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Entered as second-class matter December 26, 1936, at the post office at Pullman, Washington, under the Act of August 24, 1912.

Research Studies of the State College of Washington is published in Pullman, Washington, by the State College of Washington. It is issued four times a year—in March, June, September, and December.

Purpose. Research Studies is a medium of publication for articles of research in the pure sciences and arts. Its pages are open to the faculty and advanced students of the State College of Washington. One issue each year its annual convention. Suitable articles by other persons are accepted whenever space is available.

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# RESEARCH STUDIES of the STATE COLLEGE OF WASHINGTON

Volume XX

December, 1952

Number 4

## THE SUKSDORF FUNGUS COLLECTIONS1

WM. BRIDGE COOKE<sup>2</sup> and CHARLES GARDNER SHAW<sup>3</sup>

#### INTRODUCTION

Wilhelm N. Suksdorf was a botanist who lived in or near Bingen, Klickitat County, Washington for fifty-six years. He settled there in 1876, after having attended Iowa College (now Grinnell College) and the University of California at Berkeley. He realized early that the flora of Washington was poorly known and devoted most of his life to an intensive study of the native flora of South Central Washington.

Suksdorf's favorite collecting areas were Bingen, Falcon Valley near Bingen, and nearby regions of Klickitat County, such as the Klickitat and White Salmon Rivers. He also collected in areas of Skamania and Yakima Counties which had not been explored previously. Such places as Ice Cave, the Chiquash Mountains, Schmetterling See or Butterfly Lake, and so forth, were named by Suksdorf or by his Indian friends. Most of his names for places cannot be found on maps of the region. In southwestern Yakima County and adjacent Klickitat and Skamania Counties, Suksdorf had a fine collecting area upon his beloved Mt. Paddo, now known as Mount Adams, second highest mountain in the Washington Cascades. Here his favorite collecting location was Wodanthal, Valley of the Gods. He collected in it extensively before sheep were permitted to overgraze the area, denude the meadows, and leave the valley open to the rapid erosion characteristic in areas of volcanism and glaciation.

<sup>\*</sup> On leave, 1951-53.

<sup>&</sup>lt;sup>1</sup> Scientific Paper No. 1165, Washington Agricultural Experiment Station, Pullman. Project No. 1047. This investigation was supported in part by funds provided for biological and medical research by the State of Washington Initiative Measure No. 171.

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As a result of overgrazing and the subsequent erosion this area is now a canyon known as Hell Roaring Canyon.

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On the southern slopes of Mt. Adams in the Gifford S. Pinchot National Forest there are now five Forest Service Public Camp sites. From these camp sites one can easily revisit the areas in which Suksdorf collected the majority of the fungi mentioned in this paper.

At his death in 1932, Suksdorf willed his herbarium to the State College of Washington. Weber (1944) has studied Suksdorf's collections of higher plants and prepared an interesting biography, a log book, a gazetteer, a bibliography, and a list of phanerogamic type specimens. Reference should be made to Weber's paper for further details of Suksdorf's life.

The fungi in Suksdorf's herbarium were not curated until recently. These specimen's had been segregated from the higher plants, packaged, and stored separately. Labels had been prepared by Suksdorf for a few specimens, but in most case, the habit, habitat, and other collection data were in German script. The locations were indicated by Suksdorf's special symbols. Packeting the specimens and transcribing the data were performed by the senior author. Assistance in transcribing Suksdorf's symbols was furnished by Mrs. E. F. Gaines and Dr. M. Ownbey. This collection is now part of the Mycological Herbarium of the Department of Plant Pathology, State College of Washington.

While there are about 30,000 sheets of flowering plants in the Suksdorf Herbarium, there are only about 1500 collections of fungi. A few of these collections were received in exchange from such collectors as Ellis, Burt, and Durand; but Suksdorf discouraged the exchange of mycological specimens. He preferred to collect for others and usually retained only a small portion of each collection for himself. In some cases, particularly where the collection was made about the time his correspondence ceased or in anticipation of correspondence which was never completed, large sets of duplicates are still among his collections.

The date of his first fungus collection is May 29, 1882; that of the last is September 23, 1927. He collected fungi most intensively in 1894 and 1902. Possibly this was because of the incessant urging by Holway that he get as many rusts and smuts as possible, and later by Burt, that he enlarge the knowledge of North American Thelephoraceae by collecting in the Northwest. While the Suksdorf-Burt correspondence lasted only a year (1902-1903), several hundred

specimens were involved, including specimens Burt considered new species and varieties as well as new records for North America.

In the spring of 1883, his first mycological collections were sent to Ellis, who received them enthusiastically. Ellis had sent Suksdorf a postcard dated August 18, 1882, in response to Suksdorf's advertisement in the Botanical Gazette, offering sets of plants for sale. Ellis requested specimens of fungi for his exsiccatum, North American Fungi, then in its ninth century.

In 1884, E. W. D. Holway, a banker in Decorah, Iowa, contacted Suksdorf and requested rust collections. The correspondence between Suksdorf and Ellis and between Suksdorf and Holway is extensive. The last letter from Ellis is dated July 29, 1896; that from Holway was sent from Minneapolis November 28, 1905. Both are mere reports on specimens sent them. Earlier correspondence includes requests for more material, suggestions as to collecting methods, discussions of interesting species, corrected identifications, etc. In the Suksdorf correspondence files are also letters from Macbride concerning Myxomycetes, from Clinton listing smuts, from Lloyd discussing Gasteromycetes, and from Petrak requesting material of Cirsium which he was then monographing.

In sending out specimens Suksdorf used a series of reference numbers, which were assigned without much relation to chronology. Specimens not sent out were not numbered. His numbers for fungus collections reach 1172. A number of groups were never sent out; these included the polypores, boletes, agarics, Clavarias, and the larger fleshy Discomycetes.

Suksdorf's interest in the fungi seems to have been largely a business proposition. While his notes show that, had he been in contact with a good agaricologist, he could have produced an excellent collection of fleshy fungi, his most important contributions were in the groups for which Ellis and Holway, in particular, placed orders. They demanded collections which could be broken up into sixty units for their large distributions. Neither would pay for short sets and the standard price for usable material was fifty cents per number. Holway, on occasion, did pay for half sets when his interest was particularly aroused. Burt had a standard order for Thelephoraceous material. He paid ten cents for each new species or new record from the State of Washington. This increased Suksdorf's interest and intensified his collecting activity in that field. Sydow, in Germany, offered to pay forty cents for each collection which could be broken

down into forty sets. He acknowledged receipt of two interesting specimens without mention of their names or disposition. Apparently no other mycologists were involved in these transactions.

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## NEW SPECIES BASED ON SUKSDORF COLLECTIONS

About seventy new species of fungi have been described from Suksdorf's collections. Most of these are scattered through numerous papers by Ellis, Holway, Burt, and others. Only one paper (Ellis & Everhart, 1884) has been found devoted exclusively to fungi collected by Suksdorf. In this, fifteen new species of fungi are described.

The following list of new species and type collections is based on specimens present in the Suksdorf collection at the State College of Washington and on specimens found in other herbaria. The fungi are listed alphabetically according to the binomials assigned to them by the original author(s). No attempt has been made to present complete lists of synonyms. If the binomial originally assigned to the species is not in current usage today, the synonym employed in the body of this paper is given.

Aecidium collinsiae Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 4. 1884.

Puccinia collinsiae (Ell. & Ev.) P. Henn., Hedw. 37: 269. 1898. On Collinsia parviflora. Falcon Valley, Wash. June 1883. W. N. Suksdorf (#63).

Aecidium roestelioides Ell. & Ev., Jour. Mycol. 1:93. 1885.

Puccinia interveniens [Peck] Bethel, Blasd. Univ. Calif. Pub. Bot. 7: 119. 1919.

On Sidalcea sp. Spokane Co., Wash. W. N. Suksdorf (#144). Aecidium tonellae Diet. & Holw., Erythea 3: 77. 1895.

Puccinia collinsiae (Ell. & Ev.) P. Henn., Hedw. 37: 269. 1898. On Tonella collinsioides. Klickitat Co., Wash. 29 Apr. 1894.

W. N. Suksdorf (#380).

Anthostomella brachystoma Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 5. 1884.

On Tsuga mertensiana. Mt. Adams, Wash. 16 Sept. 1883. W. N. Suksdorf (#113).

Belonium arabicolum Ell. & Ev., Proc. Acad. Sci. Phila. 1894: 352. 1894.

On Arabis furcata. Mt. Adams, Wash. 12 July 1886. W. N. Suksdorf (#347).

Bovistella dealbata Lloyd, Myc. Writ. 1: 86, f. 52-54. Apr. 1902.

Bovista dealbata (Lloyd) Sacc. & D. Sacc., Syll. Fung. 17: 234.
1905.

Near Rockford, Wash. 10 May 1889. W. N. Suksdorf (#618). Cenangium tryblidioides Ell. & Ev., Bull. Torr. Bot. Cl. 1897: 136. 1897.

On Salix sp. about 7000 ft., Mt. Adams, Wash. 18 Sept. 1894. W. N. Suksdorf (#482).

Ceratostoma tinctum Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 5. 1884.

Rhynchostoma tinctum (Ell. & Ev.) Berl. et Vogl., Add. Syll. Fung.: 125. 1886.

On Acer macrophyllum. Steinbach, Bingen, Wash. 21 March 1884. W. N. Suksdorf (#129).

Cercospora cirsii Ell. & Ev., Proc. Acad. Nat. Sci. Phila. 1894: 379. 1894.

On Cirsium remotifolium. Mt. Adams, Wash. 25 Aug. 1886. W. N. Suksdorf (#291).

Ciboria juncigena Ell. & Ev., Proc. Acad. Nat. Sci. Phila. 1894: 348.

Sclerotinia juncigena (Ell. & Ev.) Whetzel, Farlowia 2: 432. 1946.

On Juncus sp. Falcon Valley, Wash. 31 May 1882. W. N. Suksdorf (#371).

Coleosporium arnicale Arth., N. Am. Fl. 7: 94. 1907.

Coleosporium Madiae Cooke, Grev. 7: 102. 1879.

On Arnica chamissonis<sup>4</sup>. Falcon Valley, Wash. 30 Oct. 1901. W. N. Suksdorf (#644).

Coleosporium occidentale Arth., N. Am. Fl. 7: 94. 1907.

On Senecio hydrophiloides. Falcon Valley, Wash. 17 July 1900. W. N. Suksdorf (#586).

Comatricha suksdorfii Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 5. 1884.

<sup>\*</sup> Jackson (1922) considered C. arnicale Arth. a synonym of C. Madiae Cooke; he also concluded that the host of Suksdort's type collection of C. arnicale was "probably . . . . Madia, Hemisonia, Hemisonella, or some close relative" (p. 115). Study of our portion of the type collection of C. arnicale and comparison of the host with collections of Arnica chamissonis Less. made by Suksdorf in the same area convince us that the host of this type collection is Arnica chamissonis.

Stemonitis suksdorfii (Ell. & Ev.) Massee, Mono. Myxogasteres: 76. 1892.

On Pinus albicaulis. Mt. Adams, Wash. 18 Sept. 1883. W. N. Suksdorf (#46).

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Coniophora corrugis Burt, Ann. Mo. Bot. Gard. 13: 310. 1926.

Corticium corruge (Burt) Burt in sched. ex Rogers & Jackson,
Farlowia 1: 276. 1943.

On Pinus contorta var. latifolia. Mt. Adams, Wash. 17 July 1902. W. N. Suksdorf (#732).

Coniophora flavomarginata Burt, Ann. Mo. Bot. Gard. 13: 311. 1926.

Mycoacia himantia (Schw.) Miller & Boyle, Univ. Iowa St. Nat.

Hist. 18: 44. 1943.

On Quercus garryana. West. Klickitat Co., Wash. W. N. Suksdorf (#888).

Corticium spretum Burt, Ann. Mo. Bot. Gard. 13: 229. 1926.

On Frazinus oregona. Bingen, Wash. W. N. Suksdorf (#962).

Excipula conglutinata Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 6. 1884.

Heteropatella conglutinata (Ell. & Ev.) Nannf., Morph. & Syst. Disco.: 296. 1932.

On Valeriana sitchensis. Mt. Adams, Wash. 17 Sept. 1883. W. N. Suksdorf (#40).

Glonium tryblidioides Ell. & Ev., Bull. Torr. Bot. Cl. 10: 76. 1883. On old rails. Washington Ter. W. N. Suksdorf (#19 or #217).

Hendersonia cylindrocarpa Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 6. 1884.

Stagonospora cylindrocarpa (Ell. & Ev.) Sacc., Syll. Fung. 3: 450. 1884.

On Brodiaea howellii. Bingen, Wash. Dec. 1883. W. N. Suksdorf (#109).

Hendersonia diplodioides Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 6. 1884.

On Sambucus glauca. Falcon Valley, Wash. 5 Nov. 1883. W. N. Suksdorf (#95).

Hypochnus cervinus Burt, Ann. Mo. Bot. Gard. 3: 232. 1916. On Acer macrophyllum. West. Klickitat Co., Wash. W. N. Suksdorf (#847). Hypoderma tunicatum Ell. & Ev., Proc. Acad. Nat. Hist. Phila. 1894: 347. 1894.

On Arctostaphylos nevadensis. Mt. Adams, Wash. 12 July 1886. W. N. Suksdorf (#268).

Hypsotheca calicioides (Fr.) Ell. & Ev., Jour. Myc. 1: 129. 1885. Caliciopsis Ellisii Sacc., Syll. Fung. 8: 833-834. 1889.

On Populus trichocarpa. Cabbage Mt., Wash. 8 Sept. 1883. W. N. Suksdorf (#22).

Lachnella rhizophila Ell. & Ev., Proc. Acad. Nat. Sci. Phila. 1894: 348. 1894.

On Rhus diversiloba, Columbia River, West. Klickitat Co., Wash. Jan. 1894. W. N. Suksdorf (#306).

Lamproderma robustum Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 5. 1884.

On Haplopappus bloomeri. Mt. Adams, Wash. 16 Sept. 1883. W. N. Suksdorf (#47).

Lasiobelonium subflavidum Ell. & Ev., Bull. Torr. Bot. Cl. 24: 136. 1897.

On *Salix* sp. About 7000 ft., Mt. Adams, Wash. 18 Sept. 1894. W. N. Suksdorf (#489).

Lasiosphaeria stuppea Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 4. 1884.

On Tsuga mertensiana. Mt. Adams, Wash. 16 Sept. 1883. W. N. Suksdorf (#115).

Leptosphaeria hysterioides Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 4. 1884.

On Xerophyllum tenax. Mt. Adams, Wash. 19 Sept. 1883. W. N. Suksdorf (#48).

Linospora brunellae Ell. & Ev., Proc. Acad. Nat. Sci. Phila. 1894: 337. 1894.

On Prunella vulgaris. Bingen, Wash. 23 April 1886. W. N. Suksdorf (#267).

Lophidium trifidum Ell. & Ev., Bull. Torr. Bot. Cl. 24: 129. 1897.
 On Salix sp. About 7000 ft., Mt. Adams, Wash. 18 Sept. 1894.
 W. N. Suksdorf (#483).

Melanomma alpestre Ell. & Ev., Proc. Acad. Nat. Sci. Phila. 1894: 328. 1894.

On Arctostaphylos nevadensis. Mt. Adams, Wash. 12 July 1886. W. N. Suksdorf (#342).

Melanomma cupulata Ell. & Ev., Bull. Torr. Bot. Cl. 24: 128. 1897. On Salix sp. About 7000 ft., Mt. Adams, Wash. 18 Sept. 1894. W. N. Suksdorf (#484).

Patellaria signata Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 4. 1884.

Blitrydium signatum (Ell. & Ev.) Sacc., Syll. Fung. 8: 807. 1889. On Tsuga mertensiana. Mt. Adams, Wash. Sept. 1883. W. N. Suksdorf (#112).

Peniophora decorticans Burt, Ann. Mo. Bot. Gard. 12: 344. 1925. On Quercus garryana. Bingen, Wash. W. N. Suksdorf (#910).

Peridermium ornamentale Arth., Bull. Torr. Bot. Cl. 28: 665. 1901. Pucciniastrum goeppertianum (Kühn) Kleb. Wirtsw. Rostp.: 391. 1904.

On Abies lasiocarpa. 6000 ft., Mt. Adams, Wash. 4 Sept. 1900. W. N. Suksdorf (#588).

Phialea ampla Ell. & Ev., Bull. Torr. Bot. Cl. 24: 135-6. 1897.

Helotium amplum (Ell. & Ev.) Seaver, N. Amer. Cup Fungi
(Inop.): 133. 1951.

On Salix sp. Mt. Adams, Wash. 17, 18 Sept. 1894. W. N. Suksdorf (#493).

Phoma lupini Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 6. 1884. On Lupinus sp. Falcon Valley, Wash. 24 July 1883. W. N. Suksdorf (#32).

Phragmidium biloculare Diet. & Holw., in Dietel, Bot. Gaz. 19: 305. 1894.

On Potentilla gelida (=P. flabellifolia). Chiquash Mts., Skamania Co., Wash. Aug. 1892. W. N. Suksdorf (#351).

Phyllosticta eriogoni W. B. Cooke in Cooke & Shaw, Mycologia 44 (6). 1952.

On Eriogonum elatum. Viala, near Bingen, Wash. 2 June 1926. W. N. Suksdorf (#1137).

Phyllosticta hosackiae W. B. Cooke in Cooke & Shaw, Mycologia 44(6). 1952.

On Lotus douglasii, Falcon Valley, Klickitat Co., Wash. 11 Sept. 1884. W. N. Suksdorf (#149).

Placosphaeria arctostaphyli Ell. & Ev., Proc. Acad. Nat. Sci. Phila. 1894: 359. 1894.

On Arctostaphylos nevadensis. Mt. Adams, Wash. 12 July 1896. W. N. Suksdorf (#343).

Pleospora amplispora Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 4, 1884.

On Lupinus sp. Mt. Adams, Wash. 26 June 1883. W. N. Suksdorf (#74).

Puccinia angelicae Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1: 3. 1884.

(Not P. angelicae Fckl. 1870.)

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Puccinia ellisii de Toni, in Sacc., Syll. Fung. 7: 651. 1888. On Angelica genuflexa. Falcon Valley, Wash. Aug. 1883.

W. N. Suksdorf (#24).

Puccinia areolata Diet. & Holw. in Dietel, Bot. Gaz. 19: 304. 1894. On Caltha biflora. Wollweise, Skamania Co., Wash. 7 Sept. 1898. W. N. Suksdorf (#318b).

Puccinia aspera Diet. & Holw., in Arth., Bull. Torr. Bot. Cl. 29:230. 1902.

(Not P. aspera Bon. 1869.)

Puccinia pazschkei Diet., Hedw. 30: 103. 1891.

On Saxifraga mertensiana. 7000 ft., Mt. Adams, Wash. 17 Aug. 1897. W. N. Suksdorf (#537).

Puccinia asperior Ell. & Ev., Bull. Washb. Col. Lab. Nat. Hist. 1:3. 1884.

On Leptotaenia dissecta (=Lomatium dissectum). Washington Ter. June 1883. W. N. Suksdorf (#86).

Puccinia chelonis Diet. & Holw. in Dietel, Hedw. 36: 297. 1897.

On Chelone nemorosa. 4-5000 ft., Chiquash Mts., Skamania Co., Wash. 27 Aug. 1895. W. N. Suksdorf (#455).

Puccinia densa Diet. & Holw. in Dietel, Hedw. 36: 298. 1897.

Puccinia violae (Schum.) DC., Fl. Fr. 6: 62. 1815.

On Viola glabella. Chiquash Mts., Skamania Co., Wash. 28 Aug. 1895. W. N. Suksdorf.

Puccinia dichelostemmae Diet. & Holw. in Dietel, Erythea 3: 78. 1895.

On Dichelostemma congesta (=Brodiaea puchella). Bingen, Wash. 25 Apr., 22, May 1894. W. N. Suksdorf (#389).

Puccinia nuda Ell. & Ev., Jour. Mycol. 3: 57. 1887. On Arnica chamissonis<sup>5</sup>. Falcon Valley, Wash. July 1885. W. N. Suksdorf (#200).

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Puccinia subangulata Holway, N. Am. Ured. 1: 25. 1905. On Brodiaea congesta (=B. puchella). Bingen, Wash. 20 May 1904. W. N. Sukesdorf (#976).

Puccinia subcircinata Ell. & Ev., Jour Mycol. 3: 56. 1887. On Senecio triangularis. Mt. Adams, Wash. Aug. 1885. W. N. Suksdorf (#197).

Puccinia suksdorfii Ell. & Ev., Jour Mycol. 7: 130. 1892. On Troximon glaucum (=Agoseris glaucus). Washington. W. N. Suksdorf.

Ramularia castillejae Ell. & Ev., Proc. Acad. Nat. Sci. Phila. 1894: 375-6. 1894.

On Castilleja miniata. Bingen, Wash. 10 Aug. 1886. W. N. Suksdorf (#288).

Ramularia synthridis W. B. Cooke in Cooke & Shaw, Mycologia 44 (6), 1952.

On Synthris reniformis. Dog Creek, Skamania Co., Wash. 2 Sept. 1926. W. N. Suksdorf (#1151).

Sebacina plumbea Burt, Ann. Mo. Bot. Gard. 2: 765. 1915.

(Not S. plumbea Bres. & Torrend. 1913.)

Sebacina plumbescens Burt, Ann. Mo. Bot. Gard. 3: 241. 1916. On Populus trichocarpa. Bingen, Wash. 18 Nov. 1902. W. N. Suksdorf (#862).

Sphaerella subcongregata Ell. & Ev., Jour. Mycol. 2: 101. 1886. On Erigeron salsuginosus (=E. peregrinus). Mt. Adams, Wash. 10 Aug. 1885. W. N. Suksdorf (#234).

Stereum patelliforme Burt, Ann. Mo. Bot. Gard. 7: 182-3. 1920. On Acer macrophyllum. Bingen, Wash. 16 April 1902. W. N. Suksdorf (#713).

Stictis chrysopsis Ell. & Ev., Proc. Acad. Nat. Sci. Phila. 1894: 353. 1894.

On Ceanothus integerrimus. Bingen, Wash. 28 June 1894. W. N. Suksdorf (#509).

Stictis serpentaria Ell. & Ev., Bull. Torr. Bot. Cl. 24:469. 1897. Stictis pachyspora (Rehm) Rehm in Rab., Krypt. Fl. 1 (3): 175. 1889.

On Salix sp. 7000 ft., Mt. Adams, Wash. Sept. 1894. W. N. Suksdorf (#481).

Thelephora scissilis Burt, Ann. Mo. Bot. Gard. 1: 204-5. 1914. On the ground, Bingen, Wash. 17 Jan. 1902. W. N. Suksdorf (#716).

Tilletia elymi Diet. & Holw. in Dietel, Bot. Gaz. 19: 304. 1894. On Elymus sp. Peter's Prairie, west of Ice Cave, Skamania Co., Wash. 13 Aug. 1886. W. N. Suksdorf (#336).

Trichopeziza coarctata Ell. & Ev., Amer. Nat. 31: 427. 1897. On Vaccinium myrtilloides (=V. membranaceum). Skamania Co., Wash. 19 July 1894. W. N. Suksdorf (#507).

Tylostoma occidentale Lloyd, Myc. Writ. 2: Tyl. 13. pl. 76, f.1-2. Feb. 1906.

On the ground. Washington. W. N. Suksdorf.

Uromyces probus Arth., Bull. Torr. Bot. Cl. 38: 376. 1911. On Sisyrinchium grandiflorum (=S. douglasii). Columbia River, Wash. July 1893. W. N. Suksdorf (#339b).

Uromyces suksdorfii Diet. & Holw. in Dietel, Erythea 3: 77. 1895. On Silene oregana. West. Klickitat Co., Wash. 17 July 1894. W. N. Suksdorf. (#385).

(To Be Continued in Volume XXI, No. 1)

<sup>&</sup>lt;sup>5</sup> Jackson (1922) concluded that the host of the type collection of P. nuda "is probably not Arnica, but a species of Madia, Hemizonia, Hemizonella, or some close relative of these" (p. 114). Study of our portion of the type collection of P. nuda and comparison of the host with collections of Arnica chamissonis Less. made by Suksdorf in the same area convince us that the host of the type collection is Arnica chamissonis.