THE FUNGI OF ALASKA

BY

P. A. SACCARDO, C. H. PECK,
AND
WILLIAM TRELEASE

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INTRODUCTION

In a very helpful little bibliography arranged according to geographic regions, a recent writer on fungi states that no representatives of this group are known from Alaska. This, however, is not quite true, for Hooker and Arnott many years ago recorded a *Dothidea* and a pseudo-fungus, *Erineum*, from Alaska; Professor Douglas H. Campbell, a few years since, noted the occurrence there of what he doubtfully named *Exobasidium vaccinii;* Professor T. H. Macbride more recently gives Alaska as a locality for five species of Myxomycetes; one rust, at least, is accredited to Alaska; and in his recent account of the vegetation of the Seal Islands, Mr. J. M. Macoun includes seven pileate fungi.[1] The fact remains, however, after taking note of even these recent publications, that almost nothing is known of the fungus flora of Alaska. And yet conditions are favorable for the development there of a large representation of this group of plants, for over the lower coast region fre-

[1] It is well known that the Krause brothers, some years since, made important botanical collections about the head of Lynn Canal, and some of their material has been examined and made the basis of published reports by Kurtz, Müller and Stephani; but inquiry made of Dr. Arthur Krause by my friend Dr. Buchenau shows that the collectors paid little attention to this group of plants, and that their collections now contain no Alaskan fungi.

quent rainfall favors the development of moulds, mildews, pileate fungi, and other moisture-loving forms, while the fogs and mists of parts of the upper coast are no less favorable to their growth, and the vast amount of putrescible vegetable material in these districts affords them abundant food. The phanerogamic vegetation of Alaska, moreover, is large and varied, notwithstanding the high latitude of the country, and as there appears little *a priori* reason to expect these higher plants to be much less liable to the attacks of parasites here than elsewhere, a large number of parasitic species is to be looked for.

Occasional collections of fungi were made by several members of the Harriman Alaska Expedition, and in addition to the material so gathered, the phanerogamic collections were subsequently examined for parasitized leaves and other organs, and such earlier material as exists in the herbarium of the Missouri Botanical Garden was also similarly gone over. The result was the accumulation of some hundreds of specimens, representing everything from bulky bracket fungi to sterile leaf spots. As was to be expected, much of this material was either valueless or indeterminable, but it has all been subjected to examination, and on it, with reference to the earlier literature concerning Alaska, the following catalogue is based.

At first a list of the Uredineæ, some few of which Professor J. C. Arthur subsequently examined, and some other things, was prepared by the writer; then a considerable number of pileate species, determined by Professor C. H. Peck, were included. Professor T. H. Macbride determined the only Myxomycete collected, and Professor P. A. Dangeard added determinations of three forms parasitic in *Spirogyra*. The residue, a large and very heterogeneous mass, was then submitted to Professor Saccardo, who, with the assistance of Abbe G. Bresadola for Hymenomycetes, and Dr. G. Scalia for many of the microscopic forms, succeeded in determining from it something over 150 species or varieties, a considerable number of which, as well as a few of those studied by Professor Peck or the writer, are described as new. The responsibility for the present list is, therefore, so divided as to suggest the authorship indicated at its head, though if the entire material had passed through Pro-

fessor Saccardo's hands, so that he could have been held responsible for all of the entries in the catalogue, it would most fittingly have been ascribed to him.

Where no indication is given, the determinations are those of Saccardo and Scalia; in other cases signs [1] indicate by whom the determinations were made, the annotation or description accompanying each species being attributable to the person who identified it, unless otherwise noted. The collector is indicated for each specimen recorded in the list.

Professor Saccardo's diagnoses are published in Latin, as written, in order that shades of meaning might not be lost in the process of translation, and for uniformity the explanation of his plates is given in the same language.

WILLIAM TRELEASE.

CATALOGUE.

Family TUBERCULARIACEÆ.

Microcera brachyspora Saccardo & Scalia, sp. nov. (PL. VI, fig. 28.)

Sporodochiis sparsis, erumpentibus, carnoso-ceraceis, pulvinatis, 1–1.5 mm. diam., carneis v. fulvellis; hyphis filiformibus, inæqualibus, flexuosis, laxe fasciculatis, 2 μ cr., continuis, minute guttulatis, non v. vix ramosis, intermixtis crassioribus brevioribus, 4 μ cr.; conidiis anguste falcatis, utrinque acutatis, 30–40 × 3 μ, guttulatis v. spurie septatis, hyalinis.

New Metlakatla (Trelease, 685, on the bark of some tree, associated with *Nectria sanguinea*).

Fusarium illosporioides Saccardo, sp. nov. (PL. III, fig. 10.)

Sporodochiis gregariis, erumpenti-superficialibus, depresse pulvinatis, .5–1 mm. diam.; laxe contextis, superficie subvelutinis, dilutissime roseis; hyphis fasciculato-intricatis, sporophoris variis, modo simplicibus, modo furcatis, interdum opposito-ramosis, usque 50–70 × 5 μ, parce septatis; conidiis fusoideis, sæpius rectis, raro curvulis, utrinque acutiusculis (junioribus obtusulis), 1–2—typice vero 3-septatis, ad septa non constrictis, 20–22 × 4–5 μ.

Sitka (Trelease, 728, on decaying corticated branches of *Ribes*).

[1] Through the catalogue * indicates that the determination was made by Wm Trelease, † that it was made by Professor Peck, ‡ by Abbe Bresadola, and § by Professor Dangeard.

Habitu et sporophoris fere illosporioideis species distinguenda videtur.

Family DEMATIACEÆ.

Speira effusa (Peck) Saccardo.

Yakutat Bay (Brewer & Coe, 689*c*, on corticated branches, associated with *Diaporthe anisomera*).

Speira minor Saccardo.

Yakutat Bay (Trelease, 684, on dead branches, associated with an immature *Cyphella*).

Cercospora apii selini-gmelini Saccardo & Scalia, var. nov.

Hyphis 36–42 × 5–8 μ, fuscidulis, apice leviter tortuoso-torulosis; conidiis bacillari-obclavatis, 1–3-septatis, 52–70 × 6.5–7 μ, hyalinis.

Cape Phipps, Yakutat Bay (Funston, on leaves of *Selinum gmelini*).

Cercospora apii angelicæ Saccardo & Scalia, var. nov.

Hyphis brevioribus, sursum obsolete tortuosis, 20 × 4 μ, demum fuscidulis; conidiis bacillari-obclavatis, usque 80–90 × 3.5–5 μ, obsolete septatis, hyalinis.

St. Paul Island, Bering Sea (Trelease, 761, on leaves of *Angelica?*).

Ab hac var. forte non differt *C. polytæniæ* Ell. & Everh.

Scolecotrichum graminis Fuckel.

St. Paul Island, Bering Sea (Trelease, 780, on grass leaves).

Coniosporium atratum Karsten & Malbr.‡

Yakutat (Trelease, 824, on dead wood).

Family MUCEDINACEÆ.

Ramularia cercosporoides Ellis & Everhart.

Kadiak (Trelease, 766, 767, on leaves of *Epilobium spicatum*).

Ramularia punctiformis Saccardo, sp. nov. (Pl. III, fig. 8.)

Maculis epiphyllis, brunneis, non marginatis, ovato-oblongis, dein ampliatis; cæspitulis in his maculis dense gregariis, erumpentibus, punctiformibus, albis, epiphyllis; hyphis e nodulo stromatico celluloso pallido oriundis, fasciculatis, cylindraceis, sursum attenuatis, vix denticulatis, hyalinis, 25–30 × 2–3 μ; conidiis fusoideis, rectiusculis, utrinque obtusulis, 16–18 × 2–3 μ, hyalinis.

Yakutat Bay (Trelease, 756, on dying leaves of *Potentilla anserina*).

A *R. anserina* cæspitulis epiphyllis, vere punctiformibus etc. distinguenda.

Ramularia macrospora Fresenius.

Alaska (Fischer, 1880, on leaves of *Campanula linifolia*).

Ramularia heraclei (Oudemans) Saccardo.

Cape Fox (Trelease, 757, on leaves of *Heracleum*).

Ramularia æquivoca Cesati.

Long Island, Kadiak (Trelease, 744); Unalaska (Trelease, 743). On leaves of *Ranunculus*, of the set of *R. montanus*.

Ramularia pratensis Saccardo.

Glacier Bay (Coville, 743); Yakutat (Trelease, 773); Virgin Bay Trelease, 772); Popof Island (Saunders, 775). On leaves of *Rumex occidentalis*.

Ramularia? arnicalis Ellis & Everhart.

Kadiak (Kellogg in 1867, on leaves of *Arnica chamissonis*—a defective, doubtful specimen).

Bostrichonema alpestre Cesati.

Glacier Bay (Trelease, 762); Yakutat (Trelease, 763). On leaves of *Polygonum viviparum*.

Ovularia bulbigera (Fuckel) Saccardo.

Maculæ arescendo ochraceæ, orbiculari-angulosæ, atro-purpureo-cinctæ, in pag. inf. dilutiores; cæspituli hypophylli, griseoli, puncti-formes; hyphæ fasciculatæ, basi in stroma dilute chlorinum bulbiforme coalitæ, 70–100 × 3.5–4 μ, subhyalinæ, obsolete septatæ, sursum leviter tortuoso-denticulatæ; conidia obovata, continua, 16–22 × 10–13 μ, granuloso-farcta, hyalina.

Kadiak (Coville & Kearney, 2361; Trelease, 752, 753); Popof Island (Saunders, 755); Unalaska (Trelease, 754). On living leaves of *Sanguisorba*.

Ovularia sommeri (Eichelbaum) Saccardo.*

Kadiak (Trelease, 721, 722). On twigs of *Myrica gale*.

Ovularia trientalis Berkeley.

See *Tuburcinia trientalis* B. & Br.

Botrytis vulgaris Fries.

Cape Fox (Trelease, 704, on decaying leaves of *Lonicera involucrata*); Yakutat Bay (Trelease, 733*a*, on decaying stems).

Glomerularia corni Peck.

Orca (Trelease, 823, on still living leaves of *Cornus canadensis*). Hyphæ manifestæ, 1–2-septulatæ, usque 50 μ longæ.

Family EXCIPULACEÆ.

Sporonema strobilinum Desmazières.

Orca (Trelease, 741, on cones of *Tsuga mertensiana;* Trelease, 742, on cones of *Picea sitchensis*).

Family LEPTOSTROMACEÆ.

Leptothyrium vulgare (Fries) Saccardo.

Yakutat Bay (Funston, on branches of *Rubus stellatus*).

Leptothyrium vulgare f. **parryæ** Saccardo.

Shumagin Islands (Harrington in 1871–2, on scales at base of stem of *Parrya macrocarpa*).

Sporulis rectiusculis, 4–5 × 1.5 μ.

Leptothyrium clypeosphærioides Saccardo.

Unalaska (Harrington in 1871–2, on dead branches of *Rubus chamæmorus*).

Forte *Phoma ruborum* West. huc spectat.

Family SPHÆRIOIDACEÆ.

Sphærographium abditum Saccardo & Scalia, sp. nov. (Pl. VI, fig. 27.)

Peritheciis sparsis, mox superficialibus, globoso-conicis, sæpius longiuscule rostellatis, circ. 500 μ diam., nigris, lenio depressis, contextu parenchymatico, fuligineo; sporulis filiformibus, rectis, raro subcurvis, 50–72 × 1–1.5 μ, continuis guttulatis, hyalinis.

Kadiak (Trelease, 737, within dead stems of *Heracleum*, associated with *Leptosphæria doliolum*).

Rhabdospora camptospora Saccardo & Scalia, sp. nov. (Pl. VI, fig. 26.)

Peritheciis sparsis, subcutaneo-erumpentibus, minutis, atro-nitidis, depresse globulosis, 200 μ diam.; contextu parenchymatico, fuligineo; sporulis bacillari-fusoideis, falcatis, raro rectiusculis, utrinque acutatis, tenuiter 3-septatis, 30–40 × 1–2 μ, minute guttulatis, hyalinis.

Yes Bay (Howell, on dead stems of *Anemone narcissiflora*, 1601).

Nonnullis notis ad *Stagonosporæ pulsatillæ*, sed sporulæ obsoletius septatæ, multo angustiores et acutiores.

Septoria rubi Westendorp.

Cape Fox (Trelease, 751, on still living leaves of *Rubus*).

Septoria canadensis Peck.

Sitka (Trelease, 726); Yakutat Bay (Trelease, 725); Virgin Bay (Trelease, 724). In fading leaves of *Cornus canadensis*.

Septoria dearnesii Ellis & Everhart.

Virgin Bay (Trelease, 759); Yakutat (Trelease, 760). On still living leaves of *Angelica?*.

Differt paululum sporulis sæpe aliquanto longioribus.

Septoria petroselini treleaseana Saccardo & Scalia, subsp. nov. (Pl. VI, fig. 23.)

Maculis minutis, amphigenis, angulosis, 1–1.5 mm. lat., diu atro-brunneis; peritheciis sparsis, punctiformibus, hypophyllis; sporulis filiformibus, 40–60 × .5 μ, continuis, non v. indistincte guttulatis, hyalinis.

Virgin Bay (Trelease, 758, in still living leaves of *Conioselinum?*).

A typo maculis et sporulis longioribus et tenuioribus sat differt.

Septoria grylli Saccardo.

Yes Bay (Howell, on leaves of *Agrostis exarata*); Nagai (Harrington in 1871–72, on leaves of *Agrostis geminata*).

Sporulæ variant, in prima 75–90 × 1–1.2 μ, in altera 60 × 1 μ.

Septoria chamissonis Saccardo & Scalia, sp. nov. (Pl. VI, fig. 25.)

Maculis nullis v. obsoletis; peritheciis minutissimis, atris, gregariis, innato-prominulis, 65–70 μ diam., globulosis, poro pertusis; contextu membranaceo, tenui, parenchymatico, fuscidulo; sporulis cylindraceis utrinque rotundatis, 3-septatis, eguttulatis, hyalinis, 46–52 × 3.5–4 μ.

Point Barrow (Murdoch, on leaves of *Eriophorum chamissonis*).

Affinis *Septoriæ scirpi* Sacc.; a sequente differt peritheciis multo minoribus, sporulis brevioribus et crassioribus.

Septoria eriophorella Saccardo & Scalia, sp. nov. (Pl. VI, fig. 24.)

Maculis nullis; peritheciis sparsis, globulosis, 275 μ diam., profunde immersis, epidermide non atrata tectis, poro pertusis; contextu parenchymatico e cellulis difformibus, minutis, fuligineis composito; sporulis cylindraceo-filiformibus, 70–90 × 2.5–3 μ, minute guttulatis, obsolete septulatis, hyalinis.

Point Barrow (Murdoch, on leaves of *Eriophorum chamissonis*, with the preceding).

A *Septoria eriophori* differt præceteris peritheciis quadruple majoribus.

Stagonospora pulsatillæ Vestergr.

Kadiak; Kukak Bay. In dead stems of *Anemone*.

Probabiliter est forma *S. anemones* Pat.

Stagonospora heleocharidis caricina Saccardo & Scalia, subsp. nov. (Pl. VI, fig. 21.)

Perithecia 90–120 μ diam.; basidia subnulla; sporulæ 5–6-septatæ, ad septa non-constrictæ.

Yakutat Bay (Funston in 1892, on dead leaves of a form of *Carex festiva*).

A typo differt sporulis paulo brevioribus, utrinque rotundatis, rarius acutiusculis, 27–34 × 6.5–7.5 μ, omnino hyalinis.

Stagonospora aquatica luzulicola Saccardo & Scalia, subsp. nov. (Pl. VI, fig. 20.)

Peritheciis hinc inde gregariis, punctiformibus, globulosis, 150–160 μ diam., poro pertusis, atris, subcutaneis; contextu parenchymatico, fusco; sporulis oblongo-teretiusculis, utrinque rotundatis, rarius acutiusculis et sæpe basi truncatulis, 3-septatis, non constrictis, 23–28 × 3.5–4 μ, e chlorino hyalinis.

Point Barrow (Murdoch in 1883, on leaves of *Luzula arcuata*).

A typo recedit sporulis paullo angustioribus, qua nota ad ejus var. *lacustrem* accedit.

Stagonospora graminum Saccardo & Scalia, sp. nov. (Pl. VI, fig. 22.)

Peritheciis laxe gregariis, subcutaneis, e globoso horizontaliter oblongis, atris, poro pertusis, 275–380 × 160–200 μ; contextu parenchymatico, castaneo-fusco; sporulis oblongis, sæpe inæquilateris, 23–28 × 6.5–8 μ, utrinque tenuato-obtusulis, 5–7-septatis, non constrictis, e chlorino hyalinis.

Iliuliuk (Harrington in 1871–2, on dead leaves of *Aira atropurpurea*).

Affinis *S. subseriatæ* (Desm.) Sacc. et præcipue ejus var. *moliniæ* Trail, sed sporulæ 5–7-septatæ (nec 4–5-septatæ), et perithecia oblonga.

Rhynchophoma raduloides Saccardo & Scalia, sp. nov. (Pl. V, fig. 17.)

Peritheciis gregariis e basi innata parum incrassata erumpentibus, longe corniculatis, rectis, sursum tenuatis, aterrimis, fragilibus, 1.5 mm. altis, 300 μ cr., apice pertusis globuloque sporularum pallide roseo sæpius coronatis; contextu prosenchymatico, atro; sporulis oblongis, utrinque rotundatis, 7–9 × 2.5–3 μ, uniseptatis, non constrictis, hyalinis; basidiis fasciculatis bacillaribus simplicibus v. furcatis, 20–30 × 2 μ, hyalinis.

Sitka (Trelease, 708, 709, in corticated branches of *Ribes laxiflorum*, associated with *Godronia urceolus*).

Affinis *R. radula* præbet sporulas 12–15 × 4–5 μ.

Phoma complanata (Tode) Desmazières.

St. Paul Island, Bering Sea (Trelease, 738, on dead stems of *Heracleum*).

Phoma oleracea Saccardo.

St. Paul Island, Bering Sea (Macoun, on dead stems of *Cardamine bellidifolia*).

Phyllosticta helleboricola coptidis Saccardo & Scalia, var. nov. (Pl. VI, fig. 19.)

Unalaska (Harrington in 1871–2, on leaves of *Coptis trifoliata*).

A typo differt sporulis angustioribus, nempe recte cylindraceis, utrinque subincrassatis, rotundatis, 5 × .5 μ.

Phyllosticta caricicola Saccardo & Scalia, sp. nov. (Pl. VI, fig. 18.)

Maculis arescentibus, indeterminatis, plerumque hypophyllis; perithecciis minutissimis, atris, globoso-depressis, 50–80 μ diam., poro pertusis, laxiuscule seriatim dispositis; contextu fusco e cellulis polyhedricis 6–8 μ diam. composito; sporulis oblongo-bacillaribus, 4–5 × .5 μ; basidiis minimis.

Orca (Trelease, 628, on leaves of *Carex*).

A *P. caricis* differt defectu maculæ fuscæ et perithecciis seriatis.

Family MYXOMYCETACEÆ.

Ceratiomyxa fruticulosa (Müller) Macbride.

Macbride, N. A. Slime-Moulds, 19.

Stikine River (Wickham).[1]

Trichia scabra Rostafinski.

Macbride, N. A. Slime-Moulds, 213.

Stikine River (Wickham).

Arcyria denudata (Linnæus) Sheldon.

Macbride, N. A. Slime-Moulds, 196.

Stikine River (Wickham).

Arcyria cinerea (Bulliard) Persoon.

Macbride, N. A. Slime-Moulds, 196.

Stikine River (Wickham).

[1] These localities are given by Professor T. H. Macbride, who further determined the single species collected by the members of the Harriman Expedition.

Stemonitis smithii Macbride.

MACBRIDE, N. A. Slime-Moulds, 122.

Stikine River (Wickham).

Tubifera ferruginosa (Batsch) Macbride.

MACBRIDE, N. A. Slime-Moulds, 156.

Stikine River (Wickham).

Diderma niveum (Rostafinski) Macbride.

Yakutat Bay: Hidden Glacier (Trelease, 782); Disenchantment Bay (Brewer, 783); Aguadulce River, Yakutat Bay (Trelease, 784); Orca (Trelease, 785). On mosses, fallen leaves, etc., maturing close to the retreating snow.

Family LABOULBENIACEÆ.

Laboulbenia nebriæ Peyritsch.

THAXTER, Monogr. Laboulbeniaceæ, 320. *pl. 13.*

Aleutian Islands, on *Nebria gregaria*.

Family MONADINACEÆ.

Vampyrella spirogyræ Cienkowski.§

Popof Island (Saunders, 401*a*, in *Spirogyra porticalis*).

Family PATELLARIACEÆ.

Heterosphæria patella (Tode) Greville.

Alaska (Evans, 114*a*); Yakutat Bay (Trelease, 736). On dead stems of *Heracleum*.

Patinella aloysii-sabaudiæ Saccardo, sp. nov.[1] (Pl. 11, fig. 6.)

Ascomatibus gregariis, majusculis, plano-patellatis, orbicularibus, sessilibus, matrici adpressis sed omnino superficialibus, puncto centrali adfixis, usque 2 mm. diam., ubique nigris, opacis, margine attenuato non prominente, disco minutissime granuloso; ascis cylindraceis, apice rotundatis, basi acutatis breve stipitatis, 84–90 × 10–11 μ, octosporis; paraphysibus stipatis, bacillari-clavulatis, sursum atratis, conidiaque perfecte globosa, atrofuliginea, 11–12 μ diam. exerentibus; sporidiis oblique monostichis v. subdistichis, ovato-oblongis rectis curvulisve, 14–15 × 5.5–6 μ, hyalinis.

Yakutat Bay (Trelease, 689, on blackened decaying stems); Orca (Trelease, 730, on stem of *Veratrum* — appears to be a young stage of the same).

[1] Dixi in honorem Aloysii Sabaudiæ, Aprutiorum ducis, qui anno 1897 summa cacumina Mtis. S. Eliæ Alaskæ primus conscendit.

Eximia species, ob paraphyses conidia magna atra gerentes prædistincta. Excipuli margo cellulis tereti-clavatis, 20–25 × 7 μ, brunneis, liberis præditus est.

Family PHACIDIACEÆ.

Rhytisma? rhododendri Fries.

Unalaska (Macoun, on leaves of *Rhododendron kamtschaticum*).

Forte huc pertinat forma hæc spermogonica: stromatibus amphigenis maculiformibus atris insidis, intus pallidioribus; sporulis ellipsoideis minutis, 2.5–3 × .5 μ, hyalinis, basidiis filiformibus usque 26 × .5 μ fasciculatis suffultis.

Rhytisma salicinum (Persoon) Fries.

Kadiak (Trelease, 698, on leaves of *Salix*).

Fabræa cincta Saccardo & Scalia, sp. nov. (Pl. v, fig. 16.)

Maculis suborbicularibus v. irregularibus, 1–2 mm. lat., raro latioribus, in hypophyllo subumbrinis, in epiphyllo expallentibus annuloque atro-purpureo cinctis; ascomatibus epiphyllis, innato-erumpentibus, depressis, 300–400 μ diam., sparsis v. confluentibus, fuscis, disco madore aperto, vix pallidiore; ascis tereti-clavatis, apice rotundatis, jodo cærulescentibus, breve stipitatis, 70–90 × 18–20 μ, octosporis, paraphysibus simplicibus v. parce ramosis, filiformibus apice capitulatis; sporidiis ovato-oblongis, utrinque obtusulis, distichis v. oblique monostichis, 15–20 × 5–6.5 μ, primo continuis, dein ut plurimum 1-septatis, non constrictis, loculo supero quam infero fere duplo majore, hyalinis, guttulato-farctis.

Yakutat Bay (Trelease, 750); Orca (Trelease, 747). On fading leaves of *Rubus*.

Pseudopeziza (Pseudorhytisma) bistortæ (Libert) Fuckel.

Unalaska (Coville & Kearney, 1752; Trelease, 765). On leaves of *Polygonum viviparum*.

Pseudopeziza cerastiorum arenariæ Saccardo, var. nov.

Yakutat Bay (Funston, on dead leaves of *Arenaria lateriflora*, 18, 19).

A typo differt sporidiis paullo majoribus, nempe 14–16 × 4–4.5 μ.

Phacidium diminuens Karsten.

Yes Bay (Howell, in fading or dead leaves of *Carex canescens*, 1709).

Family DERMATEACEÆ.

Godronia urceolus (Albertini & Schweinitz) Saccardo.

Sitka (Trelease, 708*a*, on dead branches of *Ribes*, associated with *Rhynchophoma raduloides*).

Scleroderris treleasei Saccardo, sp. nov. (pl. III, fig. 7.)

Dense gregaria v. hinc inde cæspitulosa e basi innata punctiformi omnino superficialis, bicolor; ascomatibus initio urceolatis, clausis, mox laciniato-dehiscentibus, majusculis, 2.5–3 mm. diam., scutellatis, extus margineque lacero aterrimis, carbonaceis, rugosis, disco plano-concavo, levissimo isabellino-carneo, ceraceo; ascis clavatis, apice obtuse acutatis, deorsum tenuato-stipitatis, 140×12–14 μ, octosporis; paraphysibus filiformibus, apice interdum incurvis furcatisque, totis hyalinis; sporidiis in asci parte superiore fasciculatis, cylindraceo-clavatis, deorsum acutatis, 50–60×2 μ, continuis, hyalinis, interdum curvatis.

Sitka (Kincaid, 693; Trelease, 845). On coniferous bark.

Eximia fungus, quem miror nullam mycologum observavisse. Affinitas non parum dubia, hinc ad *Clithrem*, illinc ad *Coccophacidium* nutans et tunc forte novi generis typus. A *Scleroderri* sporidiis continuis, et paraphysum natura differt. Obturaculum ascorum jodi ope non tingitur. Contextus excipuli indistincte cellulosus, subcarbonaceus, fragilis. Ascomata, cum secedunt, areolam albam in cortice matricis relinquunt.

Family PEZIZACEÆ.

Dasyscypha bicolor (Bulliard) Fuckel.†

Muir Glacier (Trelease, 586, 587, 588); Yakutat Bay (Trelease, 585).

Trichopeziza hamata Saccardo.

Yakutat Bay (Trelease, 584, on twigs).

A typo vix differt pilis minus arcte hamatis, sporidiis (forte non omnino maturis) paullo angustioribus. Cetera eadem.

Trichopeziza relicina (Fries) Fuckel.

Yakutat Bay (Trelease, 735, on decaying stems of large herbaceous plants).

Trichopeziza earoleuca (Berkeley & Broome) Saccardo. (pl. II, fig. 5.)

Disenchantment Bay (Trelease, 732*a*, on decayed stems of *Lupinus*).

Etsi species Berkeleyana sit brevissime descripta et ex insula Ceylon, tamen nostra videtur eadem. Ascomata urceolata, minutissima, rosea,

niveo-villosa. Pili rigiduli, cuspidati, 200–250 × 7–8 μ, continui. Asci fusoidei, 40–50 × 5–5.5 μ, octospori. Paraphyses aciculares, asco paullo longiores. Sporidia allantoidea, 5–6 × 1.5–2 μ, hyalina.

Pirottæa yakutatiana Saccardo, sp. nov. (Pl. II, fig. 4.)

Ascomatibus gregariis, urceolatis, basi-contracta superficialibus, majusculis, extus setulosis, siccis nigris, 1 mm. latis et altis, disco (madore tantum conspicuo) concavo cinereo-cæsio; excipuli contextu rigidulo, atro-fuligineo, ad marginem pallidiorem pilis filiformibus, pallide fuligineis, septatis, 40–70 × 5 μ, in fimbrias subtriangulares laxe coalescentibus; ascis tereti-fusoideis, utrinque obtusiusculis, 40–45 × 5.5–6 μ, octosporis; paraphysibus lanceolatis, crassiusculis, ascos superantibus; sporidiis oblique monostichis, fusoideis, rectis, 9 × 2–2.5 μ, hyalinis.

Yakutat Bay (Trelease, 734, on dry decorticated fallen twigs).

A *P. gallica* mox recedit quia quadruplo major, basi coarctata, pilis marginalibus fimbriato-fasciculatis.

Phialea carneala Saccardo, sp. nov. (Pl. II, fig. 2.)

Sparsa, minuta, ubique (in sicco) carnea, glabra; cupula initio minuta, subglobosa, dein ampliata, subhemisphærica v. obconica, .7–1 mm. diam., stipite cylindraceo subtili, 1–1.3 mm. longo, leniter longitrorsum striatulo basique vix incrassata asperulo; disco concavo, levi, roseo, margine extimo pallidiore; ascis tereti-clavatis, deorsum tenuato-stipitatis, 80–90 × 7 μ, octosporis; paraphysibus filiformi-bacillaribus; sporidiis distichis, tereti-oblongis, utrinque obtusulis, rectiusculis, 11–14 × 3–3.5 μ, intus granulosis, hyalinis.

Yakutat Bay (Trelease, 595, on decaying fallen leaves and stipules).

Affinis *P. albidæ*, *cyathoideæ et broomei*, sed vel colore v. proportione partium satis diversa.

Helotium alaskæ Saccardo, sp. nov. (Pl. II, fig. 3.)

Gregarium, minutum, ubique (in sicco) croceo-aureum, glabrum; cupula initio punctiformi-pertusa dein ampliata plano-scutellata, brevi marginata, vix 1 mm. lata; stipite cylindraceo, crassiusculo, 1 mm. alto, .3 mm. cr., levi, dilutius colorato; ascis tereti-clavatis, apice obtusis, deorsum tenuato-stipitatis, 60 × 5.5–6 μ, octosporis; paraphysibus copiosis, bacillaribus; sporidiis cylindraceo-fusoideis, leniter curvis, 8–11 × 2–2.7 μ, distichis, hyalinis.

Yakutat Bay (Trelease, 597, on decaying decorticated wood).

Ab affinibus speciebus flavis lignicolis stipites sporidiorumque notis satis diversum.

Helotium fumigatum Saccardo & Spegazzini.

Yakutat Bay (Trelease, 733, on decaying herbaceous stems, associated with *Botrytis vulgaris*).

Helotium lenticulare (Bulliard) Fries.

Juneau (Trelease, 692, on decaying wood).

Ciboria sp.

Yakutat Bay (Trelease, 686, on *Tsuga*).

Videtur affinis *Ciboriæ strobilinæ* (A. & S.) Sacc.

Ciboria sp.

Yakutat Bay (Trelease, 702).

Accedit ad *Ciboriam rufo-fuscam* (Web.) Sacc. Sunt tamen exempl. unica, non perfecta, hinc determinatio dubia.

Lachnea scutellata (Linnæus) Gill.

Juneau (Trelease, 690, 690*a*, 690*b*, 690*c*, on decaying fallen bark and wood).

Family HELVELLACEÆ.

Vibrissea truncorum (Albertini & Schweinitz) Fries.†

Kadiak (Trelease, 596*a*); Yakutat Bay (Trelease, 596). On wood in water.

Cudonia circinans (Persoon) Fries.

Orca (Trelease, 694, on fragments of wood).

Family HYSTERIACEÆ.

Lophodermium oxycocci (Fries) Karsten.

Kadiak (Trelease, 713, on drying leaves of *Vaccinium oxycoccus*, immature).

Lophodermium maculare (Fries) De Notaris.

Glacier Bay (Trelease, 697, on leaves of *Salix*).

Family MICROTHYRIACEÆ.

Microthyrium harrimani Saccardo, sp. nov. (pl. II, fig. 1.)

Perithecciis densiuscule gregariis, superficialibus, dimidiatis, omnino applanatis, orbicularibus, 350–450 μ diam., subinde binato-approximatis, ostiolo centrali pertusis, margine fimbriatis, contextu distincte parenchymatico, radiato; ascis tereti-fusoideis, utrinque obtusulis, 80–100 × 9–10 μ, octosporis; paraphysibus parcis, sæpe furcatis; sporidiis 2–3-stichis, clavato-fusiformibus, utrinque acutiusculis, infra medium 1-septatis, non constrictis, hyalinis.

Orca (Trelease, 739, 740, on fading scales of cones of *Tsuga heterophylla*).

Affine *M. abietis* Mont.

Family DOTHIDEACEÆ.

Dothidella betulina (Fries) Saccardo.

Dothidea betulina β HOOKER and ARNOTT, Bot. Beechey 134.— ROTHROCK, Smithsonian Rept. 1867 : 463.— TURNER, Nat. Hist. Alaska 85.

Port Clarence (Trelease, 699, on leaves of *Betula glandulosa*, associated with *Sphærella harthensis*).

Dothidella betulina yakutatiana Saccardo & Scalia, subsp. nov. (PL. V, fig. 15′.)

Stromatibus innato-erumpentibus, pulvinato-applanatis, subtilissime punctulatis, atris, .5 mm. diam.; loculis minutissimis, globulosis, 50 μ diam., ostiolo pertusis; ascis oblongo-cylindraceis, apice rotundatis, deorsum nonnunquam incrassatulis, subsessilibus, 40–48 × 10–12 μ, octosporis; sporidiis subdistichis v. polystichis, obovato-cuneatis, apice rotundatis, basi acutatis, 1-septatis, non constrictis, eguttulatis, 10–12 × 3–4 μ, e chlorino hyalinis.

Yakutat Bay (Trelease, 703, on dead leaves of some undetermined tree).

Phyllachora filicina Saccardo & Scalia, sp. nov. (PL. V, fig. 15.)

Stromatibus epiphyllis, maculiformibus, atris, applanatis, parum emergentibus, ambitu e circulari angulosis, superficie regularis, contextu atro-brunneo, parenchymatico; loculis numerosis, immersis, globosis, 70–80 μ diam., pallidioribus; ascis tereti-clavatis, brevissime stipitatis, 70 × 10–11.5 μ, apice rotundatis, octosporis; sporidiis elliptico-oblongis, utrinque rotundatis, rectis, 14–15 × 5–6 μ, continuis, hyalinis, intus granuloso farctis.

Unalaska (Evermann, 6, on living leaves of *Aspidium lonchitis*).

Pulchella species, omnino distincta.

Phyllachora? heraclei (Fries) Fuckel.

Unga Island (Harrington in 1871–2, on living leaves of *Heracleum lanatum*).

More solito sterilis.

Family HYPOCREACEÆ.

Cordyceps militaris (Linnæus) Link.

Orca (Trelease, 695, on pupæ of some insect).

Specimen immaturum, sed videtur hujus species.

Nectria sanguinea (Sibthorpe) Fries.

New Metlakatla (Trelease, 685*a*, on dead bark, associated with *Microcera brachyspora*); Yakutat Bay (Trelease, 684*a*).

Nectria episphæria (Tode) Fries.

Sitka (Trelease, 683, on stromata of some sphæriaceous fungus on branches apparently of *Alnus*).

Family SPHÆRIACEÆ.

Pyrenophora chrysospora (Niessl) Saccardo.

Kukak Bay (Coville & Kearney, 1552*a*, on dead petioles and stipules of *Oxytropis*).

Pyrenophora comata (Niessl) Saccardo.

Port Clarence (Brewer & Coe, 1953*a*); St. Paul Island, Bering Sea (Macoun in 1891). On dead leaves and stems of *Arenaria verna* and *A. macrocarpa*.

Pyrenophora polyphragmoides Saccardo & Scalia, sp. nov. (Pl. v, fig. 13.)

Peritheciis erumpentibus, sparsis, punctiformibus, nigris, globulosis, 190–220 μ diam., setis rigidis, fuscis, septatis, 160–190 × 7.5 μ, vertice vestitis; contextu parenchymatico, fuligineo; ascis cylindraceis, rectis curvulisve, apice rotundatis, brevissime oblique stipitatis, octosporis; sporidiis distichis, oblongo-fusoideis, utrinque obtusulis, initio 3-septatis, dein sub-7-septatis, melleis, tandem 9–12-septatis, murali-divisis, medio vix v. non constrictis, 36–56 × 18 μ, fuligineis.

Popof Island (Harrington in 1871–2, on decayed stems and leaves of *Polemonium humile*).

Affinis *P. phæosporæ* et *P. polyphragmiæ* sed rite distincta.

Pleospora media Niessl.

Unalaska (Harrington in 1871–2, in decayed leaves of *Draba vernalis*).

Est forma sporidiis latioribus (26–28 × 13–14 μ), ut var. *limonum* Penzig.

Pleospora pentamera Karsten.

Walden Island (Hb. Thiel., on leaves and stems of *Dupontia fischeri*).

Sporidia plerumque 5-septata.

Pleospora infectoria Fuckel.

Nagai (Harrington in 1871–2, in dead culms of *Poa cæsia?*).

Pleospora herbarum (Persoon) Rabenhorst.

Point Barrow (Murdoch, 15682, on decaying leaves of *Ranunculus nivalis*); Nagai (Harrington in 1871–2, on decayed leaves of *Oxytropis uralensis arctica*).

Prima est forma macrospora (sp. 44–54 × 20–23 μ), postrema est microspora (sp. 32–36 × 15–16 μ).

Metasphæria empetri (Fries) Saccardo.

Port Clarence (Trelease, 700, on leaves of *Empetrum nigrum*, the specimen not entirely mature).

Massarina dryadis Rostrup.

Point Barrow (Murdoch in 1883, on leaves of *Dryas octopetala integrifolia*, the specimen not entirely mature).

Pseudovalsa ribesia Saccardo & Scalia, sp. nov. (Pl. v, fig. 14.)

Stromatibus corticolis tectis, dein erumpentibus, nigris, e perithecciis 4–6 connatis compositis, vix 1 mm. diam., ostiolis obtusulis breviter emergentibus; ascis crasse cylindraceis, brevissime abrupte stipitatis, apice late rotundatis, 110–130 × 24–26 μ, filiformi-paraphysatis, octosporis; sporidiis distichis, oblongo-fusoideis, primo hyalinis, didymis, strato mucoso hyalino obductis, dein 3-septatis, medio parum constrictis, 38–41 × 16–20 μ, fuscidulis.

Sitka (Trelease, 709*a*, on dead corticated branches of *Ribes laxiflorum*, associated with *Rhynchophoma*, *Godronia*, *Diaporthe*, etc.).

Sporormia ambigua Niessl.

Kadiak (Trelease, 707, on dung—of ptarmigan?).

Leptosphæria ophiopogonis graminum Saccardo.

Yes Bay (Howell, on dead leaves of *Festuca rubra*, 1722).

Leptosphæria leersiana Saccardo.

Yes Bay (Howell, on leaves of *Agrostis*, 1711, associated with *Sphærella californica*).

Leptosphæria doliolum (Persoon) De Notaris.

Kadiak (Trelease, 737*a*, on dead stems of *Heracleum*, associated with *Sphærographium abditum*).

Leptosphæria fœniculacea lupina Saccardo & Scalia, subsp. nov. (Pl. v, fig. 12.)

Perithecciis globoso-depressis, diu tectis, dein nudatis, sparsis v. subgregariis, minutissime papillatis, 350–420 μ diam., glabris, nigris; contextu parenchymatico, fuligineo; ascis longe clavatis, stipitatis, 100–120 × 13·5–15·5 μ, octosporis, paraphysibus filiformibus septu-

latis obvallatis; sporidiis subdistichis, fusiformibus, 3–4-septatis, non constrictis, sæpe inæqualibus v. curvulis, dilute olivaceis.

Disenchantment Bay (Trelease, 732, on decaying stems of *Lupinus*, associated with *Phoma*).

Leptosphæria agnita labens Saccardo & Scalia, subsp. nov. (Pl. V, fig. 11.)

A typo differt peritheciis in macula flavida paullo majoribus (.5 mm. diam.) facile collabentibus; sporidiis non diversis.

Unalaska (Trelease, 731, on dead herbaceous stems).

Leptosphæria silenes-acaulis De Notaris.

Unalaska (Harrington in 1871–2, on dead petioles and leaves of *Silene acaulis*).

Leptosphæria marginata Niessl.

Yakutat Bay (Funston, on leaves of *Pyrola secunda*).

In maculis atris epiphyllis, rarius hypophyllis.

Leptosphæria juncicola Rehm.

Shumagin Islands (Harrington in 1871–2, on stems of *Scirpus cæspitosus*).

Amphisphæria applanata (Fries) Cesati & De Notaris.

Yakutat Bay (Trelease, 734*a*, on dry twigs, accompanying *Pirottæa yakutatiana*).

Asci 105–115 × 14–15 μ; sporidia 22–25 × 8–8.5; loculo super. (!) majori et acutiori. Perithecia .5–.6 mm. diam.

Didymosphæria nana Rostrup.

Port Wells (Trelease 910*a*, on leaves of *Alnus*.)

A typo differt sporidiis paullo brevioribus, nempe 18–20 × 6.5–7.5 μ, nec 25 × 7–8 μ.

Didymosphæria arenaria macrospora Saccardo & Scalia, subsp. nov. (Pl. IV, fig. 9.)

Sporidiis 40 × 13.5 μ (nec 30 × 14 μ), fuscellis.

Shumagin Islands (Harrington in 1871–2, in culms of *Aira cæspitosa brevifolia*).

Diaporthe (Chorostate) strumella (Fries) Fuckel.

Sitka (Trelease, 709*b*, on branches of *Ribes laxiflorum*).

Forma *oligocarpa*.

Diaporthe (Chorostate) anisomera Saccardo & Scalia, sp. nov. (Pl. V, fig. 10.)

Stromatibus gregariis, corticolis, erumpentibus, ambitu suborbi-

cularibus, convexis, 1.3–1.5 mm. diam., intus ligneo-pallidis; perithecciis 10–20, globosis v. mutua pressione irregularibus, 200–250 μ diam., monostichis, ostiolis breve cylindraceis, parum emergentibus, apice rotundatis; ascis fusoideo-clavatis, apice obtusis, deorsum tenuatis, 80–90 × 11–13 μ, octosporis; sporidiis distichis, obovatis, 14–17 × 5–5·5 μ, infra medium septatis, non constrictis, farctis, hyalinis et initio strato mucoso inæquali obductis, articulo superiore fere duplo majore.

Yakutat Bay (Trelease, 684*b*, on decorticated dead branches of *Corylus?*).

Etsi matrix non certa, species videtur distinguenda ob sporidia eximie anisomera.

Diaporthe (**Tetrastaga**) **pungens** Nitschke.

Sitka (Trelease, 728*a*, on twigs of *Ribes*, associated with *Rhynchophoma*).

Forma ostiolis brevius exertis.

Venturia circinans (Fries) Saccardo.

Virgin Bay (Trelease, 746, on living leaves of *Geranium erianthum*, immature).

Venturia kunzei Saccardo.

Coleroa chætomium.

Prince William Sound (Trelease, 748); Yakutat Bay (Trelease, 749). On leaves of *Rubus*.

Venturia kunzei ramicola Saccardo & Scalia, var. nov. (Pl. IV, fig. 8.)

A typo differt perithecciis ramicolis in crusta stromatica (propria?) nascentibus.

Unalaska (Harrington in 1871–2, on branches of *Rubus stellatus*).

Sphærella leptospora Saccardo & Scalia, sp. nov. (Pl. IV, fig. 7.)

Perithecciis sparsis, globulosis, primo immersis dein liberis, 220–275 μ diam., poro pertusis, contextu parenchymatico, fuligineo; ascis cylindraceis, rectis v. curvulis, brevissime stipitatis, 50–60 × 7·5–9 μ; sporidiis octonis, distichis, fusiformibus, rectis, medio 1-septatis, non constrictis, 13–15·5 × 2·5–3 μ, hyalinis, sæpe guttulatis.

Yes Bay (Howell, on leaves of *Carex mertensiana*, 1693).

Affinis *S. perexiguæ*, sed perithecia multo ampliora, asci longiores et angustiores.

Sphærella eriophila Niessl.

St. Lawrence Bay (Lütk. Exped., on dead leaves of *Artemisia glomerata* or *A. heterophylla*).

A typo differt (an ab ætate?) ascis sporidiisque paullo angustioribus.

Sphærella graminum Saccardo & Scalia, sp. nov. (pl. IV, fig. 5.)

Peritheciis sparsis, punctiformibus, globulosis, 150–200 μ diam., innato-prominulis, epidermide non atrata tectis, brevissime papillato-pertusis, contextu membranaceo-fuligineo, parenchymatico; ascis cylindraceis, subsessilibus, apice rotundatis, 65–70 × 10–12 μ, rectiusculis, 8-sporis; sporidiis distichis, elliptico-fusoideis, rectis, 13–16.5 × 3.5–4 μ, uniseptatis, non constrictis, plasmate granuloso v. minute guttulato farctis, hyalinis.

Shumagin Islands (Harrington in 1871–2, on dead leaves of *Poa stenantha*).

Affinis *S. cruris-galli*, præcipue distinguenda peritheciis majusculis ratione fructificatione.

Sphærella wichuriana Schroeter.

Yes Bay (Howell, on leaves of *Carex*, 1694).

Sphærella ootheca Saccardo.

Nagai (Harrington in 1871–2, on leaves of *Dryas octopetala*).

Verisimiliter *S. octopetalæ* Oud. non satis differt.

Sphærella stellarinearum (Rabenhorst) Karsten.

Russell Fiord (Coville & Kearney, 987*a*, on old leaves of *Alsine longipes*).

Sphærella harthensis Auerswald.

Port Clarence (Trelease, 699, on living leaves of *Betula glandulosa*, associated with *Dothidella betulina*).

Sphærella alni-viridis De Notaris.

Port Wells (Trelease, 710*a*, 910, on leaves of *Alnus*, associated with *Didymosphæria nana* and *Gnomoniella tubiformis*).

Sphærella californica Cooke & Harkness.

Yes Bay (Howell, on leaves of *Agrostis*, 1711, associated with *Leptosphæria leersiana*).

Sphærella grossulariæ salicella Saccardo & Scalia, var. nov. (pl. IV, fig. 6.)

Peritheciis sparsim gregariis, punctiformibus, 100–130 μ diam.; ascis tereti-oblongis, 52–70 × 13–15.5 μ, brevissime stipitatis, octosporis; sporidiis polystichis, fusoideo-bacillaribus, rectis, 32–34 × 1.5–2.5 μ, uniseptatis, non constrictis, hyalinis.

Kadiak (Trelease, 698, on leaves of *Salix*, associated with *Rhytisma salicinum*).

Sphærella ignobilis Auerswald.

Nagai (Harrington in 1871–2, on leaves of *Agrostis geminata*).

Sporidia 9–10 × 3–3·5 *μ*, ovato-oblonga, non exacte cuneata; asci paullo breviores, 30–34 × 9–10 *μ*.

Sphærella adusta Fuckel.

Yakutat (Trelease, 620, on *Epilobium* sp.; Brewer & Coe, 4475, on *E. bongardi*); Orca (Trelease, 619, on *Epilobium* sp.); Unalaska (Brewer & Coe, 2189, on *E. boreale*).

Sphærella pachyasca Rostrup.

Point Barrow (Murdoch, on dead leaves of *Draba alpina*, 15686).

Sphærella rumicis (Desmazières) Cooke.

Juneau (Trelease, 774); Kadiak (Trelease, 771). On leaves of *Rumex occidentalis*.

Physalospora crepiniana (Saccardo & March.).

P. alpina crepiniana.

Alaska (Harrington in 1871–2; Coville & Kearney, 1598, on leaves of *Empetrum nigrum*).

Physalospora borealis Saccardo, sp. nov. (Pl. IV, fig. 4.)

Peritheciis laxe gregariis, subcutaneis, dein erumpentibus, globulosis, papillatis, nigris, .3–.5 mm. diam., contextu parenchymatico, duriusculo, fuligineo; ascis cylindraceis, basi tenuatis brevissimeque stipitatis, apice obtusis, 70–75 × 5–6 *μ*, octosporis; paraphysibus parcis, brevibus; sporidiis oblique monostichis, oblongo-ovoideis, lenissime inæquilateris, 9–10 × 4.5 *μ*, utrinque obtusulis, intus granulosis, hyalinis.

Kukak Bay (Saunders, on decaying stems of *Anemone*, associated with *Stagonospora pulsatillæ*).

Læstadia saxifragæ Saccardo & Scalia, sp. nov. (Pl. IV, fig. 3.)

Peritheciis epiphyllis, punctiformibus, in partibus marginalibus arescentibus foliorum sparsis, globosis, 100–130 *μ* diam., poro pertusis; contextu parenchymatico fuscello; ascis cylindraceis v. cylindraceo-clavulatis, brevissime stipitatis, apice rotundatis, 60–80 × 10–13 *μ*, aparaphysatis, octosporis; sporidiis distichis, oblongo-ellipsoideis, utrinque acutulis, 10–13 × 4.5–5.5 *μ*, continuis, hyalinis.

Unalaska (one of the early Russian collectors in Hb. Bernhardi, on living leaves of *Saxifraga parviflora*).

Pluribus affinis, sed videtur satis distincta. Asci tantum e basi perithecii oriundi.

Guignardia alaskana Reed. (pl. vii.)

Reed, Univ. Cal. Publ., Bot. 1: 154, 161. *pl. 15, 16.*

Hot Springs, Baranof Island (Trelease, 970); Kadiak; Unalaska. Parasitic in *Prasiola borealis*. — Cogeneric with the preceding, but the name *Læstadia* abandoned by the author of the species because preoccupied among the flowering plants.

Gnomoniella tubiformis (Tode) Saccardo.

Port Wells (Trelease, 710, on leaves of *Alnus*).

Hypoxylon majusculum Cooke.

Yakutat Bay (Trelease, 786, on dead bark of *Alnus sitchensis*).

Sporidia 14–16 × 5.5–6 μ.

Hypoxylon ohiense Ellis & Everhart. (pl. iv, fig. 2.)

Sitka (Trelease, on trunks of *Picea*).

Asci clavati tenuiter stipitati, 68–80 × 7–8 μ; sporidia oblique monosticha, oblongo-ellipsoidea, 5.5–7.5 × 2.5–3.5 μ, fuliginea; stroma 2–4 cm. longa et lata; perithecia 1.5–1.7 mm. longa.

Family PERISPORIACEÆ.

Antennaria rectangularis Saccardo, sp. nov. (pl. iii, fig. 9.)

Cæspitulosa v. effusa, superficialis, atro-fuliginea, laxiuscule intricata; hyphis ascendentibus, tortuosis, v. subrectis, longissimis, filiformibus, 1.5–2 mm. long., 12–15 μ cr., parce ramosis, multiarticulatis, articulis 22–28 × 12–15 μ, ad septa non v. leniter constrictis, sæpe 1-guttatis; ramis simplicibus, subalternis, angulo perfecte recto patentibus, 70–80 raro usque 400 μ longis, apicibus acutiusculis v. obtusis; peritheciis. . . .

Sitka (Howell, on shoots and leaves of *Phyllodoce glanduliflora*, 1597).

Certe affinis *Antennariæ robinsonii* B. & M., differt tamen hyphis omnibus æqualibus, nec partim torulosis, ramis angulo perfecte recto oriundis, etc.

Limacinia? alaskensis Saccardo & Scalia, sp. nov. (pl. iv, fig. 1.)

Effusa, superficialis, densa, opace atra, subpannosa, 2–4 cm. longa, .5–.75 mm. cr.; hyphis mycelii hormiscioideis, filiformibus, simplicibus v. furcatis, 400–500 × 16–18 μ, crebre septatis, ad septa constrictis, articulis globoso-cuboideis, 15–20 × 13–15 μ, subinde latioribus quam longis, fuligineis, plerumque parietali-1-guttatis; conidiis oblongo-fusoideis, 28–30 × 10 μ, 3-septatis, vix constrictis, fuligineis; peritheciis in mycelio gregariis et subasconditis globulosis, obtusis v.

depressis, 180–200 μ lat., hyphis consimilibus laxe vestitis; ascis (immaturis) clavatis, 90–120 × 15–18 μ, aparaphysatis, subsessilibus; sporidiis. . . .

Glacier Bay (Trelease, 712, on still living bark of *Alnus*).

Mycelium sistit *Hormiscii* v. *Antennariæ* formam; forte *Hormiscio alto* Ehrenb. accedit.

Eurotium herbariorum (Wigg.) Link.

Yes Bay (Howell, on *Geum*, 1618).

Family CHYTRIDIACEÆ.

Physoderma menyanthis De Bary.

Kukak Bay (Saunders, 769, on *Menyanthes trifoliata*).

Family SAPROLEGNIACEÆ.

Lagenidium entophytum (Pringsheim) Zopf.§

Popof Island (Saunders, 401*c*, in zygospores of *Spirogyra porticalis*).

Pythium gracile Schenk.§

Popof Island (Saunders, 401*b*, in vegetative cells of *Spirogyra porticalis*).

Family PERONOSPORACEÆ.

Peronospora parasitica (Persoon) De Bary.

Yakutat (Saunders, 677, on *Arabis hirsuta*).

Peronospora ficariæ Tulasne.

Glacier Bay (Coville & Kearney, 743, on leaves of *Ranunculus*).

Family USTILAGINACEÆ.

Tuburcinia trientalis Berkeley & Broome.

Kadiak (Trelease, 720); Unalaska (Trelease, 719). On living leaves of *Trientalis*.

The conidial stage, known as *Ovularia trientalis* Berk.

Ustilago vinosa (Berkeley) Tulasne.*

Point Barrow (Murdoch in 1883, in *Oxyria digyna*).

Ustilago bistortarum (De Candolle) Körnicke.

Port Wells (Trelease, 764, in leaves of *Polygonum viviparum*).

Ustilago bistortarum inflorescentiæ Trelease, var. nov.*

Spores very abundant, brownish-purple, subglobose or slightly elongated, 9–14 μ, usually 11–13 μ, almost perfectly smooth.

Kadiak (Trelease, 675); Yakutat (Trelease, 674); Unalaska (Trelease, 676). In the inflorescence of *Polygonum viviparum*.

This differs from var. *glabra* in the part of the host plant in which the spores appear, and from the typical form of the species further in its smoother spores.

Family UREDINACEÆ.

Cæoma saxifragarum (De Candolle) Schlechtendal.*

St. Lawrence Island, Bering Sea (Trelease, 660, on *Saxifraga bracteata*).

Uredo ledicola Peck.*

Virgin Bay (Trelease, 641); Kadiak (Trelease, 642). On *Ledum palustre*.

Uredo nootkatensis Trelease, sp. nov.*

Sori subhemispherical, about .5 mm. in diameter, deep orange, the affected leaf yellowish. Spores globose to shortly obovoid, the rather thin wall colorless, radiately striate and slightly roughened, 28–31 μ; pedicel colorless, very slender, breaking a short distance from the spore.

Hot Springs, Baranof Island (Trelease, 668, on leaves of *Chamæcyparis nootkatensis*).

Peridermium cerebrum Peck.*

New Metlakatla (Trelease, 667, on *Pinus contorta*).

Ædidium ranunculacearum De Candolle.*

Unalaska (Harrington in 1871–2; Trelease, 663—both on *Anemone richardsonii;* Trelease, 662, on *Ranunculus*).

Held to be a stage of *Uromyces dactylidis*, which has not yet been observed as Alaskan.

Ædidium grossulariæ De Candolle.*

Wrangell (Evans, 95); Juneau (Trelease, 644); Sitka (Trelease, 643); Yakutat (Saunders, 646; Trelease, 645). On *Ribes*.

Ædidium fraseræ Trelease, sp. nov.*

Spots yellowish, round or sometimes elongated on the petiole or midvein, measuring 2–5 mm. Spermogonia and ædidia amphigenous but most numerous on the lower surface, the former at length brown; peridia not crowded, irregularly or subcircinately placed, about .25 mm. in diameter, cylindrical, without spreading border; spores polygonally subglobose to ellipsoid, nearly smooth, 16–22 μ.

Kadiak (Trelease, 647, 648, 649, on leaves of *Frasera*).

Chiefly differs from the æcidial form of *Puccinia gentianæ* in the grouping of the spermogonia and the form of the peridia.

Æcidium alaskanum Trelease, sp. nov.*

Spots pale, mostly elliptical, about 5 × 5–10 mm. Spermogonia wanting; æcidia amphigenous, but most abundant on the lower surface, about .25 mm. in diameter, with multifid recurving border. peridial cells about 28 μ broad; spores little longer than broad, nearly smooth, 16–20 μ.

Kadiak (Trelease, 652, on *Habenaria bracteata*, 652*a*, on *H. hyperborea*, 653, 654, 655, 656, 657, on *H. dilatata;* Trelease, 650, on *Orchis aristata*); Popof Island (Kincaid; Saunders, 658, 659—all on *Habenaria dilatata*); Unalaska (Trelease, 651, on *Orchis aristata*); near Ocean Cape, Yakutat Bay (Funston, on *Habenaria dilatata*, 52); Bering Island (Macoun, on *Habenaria bracteata*, 144).

Of the general appearance of *A. orchidearum*, now held to be the æcidial stage of *Puccinia moliniæ*, but differing in the absence of spermogonia and in its larger peridial cells and smaller, less sculptured spores.

Æcidium epilobii De Candolle.*

Glacier Bay (Coville & Kearney, 952); Kadiak (Trelease, 659*a*). On leaves of *Epilobium*.

Æcidium violascens Trelease, sp. nov.*

Spots large, irregular, effuse, violet especially on the upper surface of the leaf, frequently following the veins which are then thickened. Sori hypophyllous, scarcely .5 mm. in diameter, hemispherical, crowded irregularly or along the veins; peridia included, borderless, the irregularly oblong cells about 20 × 30–40 μ, sinuously and rugosely roughened; spores variously and often polygonally rounded to ellipsoidal, minutely verruculose, 22–28 × 22–35 μ.

Kadiak (Trelease, 634); Kukak Bay (Saunders, 636, on a leaf with *Puccinia geranii-silvatici*). On leaves of *Geranium erianthum*.

From *A. geranii* this differs in the color of the spots, the frequent thickening of the veins, fewer peridia neither regularly arranged nor with spreading border, and much larger spores.

Æcidium asterum Schweinitz.*

Kadiak (Trelease, 624, on *Aster foliaceus*).

Æcidium parnassiæ (Schlechtendal) Grav.*

Kadiak (Trelease, 665, on *Parnassia palustris*).

See, further, *Puccinia caricis*.

Æcidium claytonianum (Schweinitz) Clinton.

St. Paul Island, Bering Sea (Trelease, 664, on *Claytonia arctica*).

Æcidium circinans Eriksson f. **aconiti-delphinifolii.**

St. Paul Island, Bering Sea (Trelease, 661, on *Aconitum*).

Æcidium astragali-alpini Eriksson.[1]

Muir Glacier (Trelease, 632, on *Astragalus*).

Thecopsora vacciniorum (Link) Karsten.*

Sitka (Trelease, 614, on *Vaccinium*).

Chrysomyxa pirolæ (De Candolle) Rostrup.*

Glacier Bay (Trelease, 771); Disenchantment Bay (Coville & Kearney, 1025). Both on *Pyrola*. Yes Bay (Howell, on *Moneses grandiflora*, 1632). The uredo stage only.

Phragmidium subcorticium (Schrank) Winter.*

Sitka (Evans, 204); Kadiak (Cole; Trelease, 638, 639, 640). On *Rosa cinnamomea*. The æcidial stage only.

Phragmidium rubi (Persoon) Winter?*

Disenchantment Bay, (Trelease, 670); Unalaska (Hb. Bernhardi). On *Rubus stellatus*. The uredo only.

Phragmidium rubi-idæi (De Candolle) Karsten? *

Kadiak (Trelease, 671, 672, 673, on *Rubus chamæmorus*). The uredo stage only, forming small sori on the under surface of the leaves.

Puccinia bullata (Persoon) Schroeter.*

Popof Island (Saunders, 617, on *Cœlopleurum gmelini*); St. Paul Island, Bering Sea (Trelease, 618, on *Conioselinum gmelini*).

Puccinia circææ Persoon.*

Juneau (Setchell, 1250, on *Circæa alpina* or *C. pacifica*).

Puccinia laurentiana Trelease, sp. nov.*

Sori hypophyllous, chestnut-brown, round, about 1 mm. in diameter; spores brown, somewhat constricted, about $20 \times 50 \mu$, the apex thickened and with pallescent apiculus, the rather thick walls neither striate nor verrucose; pedicel hyaline, breaking short.

St. Lawrence Island, Bering Sea (Macoun, on *Saxifraga neglecta stolonifera*, 60).

Agreeing more closely with the description of *P. saxifragæ-ciliatæ* than with other described species on genera of Saxifragaceæ.

[1] Determined by Professor J. C. Arthur.

Puccinia saxifragæ Schlechtendal.

SACCARDO, Sylloge Fungorum, 12^1: 641.

Alaska. On *Saxifraga*.

Puccinia prenanthis (Persoon) Fuckel.*

Sitka (Trelease, 623); Kadiak (Trelease, 622, 622*a*). On *Prenanthes alata*.

The æcidial and teleutosporic stages.

Puccinia fergussoni Berkeley & Broome.*

Kadiak (Trelease, 625, on *Viola blanda*).

Puccinia heucheræ (Schweinitz) Dietel.*

Juneau (Setchell, 1251, on *Heuchera glabra*; Trelease, 615, on *Saxifraga nelsoniana*); Disenchantment Bay (Funston, on *Tellima grandiflora*, 83).

Puccinia tiarellæ Berkeley & Curtis.[1]

Head of Russell Fiord (Coville & Kearney, 958*a*, on *Heuchera glabra*).

Puccinia thlaspeos Schubert.*

Disenchantment Bay (Coville & Kearney, 1112); Kukak Bay (Saunders, 631). On *Arabis ambigua*.

Puccinia porphyrogenita Curtis.*

Douglas Island (Trelease, 616); Sitka (Setchell, 1270). On *Cornus canadensis*. Yes Bay (Howell, on *Cornus suecica*, 1630).

Puccinia asteris Duby.*

Kadiak (Trelease, 624*a*, on *Aster foliaceus*).

Puccinia valerianæ Carest.*

St. Paul Island, Bering Sea (Brewer, 637, on *Valeriana capitata*). Uredo and teleutospores are present.

Puccinia geranii-silvatici Karsten.*

Kukak Bay (Saunders, 636*a*); Popof Island (Saunders, 635). On leaves of *Geranium erianthum*.

Globose and obovoid mesospores, and 3-celled teleutospores, occur occasionally with the normal 2-celled spores. — See further *Æcidium violascens*.

Puccinia procera D. & H.[1]

Revillagigedo Island (Howell, on *Elymus dahuricus*, 1723 ?).

[1] Determined by Professor J. C. Arthur.

Puccinia caricis (Schumann) Reber? *

New Metlakatla (Trelease, 630); Sitka (Trelease, 629, on *Carex tolmiei?;* Wright, on *Carex*, 1575).

III. Sori oblong, bordered but not covered by the epidermis, when dry fissuring transversely at intervals, dark brown, less black than usual with *P. caricis;* spores brown, 17–20 × about 50 μ, the often somewhat truncated apex much thickened.

Dr. Juel, who was kind enough to examine the specimens in comparison with his *P. uliginosa* (the æcidial stage of which is held to be *A. parnassiæ*), considers it impossible to determine the species of this group without experimental knowledge of their æcidia. — See further *Æcidium parnassiæ*.

Melampsora farinosa (Persoon) Schroeter?*

On *Salix stolonifera:* Disenchantment Bay (Coville & Kearney, 1025*a* — not producing discolored spots on the leaves; sori mostly hypophyllous but also found on the upper surface and occasionally on the twigs; spores 16–23 μ, paraphyses 15–20 μ in diameter at top, either clavate or capitate).

On *Salix pulchra:* Popof Island (Saunders, 611 — causing small yellow or brown leaf-spots; sori most abundant on the lower surface; spores 16–20 μ; paraphyses about 20 μ in diameter at top).

On *Salix alaxensis:* Muir Glacier (Trelease, 612, 613 — causing distinct often large yellow leaf-spots; sori on both surfaces but most abundant below; spores 16–23 μ; paraphyses 16–20 or occasionally 27 μ in diameter at top).

On *Salix reticulata:* Kukak Bay (Saunders, 608 — not producing spots; the distinct sori scattered over the lower surface of the leaf and a few on the upper surface near the base; spores 16–20 μ; paraphyses 13–20 μ). *M. reticulatæ* Blytt differs markedly in its much larger and usually thicker-walled paraphyses.

On *Salix fuscescens:* St. Lawrence Island, Bering Sea (Trelease, 609 — not causing spots; sori hypophyllous; spores 16–23 μ).

Melampsora alpina Juel?*

Port Clarence (Trelease, 610, on *Salix polaris*).

Producing at most small brown spots; sori amphigenous; spores 16–20 μ; paraphyses 20–27 μ at apex.

Only the uredo form of these doubtfully determined species of *Melampsora* was observed.

Hyalospora polypodii-dryopteridis (Moug. & Nestl.) Magnus.*

Juneau (Trelease, 669, on *Phegopteris dryopteris*).

Only the uredo stage, *Uredo aspidiotus* Pk., was observed.

Uromyces lapponicus Lagerheim.[1]

Unga Island (Saunders, 633, 633*a*, on *Astragalus*).

Uromyces erythronii (De Candolle) Passerini.*

Kadiak (Trelease, 626); Kukak Bay (Saunders, 627). On *Fritillaria kamtschatcensis*.

Family LYCOPERDACEÆ.

Lycoperdon piriforme Schaeffer.*

Cape Fox (Trelease, 607).

Lycoperdon sp.*

Muir Glacier (Trelease, 605).

A minute species, apparently of the bovistoid group, but immature.

Lycoperdon saccatum Vahl.*

Virgin Bay (Kincaid).

Lycoperdon sp.*

Port Clarence (Trelease, 604).

A species apparently of the proteid group—now frequently referred to the genus *Calvatia*—but too immature for naming.

Family NIDULARIACEÆ.

Nidularia candida Peck.†

Farragut Bay (Trelease, 603); Sitka (Trelease, 599); Orca (Trelease, 602); Yakutat (Trelease, 600). Also collected on Lowe Inlet, B. C. (Trelease, 601), and occurs from Alaska without further designation of locality in the National Herbarium (Evans, 139).

The specimens indicate considerable variation in the species. In some the peridium is much larger than in others, it being 12 mm. long and 10 mm. broad at the mouth in the large specimens. The tomentum of the external surface varies in color from white to gray, and the inner surface from pure white to dingy white, often becoming brown toward the base of the cup; in the smaller cups it is glabrous, but in the larger it is often floccose or downy near the margin. The peridiola, which are about 1 mm. broad, also vary much in color. They are sometimes white on one side and brown on the other, or white with a brown margin, but they are usually brown on both sides; their surfaces may be even or wrinkled, and sometimes, as in the

[1] Determined by Professor J. C. Arthur.

typical form, they are marked by blackish lines. This character is not shown by any of these specimens, but they are apparently old, as only a few of them have any peridiola. Age may also account for the gray color of the peridium in some of the specimens. All are open. The young unopened plant is yet a desideratum.

Family TREMELLACEÆ.

Guepinia lutea Bresadola, sp. nov.‡

Gregaria v. subcæspitosa; tremelloso-tenax, flavo-lutea; conceptaculis cupulari-stipitatis; cupula glabra, complanato-concava margine sinuoso, disco-hymenophora, 2–5 mm. lata; stipes teres, 1–4.5 mm. longus, .5–1 mm. crassus, basi demum fuscidulus; basidia cylindracea, apice subcapitata, 45–50×3–4 μ, bifida; sporæ subcylindraceæ, subcurvatæ, 5–9-septatæ, 18–20×6–7 μ.

Orca (Trelease, 688). Also in Lowe Inlet, B. C. (Trelease, 592, 594).

Guepiniæ merulinæ, cujus gaudet structura, affinis; differt cupula et stipite lævibus nec non sporibus majoribus majisque septatis.

Dacryomyces deliquescens (Bulliard) Duby.‡

Juneau (Trelease, 589); Sitka (Trelease, 590); Yakutat (Trelease, 598).

One other species of this genus, *D. palmatus* (Schw.) Bresadola, determined by Abbe Bresadola, was collected along Broughton Strait, Vancouver Island (Trelease, 729).

Tremella (?) phyllachoroidea Saccardo, sp. nov. (Pl. III, fig. 11.)

Erumpenti-adnata, epiphylla, applanato-pulvinata, ambitu suborbicularis v. oblonga, 2–4 mm. diam., .7–1 mm. crass., uda exquisite gelatinosa, superficie nigra, opaca, minute rugulosa, intus pallidior, tota filamentosa; filamentis seu hyphis angustissime filiformibus, 1.5–2 μ cr., longissimis, varie intricatis, furcatis v. varie ramosis, hyalinis, intus granulosis, apicibus subinde lenissime incrassatis, obtusis; basidiis . . . ; sporis. . . .

Sitka (Mertens, on decaying fallen leaves of *Menziesia ferruginea*).

Videtur affinis *Tremella atro-virenti* Fr.; dubia tamen quia sterilis.

Family THELEPHORACEÆ.

Exobasidium vaccinii (Fuckel) Woronin.

Campbell, Amer. Naturalist, 33 : 399.

Orca (Trelease, 716, 717, 718, 765; Coville & Kearney, 1639 — all

on *Vaccinium ovalifolium?*); Seldovia (Saunders, 714, on *V. oxycoccus*).

Peniophora disciformis borealis Peck, var. nov.†

Yakutat Bay (Trelease, 583).

Differs from the description of the species in having a slight pinkish tint and in its smaller cystidia, which are only half as long and broad as in the species. The disk is covered with a distinct white pruinosity or pulverulence. The specimens are sterile. Fertile specimens may show it to be a distinct species.

Corticium incarnatum (Persoon) Fries.

Farragut Bay (Trelease, 582).

Hymenochæte tabacina (Sowerby) Léveillé.†

Sitka (Trelease, 583*a*).

Thelephora laciniata Persoon.‡

Alaska (Evans, 410).

Family POLYPORACEÆ.

Poria crassa Karsten?‡

Farragut Bay (Trelease, 577).
Sterile and doubtful.

Polystictus radiatus (Sowerby) Fries.†

Kukak Bay (Kincaid, 575).

The specimens are very old, weathered and discolored, but apparently belong here.

Polystictus abietinus Fries.†

Point Gustavus (Coville & Kearney); Orca (Trelease, 579).

Also collected along Lowe Inlet, B. C. (Trelease, 581), where *P. versicolor* L., as determined by Professor Saccardo, was also collected (Trelease, 580).

Fomes fomentarius (Linnæus) Fries.†

White Pass (Trelease, 574, on *Betula*).

Fomes pinicola Fries.†

Orca (Coville & Kearney, a small depressed form; Trelease, 573, the form having a pallid margin); Sitka (Coville & Kearney, the pale-margined form).

This species is not limited in its habitat to pine trees or even to coniferous wood.

This species, as determined by Professor Peck, was also collected along Lowe Inlet, B. C. (Trelease, 572), and on Vancouver Island (Trelease, 571).

Though not collected in Alaska, *Fomes lucidus* (Leys.) Fr. is very abundant on *Tsuga* in the Vancouver region, where it attains immense proportions. One specimen, by no means the largest observed, which was collected on Broughton Strait (Trelease, 509), measures 16 inches in length and breadth.

F. applanatus (Pers.) Wallr., another species not collected in Alaska, but doubtless occurring there, is represented from Lowe Inlet, B. C. (Trelease, 570), in a singular tabular form, according to Professor Peck's determination.

Fomes igniarius (Linnæus) Fries.†

St. Michael (Nelson, 4266, 43366, in U. S. Nat. Museum); region of Lake Iliamna (Gorman). On *Betula*.

This is the fungus figured by Nelson, without name, in Rept. Bur. Amer. Ethnology, 18[1]: 271. *f. 93*, and said by him and Mr. Gorman to be used for making ashes which are mixed with tobacco for chewing.

Polyporus melanopus Schweinitz.†

Orca (Trelease, 578).

Young and not well developed, but scarcely anything else.

Polyporus pubescens (Schumann) Fries.†

Kukak Bay (Kincaid, 576).

The single specimen collected is old and somewhat discolored.

Family AGARICACEÆ.

Psathyrella atomaria Fries.‡

Sitka (Trelease, 555).

Psathyrella disseminata Persoon.‡

Yakutat Bay (Trelease, 559).

Coprinus plicatilis (Curtis) Fries.‡

Hot Springs, Baranof Island (Trelease, 591*g*).

Psilocybe polytrichi Fries.†

St. Paul Island, Bering Sea (Trelease, 521). Among hair-cap moss.

Stropharia magnivelaris Peck, sp. nov.†

Pileus convex, becoming nearly plane, sometimes umbonate, glabrous or obscurely radiately fibrillose or fibrillose-squamose with innate

or appressed fibrils, ochraceous buff when dry; lamellæ moderately close, blackish-brown when mature; stems long, slender, glabrous, solid, slightly thickened at the base, whitish, the ring large, membranous, white, persistent; spores elliptic-oblong, 14–16 μ long, 7–8 μ broad.

Pileus 2–3 cm. broad; stem 5–7 cm. long, 2–4 mm. thick.

Yakutat (Trelease, 501, 503).

The species is well marked by the large, firm, persistent white ring, which is sometimes flocculose on the lower surface. The pileus may be somewhat glutinous when moist, and the drying of the gluten may give the fibrillose or squamose appearance exhibited by some of the specimens.

Agaricus campester Linnæus.*

Kadiak (Trelease, 504).

Cortinarius sp.?

MACOUN, Rept. Fur Seal Investigations, Pt. 3, 584.

St. Paul Island, Bering Sea.

Tubaria brevipes Peck, sp. nov.†

Pileus thin, convex, glabrous, ferruginous; lamellæ broad, arcuate, distant, adnate or slightly decurrent, ferruginous; stem short, slender, glabrous, hollow, brown; spores elliptic, uninucleate, 10–12 μ long, 7–8 μ broad.

Pileus 6–10 mm. broad; stem 6–14 mm. long, scarcely 1 mm. thick.

Port Clarence (Trelease, 562, 567).

The dried specimens resemble in color those of *Omphalia campanella*, but the color of the spores and the ferruginous hue of the lamellæ easily distinguish this species from any species of *Omphalia*.

Galera sphagnorum (Persoon) Fries.†

Kadiak (Trelease, 511); Yakutat (Trelease, 514*a*, 516).

Naucoria vernalis Peck.†

Orca (Trelease, 506).

Naucoria badipes Fries? ‡

Juneau (Trelease, 568*b*).

Naucoria camerina Fries.‡

Orca (Trelease, 508).

Flammula fulvella Peck.

MACOUN, Rept. Fur Seal Investigations, Pt. 3, 583.

St. Paul Island, Bering Sea.

Pholiota marginata Batsch.‡

Muir Glacier (Trelease, 525).

Pholiota unicolor Wahlenberg.‡

Yakutat Bay (Trelease, 520).

Pholiota præcox sylvestris Peck.†

Yakutat Bay (Trelease, 502, 514, 517).

In these specimens the whole surface of the pileus has the reddish yellow or rusty brown color that in the typical form is limited to the center.

Eccilia conchina (Fries).‡

Juneau (Trelease, 564).

Nolanea juncea Fries.‡

Sitka (Trelease, 507).

Nolanea? sp.

Nolaviea? sp. MACOUN, Rept. Fur Seal Investigations, Pt. 3, 584.

St. Paul Island, Bering Sea.

Entoloma clypeatum (Linnæus) Fries.†

Glacier Bay (Coville, 505).

The specimens appear to belong to this species, but the reference is doubtful to the extent that it is not possible to affirm that the pileus is hygrophanous when fresh, as there are no notes with the samples that indicate it.

Marasmius androsaceus Fries?‡

Virgin Bay (Trelease, 528).

Marasmius filipes Peck?‡

Orca (Trelease, 529*a*, on needles of *Tsuga*).

Marasmius perforans Host.‡

Orca (Trelease, 529, on needles of *Tsuga*).

Cantharellus bryophilus Peck, sp. nov.†

Pileus thin, dimidiate, flabellate, or subspatulate, rarely lobed, glabrous, mostly white tomentose or downy at the base, sessile by a more or less broad base; lamellæ very narrow, branched or forked, distant; spores broadly elliptic or subglobose, 6–7 μ long, 5–6 μ broad.

Pileus 1–2.5 cm. broad.

Muir Glacier (Trelease, 552, 563, in moss).

The dried specimens have the pileus partly blackened. They are

mostly whitish or pallid at and near the base, blackish toward and on the margin. They are probably white or whitish when fresh and assume the blackish color with age or in drying. Though inhabiting mosses, the species may be distinguished from *C. muscigenus* by the zoneless and differently colored pileus, by the entire absence of a distinct stem, and by the smaller spores. In one specimen the pileus is slightly fibrillose.

Russula nigrodisca Peck.

MACOUN, Rept. Fur Seal Investigations, Pt. 3, 583.

St. Paul Island, Bering Sea.

Hygrophorus limacinus (Scopoli) Fries.†

'Alaska' (Evans, 263).

The specimens are small and pale.

Omphalia semivestipes Peck.†

Orca (Trelease, 522, 524).

These specimens have the stems longer than they are in the type, but they are evidently the same species.

Omphalia campanella (Batsch) Fries.†

Sitka (Trelease, 536‡, 540, 561‡); Orca (Trelease, 530, 550, 565).

Omphalia montana Peck.†

St. Paul Island, Bering Sea (Trelease, 551).

Omphalia sphagnophila Peck, sp. nov.†

Pileus at first narrowly obconic and centrally depressed, becoming tubiform or subinfundibuliform, thin, glabrous, whitish or pale yellow; lamellæ moderately broad, distant, very decurrent, yellow, the interspaces sometimes venose; stem short, solid or stuffed, pruinose or minutely downy, whitish with a white mycelium at the base; spores broadly elliptic, 6–7 μ long, 4–5 μ broad.

Pileus 1–2 cm. broad; stem 1–2 cm. long, 2–4 mm. thick.

Port Clarence (Trelease, 558). Growing among and attached to the stems and branches of *Sphagnum*.

This species is closely related to *O. umbellifera*, of which it may possibly be a variety, but it is easily separated by its peculiar shape, especially when young, and by its more narrow and much more decurrent lamellæ.

Omphalia umbellifera (Linnæus) Fries.†

Cape Fox (Trelease); Juneau (Trelease, 568*a*); Sitka (Trelease, 539, 544–6); Orca (Trelease, 538, 543); Virgin Bay (Trelease, 548);

Port Wells (Trelease, 549); Yakutat (Trelease, 542); Bering Sea: Hall Island (Trelease, 537); St. Lawrence Island (Trelease, 556).

Omphalia gracillima Weinmann.‡

Port Clarence (Trelease, 557).

Omphalia pseudo-androsacea Bulliard.‡

Juneau (Trelease, 564*a*); Sitka (Trelease, 554).

Omphalia pyxidata hepatica Batsch.‡

Yakutat Bay (Trelease, 566).

Mycena atrocyanea Batsch.‡

Yakutat (Trelease, 532*a*?); Orca (Trelease, 533?); Virgin Bay (Trelease, 531, forma *minor*).

Mycena debilis Fries.‡

Sitka (Trelease, 553).

Mycena stannea Fries.‡

Hot Springs, Baranof Island (Trelease, 591*f*?); Orca (Trelease, 534); Yakutat (Trelease, 532).

Collybia dryophila (Bulliard) Fries.†

Wrangell (Trelease, 512); Juneau (Trelease, 564*a*); Sitka (Trelease, 509, 510, 560); Kadiak (Trelease, 519).

Collybia velutipes spongiosa Peck, var. nov.†

Yakutat (Trelease, 515).

The distinguishing characters of this variety are found in the short, rather fragile stem, which is clothed throughout with a rather dense but soft tawny tomentose stratum .5–1 mm. thick. The stems are scarcely more than 2.5 cm. long. The soft spongy texture of this tomentose coat is suggestive of the name given.

Clitocybe diatreta Fries.

Macoun, Rept. Fur Seal Investigations, Pt. 3, 583.

St. Paul Island, Bering Sea.

Clitocybe laccata Scopoli.

Macoun, Rept. Fur Seal Investigations, Pt. 3, 583.

St. Paul Island, Bering Sea.

Clitocybe cyathiformis Fries.

Macoun, Rept. Fur Seal Investigations, Pt. 3, 583.

St. Paul Island, Bering Sea.

Tricholoma melaleucum Persoon.‡

Orca (Trelease, 523).

STERILE MYCELIA.

Sclerotium varium Persoon.

Kadiak (Trelease, 737*a*, in decaying stems of *Heracleum*).

Sclerotium durum Persoon.

Orca (Trelease, 730*a*, in decaying stem of *Veratrum*, associated with *Patinella aloysii-sabaudiæ*.)

PSEUDO-FUNGI.

The following mite-galls, formerly placed in the pseudo-genus *Erineum*, occur in Alaska:

Erineum alneum Persoon.[1]

Muir Glacier (Trelease, 711); Kadiak (Cole). On leaves of *Alnus*.

Erineum roseum Schult.

Hooker & Arnott, Bot. Beechey 134. — Rothrock, Smithsonian Rept. 1867: 463.—Turner, Cont. Nat. Hist. Alaska 85.

Alaska. Doubtless on leaves of *Betula*, unless it refers to the preceding.

Erineum aucupariæ Kunze.[1]

Wrangell (Evans, 64, on leaves of *Sorbus*).

Erineum pyrinum Persoon.*

Cape Fox (Trelease, 666, on leaves of *Pyrus rivularis*).

INDEX TO HOST GENERA.[2]

[1] Determined by Professor Farlow.

[2] A few indefinite references, such as wood, moss, etc., are to be found at end of the generic index.

ANEMONE.
Physalospora borealis.
Rhabdospora camptospora.
Stagonospora pulsatillæ.
ANGELICA.
Cercospora apii var. angelicæ.
Septoria dearnesii.
ARABIS.
Peronospora parasitica.
Puccinia thlaspeos.
ARENARIA.
Pseudopeziza cerastiorum var. arenariæ.
Pyrenophora comata.
ARNICA.
Ramularia arnicola.
ARTEMISIA.
Sphærella eriophila.
ASPIDIUM.
Phyllachora filicina.
ASTER.
Æcidium asterum.
Puccinia asteris.
ASTRAGALUS.
Æcidium astragali-alpini.
Uromyces lapponicus.
BETULA.
Dothidella betulina.
Erineum rosaceum.
Fomes fomentarius.
Fomes igniarius.
Sphærella harthensis.
CAMPANULA.
Ramularia macrospora.
CARDAMINE.
Phoma oleracea.
CAREX.
Phacidium diminuens.
Phyllosticta caricicola.
Puccinia caricis.
Sphærella leptospora.
Sphærella wichuriana.
Stagonospora heleocharidis subsp. caricina.
CHAMÆCYPARIS.
Uredo nootkatensis.
CIRCÆA.
Puccinia circææ.
CLAYTONIA.
Æcidium claytonianum.
CŒLOPLEURUM.
Puccinia bullata.
CONIOSELINUM.
Puccinia bullata.
Septoria petroselini subsp. treleaseana.
COPTIS.
Phyllosticta helleboricola var. coptidis.
CORNUS.
Glomerularia corni.
Puccinia porphyrogenita.
Septoria canadensis.
DRABA.
Pleospora media.
DRYAS.
Massarina dryadis.
Sphærella ootheca.
DUPONTIA.
Pleospora pentamera.
ELYMUS.
Puccinia procera.
EMPETRUM.
Metasphæria empetri.
Physalospora crepiniana.
EPILOBIUM.
Æcidium epilobii.
Ramularia cercosporoides.
Sphærella adusta.
ERIOPHORUM.
Septoria chamissonis.
Septoria eriophorella.
FESTUCA.
Leptosphæria ophiopogonis.
FRASERA.
Æcidium fraseræ.
FRITILLARIA.
Uromyces erythronii.
GERANIUM.
Æcidium violascens.
Puccinia geranii-silvatici.
Venturia circinans.
HABENARIA.
Æcidium alaskanum.
HERACLEUM.
Heterosphæria patella.
Leptosphæria doliolum.

HERACLEUM.
Phoma complanata.
Phyllachora? heraclei.
Ramularia heraclei.
Sclerotium varium.
Sphærographium abditum.
HEUCHERA.
Puccinia heucheræ.
Puccinia tiarellæ.
LEDUM.
Uredo ledicola.
LONICERA.
Botrytis vulgaris.
LUPINUS.
Leptosphæria fœniculacea subsp. lupina.
Trichopeziza earoleuca.
LUZULA.
Stagonospora aquatica subsp. luzulicola.
MENYANTHES.
Physoderma menyanthis.
MENZIESIA.
Tremella? phyllachoroides.
MONESES.
Chrysomyxa pirolæ.
MYRICA.
Ovularia sommeri.
NEBRIA.
Laboulbenia nebriæ.
ORCHIS.
Ædidium alaskanum.
OXYRIA.
Ustilago vinosa.
OXYTROPIS.
Pleospora herbarum.
Pyrenophora chrysospora.
PARNASSIA.
Ædidium parnassiæ.
PARRYA.
Leptothyrium vulgare f. parryæ.
PHEGOPTERIS.
Hyalospora polypodii-dryopteridis.
PHYLLODOCE.
Antennaria rectangularis.
PICEA.
Hypoxylon ohiense.
Sporonema strobilinum.
PINUS.
Peridermium cerebrum.
POA.
Pleospora infectoria.
Sphærella graminum.
POLEMONIUM.
Pyrenophora polyphragmoides.
POLYGONUM.
Bostrichonema alpestre.
Pseudopeziza bistortæ.
Ustilago bistortarum.
Ustilago bistortarum var. inflorescentiæ.
POTENTILLA.
Ramularia punctiformis.
PRASIOLA.
Guignardia alaskana.
PRENANTHES.
Puccinia prenanthis.
PYROLA.
Chrysomyxa pirolæ.
Leptosphæria marginata.
PYRUS.
Erineum pyrinum.
RANUNCULUS.
Ædidium ranunculacearum.
Peronospora ficariæ.
Pleospora herbarum.
Ramularia æquivoca.
RHODODENDRON.
Rhytisma? rhododendri.
RIBES.
Ædidium grossulariæ.
Diaporthe pungens.
Diaporthe strumella.
Godronia urceolus.
Pseudovalsa ribesia.
Rhynchophoma raduloides.
ROSA.
Phragmidium subcorticium.
RUBUS.
Fabræa cincta.
Leptothyrium vulgare.
Phragmidium rubi.
Phragmidium rubi-idæi.
Septoria rubi.
Venturia kunzei.
Venturia kunzei var. ramicola.

RUMEX.
Ramularia pratensis.
Sphærella rumicis.
SALIX.
Lophodermium maculare.
Melampsora alpina.
Melampsora farinosa.
Rhytisma salicinum.
Sphærella grossulariæ var. salicella.
SANGUISORBA.
Ovularia bulbigera.
SAXIFRAGA.
Cæoma saxifragarum.
Læstadia saxifragæ.
Puccinia heucheræ.
Puccinia laurentiana.
Puccinia saxifragæ.
SCIRPUS.
Leptosphæria juncicola.
SELINUM.
Cercospora apii var. selini-gmelini.
SILENE.
Leptosphæria silenes-acaulis.
SORBUS.
Erineum aucupariæ.
SPIROGYRA.
Lagenidium entophytum.
Pythium gracile.
Vampyrella spirogyræ.
TELLIMA.
Puccinia heucheræ.
TRIENTALIS.
Tuburcinia trientalis.
TSUGA.
Ciboria sp.
Microthyrium harrimani.
Sporonema strobilinum.
VACCINIUM.
Exobasidium vaccinii.
Lophodermium oxycocci.
Thecopsora vacciniorum.
VALERIANA.
Puccinia valerianæ.
VERATRUM.
Patinella aloysii-sabaudiæ.
Sclerotium durum.
VIOLA.
Puccinia fergussoni.

UNIDENTIFIED ORGANIC MATERIAL.

BARK.
Hypoxylon majusculum.
Hypoxylon ohiense.
Lachnea scutellata.
Microcera brachyspora.
Nectria sanguinea.
Scleroderris treleasei.
DUNG (of ptarmigan?).
Sporormia ambigua.
FUNGI (Sphæriaceæ).
Nectria episphæria.
INSECTS.
Cordyceps militaris.
Laboulbenia nebriæ.
LEAVES.
Diderma niveum.
Dothidella betulina subsp. yakutatiana.
Eurotium herbariorum.
Phialea carneola.
Scolecotrichum graminis.
MOSSES.
Cantharellus bryophilus.
MOSSES—continued.
Diderma niveum.
Omphalia sphagnophila.
Psilocybe polytrichi.
SNOW.
Diderma niveum.
STEMS AND TWIGS.
Amphisphæria applanata.
Botrytis vulgaris.
Diaporthe anisomera.
Fusarium illosporioides.
Helotium fumigatum.
Leptosphæria agnita subsp. labens.
Nidularia candida.
Patinella aloysii-sabaudiæ.
Pirottæa yakutatiana.
Speira effusa.
Speira minor.
Trichopeziza relicina.
WOOD.
Coniosporium atratum.
Corticium incarnatum.
Cudonia circinans.

Wood—continued.
Dacryomyces deliquescens.
Fomes applanatus.
Fomes igniarius.
Fomes pinicola.
Guepinia lutea.
Helotium alaskæ.
Helotium lenticulare.
Hymenochæte tabacina.
Lachnea scutellata.

Wood—continued.
Lycoperdon piriforme.
Peniophora disciformis var. borealis.
Polyporus melanopus.
Polyporus pubescens.
Polystictus abietinus.
Polystictus radiatus.
Poria crassa.
Thelephora laciniata.
Vibrissea truncorum.

PLATE II.

FIG. 1. *Microthyrium harrimani* Sacc. *a*, fungus, × 5; *b*, perithecia duo binata; *c*, contextus perithecii; *d*, ascus; *e*, sporidia.

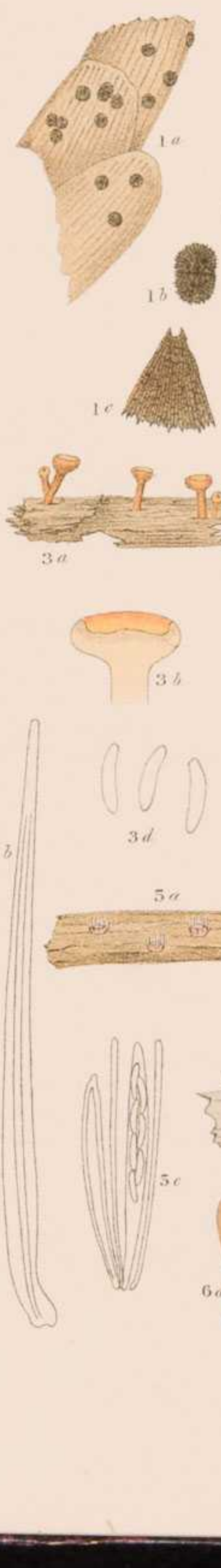
2. *Phialea carneola* Sacc. *a*, fungus, × 5; *b*, cupulæ varia ætate; *c*, ascus; *d*, sporidia.

3. *Helotium alaskæ* Sacc. *a*, fungus, × 5; *b*, ascoma sectum; *c*, ascus; *d*, sporidia.

4. *Pirottæa yakutatiana* Sacc. *a*, fungus, × 4; *b*, ascomata magis aucta; *c*, pili fimbriati; *d*, setula; *e*, ascus; *f*, sporidia.

5. *Trichopeziza earoleuca* (B. & Br.) Sacc. *a*, fungus, × 4; *b*, seta; *c*, ascus et sporidia.

6. *Patinella aloysii-sabaudiæ* Sacc. *a*, fungus, × 1; *b*, cupulæ, × 5; *c*, sectio; *d*, pili seu cellulæ marginales solutæ; *e*, ascus et paraphyses; *f*, conidia; *g*, sporidia.


1a
1b
1c
1d
1e
3a
3b
3c
3d
5a
5b
5c
6a
6b
6c
6d


2a
2b
2c
2d
4a
4b
4c
4d
4e
4f
6e
6f
6g

PLATE III.

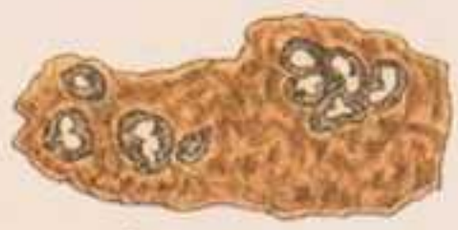
FIG. 7. *Scleroderris treleasei* Sacc. *a*, fungus, × 1; *b*, ascomata, × 5; *c*, ascoma juvenile sectum; *d*, ascoma adultum sectum; *e*, ascus; *f*, asci apex; *g*, sporidia.

8. *Ramularia punctiformis* Sacc. *a*, fungus, × 5; *b*, cæspituli hyphæ; *c*, conidia.

9. *Antennaria rectangularis* Sacc. *a*, hyphæ parum auctæ; *b*, hyphæ fragmentum valde auctum.

10. *Fusarium illosporioides* Sacc. *a*, fungus, × 3; *b*, hyphæ sporophoræ variæ; *c*, conidia varia ætate.

11. *Tremella? phyllachoroidea* Sacc. *a*, fungus auctus sectus; *b*, hyphæ.



7a

7f

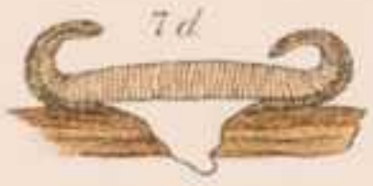
7e

7g

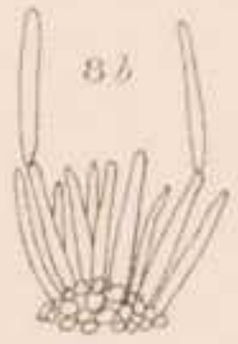
8a

7b

7c



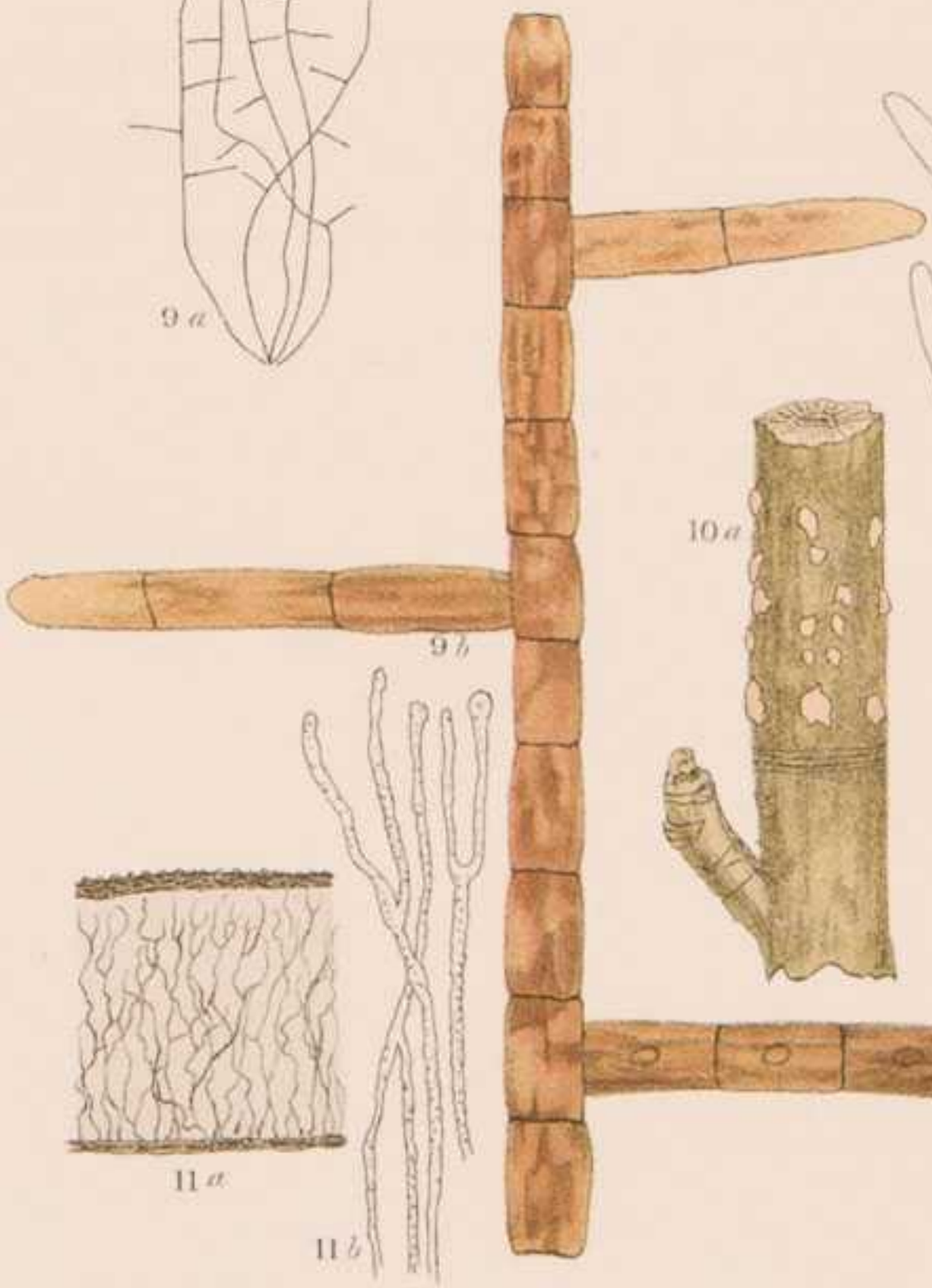
7d



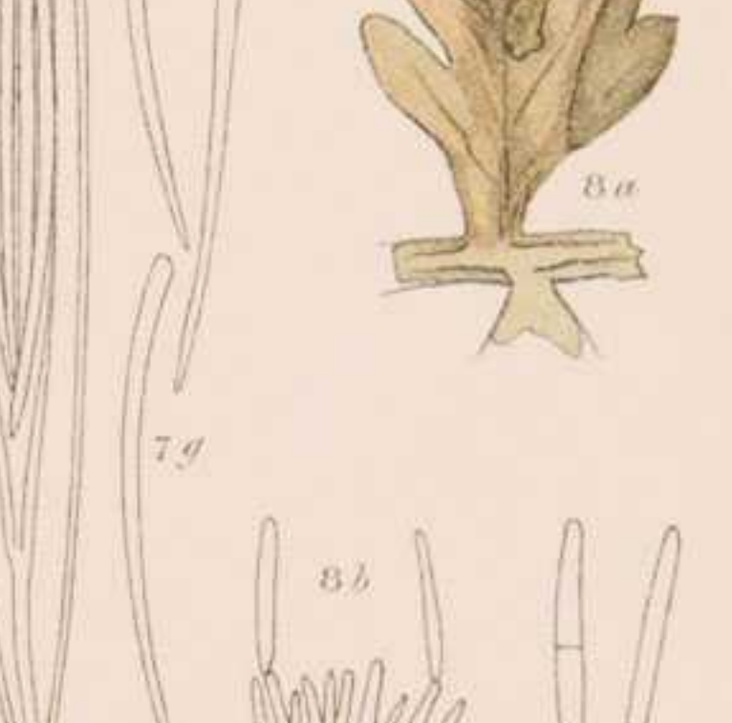
8b

8c

9a

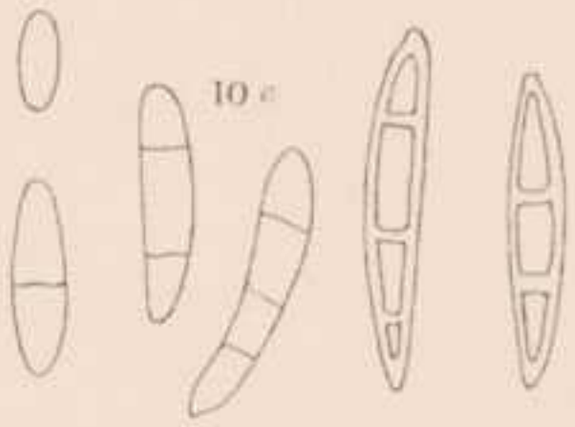


9b



10b

10a



10c

11a

11b

PLATE IV.

FIG. 1. *Limacinia? alaskensis* Sacc. & Scal. *a*, fungus, × 1; *b*, *c*, hyphæ; *d*, conidium; *e*, perithecia aucta; *f*, asci immaturi.

2. *Hypoxylon ohiense* Ell. & Everh. *a*, fungus sectus, × 1; *b*, ascus; *c*, sporidia.

3. *Læstadia saxifragæ* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, asci; *d*, sporidia.

4. *Physalospora borealis* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecia aucta; *c*, ascus; *d*, sporidia.

5. *Sphærella graminum* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium auctum; *c*, asci; *d*, sporidia.

6. *Sphærella grossulariæ salicella* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium auctum; *c*, ascus; *d*, sporidia. (In folio salicino adest quoque *Rhytisma salicinum*.)

7. *Sphærella leptospora* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium auctum; *c*, asci; *d*, sporidia.

8. *Venturia kunzei ramicola* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecia aucta; *c*, setula perithecii; *d*, ascus; *e*, sporidia.

9. *Didymosphæria arenaria macrospora* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium auctum; *c*, ascus; *d*, sporidia.


1a
1b
1c
1d
1e
1f
2a
2b
2c
3a
3b
3c
3d
4a
4b
4c
4d
5a
5b
5c
5d
6a
6b
6c
6d
7a
7b
7c
7d
8a
8b
8c
8d
8e
9a
9b
9c
9d

PLATE V.

FIG. 10. *Diaporthe* (*Chorostate*) *anisomera* Sacc. & Scal. *a*, fungus, × 1; *b*, acervulus sectus horizontaliter; *c*, acervulus sectus verticaliter; *d*, ascus; *e*, sporidia.

11. *Leptosphæria agnita labens* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, ascus; *d*, sporidia.

12. *Leptosphæria fæniculacea lupina* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecia secta; *c*, ascus; *d*, sporidia.

13. *Pyrenophora polyphragmoides* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium auctum; *c*, setula perithecii; *d*, ascus; *e*, sporidium.

14. *Pseudovalsa ribesia* Sacc. & Scal. *a*, fungus, × 1; *b*, acervulus sectus; *c*, ascus; *d*, sporidia.

15. *Phyllachora filicina* Sacc. & Scal. *a*, fungus, × 1; *b*, stroma sectum; *c*, loculus sectus auctus; *d*, ascus; *e*, sporidia.

15′. *Dothidella betulina yakutatiana* Sacc. & Scal. *a*, stroma sectum; *b*, ascus; *c*, sporidia.

16. *Fabræa cincta* Sacc. & Scal. *a*, fungus, × 1; *b*, ascoma sectum; *c*, asci; *d*, sporidia.

17. *Rhynchophoma raduloides* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecia; *c*, contextus prosenchymaticus perithecii; *d*, basidia; *e*, sporulæ.


10 a


10 b


10 c


10 e


10 d


11 a


11 b

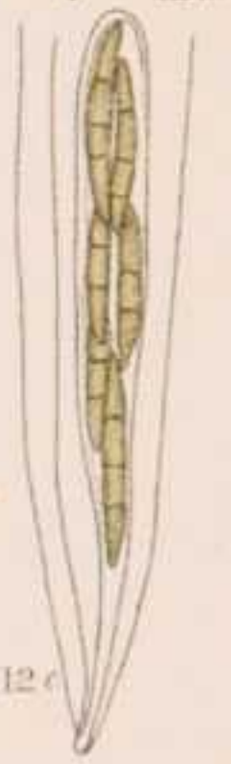

11 d

11 c


12 a


12 d


12 b


12 c


13 a


13 b


13 c

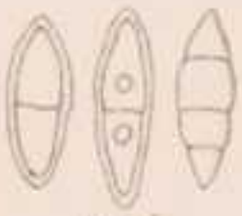

13 e

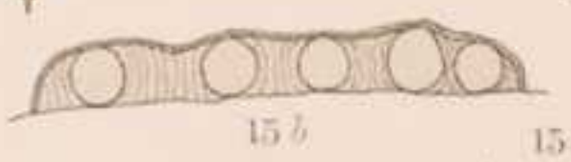

13 d


14 a


14 b


14 c

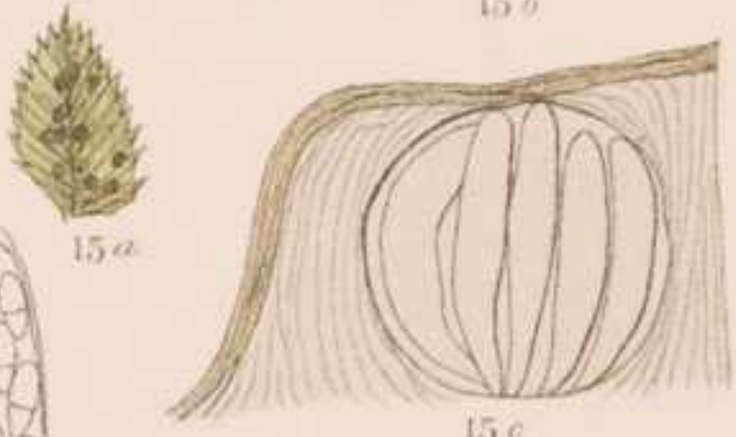

14 d


15 b


15 d


15 e

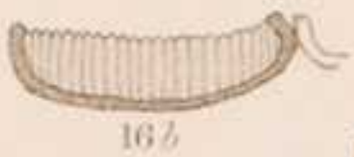

15 a


15 c


15 f


15 b


16 a


16 b


16 d


16 c


17 a


17 b


17 d


17 f


17 e

PLATE VI.

FIG. 18. *Phyllosticta caricicola* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, sporulæ.

19. *Phyllosticta helleboricola coptidis* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, sporulæ.

20. *Stagonospora aquatica luzulicola* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, sporulæ.

21. *Stagonospora heleocharidis caricina* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, sporulæ.

22. *Stagonospora graminum* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, sporulæ.

23. *Septoria petroselini treleaseana* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecia secta: *c*, sporulæ.

24. *Septoria eriophorella* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, sporulæ.

25. *Septoria chamissonis* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium sectum; *c*, sporulæ.

26. *Rhabdospora camptospora* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecium auctum; *c*, sporulæ.

27. *Sphærographium abditum* Sacc. & Scal. *a*, fungus, × 1; *b*, perithecia aucta; *c*, sporulæ.

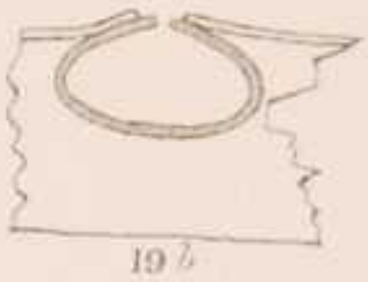
28. *Microcera brachyspora* Sacc. & Scal. *a*, fungus, × 1; *b*, sporodochium auctum sectum; *c*, hyphæ variæ; *d*, conidia.


18 a


18 b


18 c

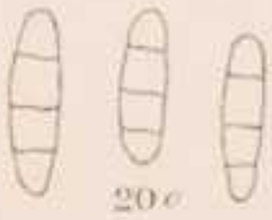

19 a


19 b

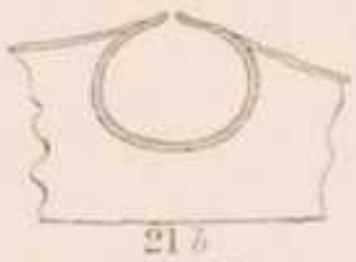

19 c


20 a


20 b


20 c


21 a


21 b


21 c


22 a


22 b


22 c


23 a


23 b


23 c


24 a


24 b


24 c


25 a


25 b

25 c


26 b


27 b


28 a

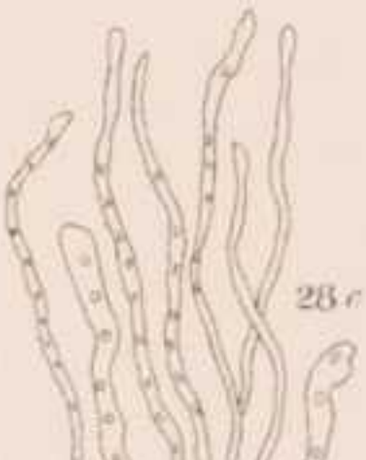

28 b


26 a


26 c


27 a


27 c


28 c


28 d

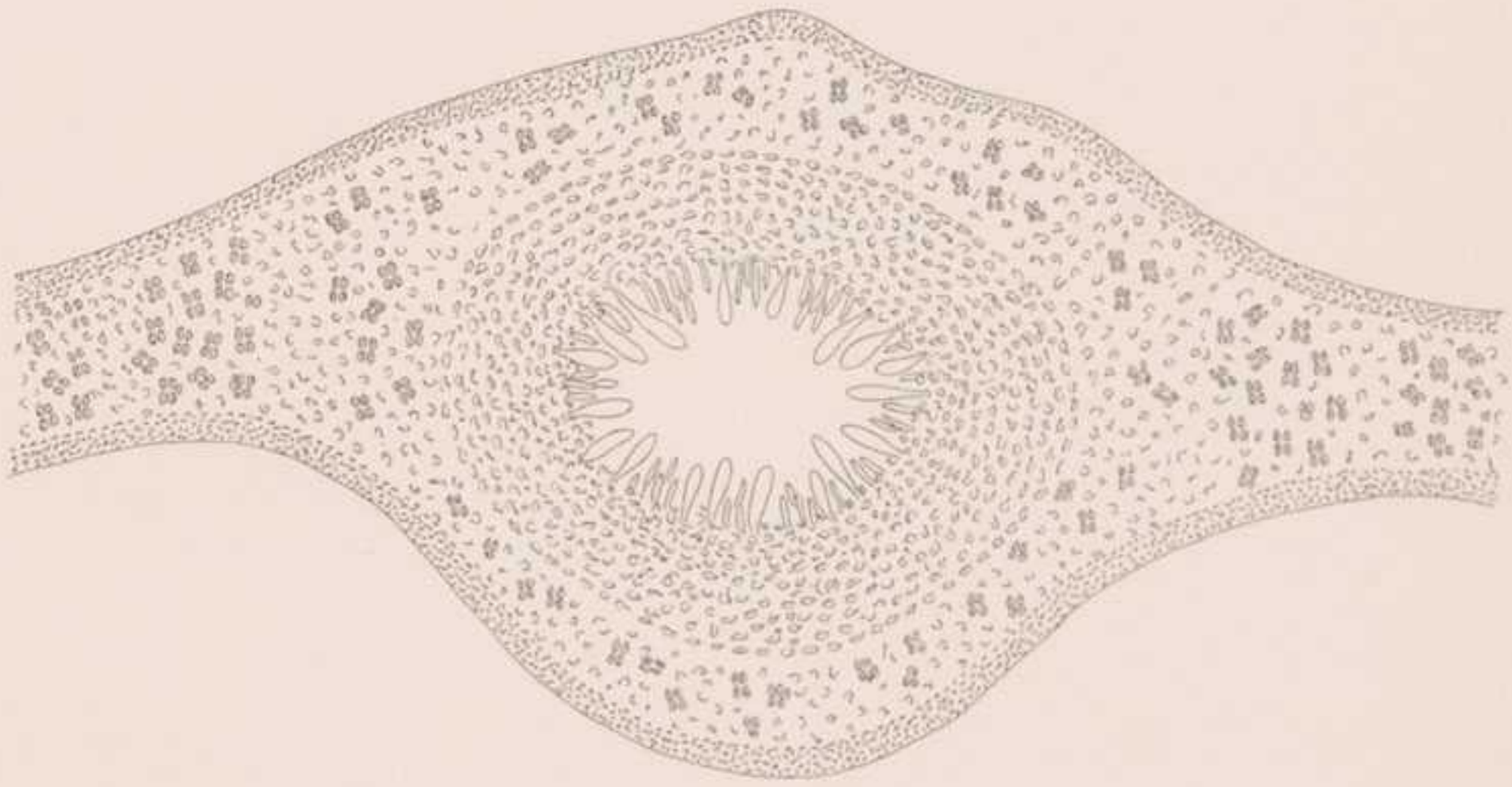
PLATE VII.

Guignardia alaskana Reed.

FIG. 1. Thallus, × 2.
2. Asci and spores, × 435.
3. Vertical section, × 192.
4. Section through the fruit, × 100.
5. Section, × 384.

1

2



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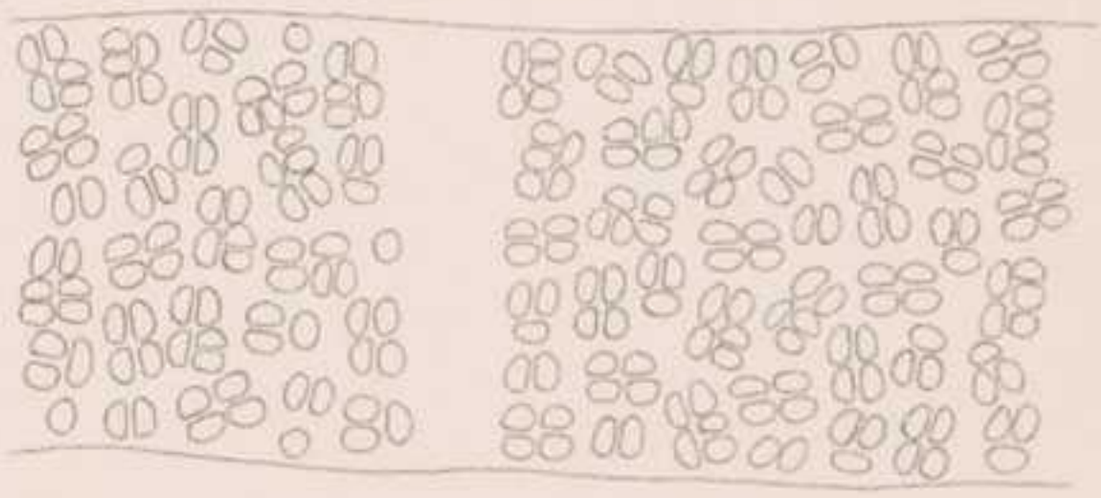

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