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Some Alaska Fungi

J. P. Anderson
Juneau Florists

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SOME ALASKA FUNGI

J. P. ANDERSON

This list is based entirely on collections and observations by the writer. Only parasitic fungi and those appearing shortly after the death of the host plant are included, as these are the only ones to which sufficient attention has been paid. Quite a number of rusts (Uredinales) have been collected but are not included as it is the intention to list them in a separate paper. With few exceptions the fungi in this list are based on material collected at Sitka during the years 1914 to 1916 inclusive. The determinations were largely made by the U. S. Department of Agriculture at Washington. The Misses Vera K. Charles and A. E. Jenkins determined most of the species.¹

So far as is known to the writer the only papers dealing with the fungi of Alaska, outside of some previous notes by himself,² are the report of the Harriman Alaska Expedition³ and the references therein given by Dr. Trelease to previous mention of fungi from Alaska.

PLASMIDIOPHORALES

Plasmidiophora brassicae Wor. Club-Root. On roots of *Brassica oleracea* and vars., *Brassica campestris*, *Raphanus sativus*. This disease is quite common and sometimes destructive on the different members of the cabbage group. It is less common on turnips, rutabagas, and radishes.

Bacteriaceae

Bacillus phytophthorus Appel. Black Leg. On *Solanum tuberosum*. Introduced with seed potatoes.

Pseudomonas campestris (Pam.) E. F. Smith. Black Rot. On *Brassica oleracea* and vars. Black rot sometimes damages cabbage and brussels sprouts.

Pseudomonas radicolica (Bey.) Moore. Tubercules have been noted on the roots of various legumes, including *Trifolium*, *Medicago*, *Cytisus*.

Pseudomonas tumefaciens (S. & T.) Stev. Crown Gall. In 1917 a few plants of Marguerite or Paris Daisy (*Chrysanthemum frutescens*) were received at Juneau from Seattle, Wash. Some crown gall was noted on

¹ Specimens have been deposited in my own herbarium at Iowa State College, and in the United States Department of Agriculture. J. P. A.

² Anderson, J. P., Fungus diseases: Rept. Alaska Agri. Expt. Stations, 1914 and 1915. Notes on the Flora of Sitka: Iowa Acad. Sci., XXIII, 1916.

³ Saccardo, J. P., Peck, C. H., and Trelease, W., Fungi of Alaska: Harriman Alaska Series of the Smithsonian Institution, Vol. 5, 1910. Cryptogamic Botany.

these. The writer propagated from them and although the cuttings were far removed from the galls the characteristic enlargements appear occasionally on plants of the species even after several asexual generations. Not observed on other hosts when grown in Alaska.

Peronosporaceae

Peronospora obovata Bon. On *Spergula arvensis*. A common parasite.

Peronospora parasitica (Pers.) DeBy. On *Arabis hirsuta*. Collected in the basin back of Juneau. Does not appear to be common or widely distributed.

Plasmopara epilobii (Raf.) Schroet. On *Chamaenerion latifolium*. Common.

Erysiphaceae

Erysiphe cichoracearum DC. On *Artemisia elatior*, *Solidago* sp., *Chrysanthemum hortorum*. Quite common at Skagway on *Artemisia* and at Haines on *Solidago*.

Erysiphe graminis DC. ? On *Agrostis exarata*. Common in the conidial stage but perithecia not observed.

Erysiphe polygoni DC. On *Aquilegia formosa*, *Geum macrophyllum*, *Lathyrus maritima*. Common at Haines and Skagway.

Microsphaera alni (Wallr.) Wint. Collected at Sitka and Skagway on *Alnus sitchensis*.

Sphaerotheca humuli (DC.) Burr. On *Epilobium alandulosum*, *Fragaria* hybrids, *Ribes bracteosum*, *Rubus spectabilis*. A very common species especially on the first and fourth hosts.

Sphaerotheca humuli fuliginea (Schlecht.) Salmon. On *Arnica latifolia*. Collected at Skagway.

Sphaerotheca mors-uvae (Schw.) B. & C. On *Ribes lacustre*, *Ribes grossularia*, *Ribes vulgare*. Common and generally destructive on the first two hosts. *Ribes vulgare* is generally quite immune but some varieties are affected to a limited extent.

Sphaerotheca pannosa (Wallr.) Lev. On *Rosa* spp. Varieties of cultivated roses belonging to several types are susceptible, especially in the greenhouse.

Sphaerotheca sp. On *Chamomilla suaveolens* at Skagway.

Uncinula salicis (DC.) Wint. On *Populus trichocarpa*, *Salix sitchensis*, *Salix* sp. (native).

Sphaeriaceae

Ceriospora ribis P. Henn. & Plo. On stems of *Ribes bracteosum*.

Cucurbitaria conglobata (Fr.) Ces. On dead stems of *Alnus sitchensis*.

Diaporthe calosphaeroides E. & E. On stems of *Sambucus pubens*.

Diaporthe conrescens (Schw.) Cke. On stems of *Ribes* sp. (goose-berry).

Diaporthe marginalis Pk. On stems of *Alnus sitchensis*.

Diaporthe salicella Fr. On stems of *Salix* sp. (cult.).

Didymella eupyrea (Sacc.) Michel. On old overwintered stems of *Urtica lyallii*.

Didymosphaeria sp. On leaves and stems of *Elaeagnus angustifolia*.

Leptosphaeria coniothyrium (Fckl.) Sacc. On dead stems of *Ribes nigrum*.

Leptosphaeria culmifraga (Fr.) Ces. & DeNot. On leaves and sheaths of *Calamagrostis aleutica*.

Leptosphaeria sp. (*folliculata* E. E.?) On leaves of *Carex sitchensis*.

Leptosphaeria sp. On old stems of *Vicia faba*.

Melogramma sp. On stems of *Menziesia ferruginea*.

Mycosphaerella fragariae (Tul.) Lindau. On leaves of *Fragaria* sp. (cultivated hybrids). Quite common but only occasionally destructive.

Mycosphaerella pinoides Berk. & Blox. On leaves, stems and pods of *Pisum sativum*. In its conidial form (*Ascochyta pisi*) this fungus is very common and destructive; especially late in the season when it may ruin what is left of the crop. The perithecia appear in late September and October.

Mycosphaerella populi Schr. On leaves of *Populus balsamifera*. Collected in the conidial stage known as *Septoria populi*.

Phomatospora sp. On the bark of old stems of *Chamaenerion spicatum*.

Sphaerella adusta Niessl. On the old stems of *Chamaenerion spicatum*.

Sphaerella caryophylli Pass. On leaves of *Dianthus caryophyllus*.

Sphaerella adusta Niessl. On old stems of *Chamaenerion spicatum*.

Sphaerella gaultheris C.* & E. On leaves of *Gaultheria shallon*.

Sphaerella rumicis (Desm.) Cke. On leaves of *Rumex occidentalis*.

Venturia clintoni Pk. On leaves of *Cornus canadensis*.

Venturia kalmiae Pk. ? On leaves of *Kalmia microphylla*.

Venturia kunzei Sacc. On leaves of *Rubus pedatus*.

Venturia pomi (Fr.) Wint. (*V. inaequalis* (Cke.) Alderh.) On leaves and fruit of *Pyrus malus*.

Hypocreaceae

Claviceps microcephala (Wallr.) Tul. In the inflorescence of *Calamagrostis aleutica*, *C. langsдорфii*, *Dactylis glomerata*, *Phleum pratense*.

Claviceps purpurea (Fr.) Tul. In the inflorescence of *Elymus mollis*, *Hordeum boreale*.

Nectria cinnabarina (Tode) Fr. On dead stems of *Alnus sitchensis*, *Amelanchier* sp., *Chamaenerion spicatum*, *Prunus cerasus*, *P. domestica*, *P. padus*, *Pyrus baccata*, *P. diversifolia*, *P. malus*, *Rosa nutkana*, *R. rugosa*, *Ribes bracteosum*, *R. nigrum*, *R. sanguineum*, *R. vulgare*, *R.* sp. (gooseberry), *Rubus parviflorum*, *R. spectabile*, *R. strigosus*, *Salix viminalis*, *Salix purpurea*, *Sorbus sitchensis*, *Sambucus pubens*, *Viburnum* sp. This species makes its appearance from December to April, the conidial stage (*Tubercularia vulgaris*) appearing first, but quickly followed by the perithecia. It seems to attack nearly all kinds of recently killed wood including prunings from woody plants. On *Chamaenerion spicatum* which has an herbaceous stem the perithecia did not develop, but on all the more woody plants perithecia develop in abundance. It has not been observed as really parasitic on any species, but wood that has been in a dying condition in the fall has been observed as affected in the early spring following.

Dothidiaceae

Phyllachora graminis (Pers.) Fckl. On leaves of *Calamagrostis langsдорфii*.

Phyllachora heraclei (Fr.) Fckl. On leaves of *Heracleum lanatum*.

Phyllachora pteridis (Reb.) Fckl. Common on fronds of *Pteridium aquilinum pubescens*.

Phyllachora wittrockii (Eriks.) Sacc. On the tips of the stems of *Limnaca longiflora*.

Plowrightia ribesia (Pers.) Fr. On stems of *Ribes hudsonianum*, *R. vulgare*.

Microthyriaceae

Asterina cupressina Cke. On *Chamaecyparis nootkatensis*.

Coryneliaceae

Tripospora elegans Cda. On stems of *Sambucus pubens*.

Hysteriaceae

Lophodermium arundinaceum (Schr.) Chev. On old leaves of *Elymus mollis*.

Lophodermium pinastri (Schrad.) Chev. On needles of *Picea sitchensis*.

Phacidiaceae

Rhytisma andromedae (Pers.) Fr. On leaves of *Andromeda polifolia*.

Rhytisma salicinum (Pers.) Fr. On leaves of *Salix* spp. (native).

Rhytisma vaccini Schr. On leaves of *Vaccinium parvifolium*.

Rhytisma sp. On leaves of *Menziesia ferruginea*.

Dermatiaceae

Cenangium cerasi Fr. On stems of *Prunus cerasus*.

Dermatea cerasi (Pers.) Fr. On stems of *Prunus cerasus*.

Tynpanis sp. On stems of *Ribes bracteosum*. This is a highly destructive parasite and causes more damage to the host than any other disease or all other diseases to which it is subject.

Mollisiaceae

Fabraea ranunculi (Fr.) Karst. On leaves of *Ranunculus occidentale*.

Pseudopeziza ribis Kleb. On leaves of *Ribes bracteosum*, *R. nigrum*.

Pseudopeziza trifolii (Bernh.) Fckl. On leaves of *Trifolium pratense*.

Exoascaceae

Exoascus cerasi Fckl. Causing witches brooms on *Prunus avium*. Not observed on *P. cerasus*.

Exoascus deformans (Berk.) Fckl. On leaves and stems of *Amygdalus persica*.

Ustilaginaceae

Ustilago avenae (Pers.) Jens. In spikelets of *Avena sativa*.

Thelephoraceae

Exobasidium vaccini (Fckl.) Wor. Causing distortions on *Cassiope mertensiana*, *Menziesia ferruginea*, *Vaccinium vitis-idaea*.

Phomataceae

Ascochyta colorata Peck. On leaves of *Fragaria* sp.

Ascochyta pisi Lib. See *Mycosphaerella pinoides*.

Ascochyta sambuci Sacc. On leaves of *Sambucus nigra aurea*.

- Ascochyta* sp. On leaves of *Ammodenia peploides major*.
Coniothyrium olivaceum Bon. On stems of *Rubus strigosus*, *Sambucus pubens*.
Coniothyrium sp. On leaves of *Prunus* hybrids. Seemingly quite destructive.
Cytospora leucostoma (Pers.) Sacc. On stems of *Prunus padus*.
Cytospora sp. On stems of *Alnus sitchensis*.
Cytospora sp. On stems of *Prunus domestica*.
Cytosporina ludibunda Sacc. On stems of *Prunus cerasus*.
Diplodia deflectens Karst. On stems of *Lonicera tatarica*.
Dothiorella latitans (Fr.) Sacc. On leaves of *Vaccinium vitis-idaea*.
Phoma actua (Fuck.) Mich. On old stems of *Urtica lyallii*.
Phoma majanthemum Pk. On leaves and petioles of *Unifolium eschscholtzianum*.
Phoma sp. On stems of *Salix* sp.
Phomopsis sp. (*padina* (Sacc.)?) On stems of *Prunus cerasus*.
Phomopsis sp. On stems of *Pyrus baccata*.
Phyllosticta digitalis Bell. On leaves of *Digitalis purpurea*.
Phyllosticta gallorum Thum. On leaves of *Caragana arborescens*.
Phyllosticta plantaginis Sacc. On leaves of *Plantago macrocarpa*.
Phyllosticta sp. On leaves of *Solanum tuberosum*.
Rhabdospora inaequalis Sacc. On stems of *Sorbus sitchensis*.
Rhabdospora interrupta (B. & C.) Sacc. On stems of *Viburnum opulus*.
Rhabdospora rubi Ell. On stems of *Rubus strigosus*.
Septoria alnifolia E. & E. On leaves of *Alnus sitchensis*.
Septoria canadensis Pk. On leaves of *Cornus canadensis*.
Septoria coptidis B. & C. On leaves of *Coptis asplenifolia*.
Septoria drummondii E. & E. On leaves of *Phlox drummondii*.
Septoria gramineum Desm. On leaves of *Agrostis exarata*, *Calamagrostis*.
Septoria hyalina E. & E. On leaves of *Viola palustris*.
Septoria ribis Desm. On leaves of *Ribes grossularia*.
Septoria rubi West. On leaves of *Rubus spectabilis*.

Leptostromataceae

- Entomosporium maculatum* Lev. On leaves of *Pyrus diversifolia*, *Sorbus sitchensis*. The perfect form of this parasite is *Fabraea maculata* (Lev.) Atk.
Leptothyrium alneum (Lev.) Sacc. On leaves of *Alnus sitchensis*.

Melanconiaceae

- Colletotrichum lindemuthianum* (Sacc. & Magn.) Briosi & Cavara. On pods of *Phaseolus vulgaris*.
Coryneum foliicolum Fckl. On leaves of *Pyrus malus*.
Coryneum longistipatum Berl. On stems of *Amelanchier* sp., *Pyrus malus*.
Coryneum sp. On leaves of *Ribes alpinum*, *R. triste*.
Coryneum sp. On stems of *Viburnum* sp. ? There is some doubt about the identity of this host. It may be a form of *Acer tatarica*.
Gloeosporium ribis (Lib.) Mont. & Desm. See *Pseudoopeziza ribis*.

- Melanconium spic-carpon* Lk. On stems of *Alnus sitchensis*.
Pestalozzia lignicola Cke. On stems of *Salix purpurea*.
Pestalozzia truncata Lev. On stems of *Salix purpurea*.
Pestalozzia truncata rubi Karst. On stems of *Rubus strigosus*.

Moniliaceae

Aspergillus sp. On leaves and stems of *Rubus strigosus*.

Botrytis cinerea Pers. (*B. vulgaris* Fr.) On *Apium graveolens*, *A. petroselinum*, *Brassica oleracea* and vars., *Calendula officinalis*, *Callistephus hortensis*, *Cheiranthus cheiri*, *Coleopleurum gmelini*, *Coreopsis* sp., *Dianthus caryophyllus*, *D. hedwigi*, *Dimorphotheca aurantiaca*, *Eschscholtzia californica*, *Euphorbia pulcherrima*, *Fragaria* spp., *Heliotropium peruvianum*, *Iberis umbellata*, *Lactuca sativa*, *Lathyrus odoratus*, *Linaria cymbalaria*, *Lobelia erinus*, *Lycopersicum cerasiforme*, *L. esculentum*, *Mathiola incana annua*, *Mimulus luteus*, *Myrsiphyllum asparegoides*, *Nicotiana tabacum*, *Papaver* spp., *Prunus* spp., *Ribes aureum*, *R. nigrum*, *R. triste*, *R. vulgare*, *Rosa* spp., *Rubus idaeus*, *R. parviflorum*, *R. strigosus*, *Solanum tuberosum*, *Tagetes erecta*, *Thymus officinalis*, *Tropaeolum majus*, *Vicia fabia*, *Viola tricolor*, *Zinnia elegans*.

The above list, though a long one is by no means complete. The writer at first started to preserve specimens of all species affected but soon despaired as there seemed to be no species of flowering plant immune. Though a weak parasite it is easily the most destructive fungus of southeastern Alaska. The conidia do not seem able to directly infect vigorous and healthy parts of plants but will readily infect weakened or dying parts and where these come in contact with healthy tissues the mycelium rapidly spreads. One of the commonest initial infections is in the fading petals of the flowers. Where these fall on the leaves the leaves soon become infected and the fungus often reaches the stem through the petiole, resulting in the girdling of the stem and the death of the parts above. Old leaves that have lost their vigor are also directly infected. The fungus is easily transferred from one species to another when the infected portions of one species come in contact with tissues of the other. The fungus seems to spread more rapidly in the tissues of some hosts than in others. Weather conditions are a potent factor in the spread of the parasite as it is much more destructive during prolonged cloudy and rainy weather than during bright clear weather. During prolonged spells of wet weather some kinds of plants will be almost ruined. Several bright days in succession very noticeably check the ravages of the fungus. The crop of garden currants was very much reduced one season by its ravages owing to unfavorable weather at blooming time. As a rule it is worse in the greenhouse than outside. During prolonged cloudy weather it is sometimes necessary to fire up in order to reduce the humidity of the air in the greenhouse even during the summer. This is also our chief damping off fungus.

Oospora scabies Thaxter. Potato Scab. On tubers of *Solanum tuberosum*. Quite common in some soils.

Ramularia heraclei (Oud.) Sacc. On leaves of *Heracleum lanatum*.

Ramularia tulasnei Sacc. See *Mycosphaerella fragariae*.

Ramularia sp. On leaves of *Plantago major*.

Dematiaceae

- Cercospora* sp. On leaves of *Castilleja pallida*.
Cladosporium carpophilum Thum. On leaves of *Prunus padus*.
Cladosporium heliotropii Erikss. On leaves of *Heliotropium peruvianum*.
Cladosporium paeoniae Pass. On leaves of *Paeonia* sp.
Cladosporium sp. Undetermined species of *Cladosporium* occur on
Gaillardia sp., *Prunus mahaleb*, *Ribes hudsonianum*, *Viburnum pauciflorum*.
Hadrotrichum linearis Pk. On leaves of *Calamagrostis langsдорфii*.
Haplobasidium pavoninum V. Höhn. On leaves of *Aquilegia* spp.
Helminthosporium avenae-sativae (B. C.) Lindau. On leaves of *Avena*
sativa.
Macrosporium brassicae Berk. On leaves of *Brassica oleracea*.

Stilbaceae

- Sporocybe* sp. On fruits of *Ledum groenlandicum*.

Tuberculariaceae

- Fusarium oxysporium* Schl. On tubers of *Solanum tuberosum* causing rot.

UNCLASSIFIED

- Sclerotium* sp. In fruits of *Rosa rugosa*.
Sclerotium sp. On stems of *Sambucus pubens*.

HOST INDEX

- Agrostis exarata* Trin. *Erysiphe graminis*, *Septoria graminum*.
Alnus sitchensis (Regel.) Sarg. *Cucurbitaria conglobata*, *Cytospora*
sp., *Diaporthe marginalis*, *Leptothyrium alneum*, *Melanconium spic-carpon*,
Microsphaera alni, *Nectria cinnabarina*, *Septoria alnifolia*.
**Amelanchier* sp. *Coryneum longistipatum*, *Nectria cinnabarina*.
Ammodenia peplodes major (Hook.) Wight. *Ascochyta* sp.
**Amygdalus persica* L. *Exoascus deformans*.
Andromeda polifolia L. *Rhytisma andromedae*.
**Apium* spp. *Botrytis cinerea*.
Aquilegia formosa Fisch. *Erysiphe polygoni*.
**Aquilegia* spp. *Haplobasidium pavoninum*.
Arnica latifolia Bong. *Sphaerotheca humuli fuliginea*.
Artemisia elatior (T. & G.) Ryd. *Erysiphe cichoracearum*.
**Avena sativa* L. *Ustilago avenae*, *Helminthosporium avenae-sativae*.
**Brassica campestris* L. *Plasmodiophora brassicae*.
**Brassica oleracea* L. and vars. *Botrytis cinerea*, *Macrosporium brassi-*
cae, *Plasmodiophora brassicae*, *Pseudomonas campestris*.
Calamagrostis aleutica Bong. *Claviceps microcephala*, *Leptosphaeria*
culmifraga.
Calamagrostis langsдорфii Trin. *Claviceps microcephala*, *Hadrotrichum*
linearis, *Phyllachora graminis*, *Septoria graminum*.
**Calendula officinalis* L. *Botrytis cinerea*.
**Caragana arborescens* Lam. *Phyllosticta gallorum*.
Carex sitchensis Prescott. *Leptosphaeria* sp.

* Indicates cultivated plant.

- Cassiope mertensiana* (Bong.) G. Don. *Exobasidium vaccinii*.
Castilleja pallida Kunth. *Cercospora* sp.
Chamecypris nootkatensis (Lamb.) Spach. *Asterina cupressina*.
Chamaenerion latifolium (L.) Sweet. *Plasmopara epilobii*.
Chamaenerion spicatum (Lam.) S. F. Gray. *Phomatospora* sp.
Sphaerella adusta, *Sphaerella caulicola*, *Sphaerella* sp.
Chamomilla suaveolens (Pursh) Rydb. *Sphaerotheca*.
 **Chieranthus cheiri* L. *Botrytis cinerea*.
Chrysocoptis asplenifolia (Salisb.) Nutt. See *Coptis asplenifolia*.
 **Chrysanthemum frutescens* L. *Pseudomonas tumefaciens*.
 **Chrysanthemum hortorum*. *Erysiphe cichoracearum*.
Coelopleurum gmelini (DC.) Ledeb. *Botrytis cinerea*.
Coptis asplenifolia Salisb. *Septoria coptidis*.
 **Coreopsis* sp. *Botrytis cinerea*.
Cornus canadensis L. *Septoria canadensis*, *Venturia clintoni*.
Dactylis glomerata L. *Claviceps microcephala*.
 **Dianthus caryophyllus* L. *Sphaerella caryophylli*.
 **Dianthus* spp. *Botrytis cinerea*.
 **Digitalis purpurea* L. *Phyllosticta digitalis*.
 **Dimorphotheca aurantiaca* DC. *Botrytis cinerea*.
Elaeagnus angustifolia L. *Didymosphaeria* sp.
Elymus mollis Trin. *Claviceps purpurea*, *Lophodermium arundinacearum*.
Epilobium glandulosum Lehm. *Sphaerotheca humuli*.
Epilobium see also *Chamaenerion*.
 **Eschscholtzia californica* Cham. *Botrytis cinerea*.
 **Euphorbia pulcherrima*. *Botrytis cinerea*.
 **Fragaria* spp. *Ascochyta colorata*, *Botrytis cinerea*, *Mycosphaerella fragariae*, *Sphaerotheca humuli*.
 **Gaillardia aristata* Pursh. *Cladosporium* sp.
Gaultheria shallon Pursh. *Sphaerella gaultheris*.
Geum macrophyllum Willd. *Erysiphe polygoni*.
 **Heliotropium peruvianum* L. *Botrytis cinerea*, *Cladosporium heliotropii*.
Heracleum lanatum Michx. *Phyllachora heraclei*, *Ramularia heraclei*.
Hordeum boreale S. & S. *Claviceps purpurea*.
 **Iberis umbellata* L. *Botrytis cinerea*.
Kalmia microphylla (Hook.) Heller. *Venturia kalmiae*.
 **Lactuca sativa* L. *Botrytis cinerea*.
Lathyrus maritima Bigel. *Erysiphe polygoni*.
 **Lathyrus odoratus* L. *Botrytis cinerea*.
Ledum groenlandicum Oeder. *Sporocybe* sp.
 **Linaria cymbalaria* Mill. *Botrytis cinerea*.
Linnaea longiflora (Torr.) Howell. *Phyllachora wittrockii*.
 **Lobelia erinus* L. *Botrytis cinerea*.
 **Lonicera tatarica* L. *Diplodia deflectans*.
 **Lycopersicum* spp. *Botrytis cinerea*.
Malus, see *Pyrus*.
 **Mathiola incana annua* Voss. *Botrytis cinerea*.

Menziesia ferruginea Smith. *Exobasidium vaccinii*, *Melogramma* sp.,
Rhytisma sp.

**Mimulus luteus* L. *Botrytis cinerea*.

**Myrsiphyllum asparagoides*. *Botrytis cinerea*.

**Nicotiana tabacum* L. *Botrytis cinerea*.

**Paeonia* sp. *Cladosporium paeoniae*.

**Papaver* spp. *Botrytis cinerea*.

**Phaseolus vulgaris* L. *Colletotrichum lindemuthianum*.

Phleum pratense L. *Claviceps microcephala*.

**Phlox drummondii* Hook. *Septoria drummondii*.

Picea sitchensis (Bong.) T. & M. *Acolium* sp., *Lophodermium pin-*
astri.

**Pisum sativum* L. *Mycosphaerella pinodes*.

Plantago macrocarpa C. & S. *Phyllosticta plantaginis*.

Plantago major L. *Ramularia* sp.

**Populus balsamifera* L. *Mycosphaerella populi*.

Populus trichocarpa T. & G. *Uncinula salicis*.

**Prunus avium* L. *Exoascus cerasi*.

**Prunus cerasus* L. *Cenangium cerasi*, *Cytospora ludibunda*, *Dermatea*
cerasi, *Nectria cinnabarina*, *Phomopsis* sp.

**Prunus domestica* L. *Cytospora* sp., *Nectria cinnabarina*.

**Prunus mahaleb* L. *Cladosporium* sp.

**Prunus padus* L. *Cladosporium carpophilum*, *Cytospora leucostoma*,
Nectria cinnabarina.

**Prunus hybrids*. *Coniothyrium* sp.

**Prunus* spp. *Botrytis cinerea*.

Pteridium aquilinum pubescens Underw. *Phyllachora pteridis*.

**Pyrus baccata* L. *Nectria cinnabarina*, *Phomopsis* sp.

Pyrus diversifolia Bong. *Entomosporium maculatum*, *Nectria cinna-*
barina.

**Pyrus malus* L. *Coryneum foliicolum*, *Coryneum longistipatum*, *Nec-*
tria cinnabarina, *Venturia pomi*.

**Raphanus sativus* L. *Plasmodiophora brassicae*.

Ranunculus occidentalis Nutt. *Fabraea ranunculi*.

**Ribes alpinum* L. *Coryneum* sp.

Ribes bracteosum Dougl. *Ceriospora ribis*, *Pseudopeziza ribis*, *Sphae-*
rotheca humuli, *Tympanis* sp.

Ribes hudsonianum Richards. *Cladosporium* sp. *Nectria cinnabarina*,
Plowrightia ribesia.

Ribes lacustre (Pers.) Poir. *Sphaerotheca mors-uvae*.

**Ribes nigrum* L. *Leptosphaeria coniothyrium*, *Nectria cinnabarina*,
Pseudopeziza ribis.

**Ribes sanguineum* Pursh. *Nectria cinnabarina*.

**Ribes grossularia*. *Septoria ribis*, *Sphaerotheca mors-uvae*.

Ribes triste Pall. *Coryneum* sp.

**Ribes vulgare* Lam. *Nectria cinnabarina*, *Plowrightia ribesia*, *Sphae-*
rotheca mors-uvae.

**Ribes* sp. (Gooseberry). *Diaporthe concrecens*, *Nectria cinnabarina*.

**Ribes* spp. *Botrytis cinerea*.

- Rosa nutkana* Presl. *Nectria cinnabarina*.
 **Rosa rugosa* Thunb. *Nectria cinnabarina*, *Sclerotium* sp.
 **Rosa* sp. *Sphaerotheca pannosa*.
 **Rosa* spp. *Botrytis cinerea*.
Rubus pedatus Smith. *Venturia kunzei*.
Rubus spectabilis Pursh. *Septoria rubi*, *Sphaerotheca humuli*.
 **Rubus strigosus* Michx. *Aspergillus* sp., *Coniothyrium olivaceum*,
Nectria cinnabarina, *Pestalozzia truncata rubi*, *Rhabdospora rubi*.
Rubus spp. *Botrytis cinerea*.
Rumex occidentalis S. Wats. *Sphaerella rumicis*.
 **Salix purpurea* L. *Nectria cinnabarina*, *Pestalozzia lignicola*, *Pestalozzia truncata*.
Salix sitchensis Sanson. *Uncinula salicis*.
 **Salix viminalis* var. *Nectria cinnabarina*.
Salix sp. *Uncinula salicis*.
 **Salix* sp. *Diaporthe salicella*, *Phoma* sp.
Sambucus pubens Michx. *Coniothyrium olivaceum*, *Diaporthe calosphaerioides*, *Nectria cinnabarina*, *Sclerotium* sp., *Tripospora elegans*.
 **Sambucus nigra aurea* Sweet. *Ascochyta sambuci*.
 **Solanum tuberosum* L. *Bacillus phytophthorus*, *Botrytis cinerea*,
Fusarium oxysporium, *Oospora scabies*, *Phyllosticta* sp.
Solidago sp. *Erysiphe cichoracearum*.
Sorbus sitchensis Roem. *Entomosporium maculatum*, *Nectria cinnabarina*, *Rhabdospora inaequalis*.
 **Tagetes erecta* L. *Botrytis cinerea*.
 **Thymus vulgaris* L. *Botrytis cinerea*.
Trifolium pratense L. *Pseudopeziza trifolii*.
 **Tropaeolum majus* L. *Botrytis cinerea*.
Unifolium eschscholtzianum (Anders. & Bess.) Wight. *Phoma majanthemum*.
Urtica lyallii Wats. *Didymella eupyrena*, *Phoma acuta*.
Vaccinium parvifolium Smith. *Rhytisma vaccinii*.
Vaccinium vitis-idea L. *Exobasidium vaccinii*, *Dothiorella latitans*.
 **Viburnum opulus* L. *Rhabdospora interrupta*.
Viburnum pauciflorum Paylae. *Cladosporium* sp.
 **Viburnum* sp.?? *Coryneum* sp., *Nectria cinnabarina*.
 **Vicia faba* L. *Botrytis cinerea*, *Leptosphaeria* sp.
Viola palustris L. *Septoria hyalina*.
 **Viola tricolor* L. *Botrytis cinerea*.
 **Zinnia elegans* Jacq. *Botrytis cinerea*.

JUNEAU FLORISTS,
 JUNEAU, ALASKA.