MEXICAN FUNGI. III.

E. W. D. Holway.

The descriptions of the following new species were sent to me in German by Dr. Dietel. I am under many obligations to Professor Robinson of the Gray Herbarium, and to C. G. Pringle for the determination of the host plants. A large collection of Uredineae yet remains to be studied.

Uromyces Celosiae Diet. & Holw., n. sp.—Sori hypophyllous, sometimes on indistinct yellow spots, small or medium-sized, scattered or often thickly covering the leaf; uredosori cinnamon-brown; uredospores elliptical or globose, sometimes obovate, 27–34×24–26μ; epispore thick, thinly covered with strong spines, with two germ-pores, brown; teleutosori dark brown; teleutospores elliptical or globose, coarsely verrucose, chestnut-brown, apex with a light colored rounded cucullate or papilla-like thickening, 28–38×22–30μ; pedicel hyaline, as long as the spore, or a little longer, easily separating at the base from the host-plant, swelling in water.

On *Celosia latifolia*, Oaxaca, October 17, 1899, no. 3641.

Uromyces venustus Diet. & Holw., n. sp.—Aecidia hypophyllous, single or in small groups, hemispherical, opening at apex by a small pore; aecidiospores globose or elliptical, 20–25×29μ, finely verrucose, teleutosori epiphyllous, opposite the aecidia, often in a circle, the center of which is the aecidium on the opposite side of the leaf, variable in size, sometimes confluent, naked, pulverulent, dark brown; teleutospores ovate or elliptical, sometimes almost globose, 32–40×20–28μ, chestnut-brown, apex light brown, beak-like; epispore thick, with longitudinal lines; pedicel about the length of the spore, thin, hyaline, easily breaking at the base from the host-plant.

On *Cestrum nitidum*, Amecameca, October 31, 1899, no. 3759. Easily

distinguished from *U. Cestri* Mont. by the papilla at apex, and by the lines on the epispore.

Uromyces Oaxacanus Diet. & Holw., n. sp.—Sori epiphyllous, irregularly scattered (occasionally a sorus on the under side of the leaf), small, pulverulent, black; teleutospores ovate, elliptical or almost globose, frequently angular and irregular, 25–35 × 18–24μ; epispore chestnut-brown, not thickened at apex, verrucose; pedicel hyaline, hollow, somewhat longer than the spore.

On *Jatropha urens*, Oaxaca, October 21, 1899, no. 3690.

Uromyces dolichosporus Diet. & Holw., n. sp.—Uredosori mostly hypophyllous, scattered, dark brown, partly with spermogonia on the upper surface of the leaves; uredospores obovate, dark brown, 33–47 × 23–27μ; epispore thickened at apex and often at the base, echinulate, with three germ-pores; teleuto sori of medium size, hypophyllous, rarely epiphyllous, scattered or in small circular groups, orange-yellow when fresh, becoming white and felt-like; teleutospores long-fusiform or long-clavate, 45–65 × 12–18μ; with a thin hyaline smooth epispore, and germinating as soon as mature; pedicel firm, about the length of the spore.

On *Tournefortia velutina*, Oaxaca, October 18, 1899, no. 3655.

Uromyces Rubi Diet. & Holw., n. sp.—Spots circular, about 5^{mm} in diameter, occasionally confluent, yellow; sori epiphyllous, small, white when dry; uredospores elliptical, obovate, or globose, 23–35 × 18–25μ; epispore hyaline, with stout spines; teleutospores elliptical or clavate, 26–35 × 17–24μ, with a very thin hyaline epispore; pedicel short; spores germinating at once.

On *Rubus*, Cuernavaca, May 17, 1898, *C. G. Pringle.*

Uromyces Polymniae (P. Henn.) Diet. & Holw.—Uredo is *U. Polymniae* P. Henn. Teleutosori scattered, hypophyllous, single sori here and there on the upper surface, brownish black, naked; teleutospores elliptical or almost globose to pyriform, sometimes

truncate at apex, 30–45 × 20–30μ; epispore smooth, strongly thickened at apex, brown; pedicel firm, tinted, up to 75μ long.

On *Polymnia maculata* ?, Rio Hondo cañon, near city of Mexico, October 4, 1899, no. 3562; October 30, 1899, no. 3562B. On *Polymnia maculata*, Patzcuaro, October 10, 1899. The latter host shrubby, 10–15 feet high; the former herbaceous only, 4–5 feet high.

Uromyces Indigoferae Diet. & Holw., n. sp.—Sori epiphyllous, sparingly hypophyllous, scattered or in little groups on dead brown spots, and also on the petioles and young fruit, small, naked, surrounded by the ruptured epidermis, dark brown; uredospores globose or elliptical with short spines and three germpores, brown, 20–25 × 18–23μ; teleutospores elliptical or globose, smooth, chestnut-brown, strongly thickened at apex, 22–30 × 18–25μ; pedicel long and firm, hyaline.

On *Indigofera Mexicana*, Oaxaca, October 23, 1899, no. 3722.

Uromyces Galphimiae Diet. & Holw.—Uredo on *G. Humboltiana*, Guadalajara, September 14, 1899, no. 3409.

Uromyces Vignae Barclay ?—On *Vigna stroboliphora*, Guadalajara, September 15, 1899, no. 3424.

Uromyces Trifoliae (Hedw.) Lev.—On *Trifolium*, Pachuca, October 6, 1899, no. 3588.

Uromyces globosus Diet. & Holw.—On *Sapium biglandolosum*, Cuernavaca, September 28, 1899, no. 3517. This is the host plant of the original collection.

Uromyces Caladii (Schw.) Farl.—On *Arisaema macrospathum*, Cuernavaca, September 29, 1899, no. 3522. The 1896 specimens are on this host, and not on *A. Dracontium*.

Uromyces Solani Diet. & Holw.—On *S. appendiculatum*, Amecameca, October 31, 1899, no. 3761.

Uromyces Aegopoginis Diet. & Holw.—On *Aegopogon cenchroides*, Tizapan, Valley of Mexico, September 27, 1899, no. 3506.

Puccinia Berberidis-trifoliae Diet. & Holw., n. sp.—Spots brown, or blackish-purple; sori hypophyllous, firm, strongly pulvinate, black, about 1–3^{mm} in diameter, linear on the petioles; teleutospores brown, quite variable in form and size, elliptical, oblong or fusiform, rounded at apex, or conical, or often

prolonged into a point, mostly rounded at base, little constricted, 24–45 × 14–24μ, smooth, variously thickened at apex according to the form of the spore; pedicel rather longer than the spore, tinted, firm; one-celled teleutospores rather common.

On *Berberis trifolia*, Rio Hondo, near City of Mexico, October 4, 1899, no. 3570. The Aecidium of *Puccinia graminis* occurs on some of the leaves.

Puccinia Aniscanthii Diet. & Holw., n. sp.—Sori on both sides of the leaf, scattered, small; uredosori brown; teleutosori black, naked; uredospores elliptical or obovate, 22–28 × 18–22μ, light brown, with distant short spines, and two germ-pores; teleutospores elliptical, rounded at both ends, slightly constricted, 38–48 × 25–31μ, chestnut-brown, at the apex and often on the lower cell a cucullate or papilla-like light-colored thickening, verrucose; pedicel longer than the spore, hyaline, easily separating at the base, sometimes laterally inserted.

On *Anisacanthus*, probably *A. Wrightii*, near Acamboro, October 8, 1899, no. 3595. This species is much like *Puccinia Ruelliae-Bourgaei* Diet. & Holw., but that has almost all the pedicels laterally inserted, and the membrane is not thickened over the germ-pores. *Puccinia Blechi* Lagerheim appears to be very similar, but according to the description the teleutospores are differently colored, and also without the thickening over the germ-pores.

Puccinia Ruelliae-Bourgaei Diet. & Holw., n. sp.—Aecidia in irregular groups along the veins; cells of the pseudosporidia oblong; aecidiospores elliptical or globose, often angular, 25–38 × 20–26μ, yellowish, strongly verrucose, much thickened at apex; uredospores in these specimens few, with the teleutospores, brown, echinulate, 20–25μ; teleutosori hypophyllous on yellow spots, sparingly epiphyllous, scattered, 0.5–2^{mm} in diameter, black, pulverulent, naked; teleutospores elliptical, rounded at both ends, not at all or only slightly constricted, 35–41 × 27–32μ, dark chestnut brown, with large tubercles; pedicel as long or longer than the spore, hyaline, rough, inserted at one side.

On *Ruellia Bourgaei*, Chapala, September 20, 1899, no. 3471. Closely resembles *Puccinia lateripes* B. & R., but has much larger and darker teleutospores; the aecidiospores are also larger and remarkable for their strong apical thickening.

PUCCINIA HETEROSPORA B. & C.—On *Abutilon crispum*, Oaxaca, October 20, 1899, no. 3684; on *Anoda hastata*, near Tula, September 21, 1898, no. 3186; Cuernavaca, September 28, 1898, no. 3098; on *Anoda*, Patzcuaro, October 17, 1898, no. 3004; Orizaba, October 6, 1898, no. 3194; Chapala, September 22, 1899, no. 3477; on *Anoda acerifolia*, Oaxaca, October 18, 1899, no. 3656; Cuautla, October 12, 1898, no. 3044; on *Sida Holwayi*, Cuautla, October 12, 1898, no. 3043.

PUCCINIA GALII (Pers.).—On *Galium uncinulatum* var. *obstipum*, Oaxaca, October 18, 1899, no. 3654.

PUCCINIA SEYMERIAE Burrill.—On *Seymeria virgata*, Oaxaca, October 22, 1899, no. 3721.

PUCCINIA PITCAIRNIAE Lagerh.—On *Pitcairnia Palmeri*, Chapala, September 1899, no. A; Uruapam, October 11, 1899, no. 3619. These two specimens are not exactly alike, the latter having somewhat smaller more regular spores less thickened at apex.

PUCCINIA MENTHAE Pers.—On *Monarda?*, Jalapa, October 3, 1898, no. 3211.

PUCCINIA PHILIBERTIAE E. & E.—Tizapan, Valley of Meixco, October 28, 1899, no. 3749, on *Metalstelma angustifolium*.

Puccinia Marsdeniae Diet. & Holw., n. sp.—Sori on yellow or brownish spots, medium-sized or small; uredosori scattered, cinnamon-brown, on both sides of the leaves; uredospores broadly elliptical, almost globose, 28–33×25–29μ, light brown; epispore thick, with widely separated short spines and numerous germ-pores; teleutosori epiphyllous, scattered, naked, black, pulverulent; teleutospores elliptical, rounded at both ends, very little constricted, 33–45×28–32μ, dark chestnut-brown, with large tubercles; pedicel up to 75μ long, easily breaking off at the base, often inserted at the side of the spore.

On *Marsdenia Mexicana*, Cuernavaca, September 29, 1899, no. 3529.

PUCCINIA XANTHII Schw.—On *Xanthium*, Chapala, September 17, 1899, no. 3440; Cuautla, October 12, 1898, no. 3042; Oaxaca, October 17, 1899, no. 3644; Cuernavaca, September 28, 1899, no. 3516; on *Zinnia tenuiflora*, Chapala, September 17, 1899, no. 3441; Oaxaca, October 17, 1899, no. 3646.

PUCCINIA KUHNIAE Schw.—On *Barroetea subuligera*, Aguas Calientes, September 12, 1899, no. 3400.

Puccinia Oaxacana Diet. & Holw. n. sp.—Sori hypophyllous, small, scattered, brown; uredospores elliptical or ovate, 23–29×23μ, with echinulate epispore; teleutospores oblong or elliptical, rounded at both ends or narrowed to the base, little constricted, 31–50×18–25μ, smooth, pale brown, slightly thickened at apex, germinating at once; pedicel the length of the spore or a little longer.

On *Baccharis hirtella* DC., Oaxaca, October 18, 1899, no. 3673. *Aecidium fragile*, n. sp., occurs with this, but it is doubtful whether it is a stage of the Puccinia.

Puccinia Baccharidis-multiflorae Diet. & Holw., n. sp.—Sori hypophyllous, small, scattered; uredosori light chestnut-brown; uredospores obovate, 32–42×22–28μ, yellowish-brown, echinulate, apex with a cucullate thickening (up to 7μ) and with 3 germ-pores, which are covered with a convex hyaline thickening; teleutosori dark brown; teleutospores oblong, apex rounded or conical, mostly narrowed to the base, somewhat constricted, 38–60×21–30μ; epispore smooth, yellowish-brown, apex strongly thickened, and mostly somewhat paler; pedicel short, or up to 60μ long, hyaline, rather fragile. The spores germinate soon after maturity.

On *Baccaris multiflora*, Amecameca, October 31, 1899, no. 3757.

CAEOMA PUNCTATO-STRIATUM Diet. & Neg.—On *Baccharis*, Guadalajara, September 16, 1899, no. 3435, with *Puccinia Baccharidis*, Diet & Holw.

PUCCINIA BACCHARIDIS Diet & Holw.—On *Baccharis*, Patzcuaro, October 17, 1898, no. 3003; Guadalajara, September 16, 1899, no. 3435.

Puccinia Baccharidis-hirtellae Diet. & Holw., n. sp.—Sori hypophyllous, scattered, punctiform, pulvinate, chestnut-brown; uredospores (mixed with the teleutospores) elliptical to globose, or obovate, 22–27×19–25μ, with a thin light brown echinulate epispore; teleutospores elliptical, rounded at both ends, slightly constricted, 32–46×20–30μ; epispore yellowish-brown, slightly or not at all thickened at apex, finely punctate; pedicel long, thin, hyaline.

On *Baccharis hirtella*, Amecameca, October 31, 1899, no. 3756.

Puccinia subglobosa Diet. & Holw., n. sp.—Sori on both sides of the leaves, particularly on the under side, scattered, punctiform, naked; uredosori chestnut-brown; teleutosori black, pulverulent; uredospores elliptical or obovate, sometimes almost globose, 18–25 × 17–20 μ brown, with short spines; teleutospores broadly ellipsoidal, often almost globose, rounded at both ends, not at all or only slightly constricted, apical thickening slight, smooth, dark chestnut-brown, 29–38 × 24–29 μ; pedicel hyaline, easily breaking from the host plant.

On *Viguiera Palmeri*, Chapala, September 23, 1899, no. 3488.

Puccinia praemorsa Diet. & Holw., n. sp.—Sori on the under side of brown roundish spots, which are somewhat depressed, solitary, medium-sized, dark brown, pulvinate, mostly made up of several small sori which have crowded together; teleutospores oblong-clavate, apex truncate, conical, or very irregular, narrowed at the base, somewhat constricted, 40–73 μ long, upper cell 15–30 μ wide, smooth, brown, thickened at apex; pedicel short, firm, brownish. The spores germinate, at least in part, as soon as mature.

On *Brickellia veronicaefolia*, Oaxaca, October 20, 1899, no. 3686. This is like *Puccinia Asteris*, but differs in several particulars.

Puccinia inanipes Diet. & Holw., n. sp.—Sori on both sides of the leaf, particularly on the upper, scattered, punctiform; uredosori brown; uredospores elliptical, rounded at both ends and when dry both ends depressed, scarcely constricted, apex with a very slight cucullate thickening, smooth, dark chestnut-brown, 34–42 × 28–31 μ, with long hyaline hollow pedicels which easily break from the host plant.

On *Eupatorium brevipes*, Oaxaca, October 18, 1899, no. 3677.

Puccinia espinosarum Diet. & Holw., n. sp.—Sori on both sides of the leaf, scattered, small or medium sized, naked; uredosori brown; uredospores ovate, epispore light brown, with short spines, 30–36 × 20–23 μ; teleutosori black; teleutospores broadly elliptical, rounded at both ends, apex with a slight cucullate

thickening, smooth, dark chestnut-brown, 40–50×32–36 μ; pedicel long (up to 125 μ), 10 μ thick, hollow at the base only, easily breaking from the leaf.

On *Eupatorium espinosarum*, Oaxaca, October 17, 1899, no. 3651.

PUCCINIA VIGUIERAE Peck.—On *V. picta*, near Tula, September 20, 1898, no. 3136; on *V. excelsa*, Rio Hondo cañon, near City of Mexico, September 22, 1898, no. 3160; City of Mexico, October 9, 1898; no. 3039; on *Gymnolomia Ghiesbreghtii*, Oaxaca, October 21, 1899, no. 3700; on *Viguiera*, Toluca, September 20, 1898, no. 3178; on *Gymnolomia subflexuosa*, Oaxaca, October 17, 1899, no. 3645; on *Verbesina trilobata*, Oaxaca, October 24, 1899, no. 3731; on *Verbesina virgata*, Rio Hondo cañon, near City of Mexico, October 30, 1899, no. 3751; on *Verbesina montanifolia*, Patzcuaro, October 10, 1899, no. 3604; on *Viguiera*, Chapala, September 20, 1899, no. 3469; on *Calea Zacetechichi* var. *rugosa*, Cuernavaca, September 30, 1899, no. 3534; September 28, 1899, no. 3512; on *Calea hypoleuca*, Oaxaca, October 17, 1899, no. 3648.

Puccinia ferox Diet. & Holw., n. sp.—Sori pulverulent, large, irregular, brown, attacking the upper leaves and occasionally the flowers, often destroying the plants, the leaves being much thickened and deformed and often entirely covered with the spores on both sides; teleutospores rounded at both ends, strongly constricted, with epispore uniform in thickness, pale brown, finely verrucose, 33–43×20–26 μ; pedicel short, fragile. The spores germinate at once.

On *Verbesina diversifolia*, Oaxaca, October 21, 1899, no. 3704. A very destructive species.

Puccinia Electrae Diet. & Holw., n. sp.—Sori on various colored spots on the upper side of the leaf, less numerous on the lower side, small, scattered; uredosori dark brown; uredospores obovate or elliptical, 28–35×21–25 μ, echinulate, brown; teleutosori naked, black; teleutospores elliptical, rounded at both ends, scarcely constricted, verrucose, apex not thickened, 36–48×24–31 μ; pedicel long, hyaline, or next the spore somewhat tinted, easily separating at the base from the host plant.

On *Electra Galeottii*, Oaxaca, October 18, 1899, no. 3664.

Puccinia Desmanthodii Diet. & Holw., n. sp.—Sori on the under side of large irregularly limited violet or yellow spots, small, but closely crowded into large groups in a kind of stroma formed of dark brown firm united paraphyses; teleutospores oblong or mostly fusiform, narrowed to both ends or truncate at apex, not at all or only slightly constricted, 40–60×10–17 μ, smooth, thickening at apex conical or cucullate, light brown; pedicel short or up to 40 μ long, firm, tinted.

On *Desmanthodium ovatum*, Oaxaca, October 18, 1899, no. 3665. Aecidia occur on some of the leaves but are too old to describe.

Puccinia Iostephanes Diet. & Holw., n. sp.—Sori mostly epiphyllous on small purple spots, less numerous on the under side of the leaf, scattered, black; teleutospores elliptical, rounded at both ends, scarcely constricted, chestnut-brown, verrucose, a light-colored cucullate thickening at the apex and on the side of the lower cell, 37–50×25–35 μ; pedicel long, hyaline, easily breaking at the base from the host plant, often laterally inserted.

On *Iostephane heterophylla?* Cuernavaca, September 30, 1899, no. 3543; on *Viguiera dentata*, Oaxaca, October 21, 1899, no. 3543, and October 25, 1899, no. 3744. Type is on no. 3543, the host being an Iostephane which is probably *I. heterophylla*, although it differs somewhat from other Mexican specimens.

Puccinia Guardiolae Diet. & Holw., n. sp.—Sori on purple spots, hypophyllous, rarely single sori epiphyllous, punctiform, scattered; uredosori dark brown; uredospores nearly globose, elliptical or obovate, 24–32×22–25 μ, dark brown, echinulate, with two germ-pores; teleutosori blackish, strongly convex, firm, small; teleutospores clavate, rounded at apex, or more rarely truncate, with a hyaline cucullate thickening, narrowed to the base or rounded, constricted, 45–60×18–25 μ, smooth, pale brown, germinating at once, whitening the sori; pedicel hyaline, firm, mostly shorter than the spore.

On *Guardiola Mexicana*, Cuernavaca, September 28, 1899, no. 3513.

Puccinia conjuncta Diet. & Holw., n. sp.—Sori epiphyllous, a few scattered ones epiphyllous, of medium size, except on the petioles and stems, where they break through the epidermis in large patches, pulverulent, dark brown; teleutospores strongly constricted, of two almost globose cells, 34–45×22–28μ, brown, echinulate, apex with a slight cucullate thickening; pedicel short, deciduous.

On *Lippia Pringlei*, Oaxaca, October 23, 1899, no. 3719B. Collected at about 10,000 feet, where there were no specimens of *Uredo Lippiae* D. & H. to be found. The latter occurred at about 6000 feet.

Puccinia Coulterophyti Diet. & Holw., n. sp.—Spots yellow or wanting; sori hypophyllous, small, scattered; uredosori light ochre color; uredospores obovate, 29–36×22–29μ; epispore hyaline, apex very strongly thickened, covered with distant, globose warts; teleutosori blackish-brown, naked, pulverulent; teleutospores long elliptical or irregular, rounded at both ends, scarcely constricted, 33–50×23–30μ; epispore chestnut-brown, verrucose, sometimes irregularly rugose; pedicel deciduous. One-celled teleutospores are not uncommon.

On *Coulterophytum laxum* Rob., Chapala, September 19, no. 3463; Uruapam, October 11, no. 3621. These hosts were determined for me at the Gray Herbarium. The leaflets differ, however, the former being smooth, while the latter are densely white-tomentose.

Uredo Lippiae Diet. & Holw., n. sp.—Sori hypophyllous, scattered, dark brown, pulverulent; uredospores globose or broadly elliptical, 25–32×25–28μ; epispore dark brown, closely echinulate, to 3μ thick, with two germ pores. Hyaline ampullaceous paraphyses are found in the sori.

On *Lippia Pringlei*, Oaxaca, October 23, 1899, no. 3719. Collected at about 6000 feet. No trace of *Puccinia conjuncta* D. &. H. could be found at this elevation.

Uredo Arbuti Diet. & Holw.—On *Arbutus diversiflora*, Oaxaca, October 18, 1899, no. 3662.

Ravenelia epiphylla Schw.—On *Brongniartia*, Guadalajara, September

14, 1899 no. 3415; on *Tephrosia Talpa*, Oaxaca, October 19, 1899, no. 3679.

RAVENELIA INDICA Berk.—On *Cassia Absus*, Tequila, September 29, 1893, *C. G. Pringle*.

RAVENELIA BRONGNIARTIAE Diet. & Holw.—On *B. sericea*, Oaxaca, October 18, 1899, no. 3663; on *Brongniartia*, Cuernavaca, September 28, 1898, nos. 3170 and 3022; September 29, 1899, no. 3519; on *B. intermedia*, Tizapan, Valley of Mexico, September 27, 1899, no. 3504½.

RAVENELIA INDIGOFERAE Tranzschel.—On *Indigofera Palmeri*, Oaxaca, October 19, 1899, no. 3682, forming swellings on the stems, and apparently quite destructive; on *Indigofera Cuernavacana*, Cuernavaca, September 22, 1898, no. 3120.

Ravenelia spinulosa Diet. & Holw., n. sp.—Sori on both sides of the leaf, breaking forth from beneath the epidermis, of irregular shape and size; uredosori ochre-colored; uredospores elliptical or almost globose, 18–23×16–19μ, light brown, with short spines, germ pores numerous, paraphyses sparingly intermixed; teleutosori black, heads hemispherical, 75–110μ in diameter, with 7–9 spores in cross-section, chestnut-brown, with numerous globose hyaline cysts on the under side; spores 11–17μ broad, one-celled, each with a long (up to 8μ) pale brown point at the apex.

On *Cassia multiflora*, Oaxaca, October 18, 1899, no. 3675. This species is much like the African *R. Stuhmanni* P. Henn., but has smaller uredospores.

PUCCINIOSIRA PALLIDULA (Speg.) Lagerh. (*P. triumfetta* Lagerh.).—On malvaceous plant, Jalapa, April 22, 1899, *C. G. Pringle*. Is probably on *Triumfetta* sp.

PUCCINIOSIRA BRICKELLIAE Diet. & Holw.—On *Brickellia tomentella*, Amecameca, October 31, 1899, no. 3767. These specimens show that the fungus also occurs on the under side of the leaves in various sized groups, sometimes annular, or elongated along the veins, and that the spores are not smooth, as originally described, but finely verrucose.

Endophyllum singulare Diet. & Holw., n. sp.—Sori covering large areas of the stems and leaves, with pseudosporidia strongly developed, conical, up to 2^{mm} long, irregularly splitting; spores ochre-colored in mass, elliptical or oblong, not rarely pointed at

apex, 40–55 × 24–30μ; epispore pale brown, strongly thickened at apex, closely verrucose.

On ericaceous plant, Jalisco, *Marcus E. Jones.*

Stichospora Mentzeliae Diet. & Holw., n. sp.—Sori hypophyllous, scattered, small; uredosori orange-yellow when fresh, white when dry; uredospores formed in short chains, 20–28 × 20–24μ; epispore verrucose, hyaline; teleutosori waxy, blood-red, 100–120μ high; teleutospores formed in a few series, one over the other, cylindrical clavate or elliptical, 24–45 × 14–20μ, at first one-celled, shortly before germination divided by vertical septa into four cells; epispore of the upper spore of each series with a hyaline thickening (up to 8μ); sporidia elliptical, often narrowed to one end, 15 × 10–13μ.

On *Mentzelia hispida*, Chapala, September 18, 1899, no. 3452.

Coleosporium Verbesinae Diet. & Holw., n. sp.—Sori scattered or in irregular groups, hypophyllous; uredosori golden-yellow; teleutosori bright red; uredospores elliptical to globose, 26–33 × 23–26μ, with colorless verrucose epispore; teleutospores cylindrical, up to 130μ long, 12 × 18μ thick, strongly thickened at apex.

On *Verbesina virgata*, with *Puccinia Viguierae*, Rio Hondo cañon, near City of Mexico, October 30, 1899, no. 3751; on *Verbesina*, Cuernavaca, September 30, 1899, no. 3542.

Coleosporium paraphysatum Diet. & Holw., n. sp.—Sori hypophyllous, on yellow or chestnut-brown spots, small, scattered; uredospores long-elliptical to clavate, with sharply projecting warts, 26–43 × 17–24μ; teleutospores at first ellipsoidal and one-celled, at length cylindrical or clavate, and divided by horizontal septa into four cells, 45–65 × 17–22μ; in many teleutosori there were numerous filiform paraphyses.

On *Liabum discolor*, Chapala, September 23, 1899, no. 3483.

Coleosporium anceps Diet. & Howl., n. sp.—Uredosori punctate, scattered or in circular groups, hypophyllous, white when

dry; uredospores elliptical, oblong, or almost globose, 17–25× 15–20μ, with long cylindrical tubercles; teleutosori hypophyllous, on yellow or brown dead spots, single, or often in annular or irregular groups, honey-colored, waxy; teleutospores cylindrical or clavate, 90μ long, 18–25μ wide, 4-celled; pedicel hollow, 60–70μ long; sporidia mostly cylindrical, 24–30×12–15μ.

On *Verbesina sphaerocephala*, Chapala, September 24, 1899, no. 3492, mostly Uredo, and September 25, 1899, no. 3501, only teleutospores.

DECORAH, IOWA.