circinatum and Sorbus sp. growing with extensive Vaccinium membranaceum. Vaccinium parvifolium also occasional (fruit gone). Collected August 5, 1985.

BL-59-1 Vaccinium membranaceum Dougl.
Population sample of open-pollinated fruit, collected at 25 berries per clone. Fruit size impressive generally and a good crop overall. Fruit color dark, subglaucous to shiny black (one light purple subglaucous fruited plant included). Fruit quality acceptable to poor. Plants 1-2 m tall. Herbarium specimen collected also. Seeds.

Extensive populations of Vaccinium membranaceum continued for several kilometers in either direction from Location BL-59.

Location BL-60 Gifford Pinchot National Forest, Washington.
18.9 km up FS Rd 41 from Wind River Forest Nursery. Elevation, 1230 m; aspect, east; slope, 30°; latitude, 46° 00' N; longitude, 122° 00' W. Roadside in an old burn with scattered Acer circinatum, Alnus, Sorbus, and Salix spp. The location included abundant Vaccinium membranaceum, scattered Rubus parviflorus and Ribes bracteosum, and occasional Rubus spectabilis. Collected August 5, 1985.

BL-60-1 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit. Both red and yellow-fruited plants in the population. Plants growing in moist seepage along the road. Seeds.

BL-60-2 Rubus parviflorus Nutt.
Population sample of open-pollinated fruit. Typical for the species. Seeds.

BL-60-3 Ribes bracteosum Dougl.
Population sample of open-pollinated fruit. Fruit ranging from ripe to partially ripe. Seeds.

BL-60-4 Vaccinium membranaceum Dougl.
Population sample of open-pollinated fruit, collected at 25 berries per clone. Good deal of variability in degree of bloom on the leaves and fruit (black to medium blue), fruit size, and firmness. Plants 0.6-1.6 m tall. Variability in glaucousness suggests introgression with a species bearing glaucous leaves and fruit (i.e. V. ovalifolium or V. deliceosum, but no other tetraploid found on the site. Herbarium specimens collected also. Seeds.

This location appeared to be worthy of further study and sampling for V. membranaceum.

BL-60-5 Vaccinium chamissonis Bongard.
Open-pollinated fruit from a single plant of this species found on the site. Herbarium specimen collected also. Seeds.

Location BL-61 Gifford Pinchot National Forest, Washington.
Followed FS Rd 41 for 1.1 km beyond BL-60 to FS Rd 4220, then turned onto FS Rd 4220. The location was 1.4 km up FS Rd 4220. Elevation, 1250 m; aspect, east; slope, 20°; latitude, 46° 00' N; longitude, 122° 00' W. Roadsides on the right and above the road under Abies spp. and Pseudotsuga menziesii. Vaccinium chamissonis and Rubus spectablis were abundant for about 0.8 km along the road. Vaccinium ovalifolium and Ribes bracteosum were also scattered on the site. Collected August 5, 1985.

BL-61-1 Vaccinium chamissonis Bongard.
Population collection open-pollinated fruit. Plants mostly 1.0-1.3 m tall. Typical for the species. Herbarium specimen collected also. Seeds.

BL-61-2 Vaccinium ovalifolium Sm.
Representative herbarium specimen collected. Fruit on most plants of this species were just starting to ripe.

BL-61-3 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit. Fruit orange. Typical for the species. Seeds.

BL-61-4 Ribes bracteosum Dougl.
Small population collection of open-pollinated fruit from the colony growing in one cove. Typical for the species. Seeds.

BL-61-5 Rubus spectabilis Pursh.
Open-pollinated fruit collected from one red-fruited clone. Seeds.

Back to Rd 30 (Wind River Rd.). Followed Rd 30 for 29.3 km to FS Rd 3053 (McClellan Meadow Rd) to the left. Occasional Vaccinium parvifolium was noted along Wind River Rd at lower elevations.

Location BL-62 Gifford Pinchot National Forest, Washington.
Roadsides along McClellan Meadow Rd. (FS Rd 3053) off Hwy 30. Elevation, 1100 m; aspect, generally southeast; slope, less than 5° generally. The location included roadsides, an old clearcut at the end of the road, and an almost boggy meadow on the left side of the road (i.e. McClellan Meadow). Canopy species Pseudotsuga menziesii, Pinus monticola, Thuja plicata, and Abies spp. Fragaria virginiana var. glauca was very abundant along the road. The fruit was already gone. The site is worth revisiting to collect Fragaria fruit, at an earlier date during the summer. Vaccinium membranaceum, Rubus spectabilis, and Rubus ursinus were scattered, and V. chamissonis occasional. Fruit still green on Rubus ursinus. Herbarium specimens collected from V. chamissonis and a Viburnum sp. Collected August 5, 1985.

Back to Rd 30 again. Followed Rd 30 for 10.7 km to FS Rd 51. Then on FS 51 to Outlaw Ridge Viewpoint of Mt. St. Helens.

Overnight at Outlaw Ridge Viewpoint. Vaccinium parvifolium and V. ovalifolium were present at this site also.

August 6, 1985. Back to Hwy 30 for 12.5 km to FS Rd 24, toward the Sawtooth Huckleberry Fields, just south of Mt. Adams.

Location BL-63 Gifford Pinchot National Forest, Washington.
Intersection of the Pacific Crest Trail and FS Rd 24, 5.9 km from Hwy 30, in the Sawtooth Huckleberry Fields area. Elevation, 1400 m; aspect, east; slope, variable (most not over 20°); latitude, 45° 50' N; longitude, 121° 40' W. The sample location covered approximately one hectare on the right and consisted of open meadows with scattered regeneration of Abies and Pinus spp. Both Vaccinium membranaceum and Fragaria virginiana var. glauca were abundant, but with only scattered fruit on either. There was an extensive population of V. deliceosum around the border of a seasonal bog located about 0.8 km off the road. Phyllodoce empetriformis was associated with V. deliceosum on the site. Apparent hybrids among V. membranaceum and V. deliceosum were also present. Collected August 6, 1985.

BL-63-1 Vaccinium membranaceum Dougl.
Population sample of open-pollinated fruits. Plants varying in degree of glaucousness on leaves and fruit. Seeds. (This is still a major location for this species.)

BL-63-2 Vaccinium deliceosum Piper.
Population collection of open-pollinated fruit. Stems 0.1-0.6 m tall, depending on amount of browsing. Flavor similar to V. myrtillus and especially similar to edible forms of Vaccinium stamineum. Herbarium specimens collected also. Seeds.

BL-63-3 and BL-63-4 Vaccinium deliceosum x membranaceum
Herbarium specimens collected. Fruit still green.

BL-63-5 Fragaria virginiana var. glauca (S.Wats.) Staudt.
Population collection of open-pollinated fruit. The population included plants with very erect, long peduncles and fruits with nonsunken seeds. This combination of characters suggested possible introgression with Fragaria vesca. Seeds.

BL-63-6 Vaccinium deliceosum x membranaceum
Herbarium specimen collected from one hybrid growing by the trail at approximately 20 m off the highway.

Back to Hwy 30, then north on FS Rd 25 toward Randle.

Location BL-64 Gifford Pinchot National Forest, Washington.
FS Rd 25, 31.4 km north of Hwy 30. Elevation, 1280 m; aspect, north; slope, 30°; latitude, 46° 00' N; longitude, 122° 00'W. Clearcut on the right side of the road with 15-year-old Pseudotsuga menziesii, Tsuga heterophylla, and Thuja plicata regenerating. The subcanopy species were Alnus and Salix. The area was still largely an open meadow with a very extensive Vaccinium membranaceum population and scattered V. chamissonis and V. ovalifolium. Shrub associaates included Menziesia ferruginea, Holodiscus discolor, and Sorbus. Collected August 6, 1985.

BL-64-1 Vaccinium membranaceum Dougl.
Population sample of open-pollinated fruit collected at 10 berries per clone. Low to moderate crop this year. Plant height 0.6-1.3 m. Plants quite variable for fruit size, color, firmness, and ease of picking. Introgression with V. ovalifolium appeared to be a possibility. Herbarium sample collected also. Seeds.

This location is also worthy of further study and sampling for V. membranaceum, both for variability and further evidence of introgression.

BL-64-2 Vaccinium chamissonis Bongard.
Small population sample of open-pollinated fruit collected at 25 berries per plant. Plants 0.8-1.9 m tall. Fruit very light blue, firm. Herbarium sample collected also. Seeds.

Location BL-65 Gifford Pinchot National Forest, Washington.
0.8 km up FS Rd 99 (road to Mt. St. Helen's Visitors Center), off FS Rd 25. Elevation, 1100 m; aspect, south; slope, 20°; latitude, 47° 55' N; longitude, 123° 00' W. Roadside on the right (on top of the roadbank) with a mix of Vaccinium ovalifolium and V. chamissonis under young Pseudotsuga menziesii. Occasional V. parvifollium also occurred on the site. A very significant location for the V. chamissonis-V. ovalifolium species pair. Collected August 6, 1987.

BL-65-1 Vaccinium ovalifollium Sm.
Population sample of open-pollinated fruit collected at 25 berries per plant. Typical for the species with fine fruit size, light blue color, and excellent firmness. Herbarium specimens collected also. Seeds.

BL-65-2 Vaccinium chamissonis Bongard.
Population sample of open-pollinated fruit collected at 25 berries per plant. Typical for the species. Herbarium specimen collected also. Seeds.

Location BL-66 Gifford Pinchot National Forest, Washington.
Iron Creek Campground off FS Rd 25, 16 km south of Randle, WA by the Cispus River. Elevation, 530 m; aspect, north; slope, less than 5°; latitude, 47° 50' N; longitude, 124° 00' W. Partially open woods with Pseudotsuga menziesii, Tsuga heterophylla, and Thuja plicata. Vaccinium parvifolium was scattered over the location, especially in the vicinity of the river. Mahonia nervosa was also scattered over the location as a low colonial shrub. Occasional Taxus brevifolia occurred near the river (herbarium specimen collected). Collected August 6, 1985.

BL-66-1 Vaccinium parvifolium Sm.
Population sample of open-pollinated fruit collected at 10-25 fruits per plant. Seeds.

Overnight at Iron Creek Campground.

US Hwy 12 from Randle, WA, to Davis Creek Rd. Then took FS Rd 63 off Davis Creek Rd.

Location BL-67 Gifford Pinchot National Forest, Washington.
11.0 km up FS Rd 63 from Davis Creek Rd. Elevation, 1400 m; aspect, south to southwest; slope, 25°; latitude, 46° 30' N; longitude, 122° 00'W. Old clearcut, with Pseudotsuga menziesii, Tsuga heterophylla, and Abies spp. regenerating. Extensive Vaccinium membranaceum population and scattered V. chamissonis. Collected August 7, 1985.

BL-67-1 Vaccinium membranaceum Dougl.
Population sample of open-pollinated fruit collected at 25 berries per plant. Herbarium sample collected also. Seeds.

BL-67-2 Vaccinium chamissonis Bongard.
Population sample of open-pollinated fruit collected at 25 berries per plant. Herbarium sample collected also. Seeds.

1.3 km beyond Location BL-67. Large, recent clearcut with an extensive Vaccinium membranaceum population. Elevation 1700 m. Very little if any fruit. It appeared that the western species of Vaccinium in section Myrtillus needed to develop a fairly extensive plant body before they could produce a significant amount of fruit.

5.6 km beyond Location BL-67. Very extensive Vaccinium membranaceum population. This would be worth a return trip to collect fruit.

Location BL-68 Gifford Pinchot National Forest, Washington
21.8 km up FS Rd 63, at a hairpin turn in the road. Elevation, 1300 m; aspect, east; slope, very little in the immediate vicinity of the road; latitude, 46° 00' N; longitude, 122° 00' W. Extensive population of both Ribes bracteosum and Rubus spectabilis by the roadside on the left in an open meadow with Alnus and Salix. Ribes bracteosum was a dominant species over much of the meadow and extending up a seepage slope. Collected August 7, 1985.

BL-68-1 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit, including both red- and yellow-fruited forms. Typical for the species.

BL-68-2 Ribes bracteosum Dougl.
Small population sample of open-pollinated fruit (less than 1% ripe). Worth returning on a later date to collect ripe fruit.

Location BL-69 Gifford Pinchot National Forest, Washington
Junction FS Rd 63 and FS Rd 47. Elevation, 910 m; aspect, northwest; slope, 10°; latitude, 46° 30' N; longitude, 122° 00' W. Old clearcut on the left, overstory mostly Alnus rubra and Acer circinatum. Scattered Vaccinium parvifolium, Rubus ursinus, R. leucodermis and Ribes lacustre noted on the site. Collected August 7, 1985.

BL-69-1 Vaccinium parvifolium Sm.
Population sample of open-pollinated fruit collected at 25 berries per plant. The site included a number of plants with very large fruit. Herbarium sample collected also. Seeds.

BL-69-2 Ribes lacustre (Pers.) Poir.
Open-pollinated fruit collected from two large plants on the site. Herbarium sample collected also. Seeds.

BL-69-3 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Open-pollinated fruit sample collected from the three plants on the site. Seeds.

Back to US 12, headed from Randle toward Packwood. On the mountains above the highway, Corylus cornuta var. Californica was quite common.

FS Rd 46, off US 12; then FS Rd 4610, off FS Rd 46.

Location BL-70 Gifford Pinchot National Forest, Washington.
6.4 km up FS Rd 4610 (off FS 46). Elevation, 1100 m; aspect, east; slope, 45°; latitude, 46° 00' N; longitude, 122° 00' W. Old clearcut on the right with Pseudotsuga menziesii and Tsuga heterophylla. Subcanopy, mainly Acer circinatum and Ceanothus velutinus. Rubus ursinus was scattered over the site, and R. leucodermis and Vaccinium parvifolium occasional. Apparent Fragaria virginiana var. glauca x chileonsis segregates were common along the road. Taxus brevifolia was also scattered above the road. Collected August 7, 1985.

BL-70-1 Rubus ursinus Cham. & Schlect.
Population sample of open-pollinated fruit. Fairly variable for drupelet size, leaf disease, and Botrytis on fruit calyces. Overall, a very interesting population. Seeds.

BL-70-2 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population sample of open-pollinated fruit. Typical for the species. Seeds.

BL-70-3 Vaccinium parvifolium Sm.
Small population collection of open-pollinated fruit. Crop light, fruit size large. Seeds.

BL-70-4 Fragaria virginiana var. glauca x chileonsis apparent segregates.
Fairly extensive population. Fruit gone already. Herbarium specimens collected.

Back to FS Rd 46.

Location BL-71 Gifford Pinchot National Forest, Washington.
Trailhead at the end of FS Rd 46. Elevation, 1220 m; aspect, south; slope, 20°; latitude, 46° 30' ; longitude, 122° 00' W. Clearcut with young Pseudotsuga menziesii and Abies spp. and occasional Tsuga heterophylla. The site included a very large Vaccinium membranaceum population, along with scattered V. chamissonis, V. ovalifolium, V. parvifolium and Rubus leucodermis. The site appears to have literally dried up this summer, with V. membranaceum leaves already reddening and in some cases dropping off. Fruit size was very small. Fruit color ranged from dark blue to shiny black. There was very little fruit on V. chamissonis, V. ovalifolium or V. parvifolium, and none on Rubus leucodermis. Rubus leucodermis also appeared to have significant winter injury to canes on this site. Collected August 7, 1985.

BL-71-1 Vaccinium membranaceum Dougl.
Population sample of open-pollinated fruit collected at 10 berries per plant. There was a good crop on some plants, perhaps indicating that these had superior drought and heat tolerance. Also, plants bearing subglaucous fruits appeared to fare somewhat better this year. Herbarium sample collected also. Seeds.

This was a major V. membranaceum location, worth further study and collection in a year with ample rain.

BL-71-2 Vaccinium chamissonis Bongard.
Representative herbarium specimen.

BL-71-3 Vaccinium ovalifolium Sm.
Representative herbarium specimen.

Back down FS Rd 46, Rhododendron albiflorum was noted when the elevation was around 1650 m or higher.

Location BL-72 Gifford Pinchot National Forest, Washington
11.8 km up FS Rd 46 (off US 12). Elevation, 1200 m; aspect, east; slope, 20°; latitude, 46° 30' N; longitude, 122° 00' W. Top of the roadbank in fairly heavy shade. Canopy, fairly mature second growth Pseudotsuga menziesii, Thuja plicata, Tsuga heterophylla, and Abies spp. Vaccinium ovalifolium was abundant on the site, V. membranaceum scattered, and V. chamissonis occasional. Collected August 7, 1985.

BL-72-1 Vaccinium ovalifolium Sm.
Population collection of open-pollinated fruit. Plants 0.6-2.0 m tall. Fruit size, generally very large; color light to dark blue; shape oblate to tear-shaped; flavor average. An outstanding population of this species. Herbarium sample collected also. Seeds.

BL-72-2 Vaccinium chamissonis Bongard.
Population sample of open-pollinated fruit. Herbarium sample collected also. Seeds.

Back to US 12. Overnight at LaWisWis Campground near White Pass.

Location BL-73 Gifford Pinchot National Forest, Washington
Open roadside, 0.3 km east of Silverbrook Rd, east of Randle, WA on the north side of US 12. Elevation, 430 m; flat; latitude, 46° 30' N; longitude, 121° 55' W. One plant of Sambucus cerulea along with scattered Fragaria virginiana var. glauca. Collected August 8, 1985.

BL-73-1 Sambucus cerulea Raf.
Open-pollinated fruit collected from one very large clone. Plant 5.0 m high and 5.0 m in diameter.

Headed west on US 12 toward Interstate 5 and then US 101 to Olympia, WA.

Abundant Corylus cornuta var. Californica noted along US 12 west of Randle.

US 101 to Agate/Shelton. Consulted with District Resource Officer, U.S. Forest Service, on small fruit species collected sites.

Took FS Rd 12, off US 101, 9.3 km above Shelton.

Location BL-74 Olympic National Forest, Washington
Elevation, 370 m; aspect, north; slope, 30°; latitude, 48° 00' N; longitude, 124° 00' W. Clearcut on the left above the road with an extensive population of Vaccinium parvifolium and Gaultheria shallon and scattered V. ovalifolium, Rhododendron macrophyllum, and Menziesia ferruginea. No fruit on V. ovalifolium. Collected August 8, 1985.

BL-74-1 Vaccinium parvifolium Sm.
Population sample of open-pollinated fruit collected at 25 berries per plant. Variable for fruit size and color. Flavor reasonable (acid). Herbarium specimen collected also. A large and interesting population. Seeds.

BL-74-2 Gaultheria shallon Pursh.
Population sample of open-pollinated fruit. Seeds.

Location BL-75 Olympic National Forest, Washington
34.6 km up FS Rd 23. Elevation, 760 m; aspect, northwest; slope, less than 10°; latitude, 47° 10' N; longitude, 123° 30' W. Roadside and woods edge of mature forest of Pseudotsuga menziesii, Tsuga heterophylla, and Abies spp. Rubus ursinus was scattered on the roadbank and Vaccinium ovalifolium at the edge of and into the woods. Acer circinatum and Menziesia ferruginea also occurred in the shrub layer. Collected August 8, 1985.

BL-75-1 Rubus ursinus Cham. & Schlect.
Population collection of open-pollinated fruit. Generally good fruit size. Some Botrytis on the fruit, especially on calyces. Seeds.

BL-75-2 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit, collected at 25 berries per clone. Fruit color dark to light blue; size, generally large; shape, tear-shaped to oblate. Fruit presentation (position in which the fruit is held) extremely variable - pendent to horizontal to erect. Herbarium specimens collected also. Seeds.

Location BL-76 Olympic National Forest, Washington
58.7 km up FS Rd 26. Elevation, 530 m; latitude, 47° 10' N; longitude, 123° 30' W. Shady cove, just west of the bridge across the West Fork of the Satsop River. Canopy mostly Alnus rubra with some Tsuga heterophylla. An extensive population of Rubus parviflorus occurred along the roadside, along with Rubus spectabilis (no fruit remained). Collected August 8, 1985.

BL-76-1 Rubus parviflorus Nutt.
Population collection of open-pollinated fruit. Botrytis fairly widespread on overripe fruit. Seeds.

Location BL-77 Olympic National Forest, Washington
1.3 to 2.9 km up FS Rd 2312 after crossing the Wynoochee River bridge. Elevation, 760 m; aspect, northeast; slope, 30°; latitude, 47° 10' N; longitude, 123° 30' W. Roadsides and above the road on the left in a clearcut. The site includes scattered plants of Rubus leucodermis, R. ursinus, R. spectabilis, R. pedatus, Ribes bracteosum, Vaccinium chamissonis, V. ovalifolium, and Sambucus racemosa. Associated plants included Acer circinatum, and Sorbus, and Alnus spp. Collected August 8, 1985.

BL-77-1 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population sample of open-pollinated fruit. Botrytis on fruit. Seeds.

BL-77-2 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit. The population includes approximately 50% red- and 50% yellow-fruited forms. Seeds.

BL-77-3 Ribes bracteosum Dougl.
Population collection of open-pollinated fruit. Herbarium specimen collected also. Seeds.

BL-77-4 Sambucus racemosa L.
Population collection of open-pollinated fruit. Seeds.

BL-77-5 Vaccinium ovalifolium Sm.
Representative herbarium specimen.

Location BL-78 Olympic National Forest, Washington
7.0 km up FS Rd 2312 (from the bridge across the Wynoochee River). Elevation, 1200 m; aspect, west; slope, 20°; latitude, 47° 20' N; longitude, 124° 00' W. Open woodland on the left with Abies, Tsuga, and Thuja plicata. The location includes a major population of Vaccinium deliceosum, with extensive V. ovalifolium around the margins. Scattered V. membranaceum and V. chamissonis also occurred on the site. Phyllodoce empetriformis was again a common associate of V. deliceosum. Collected August 8, 1985.

BL-78-1 Vaccinium deliceosum Piper.
Population collection of open-pollinated fruit, mainly from stems in a sunny spot where it was ripe on this date. The population was quite variable for plant and fruit traits, suggesting possible introgression with other tetraploid species. Stems 0.2-0.6 m tall. Herbarium specimen collected also. Seeds.

BL-78-2 Vaccinium chamissonis Bongard.
Representative herbarium specimen.

Location BL-79 Olympic National Forest, Washington
9.6 km up FS Rd 2312 (from the bridge across the Wynoochee River). Elevation, 1300 m; aspect, south; slope 20°; latitude, 47° 20' N; longitude, 124° 00' W. Meadow on the left (seepage slope in part) and open woodland on both sides of the road with Abies spp., Thuja plicata, and Tsuga mertensiana. The total site covered a little over one hectare. The site includes extensive Vaccinium deliceosum along with its associate Phyllodoce empetriformis. Vaccinium membranaceum was scattered on the site along with occasional V. chamissonis and V. ovalifolium. Rhododendron albiflorum and Menziesia ferruginea were also fairly common. Collected August 8, 1985.

BL-79-1 Vaccinium deliceosum Piper.
Population sample of open-pollinated fruit. Population quite variable for plant and fruit characters. Fruit flavor quite refreshing. Plant stems 0.1-0.8 m tall. Herbarium sample collected also. Seeds. Fruit sample also collected for anthocyanin analysis.

Overnight at Coho Campground on Lake Wynoochee.

Along FS Rd 22 from Wynoochee Lake to the intersection with FS Rd 2221 there was a very extensive Rubus spectabilis population (fruit already gone). Rubus spectabilis continued along FS Rd 22 west toward US 101.

3.2 km above the junction of US 101 and FS Rd 22, there was an extensive bog on the left with Vaccinium uliginosum. Elevation approximately 260 m.

Location BL-80 Olympic National Forest, Washington
FS Rd 2309 in Quinault. Elevation, 600 m; latitude, 47° 10' N; longitude, 124° 00' W. Roadsides with a Tsuga heterophylla and Alnus rubra canopy. Rubus spectabilis was extensive and R. leucodermis, Vaccinium parvifolium and V. ovalifolium scattered. Rubus ursinus and R. laciniatus were also fairly abundant. Collected August 9, 1985.

BL-80-1 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit (a good mix of reds and yellows). The majority of the fruit was already gone. Seeds.

BL-80-2 Rubus leucodermis Dougl. ex. Torr. & A. Gray
Population collection of open-pollinated fruit. Seeds.

BL-80-3 Vacinium ovalifolium Sm.
Representative herbarium specimen.

Turned onto FS Rd 2258 (Quinalt Ridge Rd.), then onto FS 2262 1.3 km up to FS 2258.

Location BL-81 Olympic National Forest, Washington.
Roadsides along FS Rd 2262, off FS Rd 2258. Elevation, 667 m; aspect, variable; latitude, 47° 10' N; longitude, 124° 00' W. Canopy species young Tsuga heterophylla, Pseudotsuga menziesii, and Thuja plicata. Rubus ursinus were scattered along the roadsides. Overall the fruit was about 25% ripe. Rubus spectabilis was also common on lower elevations. Collected August 9, 1985.

BL-81-1 Rubus ursinus Cham. & Schlect.
Population collection of open-pollinated fruit. Plants growing on both roadsides 4.5 km up the road. Aspect, east to southeast. Seeds.

BL-81-2 Rubus ursinus Cham. & Schlect.
Open-pollinated fruit from a group of plants (possibly one clone) located on the roadside on the right 5.9 km up the road. Aspect, southwest. This accession was outstanding for fruit size.

Overall FS Rd 2262 was an excellent Rubus ursinus site.

Turned right onto FS Rd 2405 off US 101. Then turned onto FS Rd 2410, 13.1 km up FS Rd 2405.

Location BL-82 Olympic National Forest, Washington.
15.5 km up FS Rd 2410, off FS Rd 2405. Elevation, 975 m; aspect, north; slope, 30°; latitude, 47°20' N; longitude, 124° 00' W. Woods edge and up into the woods above the road on the right. Canopy species, mixed age Tsuga heterophylla and Abies spp. The site included extensive Vaccinium ovalifolium and scattered V. chamissonis. Rubus spectabilis was also fairly abundant and R. pedatus scattered up to the edge of the woods. Vaccinium ovalifolium was particularly variable on this site, and appeared worthy of further study. Collected August 9, 1985.

BL-82-1 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit collected at 25 berries per plant. Plants 0.8-2.2 m tall on this site. Seeds.

BL-82-2 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit from plants holding their fruit from 45° above horizontal to completely erect. Collected at 10 berries per plant. Herbarium samples collected also. Seeds.

BL-82-3 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit from plants holding their fruit from partially to fully pendant. Collected at 10 berries per plant. This form was noticeably less abundant than the BL-82-2 type. Herbarium samples collected also. Seeds.

BL-82-4 Vaccinium chamissonis Bongard.
Representative herbarium specimen. Plants generally 1.0-1.6 m tall.

BL-82-5 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit, including red and yellow-fruited types. Seeds.

Back to US 101, and headed north to the entrance to Olympic National Park.

Along US 101 noted that Vaccinium ovatum did not appear to occur more than 12.8-16.0 km inland.

Right on N.P.Rd 1321.43, off US 101, 9.4 km above the entrance to Olympic National Park. Along the road occurred scattered Vaccinium parvifolium (large ripe fruit), V. ovatum (green fruit), and Rubus spectabilis (fruit gone), plus occasional V. ovalifolium (large dark blue fruit).

Location BL-83 Turnaround on State Forest Rd N 1112 (state forest land) adjacent to Olympic National Forest, Washington, at the World's Largest Western Red Cedar.
To get to the location turn onto SF Rd N 1000 off US 101, then right onto N 1100, and finally left onto N 1112. Elevation, 160 m; aspect, along a ridgetop; slope, 10° overall; latitude, 47° 20' N; longitude, 124° 00' W. Clearcut with largely young Pseudotsuga menziesii and Tsuga heterophylla, and scattered Alnus rubra. The site included scattered Vaccinium parvifolium, V. ovalifolium, and V. ovatum (all fruit green). Collected August 10, 1985.

BL-83-1 Vaccinium parvifolium Sm.
Population sample of open-pollinated fruit collected at 25 berries per plant. Outstanding for fruit size and crop. Some fruit getting a little overripe. Herbarium sample collected also. Seeds.

BL-83-2 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit collected at 10 berries per plant. Fruit generally sparse and very overripe when present. Seeds.

Location BL-84 Olympic National Park, Washington
Hoh River Trail from the Visitor Center in Hoh Rain Forest. Elevation, 240 m; slope, less than 5°; latitude, 47° 40' N; longitude, 124° 00'W. Fairly dense old growth forest of Picea sitchensis, Tsuga heterophylla, and occasional Acer circinatum. The location included scattered Vaccinium parvifolium and V. ovalifolium (plus a single V. chamissonis). Rubus spectabilis (fruit gone) and Rubus pedatus (as a groundcover) were both abundant, even in heavy shade. Vaccinium spp. and especially Rubus spectabilis were browsed heavily by elk. Collected August 10, 1985.

BL-84-1 Vaccinium parvifolium Sm.
Population sample of open-pollinated fruit collected at 10 berries per plant. Most plants growing out of decaying stumps or logs. Plants mainly 1.3-2.2 m tall (occasionally to 4.5 m tall). Generally a light crop, but variable. Seeds.

BL-84-2 Rubus pedatus J.E. Smith.
Small collection of open-pollinated fruit. Seeds.

Location BL-85 Olympic National Forest, Washington.
FS Rd 29, 18.6 km off US 101 along a ridgetop. Elevation, 1200 m; aspect, northwest; slope, 40°; latitude, 47° 40' N; longitude, 124° 00' W. Clearcut with largely Pseudotsuga menziesii and Tsuga heterophylla regenerating. The site included extensive populations of Vaccinium ovalifolium, V. chamissonis, Rubus spectabilis, and R. pedatus (as a groundcover). Two clones of Ribes bracteosum were also found, both with partially ripe fruit. Collected August 10, 1985.

BL-85-1 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit collected at 10 berries per plant. Typical for the species. Seeds.

BL-85-2 Vaccinium chamissonis Bongard.
Population sample of open-pollinated fruit collected at 25 berries per plant. Typical for the species. Herbarium sample collected also. Seeds.

BL-85-3 Rubus spectabilus Pursh.
Open-pollinated fruit collection, biased to include a high percentage of red-fruited plants. The population included the largest fruit size found to date (2.5 cm dia. x 3.8 cm long). Cuttings were taken from one plant with very large bright red fruit. (These rooted well after being shipped back to North Carolina for rooting.) Seeds.

BL-85-4 Rubus pedatus J.E. Smith.
Small population collection of open-pollinated fruit. Seeds.

Location BL-86 Olympic National Forest, Washington.
FS Rd 29, 5.3 km from US 101. Elevation, 665 m; aspect, east; latitude, 47° 30' N; longitude, 124° 00' W. Roadbanks with Alnus rubra, scattered Rubus ursinus, and occasional R. parviflorus. Collected August 10, 1985.

BL 86-1 Rubus ursinus Cham. & Schlect.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

Overnight at Campground at Sol Duc Hot Springs.

Headed toward Hurricane Ridge on August 11.

Location BL-87 Olympic National Park, Washington
Hurricane Ridge area. The location begins 1.4 km up the graveled portion of Hurricane Ridge Rd. and continued for 11.2 km. Elevation, 1600-1650 m; aspect, variable; slope, variable; latitude, 47° 50' N; longitude, 123° 30' W. Open woodland along the first part of the road with an extensive Vaccinium membraceum population. Ribes howellii was also common in the open woodland. A number of extensive V. deliceosum populations also were found both in the open woodland and in the alpine area in the latter portion of the location. Again Phyllodoce empetriformis was always associated with V. deliceosum. Collected August 11, 1985.

BL-87-1 Vaccinium membranaceum Dougl.
Small population sample of open-pollinated fruit. Fruit just beginning to ripen. Fairly large crop of fruit, generally small fruit size. Elevation, 1600 m; aspect, northwest; slope, 25°. Seeds.

BL-87-2 Ribes howellii Greene
Small population sample of open-pollinated fruit. Seeds.

Palo Alto Rd. (FS Rd 2909) off US 101. Then took FS Rd 2950 off FS Rd 2909.

Location BL-88 Olympic National Forest, Washington
5.6 km up FS Rd 2950 (off FS Rd 2909). Elevation, 360 m; aspect, west; latitude, 47° 00' N; longitude, 124° 00' W. Roadbanks on the left with scattered Alnus rubra, Rubus parviflorus, R. spectabilis, R. leucodermis, Fragaria vesca (fruit gone), Ribes lacustre (no fruit), and V. parvifolium. Collected August 11, 1985.

BL-88-1 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

Location BL-89 Olympic National Forest, Washington
13.3 km up FS Rd 2950. Elevation, 970 m; aspect, south; slope, less than 5°. Roadside parking area on the left with Pseudotsuga menziesii regenerating around the edge. The site included populations of both Fragaria virginiana var. glauca and F. vesca. Collected August 11, 1985.

BL-89-1 Fragaria virginiana var. glauca (S. Wats.) Staudt.
Plants collected (fruit already gone). This population appears to possibly be introgressed with F. chileonsis.

Took FS Rd 2927 off FS Rd 2950.

Location BL-90 Olympic National Forest, Washington.
4.2 km down FS Rd 2927, off FS Rd 2950 (headed back toward US 101). Elevation, 530 m; latitude, 47° 30' N; longitude, 124° 00' W. Roadside with Alnus rubra, Pseudotsuga menziesii, and Tsuga heterophylla. The site included abundant Rubus parviflorus, fairly abundant R. spectabilis, scattered Fragaria vesca, Rubus leucodermis, R. ursinus and a few Ribes lacustre. Collected August 11, 1985.

BL-90-1 Rubus ursinus Cham. & Schlect.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

BL-90-2 Ribes lacustre (Pers.) Poir.
Open-pollinated fruit from one large plant. Seeds.

Location BL-91 Olympic National Forest, Washington.
Falls View Campground off US 101, just south of Quilicene. Elevation, 120 m; aspect, not significant; slope, less than 5°; latitude, 47° 40' N; longitude, 123° 00' W. Densely wooded. Canopy species Pseudotsuga menziesii, Tsuga heterophylla, Thuja plicata, Alnus rubra, and Acer macrophyllum. Gaultheria shallon made a dense tall groundcover over the entire area. Rhododendron macrophyllum was also quite abundant. The site also included scattered plants of Vaccinium parvifolium, V. ovatum (fruit green), Rubus ursinus (no fruit), R. spectabilis (fruit gone), R. parviflorus (just beginning to ripen), Fragaria vesca (fruit gone), along with occasional Ribes bracteosum and Ribes howellii. Collected August 11, 1985.

BL-91-1 Vaccinium parvifolium Sm.
Population sample of open-pollinated fruit, collected at 25 berries per plant. Typical for the species. Seeds

BL-91-2 Gaultheria shallon Pursh.
Small population collection of open-pollinated fruit. Seeds.

BL-91-3 Vaccinium ovatum Pursh.
Cuttings and herbarium specimens collected.

Overnight at Falls View Campground.

August 12. Lords Lake Rd. (Rd 30) off US 101. Then took FS Rd 2909 to the left.

Location BL-92 Olympic National Forest, Washington.
FS Rd 2909 to the left off Lords Lake Rd. for a total of 11.2 km off US 101. Elevation, 800 m; aspect, west; slope, variable; latitude, 47° 50' N; longitude, 124° 00' W. Roadbank on the left with scattered Rubus ursinus and Vaccinium parvifolium and a few R. leucodermis and V. ovalifolium. Collected August 12, 1985.

BL-92-1 Rubus ursinus Cham. & Schlect.
Population collection of open-pollinated fruit. Fruit about 20% ripe. Population fairly variable for fruit size and shape. Seeds.

Location BL-93 Olympic National Forest, Washington.
6.9 km up FS Rd 2892, off FS Rd 2909. Elevation, 1220 m; aspect, northwest; slope, 45°; latitude, 47° 40' N; longitude, 123° 00' W. Moist wooded slope under Pseudotsuga menziesii and Tsuga, along with Alnus rubra along the margin. The location included extensive Rubus spectabilis along the margins and R. pedatus as a groundcover. Vaccinium chamissonis was scattered on the site, and V. ovalifolium (green fruit) and V. membranaceum (no fruit usually) occasional. Collected August 12, 1985.

BL-93-1 Vaccinium chamissonis Bongard.
Population sample of open-pollinated fruit, collected at 25 berries per plant. Excellent fruit size (a less stressful site). Herbarium sample collected also. Seeds.

BL-93-2 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit. Excellent fruit size, about 85% yellow-fruited. Seeds.

BL-93-3 Rubus petadus J.E. Smith.
Population collection of open-pollinated fruit. Most fruitful site to date for this species. Seeds.

BL-93-4 Vaccinium membranaceum Dougl.
Representation herbarium specimen. No fruit on plants.

BL-93-5 Fragaria chileonesis (L.) Duch.
Plants collected from a population growing on the roadside 1.1 km back up FS Rd2892. Fruit gone. One clone appeared to be a possible introgressant with F. virginiana var. glauca.

FS Rd 2621 off US 101, then turned on FS Rd 2710, 6.9 km up FS Rd 2621, and on FS Rd 2655, 4.6 km up FS Rd 2710.

Location BL-94 Olympic National Forest, Washington.
2.4 km up FS Rd 2655, off FS Rd 2710. Elevation, 1130 m; aspect, northeast; slope, 30°; latitude, 47° 40' N; longitude, 123° 00' W. Open woods on the left under mature Pseudotsuga menziesii and Tsuga heterophylla. The location included fairly abundant Vaccinium ovalifolium, scattered V. membranaceum and V. chamissonis, and occasional V. parvifolium. Collected August 12, 1985.

BL-94-1 Vaccinium membranaceum Dougl.
Population sample of open-pollinated fruit. Herbarium sample collected also. Also added fruit from plants up the road in the same general area. Seeds.

BL-94-2 Vaccinium ovalifolium Sm.
Population sample of open-pollinated fruit, collected at 25 berries per plant. Fruit from apparent hybrids with V. membranaceum were also included. Fruit color ranged from glaucous blue to essentially black. Fruit presentation variable, pendant or upright. Herbarium specimens collected also. Seeds.

BL-94-3 Vaccinium chamissonis Bongard.
Small population sample of open-pollinated fruit collected at 25 berries per plant. Herbarium sample collected also. Seeds.

BL-94-4 Vaccinium parvifolium Sm.
Small population collection of open-pollinated fruit from the few, generally sparsely fruiting plants on the site. Seeds

Back to FS Rd 2621, then turned onto FS Rd 2651 off FS Rd-2621, and then onto FS Rd 2658, 1.6 km up FS Rd 2651.

Location BL-95 Olympic National Forest, Washington.
3.0 km up FS Rd 2658 (off FS Rd 2651), and continuing for 2.4 km. Elevation, 760 m; aspect, south. Rubus leucodermis was scattered along the roadsides. Collected August 12, 1985.

BL-95-1 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population collection of open-pollinated fruit. Smallest overall fruit size of any population to date, but the plants appeared to be drying up. Seeds.

Location BL-96 Olympic National Forest, Washington.
Approximately 3.2 km above US 101 on FS Rd 2621. Elevation, 500 m; aspect, south. Roadbanks for about 0.8 km included very extensive populations of Fragaria vesca and Fragaria virginiana var. glauca (fruit gone on both). Rubus ursinus was also scattered on roadbanks on the right, and occasional Vaccinium ovatum and V. parvifolium above the road on the left (10° slope). Collected August 12, 1985.

BL-96-1 Fragaria virginiana var. glauca (S.Wats.) Staudt.
Plants collected from 15 random clones. Some appear to be possible introgressants with F. chileonesis.

Overnight at Falls View Campground.

FS Rd 2515 off US 101, then FS Rd 2530, 9.9 km up FS Rd 2515, and then turned on Spur Rd 2574, 8.5 km up FS Rd 2530.

Location BL-97 Olympic National Forest, Washington.
1.6 km up Spur Rd 2574, off FS Rd 2530. Elevation, 820 m; aspect, northwest; slope, 45°; latitude, 47° 40' N; longitude, 123° 00' W. Moist narrow cove on the right with young Tsuga, Abies, and Alnus rubra. The site included a dense stand of Rubus spectabilis, and

scattered Ribes bracteosum, R. lacustre, Vaccinium ovalifolium and V. chamissonis, and occasional V. myrtillus (fruit green). Menziesia ferruginea and Oplopanax horridum were also common associates. Collected August 13, 1985.

BL-97-1 Vaccinium ovalifolium Sm.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

BL-97-2 Vaccinium chamissonis Bongard.
Population collection of open-pollinated fruit. Good flavor on this site. Seeds.

BL-97-3 probable Vaccinium myrtillus L.
Herbarium sample from 0.1 m tall plants growing on dry rocky slopes above the cove. Fruit still green.

BL-97-4 Rubus spectabilis Pursh.
Population collection of open-pollinated fruit, including red and yellow forms. Seeds.

BL-97-5 Ribes bracteosum Dougl.
Population collection of open-pollinated fruit. Typical for the species. Seeds.

BL-97-6 Ribes lacustre (Pers.) Poir.
Population collection of open-pollinated fruit. Typical for the species. Seeds

BL-97-7 probable Vaccinium ovalifolium Sm.
Plant with short-pedicled dark blue fruit, and fruit held in a pendant position. Leaves and stems coarse. Herbarium specimen collected.

Back to FS Rd 2530, then turned onto Spur Rd 2540, 1.9 km up FS Rd 2530, and then turned on Side Spur 012, 1.8 km up Spur Rd 2540.

Location BL-98 Olympic National Forest, Washington.
0.3 km up Side Spur 012, off Spur Rd 2540. Elevation, 1000 m; aspect, southeast; slope, 46°-60°; latitude, 47° 40' N; longitude, 123° 00' W. Clearcut with Pseudotsuga menziesii and Tsuga heterophylla regenerating. Vaccinium membranaceum and V. ovalifolium were scattered and V. chamaissonis occasional. Rubus pedatus was abundant along the interface of the clearcut and mature forest, and R. lasicoccus scattered in the clearcut. Rhododendron macrophyllum was also a common associate. Collected August 13, 1985.

BL-98-1 Vaccinium membranaceum Dougl.
Population collection of open-pollinated fruit. Plants largely on steep slopes and appear to be drying up. Seeds.

BL-98-2 Vaccinium ovalifolium Sm.
Population collection of open-pollinated fruit. Plants concentrated along the ridge top. Seeds.

BL-98-3 Rubus pedatus J.E. Smith
Population sample of open-pollinated fruit. Pleasant, slightly acidic flavor. The 'fruit' often consisted of only one ior two drupelets. Seed size for this species was very large. Seeds.

Back to FS Rd 2530.

Location BL-99 Olympic National Forest, Washington
15.4 km up FS Rd 2530. Elevation, 1300 m; aspect, south; slope, 30°-45°; latitude, 47° 40' N; longitude, 123° 00' W. Clearcut (approximately 10-yrs-old) with Pseudotsuga menziesii and Thuja plicata regenerating. The site included extensive populations of Vaccinium membranaceum, V. ovalifolium, and V. chamissonis covering the slopes. Scattered plants of Rubus lasicoccus were also found. Collected August 13, 1985.

BL-99-1 Vaccinium membranaceum Dougl.
Population collection of open-pollinated fruit. Typical for the species. Fruit color black to dark blue (occasionally purplish). Seeds. (A major location worthy of further study.)

Ribes bracteosum occurred in many of the moist coves along FS Rd 2530.

FS 24 to FS Rd 2480 to the right (2.1 km up FS 24), then turned on FS Rd 2441, 8.3 km up FS 2480, and then turned onto FS Rd 2401, 4.8 km up FS 2441.

Location BL-100 Olympic National Forest, Washington
7.0 km up FS Rd 2401, off FS Rd 2441. Elevation, 560 m; aspect, east to northeast; slope, 45°; latitude, 48° 00' N; longitude, 124° 00' W. Roadside on the left below the road, with scattered young Pseudotsuga menziesii, Alnus rubra, and Salix sp. The site included scattered Rubus leucodermis and one elite R. ursinus clone. Collected August 13, 1985.

BL-100-1 Rubus leucodermis Dougl. ex. Torr. & A. Gray.
Population collection of open-pollinated fruit. Typical for the species. A very dry site. Seeds.

BL-100-2 Rubus ursinus Cham. & Schlect.
Open-pollinated fruit from one clone with large fruit size. Seeds.

Location BL-101 Olympic National Forest, Washington

9.1 km up FS Rd 2401. Elevation, 730 m; aspect, west; slope, none essentially; latitude, 48° 00' N; longitude, 123° 30' W. Stream bottom (both roadsides) in a curve in the road. Open to dense Pseudotsuga menziesii, Tsuga heterophylla, and Abies spp. canopy. The location contained a very extensive population of Ribes bractosum along with abundant Rubus spectabilis (most fruit gone). Collected August 13, 1985.

BL-101-1 Ribes bracteosum Dougl.

Population collection of open-pollinated fruit. The sample included fruit from several elite clones from the standpoint of fruitfulness and uniformity of maturity, along with typical clones. Seeds.

Overnight at Falls View Campground.

August 14, 1985 - Summarized information and returned to Corvallis, OR.

Collections are summarized by genus, species, type,and total number of locations in Table 1. Table 2 summarizes information on location of populations of major small fruit genera and identifies major populations. In addition, five minor small fruit genera, two tree fruit genera, and two nut producing genera were collected. Since the germplasm from this expedition is being maintained at the National Clonal Germplasm Repository at Corvallis, field accession numbers are cross-referenced with Corvallis numbers in Appendix Table I, to aid researchers requesting accessions for utility in breeding programs or other investigations.

Fragaria

The Fragaria collections included three species including F. chiloensis, F. vesca, F. virginiana, and also F. virginiana var. glauca, and one F. virginiana x chiloensis population. A total of 23 accessions were collected including 17 population collections of open-pollinated seeds, and six clonal accessions (Table 1). Fruit was often either green or already gone on the 41 locations where species or species hybrids were identified (Table 2).

Fragaria virginiana var. glauca (22 location) and F. vesca (14 locations) were very widespread, both altitudinally and latitudinally. These species generally occurred on roadsides or roadbanks and in open meadows. Fragaria vesca occurred at elevations ranging from 700-1600 m in Oregon and 120-1000 m in Washington. Fragaria virginiana var. glauca occurred at elevations of 800-2100 m in Oregon and 400-1400 m in Washington. Eight major populations of F. vesca and 16 major populations of F. virginiana var. glauca were identified (Table 2.). Fragaria virginiana var. glauca exhibited extensive variability for fruit size, fruit shape, fruit firmness, skin color, and degree of sunkenness of seeds. Several

Table 1. Summary of major and minor genera collected in the Pacific Northwest, 1985.

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Major Genera						
Fragaria chiloensis	BL-57-6	Siuslaw, NF			x	2
Fragaria chiloensis	BL-93-5	Olympic, NF		x		
Fragaria vesca	BLJ-2-3	Willamette, NF	x			14
Fragaria vesca	BL-18-1	Siskiyou, NF	x			
Fragaria vesca	BL-21-1	Rogue River, NF	x			
Fragaria vesca	BL-29-1	Winema, NF	x			
Fragaria vesca	BL-41-1	Deschute, NF	x			
Fragaria virginiana	BL-57-4	Siuslaw, NF	x			1
Fragaria virginiana	BL-57-5	Siuslaw, NF			x	
Fragaria virginiana var. *glauca*	BLJ-2-1	Willamette, NF	x			22
Fragaria virginiana var. *glauca*	BLJ-2-2	Williamette, NF	x			
Fragaria virginiana var. *glauca*	BL-20-2	Rogue River, NF	x			
Fragaria virginiana var. *glauca*	BL-21-2	Rogue River, NF	x			
Fragaria virginiana var. *glauca*	BL-26-1	Winema, NF	x			
Fragaria virginiana var. *glauca*	BL-27-2	Winema, NF	x			
Fragaria virginiana var. *glauca*	BL-30-4	Deschute, NF	x			
Fragaria virginiana var. *glauca*	BL-39-7	Deschute, NF	x			
Fragaria virginiana var. *glauca*	BL-50-2	Willamette, NF	x			
Fragaria virginiana var. *glauca*	BL-52-2	Willamette, NF	x			
Fragaria virginiana var. *glauca*	BL-63-5	Gifford Pinchot, NF	x			
Fragaria virginiana var. *glauca*	BL-89-1	Olympic, NF		x	x	
Fragaria virginiana var. *glauca*	BL-96-1	Olympic, NF		x		
Fragaria virginiana x *chiloensis*	BL-70-4	Gifford Pinchot, NF			x	1
Ribes bracteosum	BL-43-3	Willamette, NF			x	11
Ribes bracteosum	BL-47-2	Willamette, NF			x	
Ribes bracteosum	BL-60-3	Gifford Pinchot, NF	x			
Ribes bracteosum	BL-61-4	Gifford Pinchot, NF	x			
Ribes bracteosum	BL-68-2	Gifford Pinchot, NF	x			
Ribes bracteosum	BL-77-3	Olympic, NF	x		x	

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Ribes bracteosum	BL-97-5	Olympic, NF	x			
Ribes bracteosum	BL-101-1	Olympic, NF	x			
Ribes cereum	BL-25-1	Winema, NF	x		x	4
Ribes cereum	BL-25-4	Winema, NF	x		x	
Ribes cereum	BL-32-1	Deschute, NF	x			
Ribes cruentum	BLJ-13-2	Siskiyou, NF	x		x	5
Ribes cruentum	BLJ-14-2	Siskiyou, NF	x			
Ribes cruentum	BLJ-15-1	Siskiyou, NF	x			
Ribes howellii	BL-87-2	Olympic, Nat.Park	x		x	2
Ribes inerme	BL-31-2	Deschute, NF	x		x	2
Ribes inerme	BL-32-2	Deschute, NF	x			
Ribes lacustre	BL-39-2	Deschute, NF	x		x	5
Ribes lacustre	BL-69-3	Gifford Pinchot, NF	x		x	
Ribes lacustre	BL-90-2	Olympic, NF	x			
Ribes lacustre	BL-97-6	Olympic, NF	x			
Ribes lobbi	BL-18-3	Siskiyou, NF	x		x	5
Ribes lobbi	BL-19-2	Siskiyou, NF	x			
Ribes lobbi	BL-25-3	Winema, NF			x	
Ribes sangineum	BLJ-10-1	Siuslaw, NF	x		x	3
Ribes sangineum	BLJ-12-3	Siskiyou, NF	x			
Ribes sp. unident.	BL-18-4	Siskiyou, NF			x	
Ribes sp. unident.	BL-25-2	Winema, NF			x	
Ribes sp. unident.	BL-27-5	Winema, NF			x	
Ribes sp. unident.	BL-28-1	Winema, NF			x	
Rubus idaeus var. *melanolasius*	BL-31-1	Deschute, NF	x		x	1
Rubus lasiococcus	BLJ-1	Willamette, NF			x	3
Rubus leucodermis	BLJ-5-1	Siuslaw, NF	x			22
Rubus leucodermis	BLJ-9-1	Siuslaw, NF	x			
Rubus leucodermis	BLJ-12-1	Siskiyou, NF	x	x		
Rubus leucodermis	BLJ-12-2	Siskiyou, NF	x	x		
Rubus leucodermis	BLJ-14-4	Siskiyou, NF			x	

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Rubus leucodermis	BLJ-14-7	Siskiyou, NF	x			
Rubus leucodermis	BLJ-14-8	Siskiyou, NF	x			
Rubus leucodermis	BLJ-15-2	Siskiyou,NF	x			
Rubus leucodermis	BLJ-15-3	Siskiyou, NF	x	x		
Rubus leucodermis	BLJ-15-4	Siskiyou, NF	x			
Rubus leucodermis	BLJ-15-5	Siskiyou, NF	x	x		
Rubus leucodermis	BL-18-2	Siskiyou, NF	x			
Rubus leucodermis	BL-32-3	Deschute, NF	x			
Rubus leucodermis	BL-44-1	Willamette, NF	x			
Rubus leucodermis	BL-58-1	Gifford Pinchot, NF	x			
Rubus leucodermis	BL-69-3	Gifford Pinchot, NF	x			
Rubus leucodermis	BL-70-2	Gifford Pinchot, NF	x			
Rubus leucodermis	BL-77-1	Olympic, NF	x			
Rubus leucodermis	BL-80-2	Olympic, NF	x			
Rubus leucodermis	BL-88-1	Olympic, NF	x			
Rubus leucodermis	BL-95-1	Olympic, NF	x			
Rubus leucodermis	BL-100-1	Olympic, NF	x			
Rubus parviflorus	BLJ-3-1	Siuslaw, NF	x			24
Rubus parviflorus	BLJ-9-3	Siuslaw, NF	x			
Rubus parviflorus	BLJ-14-6	Siskiyou, NF	x			
Rubus parviflorus	BL-32-4	Deschute, NF	x			
Rubus parviflorus	BL-60-2	Gifford Pinchot, NF	x			
Rubus parviflorus	BL-76-1	Olympic, NF	x			
Rubus pedatus	BL-82-6	Olympic, NF	x			5
Rubus pedatus	BL-84-2	Olympic, NF	x			
Rubus pedatus	BL-85-4	Olympic, NF	x			
Rubus pedatus	BL-93-3	Olympic, NF	x			
Rubus pedatus	BL-98-3	Olympic, NF	x			
Rubus spectabilis	BLJ-7-2	Siuslaw, NF	x			31
Rubus spectabilis	BLJ-8-6	Siuslaw, NF	x			
Rubus spectabilis	BLJ-43-4	Willamette, NF	x			

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Rubus spectabilis	BL-47-1	Willamette, NF	x			
Rubus spectabilis	BL-54-1	Siuslaw, NF	x			
Rubus spectabilis	BL-55-1	Siuslaw, NF	x			
Rubus spectabilis	BL-56-1	Siuslaw, NF	x			
Rubus spectabilis	BL-57-1	Siuslaw, NF	x			
Rubus spectabilis	BL-57-2	Siuslaw, NF	x			
Rubus spectabilis	BL-60-1	Gifford Pinchot, NF	x			
Rubus spectabilis	BL-61-3	Gifford Pinchot, NF	x			
Rubus spectabilis	BL-61-5	Gifford Pinchot, NF	x			
Rubus spectabilis	BL-68-1	Gifford Pinchot, NF	x			
Rubus spectabilis	BL-77-2	Olympic, NF	x			
Rubus spectabilis	BL-80-1	Olympic, NF	x			
Rubus spectabilis	BL-82-5	Olympic, NF	x			
Rubus spectabilis	BL-85-3	Olympic, NF	x			
Rubus spectabilis	BL-93-2	Olympic, NF	x			
Rubus spectabilis	BL-97-4	Olympic, NF	x			
Rubus ursinus	BLJ-1	Willamette, NF			x	33
Rubus ursinus	BLJ-4-1	Siuslaw, NF	x			
Rubus ursinus	BLJ-9-2	Siuslaw, NF	x			
Rubus ursinus	BLJ-14-5	Siskiyou, NF	x			
Rubus ursinus	BL-40-1	Deschute, NF	x			
Rubus ursinus	BL-45-1	Willamette, NF	x			
Rubus ursinus	BL-58-2	Gifford Pinchot, NF	x			
Rubus ursinus	BL-70-1	Gifford Pinchot, NF	x			
Rubus ursinus	BL-75-1	Olympic, NF	x			
Rubus ursinus	BL-81-1	Olympic, NF	x			
Rubus ursinus	BL-81-2	Olympic, NF	x			
Rubus ursinus	BL-86-1	Olympic, NF	x			
Rubus ursinus	BL-90-1	Olympic, NF	x			
Rubus ursinus	BL-92-1	Olympic, NF	x			
Rubus ursinus	BL-100-2	Olympic, NF	x			

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Vaccinium caespitosum	BL-23-1	Umpqua, NF			x	9
Vaccinium caespitosum	BL-27-6	Winema, NF			x	
Vaccinium caespitosum	BL-33-1	Deschute, NF			x	
Vaccinium caespitosum	BL-34-2	Deschute, NF			x	
Vaccinium chamissonis	BL-43-1	Willamette, NF	x	x	x	23
Vaccinium chamissonis	BL-43-2	Willamette, NF			x	
Vaccinium chamissonis	BL-43-7	Willamette, NF	x	x	x	
Vaccinium chamissonis	BL-50-1	Willamette, NF	x		x	
Vaccinium chamissonis	BL-64-2	Gifford Pinchot, NF	x		x	
Vaccinium chamissonis	BL-65-2	Gifford Pinchot, NF	x		x	
Vaccinium chamissonis	BL-67-2	Gifford Pinchot, NF	x		x	
Vaccinium chamissonis	BL-71-2	Gifford Pinchot, NF			x	
Vaccinium chamissonis	BL-72-2	Gifford Pinchot, NF	x		x	
Vaccinium chamissonis	BL-77-5	Olympic, NF			x	
Vaccinium chamissonis	BL-78-2	Olympic, NF			x	
Vaccinium chamissonis	BL-82-4	Olympic, NF			x	
Vaccinium chamissonis	BL-85-2	Olympic, NF	x		x	
Vaccinium chamissonis	BL-93-1	Olympic, NF	x		x	
Vaccinium chamissonis	BL-94-3	Olympic, NF	x		x	
Vaccinium chamissonis	BL-97-2	Olympic, NF	x			
Vaccinium deliceosum	BL-34-1	Deschute, NF			x	8
Vaccinium deliceosum	BL-34-3	Deschute, NF			x	
Vaccinium deliceosum	BL-35-3	Willamette, NF			x	
Vaccinium deliceosum	BL-35-6	Willamette, NF			x	
Vaccinium deliceosum	BL-35-7	Willamette, NF	x		x	
Vaccinium deliceosum	BL-36-3	Williamette, NF			x	
Vaccinium deliceosum	BL-37-9	Willamette, NF			x	
Vaccinium deliceosum	BL-37-10	Willamette, NF			x	
Vaccinium deliceosum	BL-37-11	Willamette, NF		x		
Vaccinium deliceosum	BL-63-2	Gifford Pinchot, NF	x	x	x	

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Vaccinium deliceosum	BL-78-1	Olympic, NF	x		x	
Vaccinium deliceosum	BL-79-1	Olympic, NF	x		x	
Vaccinium membranaceum	BL-21-3	Rogue River, NF	x			41
Vaccinium membranaceum	BL-22-1	Rogue River, NF	x			
Vaccinium membranaceum	BL-27-4	Winema, NF			x	
Vaccinium membranaceum	BL-35-2	Willamette, NF			x	
Vaccinium membranaceum	BL-35-10	Willamette, NF			x	
Vaccinium membranaceum	BL-36-1	Willamette, NF			x	
Vaccinium membranaceum	BL-36-2	Willamette, NF			x	
Vaccinium membranaceum	BL-36-4	Willamette, NF			x	
Vaccinium membranaceum	BL-37-1	Willamette, NF			x	
Vaccinium membranaceum	BL-37-2	Willamette, NF			x	
Vaccinium membranaceum	BL-37-3	Willamette, NF			x	
Vaccinium membranaceum	BL-38-1	Deschute, NF	x	x	x	
Vaccinium membranaceum	BL-39-1	Deschute, NF	x			
Vaccinium membranaceum	BL-39-3	Deschute, NF		x	x	
Vaccinium membranaceum	BL-39-4	Deschute, NF		x	x	
Vaccinium membranaceum	BL-39-5	Deschute, NF			x	
Vaccinium membranaceum	BL-39-6	Deschute, NF			x	
Vaccinium membranaceum	BL-42-1	Deschute, NF	x		x	
Vaccinium membranaceum	BL-43-5	Willamette, NF	x		x	
Vaccinium membranaceum	BL-48-1	Willamette, NF	x		x	
Vaccinium membranaceum	BL-51-3	Willamette, NF	x		x	
Vaccinium membranaceum	BL-51-4	Willamette, NF	x		x	
Vaccinium membranaceum	BL-51-6	Willamette, NF	x	x	x	
Vaccinium membranaceum	BL-52-1	Willamette, NF	x			
Vaccinium membranaceum	BL-59-1	Gifford Pinchot, NF	x		x	
Vaccinium membranaceum	BL-60-4	Gifford Pinchot, NF	x		x	
Vaccinium membranaceum	BL-63-1	Gifford Pinchot, NF	x		x	
Vaccinium membranaceum	BL-64-1	Gifford Pinchot, NF	x		x	

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Vaccinium membranaceum	BL-67-1	Gifford Pinchot, NF	x		x	
Vaccinium membranaceum	BL-71-1	Gifford Pinchot, NF	x		x	
Vaccinium membranaceum	BL-87-1	Olympic Nat. Park	x			
Vaccinium membranaceum	BL-93-4	Olympic, NF			x	
Vaccinium membranaceum	BL-94-1	Olympic, NF	x		x	
Vaccinium membranaceum	BL-98-1	Olympic, NF	x			
Vaccinium membranaceum	BL-99-1	Olympic, NF	x			
Vaccinium myrtillus	BL-35-11	Willamette, NF		x	x	9
Vaccinium myrtillus	BL-35-12	Willamette, NF		x		
Vaccinium myrtillus	BL-37-13	Willamette, NF		x	x	
Vaccinium myrtillus	BL-37-16	Willamette, NF			x	
Vaccinium myrtillus	BL-49-1	Willamette, NF	x	x	x	
Vaccinium myrtillus	BL-51-1	Willamette, NF	x	x	x	
Vaccinium ovalifolium	BL-43-6	Willamette, NF	x		x	28
Vaccinium ovalifolium	BL-46-1	Willamette, NF	x			
Vaccinium ovalifolium	BL-46-2	Willamette, NF	x	x	x	
Vaccinium ovalifolium	BL-51-5	Willamette, NF	x		x	
Vaccinium ovalifolium	BL-57-3	Siuslaw, NF	x		x	
Vaccinium ovalifolium	BL-61-2	Gifford Pinchot, NF			x	
Vaccinium ovalifolium	BL-65-1	Gifford Pinchot, NF			x	
Vaccinium ovalifolium	BL-71-3	Gifford Pinchot, NF			x	
Vaccinium ovalifolium	BL-72-1	Gifford Pinchot, NF	x		x	
Vaccinium ovalifolium	BL-75-2	Olympic, NF	x		x	
Vaccinium ovalifolium	BL-77-6	Olympic, NF			x	
Vaccinium ovalifolium	BL-80-3	Olympic, NF			x	
Vaccinium ovalifolium	BL-82-1	Olympic, NF	x		x	
Vaccinium ovalifolium	BL-82-2	Olympic, NF	x		x	
Vaccinium ovalifolium	BL-82-3	Olympic, NF	x		x	
Vaccinium ovalifolium	BL-83-2	Olympic, NF	x			
Vaccinium ovalifolium	BL-85-1	Olympic, NF	x			

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Vaccinium ovalifolium	BL-94-2	Olympic, NF	x		x	
Vaccinium ovalifolium	BL-97-1	Olympic, NF	x			
Vaccinium ovalifolium	BL-98-2	Olympic, NF	x			
Vaccinium ovatum	BLJ-6-3	Siuslaw, NF		x		14
Vaccinium ovatum	BLJ-8-3	Siuslaw, NF		x		
Vaccinium ovatum	BLJ-8-4	Siuslaw, NF		x	x	
Vaccinium ovatum	BLJ-8-5	Siuslaw, NF		x	x	
Vaccinium ovatum	BLJ-10-2	Siuslaw, NF		x		
Vaccinium ovatum	BLJ-13-1	Siskiyou, NF	x			
Vaccinium ovatum	BLJ-13-5	Siskiyou, NF		x		
Vaccinium ovatum	BLJ-13-6	Siskiyou, NF		x		
Vaccinium ovatum	BLJ-13-7	Siskiyou, NF		x		
Vaccinium ovatum	BLJ-14-1	Siskiyou, NF		x		
Vaccinium ovatum	BLJ-14-9	Siskiyou, NF		x		
Vaccinium ovatum	BLJ-16-6	Siskiyou, NF			x	
Vaccinium ovatum	BL-91-3	Olympic, NF			x	
Vaccinium parvifolium	BLJ-6-1	Siuslaw, NF	x			34
Vaccinium parvifolium	BLJ-6-2	Siuslaw, NF	x	x	x	
Vaccinium parvifolium	BLJ-7-1	Siuslaw, NF	x			
Vaccinium parvifolium	BLJ-11-1	Siuslaw, NF	x			
Vaccinium parvifolium	BLJ-16-1	Siskiyou, NF	x		x	
Vaccinium parvifolium	BLJ-16-2	Siskiyou, NF		x		
Vaccinium parvifolium	BLJ-16-3	Siskiyou, NF		x		
Vaccinium parvifolium	BLJ-16-4	Siskiyou, NF		x		
Vaccinium parvifolium	BLJ-16-5	Siskiyou, NF		x		
Vaccinium parvifolium	BL-17-1	Jedediah Smith S.P., CA	x			
Vaccinium parvifolium	BL-46-3	Willamette, NF	x			
Vaccinium parvifolium	BL-53-1	Willamette, NF	x			
Vaccinium parvifolium	BL-55-2	Siuslaw, NF	x			
Vaccinium parvifolium	BL-66-1	Gifford Pinchot, NF	x			

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of locations identified
Vaccinium parvifolium	BL-69-1	Gifford Pinchot, NF	x		x	
Vaccinium parvifolium	BL-70-3	Gifford Pinchot, NF	x			
Vaccinium parvifolium	BL-74-1	Olympic, NF	x		x	
Vaccinium parvifolium	BL-83-1	Olympic, NF	x		x	
Vaccinium parvifolium	BL-84-1	Olympic, NF	x			
Vaccinium parvifolium	BL-91-1	Olympic, NF	x			
Vaccinium parvifolium	BL-94-4	Olympic, NF	x			
Vaccinium parvifolium	BL-97-3	Olympic, NF			x	
Vaccinium scoparium	BL-20-1	Rogue River, NF	x			15
Vaccinium scoparium	BL-23-2	Umpqua, NF			x	
Vaccinium scoparium	BL-27-1	Winema, NF	x			
Vaccinium scoparium	BL-30-1	Deschute, NF			x	
Vaccinium scoparium	BL-33-3	Deschute, NF			x	
Vaccinium uliginosum	BLJ-8-1	Siuslaw, NF			x	10
Vaccinium uliginosum	BL-24-1	Umpqua, NF			x	
Vaccinium uliginosum	BL-27-7	Winema, NF			x	
Vaccinium uliginosum	BL-33-2	Deschute, NF			x	
Vaccinium caesp. x scop.	BL-33-4	Deschute, NF			x	
Vaccinium del. x membr.	BL-35-4	Willamette, NF			x	
Vaccinium del. x membr.	BL-35-5	Willamette, NF			x	
Vaccinium del. x membr.	BL-35-8	Willamette, NF			x	
Vaccinium del. x membr.	BL-35-9	Willamette, NF			x	
Vaccinium del. x membr.	BL-37-4	Willamette, NF			x	
Vaccinium del. x membr.	BL-37-5	Willamette, NF			x	
Vaccinium del. x membr.	BL-37-6	Willamette, NF			x	
Vaccinium del. x membr.	BL-37-7	Willamette, NF			x	
Vaccinium del. x membr.	BL-37-12	Willamette, NF			x	
Vaccinium del. x membr.	BL-37-14	Willamette, NF			x	
Vaccinium del. x membr.	BL-37-15	Willamette, NF			x	
Vaccinium del. x membr.	BL-63-3	Gifford Pinchot, NF			x	
Vaccinium del. x membr.	BL-63-4	Gifford Pinchot, NF			x	

Table 1. (continued)

Genus/Species	Accession	Collection location	Type of collections: Seeds	Clonal	Herbarium	No. of location identified
Vaccinium del. x membr.	BL-63-6	Gifford Pinchot, NF			x	
Vaccinium membranaceum (H)	BL-35-1	Willamette, NF			x	
Vaccinium myrt. x cham.	BL-51-2	Willamette, NF			x	
Vaccinium sp. unident.	BL-34-5	Deschute, NF		x	x	
Vaccinium sp. unident.	BL-49-2	Willamette, NF		x	x	
Vaccinium sp. unident.	BL-50-3	Willamette, NF	x	x	x	
Minor Genera						
Amelanchier alnifolia	BL-32-5	Deschute, NF	x		x	3
Castinopsis chrysophylla	BLJ-16	Siskiyou, NF			x	4
Corylus cornuta var. Californica	BLJ-3	Siuslaw, NF			x	8
Corylus cornuta var. Californica	BLJ-14-3	Siskiyou, NF			x	
Crataqeus douglasi var. suksdorfii	BLJ-13-4	Siskiyou, NF			x	1
Gaultheria humifusa	BL-27-3	Winema, NF	x		x	2
Gaultheria ovatifolia	BL-49-3	Willamette, NF	x		x	1
Gaultheria shallon	BL-74-2	Olympic, NF	x			6
Gaultheria shallon	BL-91-2	Olympic, NF	x			
Malus fusca	BLJ-8-2	Siuslaw, NF			x	1
Prunus emarginata	BL-41-2	Deschute, NF			x	1
Sambucus cerulea	BL-43-11	Willamette, NF	x			3
Sambucus cerulea	BL-73-1	Gifford Pinchot, NF	x			
Sambucus racemosa	BLJ-3-2	Siuslaw, NF	x			3
Sambucus racemosa	BL-43-8	Willamette, NF	x			
Sambucus racemosa	BL-77-4	Olympic, NF	x			
Sorbus scopulina var. cacaetenis	BL-43-9	Willamette, NF	x			1
Sorbus sitchensis var. grayi	BL-43-10	Willamette, NF	x			1
Vitis california	BLJ-13-3	Siskiyou, NF			x	1

Table 2. Locations identified for major small fruit genera collected in the Pacific Northwest, 1985.

Genus/species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Fragaria chiloensis	BL-57	Siuslaw, NF	45°10'	123°30'	1000	variable	-	x
Fragaria chiloensis	BL-93	Olympic, NF	47°40'	123°00'	1220	45	NW	
Fragaria vesca	BLJ-2	Willamette, NF	44°00'	122°20'	1350-1450	variable	east	x
Fragaria vesca	BLJ-15	Siskiyou, NF	42°10'	124°00'	730-780	45-65	south	x
Fragaria vesca	BL-18	Siskiyou, NF	42°10'	123°30'	1300	45	SW	x
Fragaria vesca	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	
Fragaria vesca	BL-21	Rogue River, NF	42°30'	123°10'	1600	45	east	x
Fragaria vesca	BL-25	Winema, NF	43°00'	121°30'	1590	10	south	
Fragaria vesca	BL-29	Winema, NF	-	-	1590	12	east	x
Fragaria vesca	BL-40	Deschute, NF	-	-	1130	25	north	x
Fragaria vesca	BL-41	Deschute, NF	-	-	1300	-	NE	
Fragaria vesca	BL-88	Olympic, NF	47°00'	124°00'	360	-	west	
Fragaria vesca	BL-89	Olympic, NF	-	-	970	< 5	south	x
Fragaria vesca	BL-90	Olympic, NF	47°30'	124°00'	530	-	-	
Fragaria vesca	BL-91	Olympic, NF	47°40'	123°00'	120	< 5	-	
Fragaria vesca	BL-96	Olympic, NF	-	-	500	-	south	x
Fragaria virginiana	BL-57	Siuslaw, NF	45°10'	123°30'	1000	variable	-	x
Fragaria virginiana var. *glauca*	BLJ-2	Willamette, NF	44°00'	122°20'	1350-1450	variable	east	x
Fragaria virginiana var. *glauca*	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	x
Fragaria virginiana var. *glauca*	BL-21	Rogue River, NF	42°30'	123°10'	1600	45	east	
Fragaria virginiana var. *glauca*	BL-22	Rogue River, NF	42°50'	122°30'	1580	20	east	
Fragaria virginiana var. *glauca*	BL-24	Umpqua, NF	-	-	1630	< 5	-	
Fragaria virginiana var. *glauca*	BL-25	Winema, NF	43°00'	121°30'	1590	10	south	x
Fragaria virginiana var. *glauca*	BL-26	Winema, NF	-	-	1830	20	SW	x
Fragaria virginiana var. *glauca*	BL-27	Winema, NF	-	-	1810	10	NW	x
Fragaria virginiana var. *glauca*	BL-29	Winema, NF	-	-	1590	12	east	x
Fragaria virginiana var. *glauca*	BL-30	Deschute, NF	-	-	2100	10	east	x
Fragaria virginiana var. *glauca*	BL-36	Willamette, NF	-	-	1650	25	north	x
Fragaria virginiana var. *glauca*	BL-39	Deschute, NF	43°50'	121°50'	1530	variable	east	x
Fragaria virginiana var. *glauca*	BL-40	Deschute, NF	-	-	1130	25	north	x
Fragaria virginiana var. *glauca*	BL-41	Deschute, NF	-	-	1300	-	NE	
Fragaria virginiana var. *glauca*	BL-49	Willamette, NF	44°30'	122°10'	820	5-10	west	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Fragaria virginiana var. *glauca*	BL-50	Willamette, NF	44°30'	122°00'	1100	< 5	S to SW	x
Fragaria virginiana var. *glauca*	BL-52	Willamette, NF	44°20'	122°10'	1370	variable	NW	x
Fragaria virginiana var. *glauca*	BL-62	Gifford Pinchot, NF	-	-	1100	< 5	SE	x
Fragaria virginiana var. *glauca*	BL-63	Gifford Pinchot, NF	46°00'	122°00'	1400	variable	east	x
Fragaria virginiana var. *glauca*	BL-73	Gifford Pinchot, NF	46°30'	121°55'	430	0	-	
Fragaria virginiana var. *glauca*	BL-89	Olympic, NF	-	-	970	< 5	south	x
Fragaria virginiana var. *glauca*	BL-96	Olympic, NF	-	-	500	-	south	x
Fragaria virginiana x *chiloensis*	BL-70	Gifford Pinchot, NF	46°00'	122°00'	1100	45	east	x
Fragaria virg. var. *glauca* x *vesca*	BL-63	Gifford Pinchot, NF	46°00'	122°00'	1400	variable	east	
Ribes bracteosum	BL-43	Willamette, NF	44°30'	122°10'	1160	45+	E to SE	x
Ribes bracteosum	BL-47	Willamette, NF	45°40'	122°05'	1000	35	SE	
Ribes bracteosum	BL-60	Gifford Pinchot, NF	46°00'	122°00'	1230	30	east	
Ribes bracteosum	BL-61	Gifford Pinchot, NF	46°00'	122°00'	1250	20	east	
Ribes bracteosum	BL-68	Gifford Pinchot, NF	46°00'	122°00'	1300	variable	east	x
Ribes bracteosum	BL-77	Olympic, NF	47°10'	123°30'	760	30	NE	
Ribes bracteosum	BL-85	Olympic, NF	47°40'	124°00'	1200	40	NW	
Ribes bracteosum	BL-91	Olympic, NF	47°40'	123°00'	120	< 5	-	
Ribes bracteosum	BL-97	Olympic, NF	47°40'	123°00'	820	45	NW	
Ribes bracteosum	BL-99	Olympic, NF	47°40'	123°00'	-	-	-	x
Ribes bracteosum	BL-101	Olympic, NF	48°00'	123°30'	730	< 5	west	x
Ribes cereum	BL-25	Winema, NF	43°00'	121°30'	1590	10	south	x
Ribes cereum	(US 97, between Collier State Park and Chemult)				-	-	x	
Ribes cereum	BL-30	Deschute, NF	-	-	2100	10	east	
Ribes cereum	BL-32	Deschute, NF	43°45'	121°30'	1400	variable	east	x
Ribes cruentum	BLJ-13	Siskiyou, NF	42°40'	123°20'	130	-	-	
Ribes cruentum	BLJ-14	Siskiyou, NF	42°30'	124°00'	510	35	S to E	
Ribes cruentum	BLJ-15	Siskiyou, NF	42°10'	124°00'	730-780	45-65	south	x
Ribes cruentum	(SR 46 from Cave Jct., OR to FS Rd.4613)			-	-	-	-	
Ribes cruentum	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	
Ribes howellii	BL-87	Olympic, Nat.Pk.	47°50'	123°30'	1600-1650	variable	variable	x
Ribes howellii	BL-91	Olympic, NF	47°40'	123°00'	120	< 5	-	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Ribes inerme	BL-31	Deschute, NF	43°40'	121°20'	1450	-	-	
Ribes inerme	BL-32	Deschute, NF	43°45'	121°30'	1400	variable	east	
Ribes lacustre	BL-39	Deschute, NF	43°50'	121°50'	1530	variable	east	
Ribes lacustre	BL-69	Gifford Pinchot, NF	46°30'	122°00'	910	10	NW	
Ribes lacustre	BL-88	Olympic, NF	47°00'	124°00'	360	-	west	
Ribes lacustre	BL-90	Olympic, NF	47°30'	124°00'	530	-	-	
Ribes lacustre	BL-97	Olympic, NF	47°40'	123°00'	820	45	NW	
Ribes lobbii	BL-18	Siskiyou, NF	42°10'	123°30'	1300	45	SW	
Ribes lobbii	BL-19	Siskiyou, NF	-	-	1440	-	NW	x
Ribes lobbii	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	
Ribes lobbii	BL-23	Umpqua, NF	-	-	1550-1600	30	east	x
Ribes lobbii	BL-25	Winema, NF	43°00'	121°30'	1590	10	south	
Ribes sanguineum	BLJ-10	Siuslaw, NF	-	-	250	40	-	x
Ribes sanguineum	BLJ-12	Siskiyou, NF	42°00'	124°00'	170	45	west	
Ribes viscosissimum var. *hallii*	BL-25	Winema, NF	43°00'	121°30'	1590	10	south	
Ribes viscosissimum var. *hallii*	(along FS RD 3661 in Winema, NF		-	-	-	-	-	
Ribes viscosissimum var. *hallii*	(between Paulina and East Lake in Newberry Crater, Deschute, NF)					-	-	
Rubus idaeus var. *melanolasius*	BL-31	Deschute, NF	43°40'	121°20'	1450	-	-	
Rubus lasiococcus	BLJ-1	Willamette, NF	44°00'	122°10'	1500	20	SW	
Rubus lasiococcus	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	x
Rubus lasiococcus	BL-98	Olympic, NF	47°40'	123°00'	1000	46-60	SE	
Rubus leucodermis	BLJ-5	Siuslaw, NF	44°00'	123°50'	280	-	SE	
Rubus leucodermis	BLJ-9	Siuslaw, NF	44°00'	123°50'	200	-	SE	
Rubus leucodermis	BLJ-12	Siskiyou, NF	42°00'	124°00'	170	45	west	x
Rubus leucodermis	BLJ-14	Siskiyou, NF	42°30'	124°00'	510	35	S to E	x
Rubus leucodermis	BLJ-15	Siskiyou, NF	42°10'	124°00'	730-780	46-65	S to E	x
Rubus leucodermis	BL-18	Siskiyou, NF	42°10'	123°30'	1300	45	SW	
Rubus leucodermis	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	
Rubus leucodermis	BL-32	Deschute, NF	43°45'	121°30'	1400	variable	east	
Rubus leucodermis	BL-44	Willamette, NF	44°30'	122°00'	1000	-	S to SE	x
Rubus leucodermis	BL-58	Gifford Pinchot, NF	46°00'	122°00'	700	-	variable	
Rubus leucodermis	BL-69	Gifford Pinchot, NF	46°30'	122°00'	910	10	NW	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Rubus leucodermis	BL-70	Gifford Pinchot, NF	46°00'	122°00'	1100	45	east	
Rubus leucodermis	BL-71	Gifford Pinchot, NF	46°30'	122°00'	1220	20	south	
Rubus leucodermis	BL-77	Olympic, NF	47°10'	123°30'	760	30	NE	
Rubus leucodermis	BL-80	Olympic, NF	47°10'	124°00'	600	-	-	
Rubus leucodermis	BL-88	Olympic, NF	47°00'	124°00'	360	-	west	
Rubus leucodermis	BL-90	Olympic, NF	47°30'	124°00'	530	-	-	
Rubus leucodermis	BL-92	Olympic, NF	47°50'	124°00'	800	variable	west	
Rubus leucodermis	BL-95	Olympic, NF	-	-	760	-	south	
Rubus leucodermis	BL-100	Olympic, NF	48°00'	124°00'	560	45	E to NE	x
Rubus parviflorus	BLJ-3	Sinslaw, NF	44°00'	123°50'	120	< 5	E	x
Rubus parviflorus	BLJ-4	Siuslaw, NF	44°15'	123°40'	150	< 5	south	x
Rubus parviflorus	BLJ-5	Siuslaw, NF	44°00'	123°50'	280	-	SE	x
Rubus parviflorus	BLJ-7	Siuslaw, NF	44°05'	123°10'	60	-	-	x
Rubus parviflorus	BLJ-9	Siuslaw, NF	44°00'	123°50'	200	-	SE	
Rubus parviflorus	BLJ-10	Siuslaw, NF	-	-	250	40	-	x
Rubus parviflorus	BLJ-12	Siskiyou, NF	42°00'	124°00'	170	45	west	
Rubus parviflorus	BLJ-14	Siskiyou, NF	42°30'	124°00'	510	35	S to E	
Rubus parviflorus	BL-18	Siskiyou, NF	42°10'	123°30'	1300	45	SW	x
Rubus parviflorus	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	
Rubus parviflorus	BL-32	Deschute, NF	43°45'	121°30'	1400	variable	east	
Rubus parviflorus	BL-41	Deschute, NF	-	-	1300	-	NE	
Rubus parviflorus	BL-43	Willamette, NF	44°30'	122°10'	1160	45	E to SE	x
Rubus parviflorus	BL-47	Willamette, NF	45°40'	122°05'	1000	35	SE	
Rubus parviflorus	BL-54	Siuslaw, NF	-	-	530	< 5	SW	x
Rubus parviflorus	BL-55	Siuslaw, NF	45°00'	123°30'	330	-	-	x
Rubus parviflorus	BL-57	Siuslaw, NF	45°10'	123°30'	1000	variable	-	x
Rubus parviflorus	BL-60	Gifford Pinchot, NF	46°00'	122°00'	1230	30	east	
Rubus parviflorus	BL-76	Olympic, NF	47°10'	123°30'	530	-	-	x
Rubus parviflorus	BL-86	Olympic, NF	47°30'	124°00'	665	-	east	
Rubus parviflorus	BL-88	Olympic, NF	47°00'	124°00'	360	-	west	
Rubus parviflorus	BL-91	Olympic, NF	47°40'	123°00'	120	< 5	-	
Rubus pedatus	BL-77	Olympic, NF	47°10'	123°30'	760	30	NE	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Rubus pedatus	BL-82	Olympic, NF	47°20'	124°00'	975	30	north	
Rubus pedatus	BL-84	Olympic, NF	47°40'	124°00'	240	< 5	-	x
Rubus pedatus	BL-85	Olympic, NF	47°40'	124°00'	1200	40	NW	x
Rubus pedatus	BL-93	Olympic, NF	47°40'	123°00'	1220	45	NW	x
Rubus pedatus	BL-98	Olympic, NF	47°40'	123°00'	1000	46-60	SE	x
Rubus spectabilis	BLJ-3	Siuslaw, NF	44°00'	123°50'	120	< 5	east	x
Rubus spectabilis	BLJ-7	Siuslaw, NF	44°05'	123°10'	60	-	-	x
Rubus spectabilis	BLJ-8	Siuslaw, NF	44°00'	124°00'	10-30	-	-	x
Rubus spectabilis	BLJ-9	Siuslaw, NF	44°00	123°50'	200	-	SE	x
Rubus spectabilis	BLJ-10	Siuslaw, NF	-	-	250	40	-	x
Rubus spectabilis	BL-43	Willamette, NF	44°30'	122°10'	1160	45	E to SE	x
Rubus spectabilis	BL-47	Willamette, NF	45°40'	122°05'	1000	35	SE	
Rubus spectabilis	(FS Rd 11, off FS Rd 1161, Willamette, NF)				-	-	-	
Rubus spectabilis	BL-53	Willamette, NF	44°30'	122°00'	-	-	-	
Rubus spectabilis	BL-54	Siuslaw, NF	-	-	530	< 5	SW	x
Rubus spectabilis	BL-55	Siuslaw, NF	45°00'	123°30'	330	-	-	x
Rubus spectabilis	BL-56	Siuslaw, NF	-	-	600	0-10	-	x
Rubus spectabilis	BL-57	Siuslaw, NJ	45°10'	123°30'	1000	0-20	-	x
Rubus spectabilis	BL-60	Gifford Pinchot, NF	46°00	122°00'	1230	30	east	
Rubus spectabilis	BL-61	Gifford Pinchot, NF	46°00'	122°00'	1250	20	east	x
Rubus spectabilis	BL-62	Gifford Pinchot, NF	-	-	1100	< 5	SE	
Rubus spectabilis	BL-68	Gifford Pinchot, NF	46°00'	122°00'	1300	variable	east	x
Rubus spectabilis	BL-77	Olympic, NF	47°10'	123°30'	760	30	NE	
Rubus spectabilis	(FS Rd 22 from Wynoochee Lake toward US 101, Olympic, NF)				-	-	-	
Rubus spectabilis	BL-80	Olympic, NF	47°10'	124°00'	600	-	-	x
Rubus spectabilis	BL-81	Olympic, NF	47°10'	124°00'	667	-	variable	x
Rubus spectabilis	BL-82	Olympic, NF	47°20'	124°00'	975	30	north	x
Rubus spectabilis	BL-84	Olympic, NF	47°40'	124°00'	240	< 5	-	
Rubus spectabilis	BL-85	Olympic, NF	47°40'	124°00'	1200	40	NW	x
Rubus spectabilis	BL-88	Olympic, NF	47°00'	124°00'	360	-	west	
Rubus spectabilis	BL-90	Olympic, NF	47°30'	124°00'	530	-	-	x
Rubus spectabilis	BL-91	Olympic, NF	47°40'	123°00'	120	< 5	-	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Rubus spectabilis	BL-93	Olympic, NF	47°40'	123°00'	1220	45	NW	x
Rubus spectabilis	BL-97	Olympic, NF	47°40'	123°00'	820	45	NW	x
Rubus spectabilis	BL-101	Olympic, NF	48°00'	123°30'	730	< 5	west	x
Rubus ursinus	BLJ-1	Willamette, NF	44°00'	122°10'	1500	20	SW	
Rubus ursinus	BLJ-4	Siuslaw, NF	44°15'	123°40	150	< 5	south	x
Rubus ursinus	BLJ-5	Siuslaw, NF	44°00'	123°50'	280	-	SE	x
Rubus ursinus	BLJ-6	Siuslaw, NF	44°20'	123°40'	300	45	SE	
Rubus ursinus	BLJ-9	Siuslaw, NF	44°00'	123°50'	200	-	SE	
Rubus ursinus	BLJ-10	Siuslaw, NF	-	-	250	40	-	x
Rubus ursinus	BLJ-14	Siskiyou, NF	42°30'	124°00'	510	35	S to E	
Rubus ursinus	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	
Rubus ursinus	BL-21	Rogue River, NF	42°30'	123°10'	1600	45	east	
Rubus ursinus	BL-22	Rogue River, NF	42°50'	122°30'	1580	20	east	
Rubus ursinus	BL-38	Deschute, NF	43°50'	122°20'	450	-	east	
Rubus ursinus	BL-40	Deschute, NF	-	-	1130	25	north	x
Rubus ursinus	BL-41	Deschute, NF	-	-	1300	-	NE	
Rubus ursinus	BL-43	Willamette, NF	44°30'	122°10'	1160	45	E to SE	
Rubus ursinus	BL-45	Willamette, NF	-	-	1000	-	E to SE	
Rubus ursinus	BL-48	Willamette, NF	43°10'	121°30'	1500	30	SE	
Rubus ursinus	BL-50	Willamette, NF	44°30'	122°00'	1100	< 5	S to SW	
Rubus ursinus	BL-51	Willamette, NF	44°30'	122°10'	1040	< 5	south	
Rubus ursinus	BL-57	Siuslaw, NF	45°10'	123°30'	1000	0-20	-	x
Rubus ursinus	BL-58	Gifford Pinchot, NF	46°00'	122°00'	700	-	variable	
Rubus ursinus	BL-62	Gifford Pinchot, NF	-	-	1100	< 5	SE	
Rubus ursinus	BL-69	Gifford Pinchort, NF	46°30'	122°00'	910	10	NW	
Rubus ursinus	BL-70	Gifford Pinchot, NF	46°00'	122°00'	1100	45	east	x
Rubus ursinus	BL-75	Olympic, NF	47°10	123°30'	760	<10	NW	
Rubus ursinus	BL-77	Olympic, NF	47°10'	123°30'	760	30	NE	
Rubus ursinus	BL-80	Olympic, NF	47°10'	124°00'	600	-	-	x
Rubus ursinus	BL-81	Olympic, NF	47°10'	124°00'	667	-	variable	x
Rubus ursinus	BL-86	Olympic, NF	47°30'	124°00'	665	-	east	
Rubus ursinus	BL-90	Olympic, NF	47°30'	124°00'	530	-	-	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Rubus ursinus	BL-91	Olympic, NF	47°40	123°00'	120	< 5	-	
Rubus ursinus	BL-92	Olympic, NF	47°50'	124°00'	800	variable	west	x
Rubus ursinus	BL-96	Olympic, NF	-	-	500	-	south	
Rubus ursinus	BL-100	Olympic, NF	48°00'	124°00'	560	45	E to NE	
Vaccinium caespitosum	BL-23	Umpqua, NF	-	-	1550-1600	30	east	
Vaccinium caespitosum	BL-27	Winema, NF	-	-	1810	10	NW	x
Vaccinium caespitosum	BL-28	Winema, NF	-	-	1920	-	-	
Vaccinium caespitosum	BL-33	Deschute, NF	44°00'	121°40'	2050	-	-	x
Vaccinium caespitosum	(OR 242, 15.5 km west of Sisters, OR, Deschute NF)				-	-	-	x
Vaccinium caespitosum	BL-34	Deschute, NF	-	-	1700	< 5	-	
Vaccinium caespitosum	BL-35	Willamette, NF	43°30'	122°30'	1700	0-10	south	x
Vaccinium caespitosum	BL-36	Willamette, NF	-	-	1650	25	north	x
Vaccinium caespitosum	BL-50	Willamette, NF	44°30'	122°00'	1100	< 5	S to SW	x
Vaccinium chamissonis	BLJ-1	Willamette, NF	44°00'	122°10'	1500	20	SW	
Vaccinium chamissonis	BL-43	Willamette, NF	44°30'	122°10'	1160	45	E to SE	
Vaccinium chamissonis	BL-50	Willamette, NF	44°30'	122°00'	1100	< 5	S to SW	x
Vaccinium chamissonis	BL-51	Willamette, NC	44°30'	122°10'	1040	< 5	south	
Vaccinium chamissonis	BL-57	Siuslaw, NF	45°10'	123°30'	1000	variable	-	
Vaccinium chamissonis	BL-60	Gifford Pinchot, NF	46°00'	122°00'	1230	30	east	
Vaccinium chamissonis	BL-61	Gifford Pinchot, NF	46°00'	122°00'	1250	20	east	x
Vaccinium chamissonis	BL-62	Gifford Pinchot, NF	-	-	1100	< 5	SE	
Vaccinium chamissonis	BL-64	Gifford Pinchot, NF	46°00'	122°00'	1280	30	north	
Vaccinium chamissonis	BL-65	Gifford Pinchot, NF	47°55'	123°00'	1100	20	south	x
Vaccinium chamissonis	BL-67	Gifford Pinchot, NF	46°30'	122°00'	1400	25	S to SW	
Vaccinium chamissonis	BL-71	Gifford Pinchot, NF	46°30'	122°00'	1220	20	south	
Vaccinium chamissonis	BL-72	Gifford Pinchot, NF	46°30'	122°00'	1200	20	east	
Vaccinium chamissonis	BL-77	Olympic, NF	47°10'	123°30'	760	30	NE	
Vaccinium chamissonis	BL-78	Olympic, NF	47°20'	124°00'	1200	20	west	
Vaccinium chamissonis	BL-79	Olympic, NF	47°20'	124°00'	1300	20	south	
Vaccinium chamissonis	BL-82	Olympic, NF	47°20'	124°00'	975	30	north	
Vaccinium chamissonis	BL-85	Olympic, NF	47°40'	124°00'	1200	40	NW	x
Vaccinium chamissonis	BL-93	Olympic, NF	47°40'	123°00'	1220	45	NW	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Vaccinium chamissonis	BL-94	Olympic, NF	47°40'	123°00'	1130	30	NE	
Vaccinium chamissonis	BL-97	Olympic, NF	47°40'	123°00'	820	45	NW	
Vaccinium chamissonis	BL-98	Olympic, NF	47°40'	123°00'	1000	46-60	SE	
Vaccinium chamissonis	BL-99	Olympic, NF	47°40'	123°00'	1300	30-45	south	x
Vaccinium deliceosum	BL-34	Deschute, NF	-	-	1700	< 5	-	
Vaccinium deliceosum	BL-35	Willamette, NF	4330'	122°30'	1700	0-10	south	x
Vaccinium deliceosum	BL-36	Willamette, NF	-	-	1650	25	north	x
Vaccinium deliceosum	BL-37	Willamette, NF	43°30'	122°30'	1650-1800	variable	north	x
Vaccinium deliceosum	BL-63	Gifford Pincnot, NF	45°50'	121°40'	1400	variable	east	x
Vaccinium deliceosum	BL-78	Olympic, NF	47°20'	124°00'	1200	20	west	x
Vaccinium deliceosum	BL-79	Olympic, NF	47°20'	124°00'	1300	20	south	x
Vaccinium deliceosum	BL-87	Olympic Nat. Park	47°50'	123°30'	1600-1650	variable	variable	x
Vaccinium membranaceum	BLJ-1	Willamette, NF	44°00'	122°10'	1500	20	SW	
Vaccinium membranaceum	BL-20	Rogue River, NF	42°10'	123°00'	1530	20	south	x
Vaccinium membranaceum	BL-21	Rogue River, NF	42°30'	123°10'	1600	45	east	
Vaccinium membranaceum	BL-22	Rogue River, NF	42°50'	122°30'	1580	20	east	x
Vaccinium membranaceum	BL-23	Umpqua, NF	-	-	1550-1600	variable	east	x
Vaccinium membranaceum	(0.8 km down FS Rd 3633 from BL-25, Winema, NF)				-	-	-	
Vaccinium membranaceum	BL-27	Winema, NF	-	-	1810	10	NW	
Vaccinium membranaceum	BL-28	Winema, NF	-	-	1920	-	-	
Vaccinium membranaceum	(FS Rd 3661, down from BL-28, Winema, NF)			-	-	-	-	
Vaccinium membranaceum	BL-34	Deschute, NF	-	-	1700	< 5	-	
Vaccinium membranaceum	BL-35	Willamette, NF	43°30'	122°30'	1700	0-10	south	
Vaccinium membranaceum	BL-36	Willamette, NF	-	-	1650	25	north	x
Vaccinium membranaceum	BL-37	Willamette, NF	43°30'	122°30'	1650-1800	variable	north	x
Vaccinium membranaceum	BL-38	Deschute, NF	43°50'	122°20'	1450	-	east	x
Vaccinium membranaceum	BL-39	Deschute, NF	43°50'	121°50'	1530	variable	east	x
Vaccinium membranaceum	BL-42	Deschute, NF	43°30'	121°30'	1650	30-45	N to NE	x
Vaccinium membranaceum	BL-43	Willamette, NF	44°30'	122°10'	1160	45	E to SE	x
Vaccinium membranaceum	BL-46	Willamette, NF	44°20'	122°10'	1000	45	east	
Vaccinium membranaceum	BL-48	Willamette, NF	43°10'	121°30'	1500	30	SE	x
Vaccinium membranaceum	BL-49	Willamette, NF	44°30'	122°10'	820	5-10	west	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Vaccinium membranaceum	BL-50	Willamette, NF	44°30'	122°00'	1100	< 5	S to SW	
Vaccinium membranaceum	BL-51	Willamette, NF	44°30'	122°10'	1040	< 5	south	x
Vaccinium membranaceum	(FS Rds 11 & 1161, off OR 22, west of BL-51)		-	-	-	-	-	x
Vaccinium membranaceum	BL-52	Willamette, NF	44°20'	122°10'	1370	variable	NW	x
Vaccinium membranaceum	BL-59	Gifford Pinchot, NF	46°00'	122°00'	1040	25	south	x
Vaccinium membranaceum	BL-60	Gifford Pinchot, NF	46°00'	122°00'	1230	30	east	x
Vaccinium membranaceum	BL-62	Gifford Pinchot, NF	-	-	1100	< 5	SE	
Vaccinium membranaceum	BL-63	Gifford Pinchot, NF	45°50'	121°40'	1400	variable	east	x
Vaccinium membranaceum	BL-64	Gifford Pinchot, NF	46°00'	122°00'	1280	30	north	x
Vaccinium membranaceum	BL-67	Gifford Pinchot, NF	46°30'	122°00'	1400	25	S to SW	x
Vaccinium membranaceum	(FS Rd. 63, 1.3 km beyond BL-67)		-	-	-	-	-	x
Vaccinium membranaceum	(FS Rd. 63, 1.3 km beyond BL-67)		-	-	-	-	-	x
Vaccinium membranaceum	BL-71	Gifford Pinchot, NF	46°30'	122°00'	1220	20	south	x
Vaccinium membranaceum	BL-72	Gifford Pinchot, NF	46°30'	122°00'	1200	20	east	
Vaccinium membranaceum	BL-78	Olympic, NF	47°20'	124°00'	1200	20	west	
Vaccinium membranaceum	BL-79	Olympic, NF	47°20'	124°00'	1300	20	south	
Vaccinium membranaceum	BL-87	Olympic, Nat. Park	47°50'	123°30'	1600-1650	variable	variable	x
Vaccinium membranaceum	BL-93	Olympic, NF	47°40'	123°00'	1220	45	NW	
Vaccinium membranaceum	BL-94	Olympic, NF	47°40'	123°00'	1130	30	NE	
Vaccinium membranaceum	BL-98	Olympic, NF	47°40'	123°00'	1000	46-60	SE	
Vaccinium membranaceum	BL-99	Olympic, NF	47°40'	123°00'	1300	30-45	south	x
Vaccinium myrtillus	BL-35	Willamette, NF	43°30'	122°30'	1700	0-10	south	
Vaccinium myrtillus	BL-37	Willamette, NF	43°30'	122°30'	1650-1800	variable	north	
Vaccinium myrtillus	BL-49	Willamette, NF	44°30'	122°10'	820	5-10	west	x
Vaccinium myrtillus	(FS Rd. 2261, for 3.2 km below BL-49)			-	-	-	-	x
Vaccinium myrtillus	BL-50	Willamette, NF	44°30'	122°00'	1100	< 5	S to SW	x
Vaccinium myrtillus	(0.5 km off OR 22, on Parrish Lake Rd)			-	-	-	-	x
Vaccinium myrtillus	BL-51	Willamette, NF	44°30'	122°10'	1040	< 5	south	x
Vaccinium myrtillus	(FS Rd 11, just after turning off OR 22)			-	-	-	-	x
Vaccinium myrtillus	(6.5 km up FS Rd 11, off OR 22)		-	-	-	-	-	x
Vaccinium ovalifolium	BLJ-1	Willamette, NF	44°00'	122°10'	1500	20	SW	
Vaccinium ovalifolium	BL-43	Willamette, NF	44°30'	122°10'	1160	45	E to SE	x

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Vaccinium ovalifolium	BL-46	Willamette, NC.	44°20'	122°10'	1000	45	east	x
Vaccinium ovalifolium	BL-47	Willamette, NF	45°40'	122°05'	1000	35	SE	x
Vaccinium ovalifolium	BL-48	Willamette, NF	43°10'	121°30'	1500	30	SE	
Vaccinium ovalifolium	BL-51	Willamette, NF	44°30'	122°10'	1040	< 5	south	
Vaccinium ovalifolium	BL-57	Siuslaw, NF	45°10'	123°30'	1000	variable	-	
Vaccinium ovalifolium	BL-61	Gifford Pinchot, NF	46°00'	122°00'	1250	20	east	
Vaccinium ovalifolium	(FS Rd 51, at Outlaw Ridge Viewpoint)		-	-	-	-	-	
Vaccinium ovalifolium	BL-64	Gifford Pinchot, NF	46°00'	122°00'	1280	30	north	
Vaccinium ovalifolium	BL-65	Gifford Pinchot, NF	47°55'	123°00'	1100	20	south	x
Vaccinium ovalifolium	BL-71	Gifford Pinchot, NF	46°30'	122°00'	1220	20	south	
Vaccinium ovalifolium	BL-72	Gifford Pinchot, NF	46°30'	122°00'	1200	20	east	x
Vaccinium ovalifolium	BL-74	Olympic, NF	48°00'	124°00'	370	30	north	
Vaccinium ovalifolium	BL-75	Gifford Pinchot, NF	47°10'	123°30'	760	<10	NW	
Vaccinium ovalifolium	BL-77	Olympic, NF	47°10'	123°30'	760	30	NE	
Vaccinium ovalifolium	BL-78	Olympic, NF	47°20'	124°00'	1200	20	west	x
Vaccinium ovalifolium	BL-79	Olympic, NF	47°20'	124°00'	1300	20	south	
Vaccinium ovalifolium	BL-80	Olympic, NF	47°10'	124°00'	600	-	-	
Vaccinium ovalifolium	BL-82	Olympic, NF	47°20'	124°00'	975	30	north	x
Vaccinium ovalifolium	BL-83 (State Forest Rd N-112 @ turnaround)		-		160	10	ridgetop	
Vaccinium ovalifolium	BL-84	Olympic, Nat. Park	47°40'	124°00'	240	< 5	-	
Vaccinium ovalifolium	BL-85	Olympic, NF	47°40'	124°00'	1200	40	NW	x
Vaccinium ovalifolium	BL-92	Olympic, NF	47°50'	124°00'	800	variable	west	
Vaccinium ovalifolium	BL-93	Olympic, NF	47°40'	123°00'	1220	45	NW	
Vaccinium ovalifolium	BL-94	Olympic, NF	47°40'	123°00'	1130	30	NE	x
Vaccinium ovalifolium	BL-97	Olympic, NF	47°40'	123°00'	820	45	NW	
Vaccinium ovalifolium	BL-98	Olympic, NF	47°40'	123°00'	1000	46-60	SE	
Vaccinium ovalifolium	BL-99	Olympic, NF	47°40'	123°00'	1300	30-45	south	x
Vaccinium ovatum	(FS Rd 156, 3 km below BLJ-5, Siuslaw, NF)		-	-	-	-	-	
Vaccinium ovatum	BLJ-6	Siuslaw, NF	44°20'	123°40'	300	45	SE	x
Vaccinium ovatum	BLJ-8	Siuslaw, NF	44°00'	124°00'	10-30	-	-	x
Vaccinium ovatum	BLJ-10	Siuslaw, NF	-	-	250	40	-	x
Vaccinium ovatum	BLJ-11	Siuslaw, NF	44°00'	123°50'	360	30	SE	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Vaccinium ovatum	BLJ-13	Siskiyou, NF	42°40'	123°20'	130	-	-	x
Vaccinium ovatum	(FS Rd 2308, left off FS Rd 33 from BLJ-13, Siskiyou, NF)				-	-	-	
Vaccinium ovatum	BLJ-14	Siskiyou, NF	42°30'	124°00'	510	35	S to E	x
Vaccinium ovatum	BLJ-16	Siskiyou, NF	42°10'	123°20'	860	20	east	x
Vaccinium ovatum	BL-17	Jedediah Smith Redwoods State Park	41°50'	123°40'	30	-	-	x
Vaccinium ovatum	(FS Rd 4613, off OR 46, from Cave Jct.,OR)			-	-	-	-	
Vaccinium ovatum	(Olympic Nat. Park Rd 1321.43 off US 101, 9.4 km north of park entrance)		-	-	-	-	-	
Vaccinium ovatum	BL-83(State Forest Rd N-1112 @ turnaround)			-	160	10	ridgetop	
Vaccinium parvifolium	BL-91	Olympic, NF	47°40'	123°00'	120	< 5	-	x
Vaccinium parvifolium	(FS Rd 156, 3 km below BLJ-5, Siuslaw, NF)			-	-	-	-	
Vaccinium parvifolium	BLJ-6	Siuslaw, NF	44°20'	123°40'	300	45	SE	
Vaccinium parvifolium	BLJ-7	Siuslaw, NF	44°05'	123°10'	60	-	-	
Vaccinium parvifolium	BLJ-10	Siuslaw, NF	-	-	250	40	-	
Vaccinium parvifolium	BLJ-11	Siuslaw, NF	44°00'	123°50'	360	30	SE	x
Vaccinium parvifolium	BLJ-16	Siskiyou, NF	42°10'	123°20'	1160	35	north	x
Vaccinium parvifolium	BL-17	Jedediah Smith Redwoods State Park	41°50'	123°40'	30	-	-	x
Vaccinium parvifolium	BL-43	Willamette, NF	44°20'	122°10'	1160	45	E to SE	
Vaccinium parvifolium	BL-49	Willamette, NF	44°30'	122°10'	820	5-10	west	
Vaccinium parvifolium	(FS Rd 11, just after turning off OR 22)			-	-	-	-	
Vaccinium parvifolium	BL-53	Willamette, NF	44°30'	122°00'	-	-	-	x
Vaccinium parvifolium	BL-54	Siuslaw, NF	-	-	530	< 5	SW	
Vaccinium parvifolium	BL-55	Siuslaw, NF	45°00'	123°30'	330	-	-	x
Vaccinium parvifolium	BL-56	Siuslaw, NF	-	-	600	0-10	-	x
Vaccinium parvifolium	BL-57	Siuslaw, NF	45°10'	123°30'	1000	variable	-	
Vaccinium parvifolium	(FS Rd 41 from Wind River Forest Nursery)			-	-	-	-	
Vaccinium parvifolium	BL-59	Gifford Pinchot, NF	46°00'	122°00'	1040	25	south	
Vaccinium parvifolium	(Wind River Rd., for 29.3 km between FS Rd 4220 and FS Rd 3053)		-	-	-	-	-	
Vaccinium parvifolium	(Outlaw Ridge Viewpoint on FS Rd 51)			-	-	-	-	

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope (degrees)	Aspect	Major population
Vaccinium parvifolium	BL-65	Gifford Pinchot, NF	47°55'	123°00'	1100	20	south	
Vaccinium parvifolium	BL-66	Gifford Pinchot, NF	47°50'	124°00'	530	< 5	north	x
Vaccinium parvifolium	BL-69	Gifford Pinchot, NF	46°30'	122°00'	910	10	NW	x
Vaccinium parvifolium	BL-70	Gifford Pinchot, NF	46°00	122°00'	1100	45	east	
Vaccinium parvifolium	BL-71	Gifford Pinchot, NF	46°30'	122°00'	1220	20	south	
Vaccinium parvifolium	BL-74	Olympic, NF	48°00'	124°00'	370	30	north	x
Vaccinium parvifolium	BL-80	Olympic, NF	47°10'	124°00'	600	-	-	
Vaccinium parvifolium	(Olympic Nat. Park Rd 1321.43 off US 101, 9.4 km north of park entrance)		-	-	-	-	-	
Vaccinium parvifolium	BL-83	(State Forest Rd N-1112 @ turnaround)			160	10	ridgetop	x
Vaccinium parvifolium	BL-84	Olympic, NF	47°40'	124°00'	240	< 5	-	
Vaccinium parvifolium	BL-88	Olympic, NF	47°00'	124°00'	360	-	west	
Vaccinium parvifolium	BL-91	Olympic, NF	47°40'	123°00'	120	< 5	-	x
Vaccinium parvifolium	BL-92	Olympic, NF	47°50'	124°00'	800	variable	west	
Vaccinium parvifolium	BL-94	Olympic, NF	47°40'	123°00'	1130	30	NE	
Vaccinium parvifolium	BL-96	Olympic, NF	-	-	500	-	south	
Vaccinium scoparium	(eastern edge of Rogue River NF on Hwy 62)			-	-	-	-	x
Vaccinium scoparium	(Hwy 62, Annie Springs to Crater Lake Nat. Park)				-	-	-	x
Vaccinium scoparium	BL-20	Rogue River, NF	42°10'	123°00'	1300	variable	variable	x
Vaccinium scoparium	(Pinus contorta sites along FS Rd 800 loop)			-	-	-	-	x
Vaccinium scoparium	BL-23	Umpqua, NF	-	-	1550-1600	variable	east	x
Vaccinium scoparium	BL-24	Umpqua, NF	-	-	1630	< 5	-	
Vaccinium scoparium	BL-27	Winema, NF	-	-	1810	10	NW	x
Vaccinium scoparium	BL-28	Winema, NF	-	-	1920	-	-	x
Vaccinium scoparium	(FS Rd 2125, Paulina to East Lake in Newberry Crater)				-	-	-	x
Vaccinium scoparium	BL-30	Deschute, NF	-	-	2100	10	east	x
Vaccinium scoparium	BL-33	Deschute, NF	44°00'	121°40'	2050	-	-	x
Vaccinium scoparium	(Elk Lake Campground, near Mt. Batchelor)			-	-	-	-	
Vaccinium scoparium	BL-34	Deschute, NF	-	-	1700	< 5	-	x
Vaccinium scoparium	BL-35	Willamette, NF	43°30'	122°30'	1700	0-10	south	x
Vaccinium scoparium	BL-36	Willamette, NF	-	-	1650	25	north	x

Table 2. (continued)

Genus/Species	Accession	Collection location	Latitude (N)	Longitude (N)	Elevation (m)	Slope degrees)	Aspect	Major population
Vaccinium uliginosum	BLJ-8	Siuslaw, NF	44°00'	124°00'	10	< 10	-	x
Vaccinium uliginosum	BL-23	Umpqua, NF	-	-	1550-1600	< 5	east	x
Vaccinium uliginosum	BL-24	Umpqua, NF	-	-	1630	< 5	-	x
Vaccinium uliginosum	BL-27	Winema, NF	-	-	1810	< 5	NW	x
Vaccinium uliginosum	BL-33	Deschute, NF	44°00'	121°40'	20 0	-	-	x
Vaccinium uliginosum	BL-34	Deschute, NF	-	-	1700	< 5	-	
Vaccinium uliginosum	BL-35	Willamette, NF	43°30'	122°30'	1700	< 5	south	x
Vaccinium uliginosum	BL-39	Deschute, NF	43°50'	121°50'	1530	< 5	east	x
Vaccinium uliginosum	(1.6 km west of San Tian Pass, on OR 20)			-	-	-	-	x
Vaccinium uliginosum	(3.2 km above jet US 101 & FS Rd 22, Olympic, NF)		-	-	260	-	-	x
Vaccinium caesp. x *scop.*	BL-33	Deschute, NF	44°00'	121°40'	2050	-	-	
Vaccinium del. x *membr.*	BL-35	Willamette, NF	43°30'	122°30'	1700	< 5	south	x
Vaccinium del. x *membr.*	BL-36	Willamette, NF	-	-	1650	25	north	
Vaccinium del. x *membr.*	BL-37	Willamette, NF	43°30'	122°30'	1650-1800	variable	north	x
Vaccinium del. x *membr.*	BL-39	Deschute, NF	43°50	121°50'	1530	variable	east	x
Vaccinium del. x *membr.*	BL-63	Gifford Pinchot, NF	45°50'	121°40'	1400	variable	east	
Vaccinium del. x *membr.*	BL-78	Olympic, NF	47°20'	124°00'	1200	20	west	
Vaccinium myrt. x *cham.*	BL-51	Willamette, NF	44°30'	122°10'	1040	< 5	south	
Vaccinium oval. x *membr.*	BL-64	Gifford Pinchot, NF	46°00'	122°00'	1280	30	north	
Vaccinium oval. x *membr.*	BL-94	Olympic, NF	47°40'	123°00'	1130	30	NE	

populations, including BLJ-2, BLJ-39-7, and BL-52-2 were especially outstanding for fruit size. In the Washington collection areas, it was anticipated that F. virginiana rather than F. virginiana var. glauca might be encountered. However, phenotypically, all accessions appeared to be of the latter form. Since F. chiloensis had been extensively collected from the northwest in recent years, it was not emphasized during this collection.

Species hybrids were not common, but in addition to BL-70-4, it appeared that hybridization or introgression among F. virginiana and F. chiloensis might also be evident at the BL-57 location. Another very interesting location, BL-63, included F. virginiana var. glauca with characteristics normally found in F. vesca.

Ribes

Nine species of Ribes were collected including R. bracteosum, R. cereum, R. cruentum, R. howellii, R. inerme, R. lacustre, R. lobbii, R. sangineum, and R. viscosissimum var. hallii (Table 1). A total of 40 accessions were collected including 23 population collections of seeds and 17 herbarium specimens. Thirty-nine locations were identified with Ribes species (Table 2).

Ribes bracteosum was particularly interesting with its vigorous upright growth form and long striges with potentially large numbers of fruits per strige. It was found in moist coves and on seepage slopes on the west slope of the Cascades from Willamette National Forest northward and including the Olympic peninsula. It occurred at elevations of 1000-1300 m in Oregon and in Gifford Pinchot National Forest in Washington, and over a wide range of elevations in the Olympics, from 120-1200 m. Four major populations of this species were identified.

Ribes cereum was collected in Winema and Deschute National Forests. This species is often quite productive with attractive light orange to scarlet fruits. It also appeared to be quite variable for fruit size. It was found on dry habitats on the east slope of the Cascades in Oregon at elevations of from 1400-2100 m, and so appeared both drought and cold tolerant. Three major populations were identified.

The spiny-fruited gooseberry R. cruentum was collected in southern Oregon in Siskiyou and Rogue River National Forests. It occurred mainly on south-facing slopes at elevations ranging from 130-1530 m. The flavor of the fruit was pleasant after removing the spines. It was also a drought tolerant species. One major population was identified.

Ribes howellii was only found in the Olympics during these collections. It occurred over quite a range in altitudes, from 120-1600 m. One major population was identified.

Ribes inerme was collected in two locations east of the Cascades in Deschute National Forest at elevations of 1400-1450 m.

Ribes lacustre was collected over a wide area from Deschute National Forest to the Olympics. It occurred at about 1500 m elevation in Oregon, and below 1000 m in Washington.

Ribes lobbii was collected only in the Siskiyou, Rogue River, Umpqua, and Winema National Forests in southern Oregon, at elevations of from 1300-1600 m. This species was similar in overall appearance to R. cruentum except that the fruit was covered with sticky glandular hairs rather than spines. It also occurred on sunny southern exposures and appeared drought tolerant like the latter species. Two major populations were identified.

The flowering current R. sangineum was collected at low elevations of 170-250 m in Siuslaw and Siskiyou National Forests. One major population was identified.

Ribes viscosissimum var. hallii was only collected as herbarium specimens because no ripe fruit was found. It was found in southern Oregon on the east slope of the Cascades at elevations of 1500-1600 m.

Rubus

Seven species of Rubus were collected including R. idaeus var. melanolasius, R. lasiococcus, R. leucodermis, R. parviflorus, R. pedatus, R. spectabilis, and R. ursinus (Table 1). Seventy-four accessions were collected including 66 population collections of seeds, four clonal accessions, and four herbarium specimens. A total of 115 Rubus locations were identified. As with Fragaria, a number of Rubus species occurred over wide areas, so with R. leucodermis, R. parviflorus, R. spectabilis, and R. ursinus, the fruit was often already gone at the time locations were visited.

Rubus idaeus var. melanolasius was only collected at one location. This was a very unusual site, situated in a collapsed lava cave in Deschute National Forest.

The herbaceous perennial species R. lasiococcus was widespread in occurrence, but little or no fruit was found at any location. It occurred on south to southeast facing slopes at elevations of from 1000-1530 m. One major population was identified in Rogue River National Forest (BL-20).

Rubus leucodermis generally occurred at low to intermediate elevations throughout the collection area, however it occurred up to 1530 m elevation in southern Oregon (Table 2). It was more common on the west slope of the Cascades and westward. Aspect was variable with this species, although it tended to be found on south to southeast facing slopes in Oregon. In a number of populations there was a tendency for fruit to be somewhat elongated (in contrast to rounded) in shape. Fruit firmness was very similar to wild R. occidentalis in North Carolina. Flavor was typical for black raspberry. One population at location BLJ-12 was particularly outstanding for fruit size. Two variants, nonglaucous stems and leaves and white fruit, were found in populations in the Siskiyous. At location BLJ-15 all possible combinations of glaucous and nonglaucous stems and leaves and black and white fruit occurred, indicating that these traits appear to be transmitted independently. The entire population was of the nonglaucous phase at location BL-18. Five major populations were identified.

Rubus parviflorus occurred at elevations ranging from 60-1530 m, and throughout the area surveyed. Elevations were generally higher in southern Oregon. This species occurred on various exposures, but tended toward south to southeast facing slopes. Eleven major populations were identified.

A second herbaceous perennial species, R. pedatus, was only collected in Olympic National Forest. It occurred on various aspects and over a range of from 240-1220 m elevation. This was an interesting groundcover type species. Fruits were red and subacid in flavor but were typically made up of only one to three drupelets, and the seeds were quite large. Four major populations were identified.

Rubus spectabilis was very widespread on the west slope of the Cascades westward and in the Olympics. It occurred at low to intermediate elevations ranging from 30-1300 m, and on mostly east to southeast facing slopes in Oregon and in Gifford Pinchot National Forest, and north to northwest facing slopes in the Olympics. With this species extremely large-fruited accessions were mainly collected in Washington. Location BL-85 on the Olympic peninsula was particularly outstanding for fruit size. There also appeared to be an altitudinal and latitudinal gradient with regard to fruit color, i.e. the percentage of accessions with red fruit (as opposed to yellow) appeared to increase with increase in latitude or altitude. However, since this species is so widespread, and since fruit was already gone from most low elevation populations, more widespread collections need to be made before a definite conclusion can be reached in this regard. Twenty-one major populations were identified.

Rubus ursinus was the most widely occurring Rubus species encountered, being identified on 33 locations. It was generally found at low to intermediate elevations (but up to 1600 m in southern Oregon). Like R. leucodermis and R. spectabilis, it was more common on the west slope of the Cascades and westward. Of populations with ripe fruit, large fruit size was only found in accessions from Washington, especially at locations BL-81 and BL-100. Nine major populations were identified.

Vaccinium

Ten species of Vaccinium were collected including V. caespitosum, V. chamissonis, V. deliceosum, V. membranaceum, V. myrtillus, V. ovalifolium, V. ovatum, V. parvifolium, V. scoparium, and V. uliginosum (Table 1). With the exception of V. ovatum (section Pyxothamnus) and V. uliginosum (section Vaccinium), these species are in Vaccinium section Myrtillus. In addition, four interspecific hybrid combinations were identified. Two hundred twenty-three accessions were collected including 75 population collections of seeds, 33 clonal accessions, and 115 herbarium specimens. A total of 203 individual Vaccinium species locations were identified (Table 2). Mummy berry [Monolinia vaccini-corymbosi Reade (Honey)] and witches broom [Pucciniastrum goeppertianum (Kuhn) Kleb.] were found in all Vaccinium species.

Vaccinium caespitosum was only collected in Oregon on this trip. It was generally found at high elevations of from 1550-2000 m, and apparently is a late-ripening species, since no ripe fruit was found. Six major populations were identified.

Vaccinium chamissonis was found from Willamette National Forest, northward on the west slope of the Cascades and westward, at elevations of 700-1500 m (mostly 1000-1300 m). It grew on moderate to steep slopes of variable aspect. This is an interesting crown-forming species with glaucous leaves and small to medium size glaucous-blue fruits. Five major populations were identified.

Vaccinium deliceosum was scattered in distribution. It was basically a high elevation species, but occurred at lower elevations as latitude increased. It occurred at 1650-1800 m elevation in Oregon and 1200-1650 m in Washington. As Shultz (9) has pointed out, this species is very appropriately named. The fruit is of excellent quality. Fruit quality is similar to V. myrtillus and to certain edible forms of V. stamineum from the southeastern U.S. (1). The fruit is also an attractive light blue color, however since this species like other section Myrtillus species, develops no abscission zone at the base of the fruit, the fruit must be torn from the plant at harvest, and generally has a large tear on the stem end which leaks and has an extremely short shelf-life. This, along with the low stoloniferous plant habit of this species would appear to severely limit its potential for domestication and/or utility as a small fruit crop. Red mountain heather, Phyllodoce empetriformis, was a companion species on most locations. Seven major populations were identified.

Vaccinium membranaceum was of very widespread occurrence at intermediate to high elevations (1000-1900 m) in the Cascades and Olympics. Fruit size of this species ranged from medium to very large. Few populations bore heavy crops in the year these collections were made. Plant habit was variable but generally could be described as suckering from the crown with stems from 1.2-2.0 m tall. Fruits also had the limitation of being torn from the plant at harvest with a large scar and therefore limited shelf-life. Twenty-three major populations were identified, and a number were designated as worthy of further and more intensive study.

Vaccinium myrtillus was only collected in Willamette National Forest, at elevations ranging from 820-1800 m. The similarity of the flavor of this species to V. deliceosum was eluded to in the discussion of that species. It was low in productivity and fruit size was quite small on the sites where collections were made. Six major populations were identified.

Vaccinium ovalifolium was distributed over the same area as V. chamissonis, and as described by Shultz (9) in all morphological aspects it appeared to be an autotetraploid derived from the latter species. It was found over a fairly wide range in elevations from 160-1300 (1500) m. Like V. chamissonis it is a crown-forming species. It was often quite productive with large medium to light blue fruits. One advantage it appears to possess over most other species in section Myrtillus is that although it does not develop an abscission zone at the berry-stem junction, the fruit is usually quite firm and when picked it leaves a fairly small round hole in the berry no larger than the picking scar on many cultivars

of the highbush blueberry (V. coryambosum L.). This species therefore appears to have some promise for domestication. However, because of the fruiting habit of section Myrtillus species (single flowers from the basal nodes on lateral branches), management of plants would be quite different from present cultivated blueberries. With species in section Myrtillus productivity is directly correlated with twigginess of plants, so pruning as practiced on cultivated highbush blueberries would seriously reduce production. Ten major populations of this species were identified, including BL-72 and BL-75 which were extremely variable.

Vaccinium ovatum collections were scattered and given the distribution of this species (4,9), were not as complete as desired. It was found mostly along the coast and in the coast range and Olympics. It also occurred inland in the Siskiyous. Elevations ranged from 10-860 m. The drought tolerance of this species was quite noteworthy on locations in the Siskiyous. Fruit color ranged from blue to black in a number of populations, especially at locations BLJ-8 and BLJ-13. Eight major populations were identified.

Vaccinium parvifolium was widespread at low to intermediate elevations (30-1220 m), mainly on the west slope of the Cascades and westward. On one unique location at 1160 m elevation in the Siskiyous (BLJ-16), plants were typically less than 0.5 m tall and suckering to stoloniferous, and the fruits sweet rather than acid. Whether this represents the results of interspecific hybridization or adaptation to the thin rocky soil on the site is unknown. The extensive population at location BL-17 was characterized for fruit traits in Table 3. This population was quite variable for all traits evaluated except for the number of fruit bearing nodes on lateral branches. Fruit color ranged from pink to dark red among plants in the population. Fruits on several plants had aromatic "blueberry flavor", in contrast to the acidic flavor generally ascribed to this species. The variation in fruit removal force and firmness in this population was also quite interesting. This means that clones combining both superior fruit firmness and ease of fruit removal should result in prolonged shelf-life of fruit. Several plants on this location were susceptible to powdery mildew on the leaves. Contrary to Shultz's recommendation (9) this species does appear worthy of consideration for domestication or utility in interspecific hybridization. He did point out that it has a deep and wide ranging root system. When growing in full sun it was often quite productive on a number of sites during these collections. With regard to domestication, the acceptability of a red-fruited blueberry to the consuming public would have to be determined. Eleven major populations were identified.

Vaccinium scoparium was only collected at high elevations in southern Oregon on this expedition, although it occurs widely in mountains in the western United States. (4). On most sites it was associated with Pinus contorta and is thus quite drought tolerant. Thirteen major populations were identified.

Vaccinium uliginosum was found in bogs and along lake margins along the coast or at high elevations in the mountains throughout the area. Fruit was still green on all locations at the time they were visited. For tolerance to waterlogged soils and to standing water over the roots, this species rivals the cranberries. Nine major populations were identified.

Table 3. Characterization of the BL-17 *Vaccinium parvifolium* population for fruit traits.[1]

Trait[2]	N	Mean	Range
Crop[3]	33	2.04	1-4
Fruit size[3]	28	3.54	2-5
Color[4]	28	3.36	2-5
Fruit firmness[3]	28	3.75	2-5
Fruit removal force[3]	28	3.39	2-5
Flavor[3]	28	2.11	1-4
No. fruit bearing nodes[5]	28	1.28	1-2

[1]Jedediah Smith Redwoods State Park, California

[2]All values except number of fruit bearing nodes were subjective ratings

[3]1-2 = unacceptable, 3 = average, 4 = above average, 5 = superior

[4]1-2 = light pink, 3 = light red, 4 = medium red, 5 = dark red

[5]Maximum number of basal nodes on laternal branches bearing fruits

A number of interspecific Vaccinium hybrids were identified, however with the exception of V. deliceosum x membranaceum, none were common. Hybrids between V. deliceosum and V. membranaceum, were always present when these two species occurred in the same vicinity. The plants often appeared to be later generation segregates as opposed to F_1 hybrids. On one location, BL-39, glaucous leaves and blue fruit occurred on plants of V. membranaceum where V. deliceosum was not found. These plants were however quite similar to those found where these species occurred together. Vaccinium uliginosum also occurred on this location, and it has glaucous leaves and fruit, however it is doubtful that these plants are sectional hybrids.

Vaccinium ovalifolium x membranaceum hybrids were identified on two locations, BL-64 and BL-94, based on intermediate characteristics of plants. Vaccinium caespitosum x scoparium hybrids occurred on one location (BL-33) and one plant intermediate between V. myrtillus and V. chamissonis on another (BL-51). In addition, there were a number of plants of obvious hybrid origin, for which putative parents could not be determined.

Minor Small Fruit Genera

Three locations were identified for Amelanchier alnifolia, and seeds were collected from one of the three. Gaultheria shallon was identified on six locations, and seed collected on two. Gaultheria humifusa was identified on two locations, and seed collected on one. Gaultheria ovatifolia was identified on one location and seed collections made. Sambucus cereula and S. racemosa were identified on three locations, and seed collected from two of the former and all three of the latter. Sorbus species were identified on four locations, and seed collections made from two species at the BL-43 location. Mahonia nervosa was identified and collected on one location.

Other Genera

Eight locations were identified for Corylus cornuta var. californica, however no seed or clonal accessions were collected because the nuts were not mature. Nut size and plant growth habit were quite superior to forms of the eastern variety of this species observed by the senior author. There also appeared to be a great deal of variability for beak length on husks, and nuts on some trees should fall free from the husks. Castinopsis chrysophylla occurred on four locations in southern Oregon, however, like Corylus, the nuts were not mature. Malus fusca was found at BLJ-8 and Prunus virginiana at BL-31. Prunus emarginata was found on two locations, but again the fruit was immature. Cratageus douglasi var. suksdorfii and Vitis californica both occurred on the BLJ-13 location along the Rogue River in Siskiyou National Forest.

SUMMARY

The authors recognize that they could not identify all possible locations for small fruit species in the area surveyed. Subsequent expeditions will undoubtedly find additional locations, especially with

some of the more widely occurring species. Likewise, we regret that due to time and resource constraints, it was not possible to collect all species as adequately as desired. However, a total of 382 accessions were collected including 193 seed collections, 43 clonal accessions, and 146 herbarium specimens. Equally important, 434 locations were identified for the species collected, and, major populations worthy of further study and collection were identified for almost all species (Table 2).

The most noteworthy species collected during this expedition included Fragaria virginiana var. glauca, Ribes bracteosum, Rubus leucodermis, Rubus spectabilis, Vaccinium deliceosum, Vaccinium ovalifolium, and Vaccinium membranaceum.

Fragaria virginiana var. glauca exhibited variation for a number of economic traits including drought tolerance and large fruit size. Therefore, it should be very valuable in broadening the germplasm base and increasing ecological amplitude in strawberry breeding.

Of the Ribes species encountered, R. bracteosum appeared to include more traits of direct utility in breeding currents. Its plant habit approaches that of black currant, and its extremely long striges and large numbers of flowers per strige make it potentially useful in breeding for increased productivity. Fruit flavor was fairly insipid, but not unpleasant.

Rubus leucodermis appeared to be more variable than its eastern U.S. counterpart, R. occidentalis (7). Several populations were outstanding for fruit size, and somewhat conic fruit shape, which also involve larger numbers of drupelets per fruit. Fruit firmness did not appear any poorer than on wild selections of R. occidentalis, contrary to previous reports (7). This characteristic, plus drought tolerance appear to make this a promising species for use in breeding improved cultivars. The white-fruited variant was also an interesting novelty.

The extremely large fruited, bright red forms of Rubus spectabilis collected on the Olympic peninsula appear very promising as a source of genes for attractive red color and increased fruit size in breeding red raspberries. Unfortunately fruit quality in this species is poor.

Vaccinium deliceosum, V. ovalifolium, and V. membranaceum are all tetraploid species which have desirable traits worthy of incorporation into cultivated genotypes. An ideal situation would be to combine the superior fruit color, quality, and cold hardiness of V. deliceosum, the crown-forming plant habit, fruit firmness, superior picking scar (for section Myrtillus species), and large blue fruit of V. ovalifolium, and the very large fruit size and drought tolerance of V. membranaceum into a new type of hybrid cultivated blueberry.

Since it was not possible to cover the entire Pacific Northwest in the 4 weeks included in this expedition, additional expeditions would be in order for collecting from the following areas: Eastern Oregon and Washington; British Columbia; northern California; Mt. Hood National Forest and the upper coast range in Oregon; and the northern Cascades and interior

Forest and the upper coast range in Oregon; and the northern Cascades and interior of the Olympic peninsula in Washington. Eastern Oregon and Washington and northern California are particularly high priority areas for drought resistant forms, and the extensive Ribes species occurring in these areas. The northern Cascades and interior of the Olympic peninsula, and British Columbia are potentially valuable as sources of cold hardy genotypes. Collections from Mt. Hood National Forest and the northern coast range in Oregon would then reasonably complete small fruit germplasm collecting in this region. If not soon covered in the above mentioned expeditions it would be worthwhile to systematically collect Vaccinium ovatum throughout its native range. It is quite a variable species and in areas such as the Siskiyous displays excellent drought tolerance. It also forms partially fertile hybrids when crossed with cultivated blueberries (6).

As a final suggestion, since this region is in the continental U.S., it is strongly recommended that local specialists be in charge of future expeditions if at all possible. Because of the difficulty in making adequate collections of species that occur across wide latitudinal and/or altitudinal gradients in a 4-6 week period, it is critical that follow-up trips be made, and this is both expensive and impractical if the collectors are located several thousand miles away. It is also important to select team participants who will follow-up where additional trips to particular sites are required.

The National Clonal Germplasm Repository-Corvallis carried out one collection expedition in eastern Oregon during 1987, mainly for Ribes, and plans continue for explorations throughout the recommended areas.

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Appendix Table I. Cross reference of field collection accession numbers with National Clonal Germplasm Repository-Corvallis numbers, listed alphabetically by genus and species. Pacific Northwest small fruit germplasm collections, 1985.[1]

Accession	Corvallis number	Genus/Species
BL-32-5	AME 23	*Amelanchier alnifolia* seed
BLJ-13-4	CRA 37	*Crataegus douglasi* var. *suksdorfii*
BLJ-02-3	FRA 423	*Fragaria vesca*
BL-18-1	FRA 424	*Fragaria vesca*
BL-21-1	FRA 425	*Fragaria vesca*
BL-29-1	FRA 429	*Fragaria vesca*
BL-41-1	FRA 437	*Fragaria vesca*
BL-21-2	FRA 426	*Fragaria virginiana*
BL-39-7	FRA 435	*Fragaria virginiana*
BL-57-4	FRA 433	*Fragaria virginiana*
BLJ-02-1	FRA 421	*Fragaria virginiana* var. *glauca*
BLJ-02-2	FRA 422	*Fragaria virginiana* var. *glauca*
BL-20-2	FRA 436	*Fragaria virginiana* var. *glauca*
BL-26-1	FRA 427	*Fragaria virginiana* var. *glauca*
BL-27-2	FRA 428	*Fragaria virginiana* var. *glauca*
BL-30-4	FRA 430	*Fragaria virginiana* var. *glauca*
BL-50-2	FRA 431	*Fragaria virginiana* var. *glauca*
BL-52-2	FRA 432	*Fragaria virginiana* var. *glauca*
BL-63-5	FRA 420	*Fragaria virginiana* var. *glauca*
BL-89-1	FRA 434	*Fragaria virginiana* var. *glauca*
BL-27-3	GAU 7	*Gaultheria humifusa* seed
BL-49-3	GAU 8	*Gaultheria ovatifolia*
BL-74-2	GAU 9	*Gaultheria shallon*
BL-91-2	GAU 10	*Gaultheria shallon*
BL-43-3	RIB 203	*Ribes bracteosum*
BL-60-3	RIB 182	*Ribes bracteosum*
BL-61-4	RIB 183	*Ribes bracteosum*
BL-68-2	RIB 184	*Ribes bracteosum*
BL-77-3	RIB 186	*Ribes bracteosum*
BL-97-5	RIB 189	*Ribes bracteosum*
BL-101-1	RIB 191	*Ribes bracteosum*
BL-25-1	RIB 176	*Ribes cereum*
BL-25-4	RIB 177	*Ribes cereum*
BL-32-1	RIB 179	*Ribes cereum*
BL-13-2	RIB 195	*Ribes cruentum*
BLJ-14-2	RIB 196	*Ribes cruentum*
BLJ-15-1	RIB 173	*Ribes cruentum*
BL-87-2	RIB 187	*Ribes howellii*
BL-31-2	RIB 178	*Ribes inerme*
BL-32-2	RIB 180	*Ribes inerme*

[1]Table contributed by Dr. Kim Hummer

Appendix Table I (contd.)

Accession	Corvallis number	Genus/Species
BL-39-2	RIB 193	Ribes lacustre
BL-69-2	RIB 185	Ribes lacustre
BL-90-2	RIB 188	Ribes lacustre
BL-97-6	RIB 190	Ribes lacustre
BLJ-18-3	RIB 174	Ribes lobbii
BL-19-2	RIB 192	Ribes lobbii
BLJ-10-1	RIB 194	Ribes sanguineum
BLJ-12-3	RIB 181	Ribes sanguineum
BL-18-4	RIB 175	Ribes sp. (currant)
BLJ-31-1	RUB 657	Rubus idaeus var. melanolasius
BLJ-05-1	RUB 644	Rubus leucodermis
BLJ-09-1	RUB 645	Rubus leucodermis
BLJ-12-1	RUB 646	Rubus leucodermis
BLJ-12-2	RUB 647	Rubus leucodermis
BLJ-14-4	RUB 648	Rubus leucodermis
BLJ-14-7	RUB 651	Rubus leucodermis
BLJ-14-8	RUB 652	Rubus leucodermis
BLJ-15-2	RUB 705	Rubus leucodermis
BLJ-15-3	RUB 653	Rubus leucodermis
BLJ-15-4	RUB 654	Rubus leucodermis
BLJ-15-5	RUB 655	Rubus leucodermis
BLJ-18-2	RUB 656	Rubus leucodermis
BLJ-32-3	RUB 658	Rubus leucodermis
BL-44-1	RUB 706	Rubus leucodermis
BL-58-1	RUB 669	Rubus leucodermis
BL-69-3	RUB 676	Rubus leucodermis
BL-70-2	RUB 678	Rubus leucodermis
BL-77-1	RUB 681	Rubus leucodermis
BL-80-2	RUB 684	Rubus leucodermis
BL-88-1	RUB 692	Rubus leucodermis
BL-95-1	RUB 696	Rubus leucodermis
BL-100-1	RUB 699	Rubus leucodermis
BLJ-03-1	RUB 643	Rubus parviflorus
BLJ-09-3	RUB 704	Rubus parviflorus
BLJ-14-6	RUB 650	Rubus parviflorus
BLJ-32-4	RUB 659	Rubus parviflorus
BL-60-2	RUB 672	Rubus parviflorus
BL-76-1	RUB 680	Rubus parviflorus
BL-84-2	RUB 688	Rubus pedatus
BL-85-4	RUB 690	Rubus pedatus
BL-93-3	RUB 701	Rubus pedatus
BL-98-3	RUB 698	Rubus pedatus
BLJ-07-2	RUB 702	Rubus spectabilis
BLJ-08-6	RUB 668	Rubus spectabilis
BLJ-47-1	RUB 663	Rubus spectabilis
BL-54-1	RUB 664	Rubus spectabilis
BL-55-1	RUB 665	Rubus spectabilis
BL-56-1	RUB 666	Rubus spectabilis

Appendix Table I (contd.)

Accession	Corvallis number	Genus/Species
BL-57-1	RUB 707	Rubus spectabilis
BL-57-2	RUB 667	Rubus spectabilis
BL-60-1	RUB 671	Rubus spectabilis
BL-61-3	RUB 673	Rubus spectabilis
BL-61-5	RUB 674	Rubus spectabilis
BL-68-1	RUB 675	Rubus spectabilis
BL-77-2	RUB 682	Rubus spectabilis
BL-80-1	RUB 683	Rubus spectabilis
BL-82-5	RUB 687	Rubus spectabilis
BL-85-3	RUB 689	Rubus spectabilis
BL-93-2	RUB 695	Rubus spectabilis
BL-97-4	RUB 697	Rubus spectabilis
BLJ-43-4	RUB 661	Rubus spectabilis
BLJ-04-1	RUB 708	Rubus ursinus
BLJ-09-2	RUB 703	Rubus ursinus
BLJ-14-5	RUB 649	Rubus ursinus
BLJ-40-1	RUB 660	Rubus ursinus
BLJ-45-1	RUB 662	Rubus ursinus
BL-58-2	RUB 670	Rubus ursinus
BL-70-1	RUB 677	Rubus ursinus
BL-75-1	RUB 679	Rubus ursinus
BL-81-1	RUB 685	Rubus ursinus
BL-81-2	RUB 686	Rubus ursinus
BL-86-1	RUB 691	Rubus ursinus
BL-90-1	RUB 693	Rubus ursinus
BL-92-1	RUB 694	Rubus ursinus
BL-100-2	RUB 700	Rubus ursinus
BL-43-11	SAM 37	Sambucus cerulea
BL-73-1	SAM 31	Sambucus cerulea
BLJ-03-2	SAM 32	Sambucus racemosa
BL-43-8	SAM 30	Sambucus racemosa
BL-77-4	SAM 33	Sambucus racemosa
BL-43-9	SOR 31	Sambucus scopulina cascaetensis
BL-43-10	SOR 32	Sambucus sitchensis grayi
BL-43-1	VAC 369	Vaccinium chamissonis
BL-43-7	VAC 372	Vaccinium chamissonis
BL-50-1	VAC 377	Vaccinium chamissonis
BL-61-1	VAC 388	Vaccinium chamissonis
BL-64-2	VAC 392	Vaccinium chamissonis
BL-65-2	VAC 393	Vaccinium chamissonis
BL-67-2	VAC 395	Vaccinium chamissonis
BL-85-2	VAC 412	Vaccinium chamissonis
BL-93-1	VAC 415	Vaccinium chamissonis
BL-94-3	VAC 418	Vaccinium chamissonis
BL-97-2	VAC 421	Vaccinium chamissonis
BL-60-5	VAC 387	Vaccinium chamissonis (ovalifolium)
BL-35-7	VAC 367	Vaccinium deliciosum
BL-63-2	VAC 390	Vaccinium deliciosum

Appendix Table 1 (contd.)

Accession	Corvallis number	Genus/Species
BL-78-1	VAC 403	Vaccinium deliciosum
BL-79-1	VAC 404	Vaccinium deliciosum
BLJ-09-3	VAC 500	Vaccinium membranaceum
BL-21-3	VAC 424	Vaccinium membranaceum
BL-22-1	VAC 425	Vaccinium membranaceum
BL-39	VAC 504	Vaccinium membranaceum
BL-39-1	VAC 432	Vaccinium membranaceum
BL-39-4	VAC 456	Vaccinium membranaceum
BL-42-1	VAC 426	Vaccinium membranaceum
BL-43-5	VAC 370	Vaccinium membranaceum
BL-48-1	VAC 427	Vaccinium membranaceum
BL-49-4	VAC 376	Vaccinium membranaceum
BL-51-3	VAC 380	Vaccinium membranaceum
BL-51-4	VAC 429	Vaccinium membranaceum
BL-51-6	VAC 381	Vaccinium membranaceum
BL-52-1	VAC 382	Vaccinium membranaceum
BL-59-1	VAC 385	Vaccinium membranaceum
BL-60-4	VAC 386	Vaccinium membranaceum
BL-63-1	VAC 389	Vaccinium membranaceum
BL-64-1	VAC 391	Vaccinium membranaceum
BL-67-1	VAC 394	Vaccinium membranaceum
BL-71-1	VAC 398	Vaccinium membranaceum
BL-87-1	VAC 413	Vaccinium membranaceum
BL-94-1	VAC 416	Vaccinium membranaceum
BL-98-1	VAC 434	Vaccinium membranaceum
BL-99-1	VAC 423	Vaccinium membranaceum
BL-38-1	VAC 368	Vaccinium membranaceum
BL-35-12	VAC 452	Vaccinium myrtillus
BL-37-13	VAC 455	Vaccinium myrtillus
BL-49-1	VAC 375	Vaccinium myrtillus
BL-51-1	VAC 379	Vaccinium myrtillus
BL-51-2	VAC 458	Vaccinium myrtillus (hybrid)
BLJ-01-1	VAC 357	Vaccinium ovalifolium
BL-43-6	VAC 371	Vaccinium ovalifolium
BL-46-1	VAC 373	Vaccinium ovalifolium
BL-46-2	VAC 433	Vaccinium ovalifolium
BL-51-5	VAC 430	Vaccinium ovalifolium
BL-57-3	VAC 428	Vaccinium ovalifolium
BL-65-1	VAC 435	Vaccinium ovalifolium
BL-72-1	VAC 399	Vaccinium ovalifolium
BL-72-2	VAC 400	Vaccinium ovalifolium
BL-75-2	VAC 402	Vaccinium ovalifolium
BL-82-1	VAC 405	Vaccinium ovalifolium
BL-82-2	VAC 406	Vaccinium ovalifolium
BL-82-3	VAC 407	Vaccinium ovalifolium
BL-83-2	VAC 409	Vaccinium ovalifolium
BL-85-1	VAC 411	Vaccinium ovalifolium
BL-94-2	VAC 417	Vaccinium ovalifolium

Appendix Table I (contd.)

Accession	Corvallis number	Genus/Species
BL-97-1	VAC 420	*Vaccinium ovalifolium*
BL-98-2	VAC 422	*Vaccinium ovalifolium*
BL-06-3	VAC 437	*Vaccinium ovatum*
BLJ-08-3	VAC 359	*Vaccinium ovatum*
BL-08-4	VAC 439	*Vaccinium ovatum*
BL-08-5	VAC 440	*Vaccinium ovatum*
BL-10-2	VAC 441	*Vaccinium ovatum*
BLJ-13-1	VAC 361	*Vaccinium ovatum*
BL-13-5	VAC 442	*Vaccinium ovatum*
BL-13-6	VAC 443	*Vaccinium ovatum*
BL-13-7	VAC 444	*Vaccinium ovatum*
BL-14-1	VAC 488	*Vaccinium ovatum*
BL-14-9	VAC 445	*Vaccinium ovatum*
BLJ-06-1	VAC 358	*Vaccinium parvifolium*
BL-06-2	VAC 436	*Vaccinium parvifolium*
BLJ-07-1	VAC 431	*Vaccinium parvifolium*
BLJ-11-1	VAC 360	*Vaccinium parvifolium*
BLJ-16-1	VAC 362	*Vaccinium parvifolium*
BL-16-2	VAC 446	*Vaccinium parvifolium*
BL-16-3	VAC 447	*Vaccinium parvifolium*
BL-16-4	VAC 448	*Vaccinium parvifolium*
BL-16-5	VAC 449	*Vaccinium parvifolium*
BLJ-17-1	VAC 363	*Vaccinium parvifolium*
BL-46-3	VAC 374	*Vaccinium parvifolium*
BL-53-1	VAC 383	*Vaccinium parvifolium*
BL-55-2	VAC 384	*Vaccinium parvifolium*
BL-66-1	VAC 366	*Vaccinium parvifolium*
BL-69-1	VAC 396	*Vaccinium parvifolium*
BL-70-3	VAC 397	*Vaccinium parvifolium*
BL-74-1	VAC 401	*Vaccinium parvifolium*
BL-83-1	VAC 408	*Vaccinium parvifolium*
BL-84-1	VAC 410	*Vaccinium parvifolium*
BL-91-1	VAC 414	*Vaccinium parvifolium*
BL-94-4	VAC 419	*Vaccinium parvifolium*
BL-20-1	VAC 364	*Vaccinium scoparium*
BL-27-1	VAC 365	*Vaccinium scoparium*
BL-50-3	VAC 378	*Vaccinium* sp.
BL-33-4	VAC 457	*Vaccinium* sp. (*caes.* x *scop.*)
BL-35-8	VAC 451	*Vaccinium* sp. (*del.* x *memb.*)
BL-35-4	VAC 450	*Vaccinium* sp. (*memb.* x *del.*)
BL-37-6	VAC 453	*Vaccinium* sp. (*memb.* x *del.*)
BL-37-7	VAC 454	*Vaccinium* sp. (*memb.* x *del.*)
BL-08-1	VAC 438	*Vaccinium uliginosum*