NEW WEST AMERICAN FUNGI.

By J. B. Ellis and B. M. Everhart.

Nectria cytisporina, E. & E.

On dead fir twigs. Seattle, March, 1892, Miss Adella M. Parker.

Stroma cytisporoid, subcuticular, convex, unicellular, olive-gray with a white center, raising the epidermis in distinct pustules, and filled with ovate, dark brown, 2-nucleate stylospores 8 to 10 x 4 to 5 μ. Perithecia 3 to 8, originating in the white central part of the stroma, but soon cespitose erumpent and superficial, ovate, bright red, about $\frac{1}{4}$ mm. diameter, perforated above. Asci cylindrical, short-stipitate, p. sp. about 60 x 6 μ, without paraphyses, 8-spored. Sporidia uniseriate, hyaline, unseptate, not constricted, narrow-elliptical, 7 to 8 x 8 to 4 μ.

Resembles *N. cucurbitula* (Tode), but distinguished by its accompanying stylospores and its smaller asci and sporidia.

Lasiosphæria dichroospora, E. & E.

On clay loam in woods, Seattle, Wash., April, 1892, Chas. V. Piper, No. 170, about 1 mm. diam.

Perithecia densely gregarious, ovate, rugose, black, tough-membranaceous, clothed with a few slender brown hairs. Ostiolum broad convex-papilliform, sometimes sub-compressed. Asci lanceolate, 150 x 8 to 10 μ, p. sp. 100 to 120 μ long, paraphysate, 8-spored. Sporidia biseriate, cylindrical, bent near the lower end, and hyaline below, for about $\frac{1}{3}$ the length of the sporidium, abruptly black above, each end mucronately pointed, about 40 x 4 μ.

A well marked and curious species. The base of the perithecia is sunk in the soil, with the upper half or more free.

Rosellinia pulcherrima, E. & E.

On a piece of fir bark partly covered with earth, Seattle, Wash., Sept., 18, 1892, Adella M. Parker, No. 160.

Perithecia gregarious, hemispherical, 1 to 1¼ mm. diameter, black and shining, coriaceo-carbonaceous, ribbed below, and connected by a thin, mouse-colored, loosely interwoven subiculum. Ostiolum broad-conical, seated in a shallow depression. Asci cylindrical, 110 to 120 x 7 to 8 μ, pseudo-paraphysate, stipitate, 8-spored. Sporidia uniseriate, oblong-fusoid, 2-nucleate, nearly hyaline at first, becoming brown and more or less opake, 14 to 16 x 3½ to 4½ μ, with a straight, awl-shaped, hyaline appendage at each end, 8 to 10 μ long.

The ribs around the base extend about half way up and are generally quite distinct.

Anthostomella cornicola, E. & E.

On dead twigs of *Cornus*, Seattle, Wash., August, 1892, Adella M. Parker, No. 115.

Scattered, buried. Perithecia globose, ¾ mm. diameter, partly sunk in the wood and raising the epidermis into convex pustules covered by the black and shining epidermis, which is perforated in the center by the papilliform ostiolum. Asci cylindrical, paraphysate, 8-spored, p. sp. 150 x 8 μ. Sporidia uniseriate, narrow-elliptical, 20 to 22 x 7 to 8 μ, at first with a hyaline coat and a short, hyaline, mucronate tip above, at length opake.

Sphærella sidæcola, E. & E.

On living leaves of *Sidalcea delphinifolia*, Pasadena, Calif., March, 1893.

Perithecia amphigenous, minute, subcircinate, on small (1 mm.) dead brownish spots. Asci oblong or obclavate, 35 to 40 x 8 μ, fasciculate, mostly curved. Sporidia biseriate, pyriform, greenish-hyaline, 10 to 12 x 4 μ.

Physalospora agrifolia, E. & E.

On leaves of *Quercus agrifolia*, Berkeley, Calif., March, 1893, Blasdale, No. 107.

Perithecia epiphyllous, on large wood-colored spots 1 to 2 cm. diameter, or often occupying half or more of the leaf, and bounded by a narrow, reddish line, sunk in the substance of the leaf, but raising the epidermis into pustules and finally

rupturing it. Contents of the young perithecia pale orange-yellow at first, becoming black, 150 to 200 μ diam. Asci clavate-cylindrical, 45 to 60 x 8 to 10 μ, short-stipitate, 8-spored, without paraphyses. Sporidia biseriate, ovate, hyaline, continuous, 10 to 15 x 5 to 6 μ, subacute below.

Quite different from *P. bina*, Hark., on the same host.

The *Physalospora* is accompanied by a *Phyllosticta* (*P. agrifolia*, E. & E.), with sporules oblong-elliptical, 5 to 6 x 2 μ, and a *Pestalozzia* agreeing with the diagnosis of *P. Saccardoi*, Speg.

Melogramma Columbiensis, E. & E.

On small dead limbs of some tree or shrub, British Columbia, May, 1893, Dr. J. Macoun.

Stromata thickly scattered, small, about 1 mm. diam., subangular or hysteriiform, black, soon raising and rupturing the epidermis by which they are closely embraced and partly covered, mostly flattened above. Perithecia buried in the stroma, small, 150 to 200 μ diam., white inside. Ostiola minute, papilliform. Asci clavate-cylindrical, paraphysate, 8-spored, about 100 x 12 μ. Sporidia biseriate, oblong or clavate-oblong, hyaline, 5-septate, constricted at the middle septum, 18 to 20 x 6 to 7 μ, sometimes one of the inner cells is divided by a faint, longitudinal septum. Has the habit of *Botryosphaeria fuliginosa*, (M. & N.).

Montagnella abietina, E. & E.

On dead fir twigs, Seattle, Wash., March, 1892, Miss Adella M. Parker.

Erumpent superficial, cespitose. Perithecia ovate-globose, hard (almost sclerotoid), black and shining, about $\frac{1}{3}$ mm. diam., connected at base by an obscure stroma. Ostiolum papilliform. Asci clavate-cylindrical, short stipitate, paraphysate, 8-spored, 75 to 80 x 10 μ. Sporidia biseriate, oblong-fusoid, yellowish-hyaline, 3-septate and slightly constricted, 15 to 20 x 5 to 6 μ.

Peziza (Dasyscypha) **Gaultheriæ**, E. & E.

On living leaves of *Gaultheria Shallon*, Seattle, Wash., Sept., 1892, Adella M. Parker, No. 160.

Maculicolous, hypophyllous, ascomata stipitate, nearly closed at first, then open and cup-shaped, ¾ to 1 mm. diam., pale orange, hymenium, more deeply colored, clothed outside with a dense coat of short, white hairs. Stipe cylindrical, rather less in length than the diameter of the cup. Asci clavate-cylindrical, slender, 40 x 3 to 4 μ, short-stipitate, aparaphysate. Sporidia biseriate, oblong or clavate-oblong, hyaline, continuous, 4 to 5 x 1¼ μ.

The fungus is seated on large, round spots, 2 to 3 cm. diam., grayish white above, rusty brown below, with a dark purple border shading into red.

Psilopezia trachyspora, E. & E.

On rotten wood, North Bend, King Co., Wash., Aug., 1872, Adella M. Parker, No. 92.

Applanate, ½ to 1½ cm. diam., glaucous brown, margin narrowly incurved, wrinkled outside, reddish brown below, substance white inside. Asci cylindrical, stipitate, 200 x 18 to 20 μ, p. sp. 110 to 130 μ long. Paraphyses cylindrical, stout, yellow-brown, 4 to 5 μ thick, subequal throughout. Sporidia uniseriate, elliptical, hyaline becoming slightly brownish, 18 to 20 x 12 to 14 μ, epispore coarsely and densely warted.

Distinguished from *Ps. nummularia,* Berk. (which it most resembles), by its smaller size, glaucous color and rough sporidia.

Camarosporium Eriogoni, E. & E.

On dead stems of *Eriogonum* sp. Fort Collins, Colorado, June 13, 1893, C. F. Baker, No. 94.

Perithecia scattered, erumpent, black, globose-hemispherical, about 100 μ diam. Ostiolum subpapilliform, perforated. Sporules subglobose or elliptical or subcubical, light brown, 1-septate, and often with one or both cells divided by a septum at right angles to the first (sarcinuliform).

Septoria Araliae, E. & E.

On leaves of *Aralia Californica,* Mill Valley, July 24, 1893, W. C. Blasdale, No. 163.

Spots amphigenous, dirty yellow, whitening out, suborbicular, 2 to 3 mm. diam., with a narrow rather darker raised border on both sides of the leaf. Perithecia epiphyllous, minute (70 to 75 μ), collected in the center of the spot, semierumpent. Sporules cylindrical, mostly straight, faintly nucleate, 20 to 28 x $1\frac{1}{4}$ to $1\frac{1}{2}$ μ.

The spots are concave on both sides of the leaf and generally dark brown at first.

Rhabdospora Artemisiae, E. & E.

On dead stems of *Artemisia dracunculoides*, Fort Collins, Colo., July, 1893, C. F. Baker, No. 132.

Perithecia minute, black, prominent, gregarious on slightly blackened spots surrounding the stems or interruptedly confluent along them. Sporules vermiform-cylindrical, hyaline, faintly 1 to 3-septate, undulate, 40 to 50 x 3 μ (at the thicker end).

Differs from *R. pleosporoides*, Sacc. in its smaller perithecia and thicker sporules.

Gloeosporium phyllachoroides, E. & E.

On leaves of *Artemisia vulgaris* var. *Californica*, Pasadena, Calif., July, 1893, Prof. A. J. McClatchie, No. 371.

Acervuli epiphyllous, in compact groups of 4 to 12 together, covered by the blackened epidermis which is raised into pustules about 1 mm. diam., resembling the stromata of some Phyllachora. Conidia oblong, curved, obtuse, granular, hyaline, continuous, 14 to 20 x $3\frac{1}{2}$ to 5 μ. Var. **maculicolum** has the acervuli on definite round, dirty brown spots about 2 mm. diam., but does not differ otherwise.

Marsonia ribicola, E. & E.

On leaves of *Ribes aureum*, Fort Collins, Colo., Sept. 1892, C. F. Baker, No. 139.

Spots amphigenous, at first greenish-cinereous, becoming light brown with a darker center and margin, 3 to 5 mm. diam. Acervuli collected around the center of the spots, epiphyllous, pale yellowish, becoming dark, 110 to 150 μ

diam., erumpent. Conidia elliptical, yellowish, uniseptate and slightly constricted, 10 to 14 x 5 to 6 μ, one cell often smaller, ends rounded and obtuse, not curved.

This is quite distinct from *Gloeosporium Ribis* (Lib.)

Cylindrosporium Ceanothi, E. & E.

On leaves of *Ceanothus divaricatus*, Pasadena, Calif., July, 1893.

Acervuli large (¼ to ½ mm. diam.), on small, subangular dark spots on faded, yellow parts of the leaf, prominent below, dark. Conidia elongated, 40 to 55 x 3½ to 4 μ, multinucleate, becoming 3 to 4 or more septate, nearly straight.

Cylindrosporium lactucicolum, E. & E.

On leaves of *Lactuca Ludoviciana*, Fort Collins, Colo., June, 1893, C. F. Baker, No. 110.

Spots amphigenous, indefinite, 2 to 3 mm. diam., light dirty brown above, cinereous below. Acervuli minute (about 60 μ), buried, pale, finally blackened above and appearing like punctiform, suberumpent perithecia. Sporules cylindrical, subundulate, hyaline, nucleate, 20 to 30 x 2½ μ.

On the same leaves are black, subangular spots, limited mostly by the veinlets, 2 to 4 mm. diam., the substance of the leaf in these spots being filled with millions of minute sporules (conidia)? from a size too small to be measured, up to 2 to 2½ μ, subovate, or suballantoid (*Gloeosporium? myriosporum*, E. & E.)

Stilbum albocitrinum, E. & E.

On dead twigs, Seattle, Wash., Oct., 1892, Adella M. Parker, No. 105.

Gregarious, about 1 mm. height. Stem white, glabrous or slightly pruinose, subattenuated above. Head subglobose, ⅓ to ½ mm. diam., pale orange. Conidia narrow-elliptical, hyaline, 3 x 1¼ μ.

Differs from the other smooth-stemmed species in its smaller conidia.

Scolecotrichum Typhæ, E. & E.

On dead leaves of *Typha latifolia*, Fort Collins, Colo., June, 1893, C. F. Baker, No. 149.

Hyphæ erect, simple, brown, continuous, or occasionally with a single septum, straight or subundulate, mostly toothed or lobed at the apex, 30 to 40 x 5 to 6 μ. Conidia elliptical, uniseptate (exceptionally biseptate), olivaceous-brown, 14 to 22 x 8 to 10 μ.

The crowded hyphæform short (½ to 1½ x ½ to ¾ mm.), black, subquadrangular, subseriate patches on both sides of the leaf.

Differs from *S. maculicola*, E. & K., in the absence of any spots and the rather smaller conidia.

Scolecotrichum Asclepiadis, E. & E.

On leaves of *Asclepias eriocarpa*, Pasadena, Cala., July, 1893, Prof. A. J. McClatchie.

Epiphyllous; forming dark colored patches 2 to 4 mm. diam., scattered over the leaf and finally subconfluent. Hyphæ in small but dense tufts, simple, straight, continuous, brownish, about 20 x 3½ to 4 μ, bearing at their tips the pale olivaceous, obovate or elliptical, uniseptate conidia, 15 to 20 x 9 to 11 μ, sometimes constricted at the septum.

Hadotrichum Blasdalei, Sacc., in litt.

On leaves of *Vicia gigantea*, Mill Valley, Calif., May, 1893, W. C. Blasdale, No. 126.

Forming small (½ to 1 mm.), gregarious, erumpent, superficial, dirty olive-colored, thin, appressed patches, mostly on the lower face of the leaf, which here becomes pale yellowish. Conidia elliptic-ovoid, mostly subapiculate at base, 12 to 26 (mostly 15 to 20) x 10 to 14 μ, variously guttulate, olive-brown, continuous. Basidia fasciculate, obclavate, continuous, concolorous, 22 to 26 x 7 to 9, μ, bearing a single conidium at the apex.

Heterosporium tuberculans, E. & E.

On dead herbaceous stems, Fort Collins, Colo., June, 1893, C. F. Baker, No. 155.

Hyphæ subfasciculate, erect, sparingly septate, olive-brown, 100 to 150 x 5 to 6 μ, simple, of about the same diameter throughout, subnodulose or subgeniculate above, subundulate,

arising from a subhemispherical tubercule formed from the substance of the stem and 1 to 2 mm. diam. Conidia elliptical, oblong or ovate, olive-brown, 1 to 3-septate, minutely granular-roughened, 15 to 30 x 8 to 12 μ terminal and lateral.

Uromyces Coloradensis, E. & E.

On *Astragalus* or *Spiesia,* Fort Collins, Colo., June, 1893, C. F. Baker, No. 118.

Æcidium (Æc. porosum, Ph.?) evenly and thickly scattered over the lower face of the leaf which is somewhat swollen, erumpent, hemispherical at first, then open, $\frac{1}{2}$ to $\frac{3}{4}$ mm. diam., margin spreading, lacerate-toothed, æcidiospores globose, ovate and angular 15 to 22 x 12 to 15 μ, deep orange yellow. Teleutospores, ovate, obovate, globose, angular or otherwise irregular, light chestnut color, smooth, epispore thickened at the apex and generally with a distinct papilla, forming minute ($\frac{1}{2}$ to $\frac{3}{4}$ μ), amphigenous, irregularly scattered sori nearly black while covered by the epidermis, chestnut color when exposed and bare. Pedicels fragile, hyaline, 30 to 40 μ long.

U. Astragali (Opiz.) has smaller, more regularly shaped spores and no *Æcidium.*

Uromyces Gnaphalii, E. & E.

On leaves of *Gnaphalium* sp., Fort Collins, Colo., Nov. 29, 1892, C. F. Baker, No. 71.

III. Sori scattered, hypophyllous, 1 mm. diam., naked, dark chestnut brown. Teleutospores globose or elliptical, smooth, strongly thickened at the apex, but not distinctly papillate, 22 to 30 x 19 to 22 μ, with granular contents. Pedicels hyaline, cylindrical, 80 to 100 x 4 to 5 μ.

Puccinia heterantha, E. & E.

On *Œnothera heterantha,* Basin, Montana, July, 1892, Rev. F. D. Kelsey; Sheridan, Montana, Mrs. L. A. Fitch; on *Oe. ovata,* Berkeley, Calif., March, 1892, W. C. Blasdale.

I. Æcidia abundant, scattered over the entire leaf, epiphyllous, though sometimes hypophyllous, short, 2 to 3 mm.

in diameter; border, whitish, spreading, irregularly torn; spores subglobose, smooth orange in color and 18 μ in diameter. Spermogonia abundant.

II and III. Hypophyllous. Uredospore sori scattered, round, ½ to 1 mm. diam., bordered by the ruptured epidermis, cinnamon color. Uredospores, subglobose, 16 to 22 μ in the longer diameter, faintly echinulate. Teleutospore sori same as those of the uredospores, only darker. Teleutospores ovate or oblong-elliptical, smooth, slightly constricted, rounded at both ends, 24 to 32 x 16 to 22 μ, epispore moderately thickened at the apex and mostly with a distinct papilla.

Uredo Californica, E. & E.

On leaves of *Vicia gigantea*, Mill Valley, Calif., May 25, 1893, W. C. Blasdale, No. 126.

Sori mostly hypophyllous, small (½ mm. or less), soon naked and often subconfluent, olivaceous, not many spots, but the leaf is a little paler (pale yellow above) in the parts occupied by the fungus. Uredospores globose or elliptical, nearly hyaline, faintly aculeolate, 15 to 20 x 10 to 14 μ.

In the effused state this resembles some hyphomycetous fungus. Differs from the Uredo of *Uromyces Fabæ* (Pers.), in its smaller, olivaceous sori and nearly hyaline spores.

Æcidium Gauræ, E. & E.

On leaves of *Gaura parviflora*, Fort Collins, Colo., June, 1893, C. F. Baker, No. 127.

Spots amphigenous, suborbicular, 3 to 8 mm. diam., reddish-purple above, becoming yellow with a reddish-purple border, border paler below. Spermogonia honey-color or yellow, prominent, occupying the spots on the upper surface; Æcidia hypophyllous, innate-erumpent, crowded, small (¼ to ⅓ mm.), soon open with the spreading margin coarsely lacerate-toothed; æcidiospores globose, smooth, 14 to 17 μ diam., orange-yellow.

This is entirely different from *Æcid. gaurinum*, Pk., which has scattered æcidia.