

MEXICAN FUNGI.

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THE following species were collected on my vacation trip, in 1896. The Uredineæ were determined by Dr. Dietel, and descriptions sent me in German, which I have translated. I am indebted to C. G. Pringle, L. M. Underwood, J. N. Rose, and F. L. Scribner for determinations of the host plants. To Mr. Pringle's kind assistance and advice in Mexico the size of the collection is largely due. My time was almost entirely devoted to the Uredineæ and Ustilagineæ.

Uromyces Epicampus Diet. & Holw., n. sp.—Sori epiphyllous, between the veins, linear, naked: uredosori yellowish-brown; spores mostly round, $28-32\mu$; epispore thickly set with short spines; germ-pores numerous, scattered over the whole surface: teleutosori black-brown; spores round or ovate, rarely conical at apex, $26-35$ by $20-26\mu$, chestnut-brown, epispore rather thin, apex darker and strongly thickened ($5-7\mu$); pedicel firm, up to 100μ long.—On *Epicampes macroura*, Esclava, near City of Mexico, Sept. 30.

UROMYCES PECKIANUS Farlow.—On *Eragrostis Purshii*, Guadalajara, Oct. 11; *E. lugens*, var. *major*, Rio Hondo, near City of Mexico, Oct. 4; *Muehlenbergia*, near City of Mexico, Oct. 2.

UROMYCES EUPHORBIAE C. & P.—On *Euphorbia* sp., Cuernavaca, Sept. 22; *Euphorbia* (2 sp.), near City of Mexico, Oct. 7.

Uromyces globosus Diet. & Holw., n. sp.—Sori hypophyllous, of medium size, scattered or sometimes crowded, naked, black, pulverulent: teleutospores spherical, $30-36\mu$, or broadly ovate, and up to 40μ , opaque, dark brown, closely verrucose, apex lighter, yellowish-brown; pedicel longer than the spore, easily separating at the base from the leaf, colorless, $10-12\mu$ wide,

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hollow, attached to the spore by a brown spreading collar: uredospores (a few found among the teleutospores) ovate, about 36μ long, shortly aculeate, thickened at apex, brown, lighter towards the base.—On some euphorbiaceous tree, Cuernavaca, Sept. 22.

Uromyces Solani Diet. & Holw., n. sp.—Sori hypophyllous, on small yellow spots, scattered, small, naked: uredospores obovate, 23–33 by $18-21\mu$, pale-brown, echinulate, with four equatorial germ-pores: teleutospores clavate, or narrowly ovate, narrowed towards the pedicel, mostly beak-like at apex, 30–48 by $10-17\mu$, smooth, light chestnut-brown, colorless towards apex.—On *Solanum appendiculatum*, Cuernavaca, Sept. 23.

UROMYCES CALADII (Schw.) Farlow.—On *Arisæma Dracontium*, Cuernavaca, Sept. 23.

UROMYCES BREVIPES (B. & Rav.).—On *Rhus Toxicodendron*, Cuernavaca, Sept. 23. Not *U. terebinthi* (DC.), to which it is usually referred, the uredospores being quite distinct.

UROMYCES STRIATUS Schröt.—II only. On *Medicago lupulina* and *M. denticulata*, near Tula, Oct. 6; *M. lupulina*, near City of Mexico, Oct. 7.

Uromyces Mexicanus Diet. & Holw., n. sp.—Sori mostly hypophyllous, also on the pedicels and stems; spots inconspicuous, brown or yellow, often wanting: uredosori scattered or in irregular groups, cinnamon-brown; spores broadly elliptical or globose, 18–23 by $17-21\mu$, pale brown, echinulate: teleutosori pulvinate, black, naked, on the leaves small, on the stems and pedicels larger and elongated; spores ovate, rarely almost globose, thickened at apex and often narrowed to a short conical point, 23–30 by $18-22\mu$, smooth, chestnut-brown; pedicel colorless, slender, up to 100μ long, narrowed towards the base.—On *Desmodium*, City of Mexico, Oct. 9; Guadalajara, Oct. 11; Cuernavaca, Sept. 22.

Uromyces obscurus Diet. & Holw., n. sp.—Æcidia hypophyllous, scattered, at first sunk in the parenchyma, then erumpent, without pseudoperidia, flat, orange-red; æcidiospores when fresh yellowish-red, globose or elliptical, 17–25 by $17-20\mu$, smooth:

uredo- and teleutospores intermixed in black sori, on both sides of the leaves and on the stems and pedicels: uredospores globose or elliptical, 20–30 by 20–25 μ , yellowish-brown, echinulate: teleutospores elliptical, ovate or globose, 27–38 by 23–27 μ , chestnut-brown, apex with a broad pale-brown papilla, or rarely with only a cucullate thickening; pedicel as long as the spore or somewhat longer, rather fragile.—On *Phaseolus*, Cuernavaca, Sept. 23; near Tula, Oct. 5; Guadalajara, Oct. 12 and 13.

UROMYCES PHASEOLI (Pers)?—Uredo only. On *Phaseolus* cult., Cuernavaca, Sept. 22.

Uromyces tenuistipes Diet. & Holw., n. sp.—Sori small, hypophyllous, scattered, forming red spots on the upper side of the leaf: uredosori brown; spores globose or elliptical, 21–24 by 18–22 μ , pale brown, echinulate: teleutosori black; spores mostly globose, 22 μ , epispore thick, apex with a small shallow depression, not much thickened; pedicel very long and slender, rather fragile.—On *Desmodium*, Esclava, near City of Mexico, Sept. 29.

Uromyces Galphimiae Diet. & Holw., n. sp.—Sori small, naked, scattered over both sides of the leaf: uredosori cinnamon-brown; spores obovate or elliptical, 28–36 by 22–32 μ , with a pale-brown shortly echinulate membrane and golden-yellow contents: teleutosori black; spores ovate or elliptical or almost globose, narrowed at apex to a small obtuse point, 35–45 by 23–33 μ , epispore chestnut-brown, closely verrucose, thickened at apex; pedicel longer than the spore, fragile.—On *Galphimia Humboltiana*, Guadalajara, Oct. 12.

Uromyces Jatrophae Diet. & Holw., n. sp.—Spots yellow, of irregular outline or none, sori hypophyllous: teleutosori black, small, scattered or united in irregular groups: uredospores (only a few seen) elliptical, 21–25 by 17–22 μ , with a colorless verrucose membrane; teleutospores globose or broadly elliptical, coarsely verrucose, dark chestnut-brown, apex terminating in a brown papilla, 27–33 by 23–29 μ ; pedicel about as long as the spore, fragile.—On *Jatropha multifida*, Guadalajara, Oct. 12.

Uromyces Ægopogonis Diet. & Holw., n. sp.—Sori hypophyllous, rarely epiphyllous: uredosori oblong or linear, ochreous;

spores mostly globose or subovate, 20–24 μ in diameter, pale-brown, echinulate, with about 8 germ-pores: teleutosori black, elliptic or somewhat linear, pulvinate; spores uniformly globose, 22–27 μ in diameter, chestnut-brown, smooth, apex broadly hooded (5–7.5 μ thick) and darker colored; pedicel brown, firm, long.—Near *U. Peckianus*, from which it is distinguished by the round teleutospores.—On *Ægopogon cenchroides*, near City of Mexico, Oct. 1.

Puccinia Zexmeniae Diet. & Holw., n. sp.—Sori scattered, on both sides of the leaf: uredospores elliptical to globose, 20–22 by 17–20 μ , bright brown, echinulate: teleutospores elliptical, rounded at both ends, not at all or only slightly constricted, 35–45 by 25–33 μ ; epispore chestnut-brown, 4–5 μ thick, apex not at all thickened or sometimes with a small cucullate thickening; membrane closely reticulated with narrow ridges; pedicel longer than the spore, thin, colorless, not rarely inserted on the side, easily breaking from the leaf.—On *Zexmenia podocephala*, Guadalajara, Oct. 12.

Puccinia opaca Diet. & Holw., n. sp.—Sori small, black, scattered, on both sides of the leaf: uredospores elliptical, 18–20 by 16–17 μ , light-brown, echinulate: teleutospores elliptical, rounded at both ends, slightly constricted, 30–36 by 24–28 μ , dark chestnut-brown, mostly not thickened at apex; membrane coarsely reticulated with broad ridges; pedicel colorless, to 90 μ long, occasionally inserted on the side, easily separating from the leaf.—On *Zexmenia ceanothifolia*, Guadalajara, Oct. 12.

The two preceding species, although much alike, are easily distinguished by the size of the teleutospores and the markings of the membrane.

Puccinia tageticola Diet. & Holw., n. sp.—Sori on both sides of the leaves, scattered, small, on the stems and pedicels, large, pulvinate, naked: uredosori brown; spores, elliptical, obovate, or globose, 24–31 by 17–24 μ , light-brown, echinulate: teleutosori black; spores elliptical, rounded at both ends, slightly constricted, 44–52 by 30–35 μ , epispore smooth, chestnut-brown, apex with a broad, hooded, often hyaline thickening; pedicel to

100 μ long, colorless, rather firm.—On *Tagetes tenuifolia*, Guadalajara, Oct. 12.

Puccinia (UROPYXIS) Daleæ Diet. & Holw., n. sp.—Sori on both sides of the leaves, scattered or confluent in round groups, from dot-like to medium sized: uredosori cinnamon-brown or often colorless, containing hooked paraphyses; uredospores globose or broadly elliptical, 22–25 by 20–22 μ , pale-brown, finely echinulate, with numerous scarcely visible germ-pores: teleutosori black-brown, pulvinate; teleutospores slightly constricted, rounded at both ends, 35–47 by 24–28 μ , episporium chestnut-brown with a colorless verrucose envelope, 2–2.5 μ thick, and two germ-pores in each cell; pedicel hyaline, about half as long as the spore, thick (in water swelling up to 18 μ).—On *Dalea*, near Tula, Oct. 5; near Tacubaya, Oct. 7.

Puccinia (UROPYXIS) Nissoliæ Diet. & Holw., n. sp.—Uredo not seen: teleutosori mostly hypophyllous, scattered, small or medium sized, black-brown, pulverulent; spores rounded at both ends, scarcely constricted, 32–40 by 25–27 μ ; membrane chestnut-brown, with a hyaline verrucose envelope 1–2 μ thick, and two germ-pores in each cell; pedicel hyaline, up to 25 μ long and 5–6 μ thick.—On *Nissolia confertiflora*, Guadalajara, Oct. 12.

Puccinia (UROPYXIS) Eysenhardtiae Diet. & Holw., n. sp.—Spots yellowish or none; sori punctiform, hypophyllous, scattered: uredosori whitish, surrounded by hyaline hooked paraphyses; spores broadly elliptical or globose, 15–20 by 15–17 μ , pale-brown, echinulate: teleutosori black-brown; spores rounded at both ends, slightly constricted, 38–45 by 25–28 μ , chestnut-brown, with a thin verrucose hyaline envelope, and two germ-pores in each cell; pedicel mostly globose, 15–18 μ in diameter, hyaline.—On *Eysenhardtia orthocarpa*, near City of Mexico, Oct. 1.

These three species can be distinguished with certainty only by the peculiarities of the pedicels, and, so far as they are known, by the uredospores.

Puccinia Tripsaci Diet. & Holw., n. sp.—Sori on both sides of the leaves, at first covered by the epidermis, at length erumpent, somewhat linear: uredosori cinnamon-brown, spores glo-

bose or elliptical, 30–37 by 28–33 μ , epispore up to 4 μ thick, chestnut-brown, echinulate, with 4 germ-pores: teleutospores elliptic or obovate, rounded at both ends, with a hooded thickening at apex, slightly constricted, smooth, brown, 33–41 by 20–25 μ ; pedicel longer than spore, firm, brownish.—On *Trip-sacum dactyloides*, near City of Mexico, Oct. 2.

PUCCINIA CORONATA Cda.—On *Bromus*, near Tula, Oct. 5.

Puccinia Cenchri Diet. & Holw., n. sp.—Sori very small, hypophyllous, scattered: uredosori surrounded by the ruptured epidermis; spores obovate or elliptical, 36–45 by 30–35 μ , brown, echinulate, with equatorial germ-pores: teleutosori covered by the epidermis, black; spores oblong, mostly clavate, apex truncate or irregularly angled, sometimes constricted, narrowed or rounded at base, 40–53 by 18–25 μ , epispore smooth, brown, strongly thickened at apex; pedicel very short, brown.—On *Cenchrus multiflorus*, Guadalajara, Oct. 12.

PUCCINIA VEXANS Farlow.—On *Bouteloua racemosa*, near Tula, Oct. 6.

PUCCINIA SUBNITENS Diet.—On *Aristida dispersa*, near Torreon, Oct.

Puccinia versicolor Diet. & Holw., n. sp.—Spots epiphyllous, purple-red, or brown and yellow; sori hypophyllous, oblong or linear: uredosori yellow, surrounded by the ruptured epidermis; spores ovate, 30–40 by 25–31 μ , epispore very thick, colorless, with short spines, contents irregularly branched, or often star-shaped: teleutosori firm, pulvinate, black, surrounded by the ruptured epidermis; spores elliptical, scarcely constricted, rounded at both ends, smooth, chestnut-brown, apex variously thickened (generally not over 8 μ), 35–45 by 27–33 μ ; pedicel hyaline, firm, up to 130 μ long.—On *Andropogon melanocarpus*, Guadalajara, Oct. 12.

Puccinia Setariæ Diet. & Holw., n. sp.—Sori mostly epiphyllous, elliptic or sublinear; uredosori cinnamon-brown, naked; spores elliptical or almost globose, sometimes angular, 28–38 by 22–29 μ , with a thick closely verrucose epispore, and 6–8 germ-pores, dirty yellow-brown: teleutosori pulvinate, black; spores

elliptical or obovate, rarely fusiform, not at all or only rarely constricted, rounded at both ends, rarely conical at apex, 35-48 by 24-33 μ , epispore smooth, chestnut-brown, apex with a broad hooded thickening (7.5-13 μ); pedicel thick, firm, up to 100 μ long, hyaline or pale brown.—On *Setaria imberbis*, City of Mexico, Sept. 30.

Puccinia atra Diet. & Holw., n. sp.—Sori mostly hypophyllous: uredosori mostly linear, up to 5^{mm} long, naked, pulverulent, cinnamon-brown; spores elliptical or ovate, 27-35 by 21-25 μ , closely covered with small warts, brown: teleutosori punctiform or linear, scattered or clustered, naked, black; spores elliptical, rounded at both ends, scarcely constricted, smooth, chestnut-brown, apex with hooded thickening (about 5 μ), 31-38 by 21-26 μ ; pedicel rather firm, up to 85 μ long, hyaline, often brownish next the spore.—On *Setaria Grisebachii*, Rio Hondo, near City of Mexico, Oct. 4.

Distinguished from *P. Setariae* by the smaller spores.

Puccinia emaculata Schw.—Uredo only. On *Panicum halci-forme*, near Tula.

Puccinia esclavensis Diet. & Holw., n. sp.—Sori on both sides of the leaves, but mostly epiphyllous, small to medium sized, globose to linear, often confluent on the stems; uredosori cinnamon-brown; spores elliptical, ovate, or globose, 30-43 by 24-33 μ , yellow-brown to chestnut-brown, very closely covered with small warts, and with 4 equatorial germ-pores: teleutosori black-brown, pulvinate, naked; spores elliptical, rarely obovate, not at all or only slightly constricted, rounded at both ends, apex with a broad hooded thickening, 32-41 by 23-28 μ , smooth, dark chestnut-brown; pedicel up to 160 μ long, hyaline.—On *Panicum bulbosum*, Esclava, near City of Mexico, Oct. 3.

Puccinia nigrovelata Ell. & Tracy.—On *Cyperus*, City of Mexico, Sept. 30.

Puccinia cinnamomea Diet. & Holw., n. sp.—Sori in irregular or often linear groups, hypophyllous, punctiform, pulvinate, cinnamon-brown: teleutospores oblong, 28-38 by 14-20 μ , constricted, both ends rounded, with a hooded or rarely conical

thickening at apex; membrane pale cinnamon-brown, smooth; pedicel as long as the spore, or somewhat shorter, firm, hyaline.—On a small terrestrial orchid, Cuernavaca, Sept. 23.

The spores germinate on the leaf, as soon as mature.

Puccinia Baccharidis Diet. & Holw.—On *Baccharis cærulescens*, near Tula, Oct. 6.

Puccinia Amphilophii Diet. & Holw., n. sp.—Sori hypophyllous (rarely epiphyllous), small or medium sized: uredosori brown; spores ovate or broadly elliptical, 23–27 by 20–24 μ , with large spines, yellow-brown: teleutosori black, pulverulent; spores broadly elliptical, rounded at both ends, when dry depressed at apex and base, moderately constricted, 33–40 by 26–30 μ ; membrane not at all thickened at apex or slightly hooded, chestnut-brown, with short spines: pedicel as long as the spore or very little longer, hyaline, hollow, mostly with a few appendages on the sides at the base, readily breaking at base from the host plant.—On *Amphilophium*, Cuernavaca, Sept. 22.

The peculiar pedicels show that this species is closely related to *P. appendiculata* Wint., but it may readily be distinguished by the form of the spores, the echinulate epispore, and particularly by the appendages occurring only at the base of the pedicels.

Puccinia Appendiculata Wint. (*P. ornata* Hark.; *P. medusæoides* Arthur).—On *Tecoma stans*, Guadalajara, Oct. 12.

Puccinia vacua Diet. & Holw., n. sp.—Sori hypophyllous, occasionally epiphyllous, scattered: uredosori pale-yellow; spores broadly elliptical or ovate to globose, 22–29 by 20–25 μ ; membrane almost hyaline, echinulate: teleutosori dark brown; spores elliptical, rounded at both ends, rarely narrowed towards the pedicel, slightly constricted, closely verrucose, brown, hooded at apex, 35–60 by 23–28 μ , pedicel up to 80 μ long, hyaline, not very firm.—On *Lobelia*, Cuernavaca, Sept. 23.

The teleutospores germinate as soon as mature. Spores have a thicker membrane, and are much larger than those of *P. Lobelia* Ger.

Puccinia Triumphettæ Diet. & Holw., n. sp.—Spots yellow, becoming black in the center, round or irregular: sori hypophyllous, confluent in irregular groups, firm, pulvinate, almost

globose, dark-brown: teleutospores elliptical, oblong, or rarely clavate, either rounded at both ends or narrowed towards the pedicel, often shortly conical at apex, little or not at all constricted, 27-37 by 13-19 μ , epispore smooth, pale brown, strongly thickened at apex (3-6 μ).—On *Triumfetta semitriloba*, Cuernavaca, Sept. 23.

PUCCINIA CALOCHORTI Pk.—On *Calochortus flava*, near City of Mexico, Oct. 2.

PUCCINIA VIGUIERÆ Pk.—On *Viguiera picta* and *V. helianthoides*, near Tula, Oct. 6; *V. excelsa*, Rio Hondo, near City of Mexico, Oct. 4.

I am indebted to Professor Peck for comparison with the type.

PUCCINIA ELYTRARIÆ P. Henn.—On *Elytraria tridentata*, Cuernavaca, Sept. 23; Guadalajara, Oct. 12.

PUCCINIA ARECHAVALETÆ Speg.—On *Cardiospermum Halicacabum*, Guadalajara, Oct. 12; Cuernavaca, Sept. 23; near Tula, Oct. 5.

PUCCINIA PRUNI-SPINOSÆ (Pers.)—On *Prunus serotina*, near Tula, Oct. 6; Rio Hondo, near City of Mexico, Oct. 4.

PUCCINIA HETEROSPORA B. & C.—On *Abutilon* (2 sp.), Cuernavaca, Sept. 23; *Sida*, Cuernavaca, Sept. 23; *Anoda*, Guadalajara, Oct. 12.

PUCCINIA EUPHORBIAE P. Henn.—On *Euphorbia*, Cuernavaca, Sept. 23.

Differs somewhat from specimens on *Euphorbia cotinifolia* collected by Mr. Pringle (valley of Oaxaca), which have spores 60-75 μ long. In these specimens the spores are only 40-55 μ long, and may therefore be called var. *minor*, n. var. The spores of the type, from Abyssinia, are 54-65 μ long.

PUCCINIA IPOMEÆ-PANDURANÆ (Schw.)?—On *Ipomæa*, Cuernavaca, Sept. 22.

PUCCINIA LATERITIA B. & C.—On *Bouvardia*, Cuernavaca; *Crusea*, Cuernavaca.

PUCCINIA CONOCLINII Seymour.—On *Eupatorium Schaffneri*, near Tula, Oct. 6; *Ageratum*, Guadalajara, Oct. 11.

Puccinia Tithoniæ Diet. & Holw., n. sp.—Sori mostly hypophyllous, rather small, scattered: uredosori cinnamon-brown,

pulverulent; spores globose or ovate, 24–30 by 20–26 μ ; membrane thin, brown, with very short spines: teleutosori black; spores elliptical or ovate, rounded at both ends, slightly constricted, 38–52 by 22–27 μ , smooth, chestnut-brown, hooded at apex or rarely with a conical thickening, mostly paler in color; pedicel hyaline, longer than the spore, rather firm.—On *Tithonia cubiflora*, near City of Mexico, Oct. 2; *T. tagetiflora*, Guadalajara, Oct. 12.

This species is much like *P. Helianthi* Schw., but the spores are darker, average smaller, and the septum is less thickened at the sides.

Puccinia Bidentis Diet & Holw., n. sp.—Sori mostly hypophyllous, scattered, small, dark-brown, on faint yellow spots: teleutospores partly 2-celled, but mostly 1-celled, the latter elliptical, ovate or globose, 19–30 x 17–23 μ ; the 2-celled spores greatly variable in form and size, elliptical or oblong, rarely narrowed to the pedicel, slightly constricted, 24–38 by 15–25 μ , chestnut-brown, finely punctate; pedicel firm, mostly longer than the spore, colored above.—On *Bidens*, Cuernavaca, Sept. 23.

Puccinia Melampodii Diet. & Holw., n. sp.—Spots pale yellow or brownish; sori hypophyllous, small, pulvinate, black-brown, mostly in small irregular groups: teleutospores oblong or fusiform, rounded or narrowed to a conical point at apex, narrowed towards the pedicel, moderately constricted, 42–60 by 15–20 μ , epispore smooth, brown, apex strongly thickened (5–10 μ); pedicel firm, up to 27 μ long.—On *Melampodium*, Cuernavaca, Sept. 25.

Puccinia Enceliæ Diet. & Holw., n. sp.—Sori hypophyllous, scattered, naked: uredosori brown; spores elliptical or globose, 20–25 by 19–23 μ , brown, echinulate: teleutosori black-brown; spores elliptical or obovate, rounded at both ends, very slightly constricted, 31–42 by 23–27 μ ; membrane smooth, chestnut-brown, apex with a light flat hood about 7 μ thick; pedicel longer than the spore, hyaline, moderately firm.—On *Encelia Mexicana*, Cuernavaca, Sept. 25.

This species is much like *P. Helianthi* Schw., of which it is perhaps only a form. The teleutospores, however, average considerably smaller.

PUCCINIA GRANULISPORA Ell. & Ev.—On *Allium*, Cuernavaca, Sept. 26.

PUCCINIA OXALIDIS Diet. & Ellis.—On *Oxalis*, common near City of Mexico, Sept. 30.

Puccinia salviicola Diet. & Holw., n. sp.—Sori on both sides of the leaves, scattered, medium sized, at first covered by the epidermis, pulverulent: uredosori cinnamon-brown; spores globose, ovate or elliptical, 22–37 by 20–30 μ , light-brown, echinulate, with 2 germ-pores: teleutospores in black sori, elliptical, rounded at both ends, or short conical at apex, not at all or slightly constricted, 35–44 by 25–33 μ , apex with a thick hooded or broadly conical thickening, very slightly verrucose, chestnut-brown; pedicel longer than the spore, hyaline, narrower towards the base—On *Salvia glechomæfolia*, near City of Mexico, Sept. 26.

Differs from *P. nigrescens* Pk. in its larger teleutospores and thicker, nearly smooth membrane.

Puccinia Apocyni Diet. & Holw., n. sp.—Sori epiphyllous, bright brown, closely clustered in round groups, on yellow circular spots 2–4^{mm} in diameter: teleutospores oblong, apex shortly conical or rounded, distinctly constricted, lower cell narrowed or rounded, 32–50 by 16–23 μ , pale-brown, smooth, apex strongly thickened and lighter colored; pedicel firm, not longer than the spore.—On *Apocynum androsæmifolium*, Esclava, near City of Mexico, Oct. 3.

Puccinia Mexicana Diet. & Holw., n. sp.—Spots reddish purple, surrounded by a broad yellow margin, circular, 3–5^{mm} broad; sori pulvinate, small, thickly clustered, dark-brown: teleutospores long elliptical to fusiform, apex mostly conical pointed, rarely rounded, lower cell rounded or narrowed to the pedicel, only slightly constricted, 38–50 by 16–23 μ ; membrane yellow-brown, smooth, apex thickened; pedicel longer than the spore, firm, hyaline.—On *Penstemon campanulatus*, Esclava, near City of Mexico, Sept. 29.

The spores are more slender, lighter colored, and have a thinner membrane than those of *P. Penstemonis* Pk.

Puccinia pinguis Diet. & Holw., n. sp.—Sori scattered, on both sides of the leaf, but mostly hypophyllous, small: uredosori brown, naked, pulverulent; spores globose or ovate, 28–33 by 24–30 μ , echinulate, brown, with 2 germ-pores; teleutosori black, pulverulent; spores broadly elliptical, rounded at both ends, scarcely constricted, 48–53 by 33–40 μ , apex with a short hyaline hood (a similar one often over the germ-pore of the lower cell); membrane 5–6 μ thick, smooth, chestnut-brown; pedicel easily separating from the leaf, longer than the spore, hyaline.—On *Brickellia*, Rio Hondo, near City of Mexico, Oct. 3.

Puccinia Guillemineæ Diet. & Holw., n. sp.—Sori mostly epiphyllous, round, 0.5–1^{mm} in diameter, thick, sometimes confluent, dark-brown: teleutospores elliptical, rounded at both ends, very little constricted, 29–37 by 20–23 μ , epispore deep chestnut-brown, smooth, apex strongly thickened (4–7 μ); pedicel long, fragile.—On *Guilleminea*, near City of Mexico, Oct. 7.

PHRAGMIDIUM SUBCORTICIUM (Schrank) Wint.—On *Rosa* cult., Guadalajara, Oct. 14.

Coleosporium Viguieræ Diet. & Holw., n. sp.—Uredosori orange-yellow, small, scattered, hypophyllous, causing irregular yellow spots; spores in chains, elliptical or globose, 19–25 by 15–20 μ , epispore hyaline, with cylindrical warts: teleutosori similar to the uredosori, reddish-brown, wax-like; spores cylindrical, about 125 μ long, 14–22 μ wide, with orange-yellow contents.—On *Viguiera helianthoides*, near Tula, Oct. 6.

COLEOSPORIUM VIBURNI Arth.?—Uredo on *Viburnum*, near City of Mexico, Oct. 3.

COLEOSPORIUM IPOMÆÆ (Schw.) Burrill.—On *Ipomæa*, near City of Mexico, Oct. 7.

Puccinosira Brickelliæ Diet. & Holw., n. sp.—On the stems and pedicels, forming irregular, mostly curved swellings; pseudo-peridia shortly cylindrical, partly sunken, with margins irregularly toothed, cells verrucose, easily separating, yellow-white: teleutospores 2-celled, formed in long chains, separated by short sterile cells, elliptical, 28–35 by 18–24 μ , at first not constricted,

finally separating into 2 cells; membrane hyaline, smooth.— On *Brickellia*, Rio Hondo, near City of Mexico, Oct. 4.

RAVENELIA APPENDICULATA Lagerh. & Diet.— On *Phyllanthus Galeottianus*, Guadalajara, Oct. 12.

Ravenelia expansa Diet. & Holw., n. sp.— Sori on both sides of the leaves, on large yellow spots, breaking through between the cuticle and epidermal cells: uredosori small, ochreous, containing numerous club-shaped brown paraphyses; spores elliptical or globose, 17–20 by 15–17 μ , yellow-brown, with short spines: teleutosori irregular in outline, large, black-brown; heads hemispherical, 65–95 μ in diameter, smooth, chestnut-brown, 5 to 6 spores in cross-section; spores cuneiform, 1-celled, 14–18 μ broad, apex strongly thickened (about 7 μ); cysts pear-shaped, only under the margin of the peripheral spores.— On *Acacia Tequilana* Wats., Guadalajara, Oct. 13.

Ravenelia Brongniartiae Diet. & Holw., n. sp.— Sori breaking forth from beneath the epidermis: uredosori single or clustered, on both sides of the leaves, cinnamon-brown; spots large yellow, about 5^{mm} in diameter, spores ovate to globose, 23–30 by 18–25 μ , with short spines and numerous germ-pores; paraphyses none: teleutosori not on spots, black; heads hemispherical, 85–115 μ in diameter, with 5–6 spores in cross-section, dark chestnut-brown, thickly covered on the upper side with large warts; on the margins scattering large dark-brown blunt processes; inner spores of the head 2-celled, 16–21 μ ; cysts united into a coniform body, narrowed into the compound pedicel.— On *Brongniartia*, Cuernavaca, Sept. 23.

Ravenelia laevis Diet. & Holw., n. sp.— Sori on yellow spots about 1^{mm} in diameter, scattered or confluent in round groups, on both sides of the leaves: uredosori chestnut-brown; spores globose or ovate, 21–26 by 20–23 μ , dark-brown, with short spines and numerous (12–15) germ-pores; paraphyses numerous, brown, clavate, stout: teleutosori black; heads irregularly rounded, hemispherical, 90–125 μ in diameter, opaque, brown, smooth, with mostly 5–6 spores in each direction; inner spores with transverse septa, 20–26 μ ; cysts flat, on the underside of the

heads; pedicels compound.—On *Indigofera*, Esclava, near City of Mexico, Oct. 3; Guadalajara, Oct. 11.

Easily distinguished from *R. Indigoferae* Tranzschel by the upper side of the heads being smooth; but differs from *R. epiphylla* (Schw.) (*R. glanduliformis* B. & C.) only in the uredospores.

RAVENELIA EPIPHYLLA (Schw.) Farlow & Seymour.—On *Brongniartia podalymoides*, Guadalajara, Oct. 12.

Æcidium Bouvardiæ Diet. & Holw., n. sp.—Pseudoperidia on the underside of the leaves, on large (up to 1.5^{cm}) yellow or brownish spots, rather crowded, shortly cylindrical, orange-red when fresh, soon turning white; edges either erect or recurved, irregularly toothed; spores elliptical or almost globose, 18–25 by 15–20 μ , finely verrucose.—On *Bouvardia triphylla*, Rio Hondo, near City of Mexico, Oct. 4.

Æcidium roseum Diet. & Holw., n. sp.—Spots bright rose-red or purple-red, often with a yellow center; pseudoperidia hypophyllous, in round or irregular groups, with recurved irregularly toothed edges; spores almost globose, or oblong, 25–33 by 23–26 μ , with a thick, distinctly verrucose membrane, and orange-yellow contents, apex strongly thickened (5–8 μ).—On *Eupatorium*, Esclava, near City of Mexico, Oct. 4.

Æcidium Mexicanum Diet. & Holw., n. sp.—Spots dry, circular, 3–6^{mm} in diameter, mostly with a yellowish-red margin; pseudoperidia on the edge of the spots, small, 0.25–0.30^{mm}, shortly cylindrical, yellowish-red, with erect, finely toothed white edges; spores mostly globose-polygonal, or elliptical, orange-yellow, with a hyaline, firm, often irregularly thickened finely verrucose membrane, 22–31 by 20–24 μ .—On *Cissus*, near City of Mexico.

Distinguished from *Æ. Cissi* Wint. by its much larger spores.

Æcidium Montanoæ Diet. & Holw., n. sp.—Pseudoperidia upon swellings on the pedicels and young branches, causing considerable distortion, crowded, alveolate, with irregular deeply toothed edges; cells 40–60 μ long; spores polygonal, almost globose, or irregularly ovate, 20–30 by 17–23 μ , with a thin, hyaline, verrucose membrane.—On *Montanoa*, near City of Mexico, Oct. 1.

Æcidium Mirabilis Diet. & Holw., n. sp.—Pseudoperidia on the under side of large yellow circular or irregular spots, which sometimes have a blister-like elevation, at first cylindrical with finely toothed edges, later irregularly torn to the base; spores ovate or oblong, rarely globose, 20–30 by 14–22 μ , with a thin slightly verrucose membrane.—On *Mirabilis*, Rio Hondo, near City of Mexico, Oct. 4.

Uredo pallida Diet. & Holw., n. sp.—Spots yellow or sometimes lacking; sori mostly epiphyllous, oblong or sublinear, scattered or confluent, yellowish-white when dry, surrounded by the ruptured epidermis; spores ovate to pyriform, 20–26 by 13–18 μ , with hyaline shortly verrucose epispore.—On *Tripsacum dactyloides*, near City of Mexico, Oct. 1.

PODOSORDARIA Ellis & Holw., n. gen.—Perithecia united in a stipitate stroma. Asci and sporidia as in *Sordaria*.

Podosordaria Mexicana Ellis & Holw., n. sp.—Stroma with the short stipe irregularly obconical, 1–1.5^{mm} across, slightly mammillate above from the projecting apices of the perithecia, of carnose texture and of a light liver color: perithecia 3–10 in a stroma, ovate, globose, 400–500 μ in diameter, with black papilliform ostiola: asci cylindrical, obscurely paraphysate, short-stipitate, 8-spored, 115–150 by 15–20 μ : sporidia uniseriate, or biseriate above, elliptical, subhyaline at first, becoming nearly black and opaque, 25–34 by 12–14 μ .—On cow dung, Cuernavaca, Sept. 23.

HYPOCREA FIBULA De Not.—On log, Cuernavaca, Sept. (Det. by Ellis.)

PARODIELLA PERISPOROIDES (B. & C.) Speg.—On *Zornia*, near City of Mexico, Oct. 1.

HOMOSTEGIA PARRYI (Farlow).—On *Agave*, Guadalajara, Oct. 12. (Det. by Ellis.)

PHYSALOSPORA ARALIÆ Pat.—On some araliaceous tree, Cuernavaca, Sept.

Perithecia hemispherical and sporidia smaller, but judging from the description it can hardly be separated. (Det. by Ellis.)

Bulgaria Mexicana Ellis & Holw., n. sp.—Obconic, stipitate,

2.5–3.5^{cm} across, carnose-gelatinous, becoming hard and rigid when dry, with the margin involute and much wrinkled, glabrous, olive-black: hymenium reddish-brown, cracking and showing the white substance of the ascoma: stipe central, short, stout, wrinkled (when dry): asci cylindrical, stipitate, 8-spored, 250–270 by 15 μ : paraphyses filiform, slightly thickened above and brownish: sporidia uniseriate allantoid, rounded at the ends, slightly curved, mostly with a large vacuole in the center, subhyaline, 25–34 by 8–10 μ .—Cuernavaca, Sept.

Has the general appearance of *B. spongiosa* Pk., but with very different sporidia.

DECORAH, IOWA.