

N. Suksdorf, Aug. 9th, 1882; Mt. Stewart, collected by T. S. Brandegee, Aug. 1883; Mt. Rainier at 8,000 feet altitude, collected by C. V. Piper, Aug. 1888.

Cambridge, Mass., Oct. 1890.

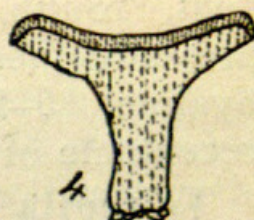
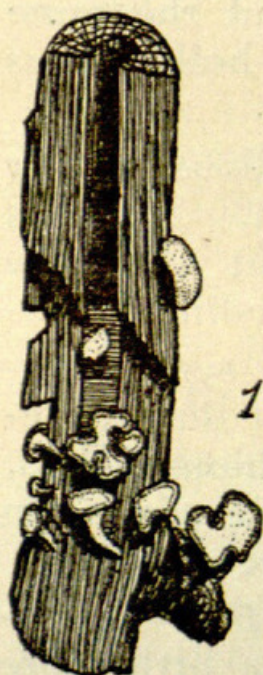
New Species of Montana Fungi.

J. B. ELLIS AND F. W. ANDERSON.

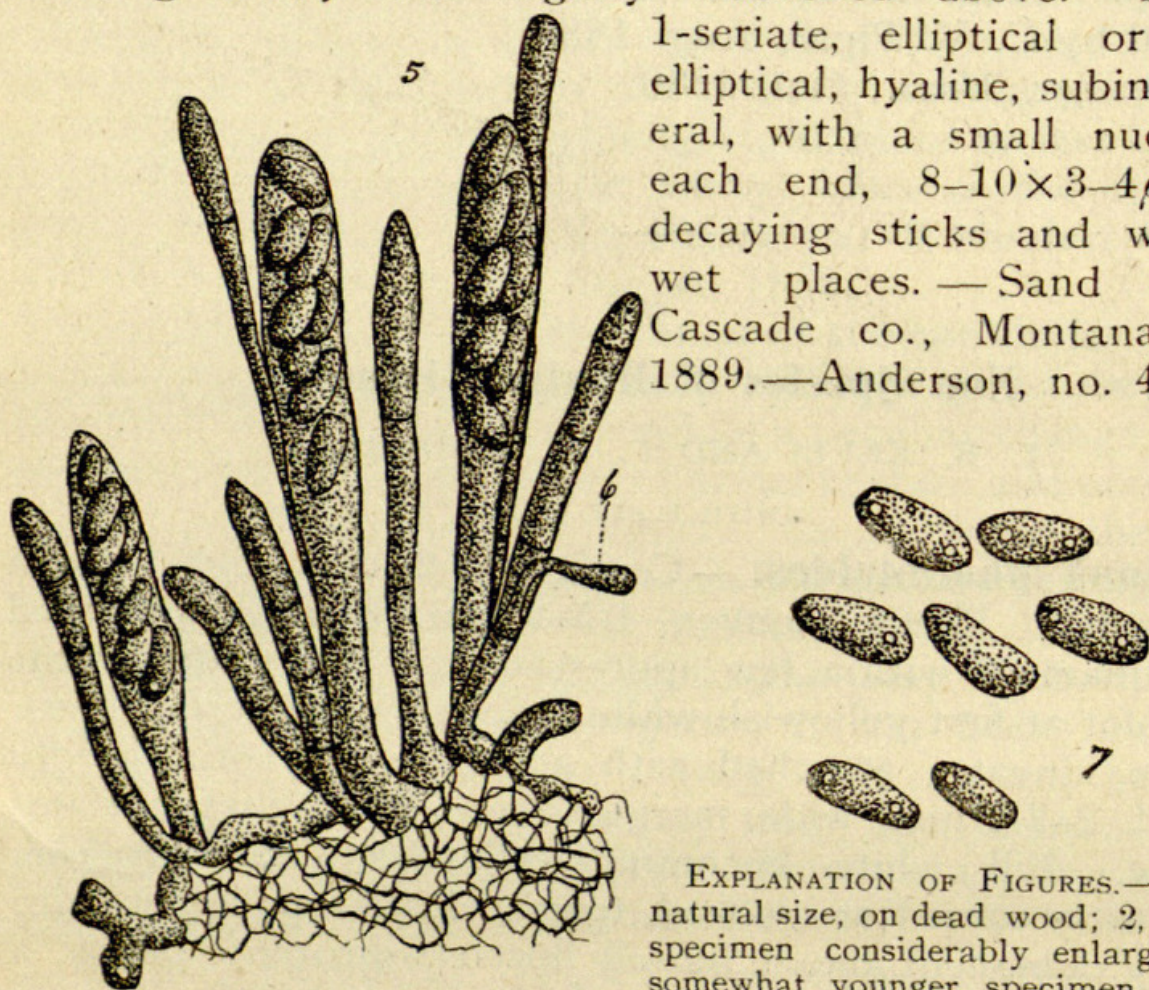
(WITH PLATE VII.)

Lentinus pholiotoides.—Cespitose, 2 cm. high, tough and elastic. Pileus convex 1.5–2 cm. diam., appressed pilose-squamose with a few appressed wart-like scales in the disk; color at first yellowish white, becoming subferruginous. Lamellæ sinuate, attached with a decurrent tooth, hardly crowded, 2–2.5 mm. wide, margins acute, minutely fimbriate-serrulate, dull white becoming yellowish, subventricose. Stem mostly curved or crooked, tough, elastic, spongy within, minutely pubescent above, loosely floccose-squamose below, a little paler than the pileus, 2 cm. high, 3 mm. thick. Spores white, oblong, obtuse with an oblique apiculus, $10-14 \times 5-6\mu$. Basidia $35-40 \times 8-10\mu$, clavate-cylindrical. Has the aspect of a *Pholiota*.—On dead *Populus tremuloides*. Sand Coulee, Montana, May, 1889.

Helotium Montaniense.—Substipitate, pale flesh color, 1–1.5 mm. across, concave with the margin repand and lobed or undulate, rather lighter outside, glabrous and subplicate, contracted into a short stipe about 1 mm. long or nearly sessile. In shape and size about like *Mollisia cinerea* Batsch, but differing in color and in being stipi-



tate. Asci clavate-cylindrical, $60-65 \times 6-7\mu$. Paraphyses filiform, gradually but slightly thickened above. Sporidia 1-seriate, elliptical or ovate-elliptical, hyaline, subinequilateral, with a small nucleus in each end, $8-10 \times 3-4\mu$. On decaying sticks and wood in wet places. — Sand Coulee, Cascade co., Montana, May 1889. — Anderson, no. 490.



ably enlarged; 4, vertical section, showing hymenial layer; 5, group of asci and paraphyses in situ; on the side (at 6) a paraphysis peculiarly branched; 7, mature spores. Figs. 5 and 7 much magnified.

Phoma ilicina. — Amphigenous. Perithecia innate, raising the cuticle into little pustules, with the apex suberumpent, globose, small (0.2 mm. diam.) Sporules fusoid-oblong, hyaline, 2-nucleate, $6-8 \times 2-3\mu$, on basidia of about the same length as the sporules themselves. — On dead holly leaves (*Ilex* sp.), Washington, D. C., Oct. 1890.

Coniothyrium ilicinum. — Perithecia epiphyllous, rather prominent, the epidermis blackened over them. Sporules subglobose, or short-elliptical, pale-brown, about 2.5 or 3μ in the longer diameter. — On same leaves as preceding.

Dothiorella Nelumbii. — Perithecia scattered, semi-erumpent, rough, black, pierced above, about 150μ diam., depressed-spherical or sublenticular. Sporules oblong-fusoid, hyaline, $15-22 \times 6-7\mu$. Has the aspect of a *Sphaerella*. — On receptacle of *Nelumbium*, Washington, D. C., Oct. 1890.

Volutella occidentalis. (Plate VII, figs. 1-6.) — Sporodochia gregarious, thin and flat, about 1 mm. or a little more

in diameter, pale orange or flesh-color, fringed with suberect, pale, roughish, faintly septate hairs $110-150\mu$ long. Conidia cylindrical, straight, hyaline, with a nucleus in each end, $6-8.5 \times 1.5-2\mu$, concatenate on branched basidia and formed by the constriction of the upper part of these branches (figs. 5 and 6.)—On dead stems of *Astragalus flexuosus* and *A. Drummondii*. Sand Coulee, Cascade co., Montana, May 1889.

This is closely allied to *V. gilva* (Pers.) but differs from Saccardo's description of that species and from his figure in F. Ital. 728, in its concatenate, shorter conidia and branching basidia. The specimen of *V. gilva* in Sydow's *Mycotheca Marchica* differs from this in its much longer (500μ) brownish hairs and rather narrower (1.5μ) conidia and from the description in *Sylloge Fung.* in its longer hairs and shorter ($6-8\mu$) conidia.

Var. **minor** differs in its slenderer, smoother hairs and smaller ($5-6 \times 1.25-1.5\mu$) conidia.—On dead *Salix*.

Sporidesmium sorisporioides.—Forming thin, tobacco-brown, narrow, elongated, sublinear strips or patches, 2–5 cm. or more long, evenly effused and composed of nearly globose cells $12-15\mu$ diam. loosely combined into glomerules (conidia) $25-40\mu$ diam. almost exactly like the spore masses of *Sorosporium*.—On decaying wood. Montana, June 1889. Anderson, no. 519.

Macrosporium puccinioides. (Plate VII, figs. 7–11.).—Tufts hysteriiform, narrow, 2–3 mm. long, erumpent through longitudinal cracks in the cortex of the stem so as to closely resemble a *Puccinia*. Hyphæ erect, simple, septate, yellowish-hyaline, $60-70 \times 5\mu$, densely compacted, at first swollen at the apex, then the swollen part becomes 1-septate and assumes an elliptical or oval shape, $20-30 \times 15-20\mu$, and finally becomes elongated, oblong or clavate-oblong, $60-70 \times 18-22\mu$, brown, 3–4-septate and muriform. The resemblance to *Puccinia* is very striking.—On dead stems of *Bigeloviæ?* with *Dothidea Montaniensis*, E. & E. Helena, Montana, Nov. 1888. Rev. F. D. Kelsey.

Æcidium Liatridis.—Spermogonia small, epiphyllous, black, on slightly thickened, light colored, sometimes purplish-bordered, elongated spots, 0.5–1 cm. long by 3–4 mm. wide. *Æcidia* hypophyllous, thickly scattered on the spots, the pseudo-peridia narrow-cylindrical or slightly enlarged above,

two to six times as long as broad, white or slightly pinkish, margin usually irregularly lacerated. Spores subglobose, oblong or ovate, $20-26\mu$ in their longer diameter.—On leaves of *Liatris punctata*. Great Falls, Montana, July, 1888.

This appears to be the *Æ. Compositarum* Mart. var. *Liatridis* Webber, in his Cat. Fl. Nebr. 1889, p. 70; but the elongated pseudo-peridia seem to distinguish it from any of the forms of *Æ. Compositarum*. Webber speaks of the pseudo-peridia being very short, so that what he has described may be another thing.

Æcidium Cleomis.—Amphigenous, on brownish, slightly thickened spots. Small, about 0.33 mm. diam. closed at first, then open but scarcely recurved, margin sublacerate. Spores irregularly globose or subovate, $15-20\mu$ diam.—On *Cleome integrifolia*. Helena, Montana, May, 1887. Anderson, no. 3.

Æcidium Chrysopsidis.—Spots thickened, pale, immarginate, 2.5–5 mm. diam., mostly on one side of the midrib, but sometimes extended entirely across the leaf and longitudinally for 1 cm. or more. *Æcidia* irregularly scattered or sometimes subconcentrically arranged so as to leave a vacant space in the center, entirely buried, showing at first only as slight mammiform projections, on the surface of the spots, finally, with a round opening above and either without any projecting margin or at most with a very slight and narrow one. Spores yellow, mostly ovate-oblong, $18-23 \times 14-16\mu$. Peridial cells mostly ovate, coarsely cellular, $30-35 \times 15-25\mu$.—On leaves of *Chrysopsis villosa*. Sand Coulee, Cascade co., Montana, June, 1888.

There is an *Æcidium* on *Gutierrezia Euthamiæ* that is very near this if not identical with it.

Pestalozziella Andersoni Ell. and Evrht. (Plate VII, figs. 12–14.).—Acervuli amphigenous, gregarious, not on definite spots, small, convex-hemispherical, black. Sporules ovate-elliptical, hyaline, continuous, with a spreading, sub-3-parted crest of hyaline bristles or threads.—On fading leaves of *Apocynum* or *Asclepias*. Sand Coulee, Montana, leg. F. W. Anderson.

Newfield, N. J. and New York City.

EXPLANATION OF PLATE VII.

Fig. 1. *Volutella occidentalis* Ell. and Anders., natural size on dead stems of *Astragalus Drummondii*; 2, sporodochium of same magnified; 3, vertical section

of sporodochium more highly magnified, showing mass of loose spores and scurfy matter on top, sparingly mixed with the characteristic hairs; 4, a group of basidia with the hairs highly magnified; 6, a branching basidium and loose spores very highly magnified. 7, *Macrosporium puccinioides* Ell. and Anders., on dead stems of *Bigelovia* (?) Montana, Kelsey, slightly magnified; 8, a group of forming and young spores rising from the interwoven threads forming the substratum of the sporodochium; 9, a cluster of mature spores; 10, two mature spores showing the stipitate base; 11, three young spores, showing the remarkable resemblance to *Puccinia* spores. 12, *Pestalotziella Andersoni* Ell. and Evrht., natural size on small leaf of *Apocynum cannabinum*; 13, vertical section through a leaf showing the destructiveness of the fungus; highly magnified; 14, five spores more highly magnified.

A key to the North American genera of the Labiatae.

ALFRED C. STOKES.

While the keys to this group in Gray's Manual and in other botanies are praiseworthy in many respects, they are not adapted to use in the field, unless that use is to be limited to those who have become experts. To the beginner and the amateur they are disheartening. The following compilation from the Synoptical Flora is in reality Professor Gray's alone; all that I have done is to attempt to use only the more obvious characters that will lead to the genera in the most direct way. That even so limited a paper as this is free from errors is not expected. Notice of blunders will be gladly received from those that may try to use the key.

I. Ovary merely 4-lobed, not deeply 4-parted (A).

II. Ovary deeply 4-parted (B).

III. Ovary deeply 5-lobed; corolla almost regular, 5-parted, blue *Isanthus*, 3.

A Stamens exserted from the cleft in the upper lip of the corolla (b).

A Stamens not exserted from the cleft in the upper lip of the obscurely bilabiate corolla (a).

a Calyx deeply 5-cleft, regular, lobes lanceolate, twice as long as the turbinate tube; corolla nearly salverform. . . . *Tetraclea*, 1.

a Calyx barely 5-cleft; corolla tube narrow; filaments long exserted. . . . *Trichostema*, 2.

b Corolla upper lip deeply cleft, the lower declined, lateral lobes united to it. . . . *Teucrium*, 4.

b Corolla upper lip short, truncate; lower lip large, middle lobe emarginate or 2-cleft. . . . *Ajuga*, 5.



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