

THE MEXICAN SPECIES OF *PUCCINIA*
(UREDINALES) *By Joe F. Hennen ** and
George B. Cummins ***

THIS CONTINUES a series of papers (Cummins 1967, Hennen and Cummins 1967, 1973a, 1973b, Hennen *et al.*, 1972) that brings the records of Mexican rust fungi up to date. Previously the primary source of information on Mexican rusts was in Arthur (1907-1972) whose records are based mainly on E. W. D. Holway's collections made around 1900 and mainly from Central Mexico. Nomenclature follows Cummins and Stevenson (1956) where citations are found or if more recent papers are followed they are cited here. Life cycle types are in parentheses following each species and they are defined in Hennen *et al.*, (1972). Herbarium abbreviations follow Lanjouw & Stalleu (1964). In the lists of voucher specimens, exsiccati are in parentheses.

Only species that produce telial stages on Angiosperms are included but 93 species on Compositae and 72 species on Gramineae are not included because of our earlier reports cited above. We record 131 species (including 32 not previously reported for Mexico), based for the most part, on specimens in the Arthur Herbarium (PUR). During the past decade we have done field work in mostly northern Mexican states and about 460 of the 892 voucher specimens cited are ours. A few records are from phanerogam specimens from other herbaria. Mucho of Mexico remains to be sample for rusts and many more species and new records undoubtedly will be found.

The rust species are arranged first by dicot host families and then by monocot host families in alphabetical order. Under each host family the host genera are arranged alphabetically.

We acknowledge with gratitude the Spanish translation by P. Buritica and the financial support of the National Science Foundation Grants GB 8214 and GB 20550.

* Journal paper No 5081 of the Purdue Agricultural Experiment Station and No. 2088 of the Arizona Agricultural Experimental Station.

** Department of Botany and Plant Pathology, Purdue University, Lafayette, Indiana 47907, E.U.A.

*** Department of Plant Pathology, University of Arizona, Tucson, Arizona 85721, E.U.A.

LIST OF THE SPECIES

Dicot Families

On Acanthaceae

Anisacanthus

1. *P. anisacanthi* Diet & Holw. (auteu). On *A. virgularis* Nees, Oaxaca: Holway PUR33541 (Sydow-Uredineen 2014); San Luis Potosi: Pringle PUR33542 (Pringle-Mexican Fungi 7). On *A. thurberi* (Torr.) Gray, Sonora: Russell PUR57007, Cummins PUR60577, 64051. On *A. wrightii* (Torr.) Gray, Nuevo Leon: Hennen & Rodriguez PUR62082; Chihuahua: Pringle PUR33543. On *A. sp.*, Coahuila: Hennen & Rodriguez PUR6374; Guanajuato: Holway PUR57373 type. Occurs also on *Carlowrightia* and is known also from U.S.A. (Arizona and Texas).

2. *P. tetramerii* Seym (auteu). On *A. abditus* Brandeg, Sonora: Cummins PUR64024. See under *Carlowrightia* for hosts and distribution.

Blechnum

1. *P. lateripes* Berk. & Rav. (auteu). On *B. brownei* Juss. (= *B. pyramidatum* (Lam.) Urban). Nayarit: Cummins PUR63781; Sinaloa: Cummins PUR60589. The type is on *Ruellia* sp. from the Carolinas, U.S.A. This rust is widespread in the eastern half of the U.S.A., Central and South America and is known also on *Carlowrightia* and *Ruellia*. Laundon (1963) restricts this species to the New World and described three varieties based on slight differences in sizes of urediniospores and teliospores and density of echinulations on urediniospores. The closely related species, *P. blechi* on *Blechnum* sp., *P. longiana* on *Dyschoriste* sp., and *P. rulliae* (Old World only) and *P. ruelliae-bourgaei* on *Ruellia* sp. are considered synonymous with *P. lateripes* by Arthur (1907-1927) but are kept separate by Laudon (1963) who states that the separation may break down as more specimens are found.

Carlowrightia

1. *P. anisacanthi* Diet. & Holw. (auteu). On *C. cordifolia* Gray, Sonora: Cummins PUR60579. See under *Anisacanthus* for hosts and distribution.

2. *P. tetramerii* Seym. (auteu). On *A. abditus* Brandeg, Sonora: Cummins PUR63487, 63486, 63485, 64013. On *C. sp.*, Sinaloa: Cummins PUR63982. See under *Blechnum* for hosts and distribution.

3. *P. tetramerii* Seym. (auteu). On *C. sp.* Sonora: Hennen PUR63475. See under *Tetramerium* for hosts and distribution.

Dicliptera

1. *P. tetramerii* Seym. (auteu). On *D. resupinata* (Vahl) Juss., Sonora: Sybler PUR62004. See under *Tetramerium* for hosts and distribution.

Elytraria

1. *P. lantanae* Farlow (micro). The name, *P. elytrariae* P. Henn., is used in older works. On *E. imbricata* (Vahl) Pers., Guerrero: Holway PUR40812; Jalisco: Cummins PUR64201, Holway PUR40810, 40811; Morelos: Holway PUR40813; Nayarit: Hennen PUR63613. Known also on *Lantana*, and *Lippia* of the Verbenaceae. Common in warmer regions of the world. The type is on *Lantana* in the Verbenaceae and from Bermuda.

Henrya

1. *P. henryae* Cum. (II, III). On *H. ortegana* Hopp., Jalisco: Cummins PUR64204; Sonora: Gentry PUR63778 ex ARIZ. Known previously only from the type from Guatemala. Urediniospores present in the Gentry collection are somewhat larger than those described for the type.

Jacobinia

1. *P. tetramerii* Seym. (auteu). On *J. mexicana* Seem., Sonora: Cummins PUR60575, 60574, 60583, 60582. See under *Tetramerium* for hosts and distribution.

Ruellia

1. *P. lateripes* Berk. & Rav. (auteu). On *R. inundata* H.B.K., Sinaloa: Cummins PUR60585, Gentry PUR60797 ex MICH. On *R. nudiflora* (Engelm. & Gray) Urban, Tamaulipas: Cummins PUR60587. On *R. strepens* L., Tamaulipas: Cummins PUR60588. On *R. sp.*, Durango: Cummins PUR60586; Michoacan: Hennen PJUR62085; Queretaro: Hennen PUR62084; San Luis Potosi: Hennen PUR62083; Tamaulipas Cummins PUR60584, Hennen PUR63472, 63473; Nuevo Leon: Cummins PUR62874. See under *Blechnum* for type, varieties, hosts and distribution.

2. *P. longiana* H. & P. Sydow (II, III). On *R. sp.*, Durango: Palmer (in S); Guerrero: Holway (in K). Known also from the U.S.A. (type from Texas), West Indies, and Central America. There are no Mexican specimens in PUR.

3. *P. ruelliae-bourgaei* Diet. & Holw. (auteu). On *R. albicaulis* Bert. ex Spreng., Sinaloa: Cummins PUR63983. On *R. bourgaei* Hemsl., Jalisco: Cummins PUR63794, 64185; Holway PUR33562 (type locality), 33564 (Sydow-Uredineen 1531), 33563. On *R. sp.*, Guerrero: Holway PUR33640 (Bartholomew N. Amer. Uredinales 467), 33641; Jalisco: Cummins PUR64184. Known also on *Dyschoriste* and from Central America and perhaps Argentina.

Tetramerium

1. *P. tetramerii* Seym. (auteu). On *T. aureum* Rose, Jalisco: Holway PUR33647, (Bartholomew-N Amer. Uredinales 769) 33646; Oaxaca: Pringle PUR-

47671 *type* (Pringle-Mexican Fungi 9, Reliquiae Farlowianae 769); Puebla: Holway PUR33644. On *T. hispidum* Nees; Aguascalientes: Hennen PUR63477; Guanajuato: Hennen & Rodriguez PUR62086; Jalisco: Cummins PUR64175, 64176; Nuevo Leon: Cummins PUR60578, Hennen PUR63476; Oaxaca: Holway PUR57640; Queretaro: Hennen & Rodriguez PUR63478; Sonora: Cummins PUR60580, 64014. On *T. sp.*, Michoacan: Hennen & Rodriguez PUR62087; Nuevo Leon: Hennen & Rodriguez PUR62089, 63479; Tamaulipas: Hennen & Rodriguez PUR63480, 62088, Cummins PUR60581. On undetermined *Acanthaceae*, Puebla: Holway PUR 33643; Jalisco: Holway PUR57545. Known also on *Anisacanthus*, *Carlowrightia*, *Dicliptera*, and *Jacobinia* and occurs in the U.S.A. (Arizona).

On Amaranthaceae

Alternanthera

1. *Puccinia obesipora* Arth. nomen dubium.

Jackson (1932) states that the teliospores described for this species are stray spores from some other species, probably one of the *Euphorbia* rusts, and that the abundant uredo stage found on the type belongs to *Uromyces celosiae* Diet. & Holw. Laundon (1965) states that the name should be considered as a nomen dubium and that the spores present are *Uredo nitidula* Arth. Further, he states that *U. nitidula* is "perhaps synonymous with *Uromyces celosiae*".

Guilleminea (Brayulinea)

1. *P. guillemineae* Diet. & Holw. (auteu). On *G. densa* (Willd.) Moq., Chihuahua: Cummins PUR60552, Federal District: Holway PUR31532 *type*, Barrus PUR52101, Hitchcock PUR31528; Durango: Hennen PUR63604; Hidalgo: Holway PUR31531 (Bartholomew-N. Amer. Uredinales 1246); Jalisco: Holway PUR31533 (Sydow-Uredineen 1874), Hennen PUR63605; Mexico: Reiche PUR-31530. Known also from U.S.A. (Arizona, New Mexico).

On Asclepiadaceae

Cynanchum

1. *P. obliqua* Berk. & Curt. (micro). On *C. sp.*, Nuevo Leon: Cummins PUR-60572, Hennen PUR62091; Queretaro: Hennen & Rodriguez PUR62090; Tamaulipas: Hennen PUR62092. Known also on *Funastrum*, *Metastelma*, *Sarcostemma*, and *Vincetoxicum* from Mexico. Occurs also on several other genera of *Asclepiadaceae* and is widespread in U.S.A. (Florida to California), West Indies (*type* from Cuba), Central and South America.

Funastrum

1. *P. obliqua* Berk. & Curt. (micro). On *F. crassifolium* (Hemsl.) Schlechter,

Oaxaca: Pringle PUR40394. On *F. sp.*, Baja California Sur: Purpus PUR40406. See under *Cynanchum* for hosts and distribution.

Marsdenia

1. *P. marsdeniae* Det. & Holw. (II, III). On *M. mexicana* Decne., Morelos: Holway PUR42452 *type* (Bartholomew-N. Amer. Uredinales 352). Known also from three collections from Guatemala.

Metastelma

1. *P. obliqua* Berk. & Curt. (micro). On *M. angustifolium* Turcz., Federal District: Holway PUR40411. See under *Cynanchum* for hosts and distribution.

Philibertia

1. *P. obliqua* Berk. & Curt. (micro). On *P. sp.*, Baja California Sur: Martinez PUR51670. See under *Cynanchum* for hosts and distribution.

Sarcostemma

1. *P. obliqua* Berk. & Curt. (micro). On *S. cynanchoides* Decne., Baja California Norte: Cummins PUR60571; Sonora: Cummins PUR60573. See under *Cynanchum* for hosts and distribution.

Vincetoxicum

1. *P. obliqua* Berk. & Curt. (micro). On *V. bifidum* (Hemsl.) Arth., Hidalgo: Rose PUR40438; Zacatecas: Palmer PUR40437. On *V. erianthum* (Dec.) Arth., Veracruz: Pringle PUR40439. On *V. mexicanum* S. Wats., San Luis Potosi: Pringle PUR40447. On *V. uniflorum* (H.B.K.) Arth., Morelos: Pringle PUR-40451. On *V. sp.*, Mexico: Holway PUR40452 (Bartholomew-N. Amer. Uredinales 442). See under *Cynanchum* for hosts and distribution.

On Berberidaceae

Mahonia (Berberis)

1. *P. berberidis-trifoliae* Diet. & Holw. (micro). On *M. moranensis* (Hebenstr. & Ludw.) I. M. Johnston, Federal District: Holway PUR38998 *type* (Bartholomew-N. Amer. Uredinales 1225) Hennen PUR63608, Campos PUR59956, Lyonnet PUR63609 ex NY. Known also from Guatemala. Rust morphology and host indicate that this micro-form is correlated with *P. graminis* Pers.

2. *P. colata* Hennen & Cummins var. *colata* (auteu). 1973b. Reports of the Tottori Mycological Institute No. 11 (in press).

On *M. gracilis* (Hartw.) Fedde, Nuevo Leon: Hennen PUR63610 *type*, Morroquin PUR63676. The variety *bajapora* Hennen & Cummins is known from Guatemala.

3. *P. mahoniae* Cum. (opsis). On *M. gracilis* (Hartw.) Fedde, Nuevo Leon: Cummins PUR59563 *type*, PUR62746, Mueller PUR59562 ex MICH, Johnston PUR61398 ex MICH; San Luis Potosi: Newman PUR59912 ex US, Palmer PUR59913 ex US. Known only from these collections

On Boraginaceae

Cordia

1. *P. bubilipes* Hennen & Cum. (II, III). 1973b. Reports of the Tottori Mycological Institute No. 11 (in press).

On *C. sp.*, Sinaloa: Cummins PUR64745 *type*, 64746, 64747, 64748, 64749. The species is *autem* but the aecia in PUR64747 are too old to describe.

2. *P. cordiae* Arth. (II, III). On *C. sonora* Rose, Tamaulipas: Johnston PUR-61274 ex MICH, Crutchfield & Johnston PUR60787 ex MICH. On *C. aliadora* (Ruiz & Pav.) Cham., Sinaloa: Cummins PUR60786; Veracruz: Purpus ARIZ. Not reported from Mexico before. Known also from Guatemala, West Indies (*type* from Puerto Rico), and Brazil.

On Caprifoliaceae

Lonicera

1. *P. appocyni* Diet. & Holw. (micro). On *L. pilosa* H.B.K., Federal District: Holway PUR40995 *type*; Reiche PUR40996. Known only from these two collections. Originally thought to be on *Apocynum androsaemifolium* L.

On Caryophyllaceae

Arenaria

1. *P. microthelis* Syd. (micro). On *A. sp.*, Chihuahua: Hennen PUR64798. This is the first record for North America. Known also from Argentina and Chile (*type*).

2. *P. modica* Holw. (II, III). On *A. sp.*, Oaxaca: Holway PUR31570 *type*, PUR31571. Known also from Guatemala and Brazil.

On Clethraceae

Clethra

1. *P. hiasecens* Arth. (micro). On *C. lanata* Mart. & Gal., Chiapas: Breedlove PUR64434 ex F. On *C. macrophylla* Mart. & Gal., Puebla: Hennen PUR64436.

On *C. mexicana* DC., Veracruz: Plunkett PUR51686. Known also from Guatemala (*type*).

On Compositae

Except for the records listed here, see Hennen, Leon-Gallegos, & Cummins. (1972).

Baccharis

1. *P. vallartensis* Hennen & Cum. (opsis). 1977. Reports of the Tottori Mycological Institute No. 12 (in press). On *B. trinervis* (Lam.) Pers. Jalisco: Cummins PUR64083 *type*, 63729, 64338. Known only from these collections.

Brickellia

1. *P. kuhniae* Schw. var. *robusta* Cum. M.P. Britt., & J. W. Baxt. (1969), (II, III). On *B. coulteri* Gray, Sinaloa: Cummins PUR64091; Sonora: Cummins PUR63569, 63570, 64044. On *B. megalodonta* Greenm., Sinaloa: Cummins PUR-63987, 63988, 63989. On *B. secundiflorus* (Lab.) Kuntze, Durango: Cummins PUR64573. See under *Kuhnia* for hosts and distribution.

Cirsium

1. *P. inclusa* Syd. var. *mexicana* Savile (1970). This rust was listed under *P. calcitrapae* DC. by Hennen *et al.* (1972) and *P. cirsii* Lasch by Arthur (1934). Savile (1970) separates this widespread North American species into five varieties mainly on the basis of the intergrading characteristics of the diameter of echinulae bases, and the distance between echinulae of urediniospores, and teliospore size.

On *C. lomatolepis* (Hemsl.) Petrak, Federal District: Holway PUR37960. On *C. pringlei* (Watson) Petrak, Coahuila: Hennen PUR62118. On *C. sp.*, Mexico: Holway PUR38053; Michoacan: Holway PUR38033, 38034; Oaxaca: Holway PUR38035 *type* of var. *mexicana*. Known also in Central America.

Kuhnia

1. *P. kuhniae* Schw. var. *robusta* Cum., M.P. Britt. & J. W. Baxt. (1969), (II, III). On *K. chlorolepis* Wood. & Standl., Chihuahua: Cummins PUR60446, 60447; Durango: Cummins PUR60449, Hennen PUR62937, 62938. This variety is also known on *Brickellia* and from U.S.A. (*type* from Arizona) and Guatemala.

Mikania

1. *P. spegazzinii* Det. (micro). On *M. sp.*, Nayarit: Cummins PUR64375. This

is the first record for Mexico. Known also from U.S.A. (Florida), West Indies, Central and South America (*type* from Argentina)

Parthenece

1. *P. parthenices* H.S. Jacks. (II, III). On *P. mollis* Gray., Sonora; Sauck in ARIZ. This is the first record for Mexico. Known also from the U.S.A. (Arizona, *type*).

Verbesina

1. *P. cognata* Syd. var *fraseri* Parmelee (auteu). On *V. crocata* (Cav.) Less., Jalisco: Cummins PUR64220. This is the first record of this variety for Mexico. Known previously from Guatemala.

Vernonia

1. *P. arthuriana* H. S. Jacks. (auteu). On *V. ctenophora* Gleason, Tabasco: Matuda PUR62821 ex MICH (this is the *type* of a new variety not yet published by Urban, Prague). On *V. spp.* Jalisco: Cummins PUR64084; Puebla: Hennen PUR64861. Known also from the West Indies (*type* from Puerto Rico) and Central America. The identification of the last two rust collections is tentative.

2. *P. discreta* H. S. Jacks. & Holw. (micro). On *V. spp.*, Puebla: Hennen PUR64682; San Luis Potosi: Hennen PUR64668, 64669. This rust usually attacks the ends of branches and becomes systemic. This is the first record for Mexico. Known also from Central America (*type* from Costa Rica).

On Convolvulaceae

Convolvulus

1. *P. convolvuli* Cast. (auteu). On *C. sepium* L., Baja California Norte: Cummins PUR60691. This is the first record from Mexico. Known also from U.S.A., Canada, Central and South America, Europe (*type*), Asia, and Africa.

Cressa

1. *P. tuyutensis* Speg. (auteu, includes *P. cressae* (DC.) Legerh.). On *C. truxillensis* H.B.K., Baja California Norte: Epling PUR49539, Rose PUR32733; Sonora: McDougale PUR32730, Cummins PUR60690. Known also from U.S.A., South America (*type* from Argentina), Europe and Asia.

Evovulus

1. *P. lithospermi* Ell. & Kell. (auteu). On *E. alsinoides* L., Chihuahua: Cum-

mins PUR60686; Durango: Cummins PUR60692; Nuevo Leon: Cummins PUR60688, Hennen PUR62285; Coahuila: Hennen PUR62284; San Luis Potosi: Hennen PUR60869; Sonora: Cummins PUR60685, 60697; Tamaulipas: Hennen PUR60689. On *E. prostratus* Rob., Federal District: Reiche PUR32705. On *E. sericeus* Swartz, Durango: Cummins PUR64523; Nuevo Leon: Cummins PUR60687. Known also from U.S.A. (*type* from Kansas), Central and South America, S. W. Africa, the Philippines and Japan.

Ipomoea

1. *P. crassipes* Berk. & Curt. (opsis). On *I. purga* (Wender.) Hayne, Oaxaca: Holway PUR36058. On *I. purpurea* (L.) Roth, Morelos: Holway PUR36061. On *I. spp.*, Jalisco: Cummins PUR64215, 64216, 64217, 64218, 64324, 64325, 64326, 64360; Morelos: Holway PUR57408, 57409. On *I. trichocarpa* Ell., Sinaloa: Cummins PUR60695. On *I. trifida* Don, Sinaloa: Cummins PUR64098, 64099. Known also from U.S.A. (*type* from South Carolina), West Indies, Central and South America.

2. *P. insignis* Holw. (opsis). On *I. wolcotiana* Rose, Morelos: Holway PUR36112 *type*, 36113. Known only from these two collections.

3. *P. jalapensis* Cum. (auteu). On *I. jalapa* (L.) Pursh, Oaxaca: Holway PUR32689 *type*, 32690 (Bartholomew-N. Amer. Uredinales 1501), 32691 (Bartholomew-N. Amer. Uredinales 2549). On *I. mutabilis* Lindl., Nayarit: Cummins PUR63896; Veracruz: Plunkett PUR46621. Known only from these collections.

4. *P. megalospora* Arth. & H.S. Jacks. (opsis). On *I. arborescens* (Humb. & Bonpl.) G. Don, Colima: Cummins PUR64194, Guerrero: ROSE PUR36096; Jalisco: Cummins PUR64193; Holway PUR 36097; Sonora: Cummins PUR63502, 63503, 63521, 63534, 63980, 64007, 64087. On *I. fistulosa* Mart., Sinaloa: Hennen PUR60862. On *I. intrapilosa* Rose, Jalisco: Holway PUR36103 (Sydow-Uredineen 2036), 36105 (Bartholomew-Fungi Columbiani 5067); Sinaloa: Cummins PUR60693. On *I. murucoides* R. & S., Guerrero: Holway PUR36110, 36111; Jalisco: Cummins PUR64195; Oaxaca: Holway PUR 36107 *type*, 36108, 36109 (Bartholomew-N. Amer. Uredinales 1907); Sinaloa: Hennen PUR62287; Cummins PUR60694, 60696. On *I. spp.*, Morelos: Holway PUR57483; Sinaloa: Hennen PUR62286. Known also from West Indies, and South America.

5. *P. noticolor* Holw. (opsis). On *I. intrapilosa* Rose, Morelos: Holway PUR36118 *type* (N. Amer. Uredinales 1461), 36119, 36121, 57493; Oaxaca: Bonansea PUR36120 (Sydow-Uredineen 2623); Puebla: Holway PUR36117. Known also from Guatemala and El Salvador.

6. *P. rubicunda* Holw. (opsis). On *I. fistulosa* Mart., Veracruz: Holway PUR36123 *type*. Known only from the *type*. Unusual because the teliospores have two germination pores in each cell rather than the usual one.

7. *P. superflua* Holw. (opsis). On *I. arborescens* (H. & B.) G. Don, Guerrero: Holway PUR36122 *type*. Known only from the *type*.

On Euphorbiaceae

Euphorbia

1. *P. intumescens* (Syd.) Holw. (opsis). On *E. calyculata* H.B.K., Michoacan: Hennen PUR62246, Holway PUR35861, 35862. This species is known only from the Lake Patzcuaro region. The type was collected by Pringle and is in S. Holway's studies (1907) indicated that this rust produces no uredinoid uredinia.

2. *P. longipedicellata* Barth. (brachy). On *E. cotinifolia* L., Oaxaca: Holway PUR36838 type, 36841 (Bartholomew-Fungi Columbiana 2559). Known also from Guatemala.

3. *P. velata* Arth. (brachy). On *E. schlechtendalii* Boiss., Jalisco: Holway PUR36844 (Sydow-Uredineen 1872), 36845, 36847, 36848; Morelos: Holway PUR36846. On *E. scotana* Boiss., Oaxaca: Hitchcock PUR36852; Veracruz: Holway PUR57553. Known also from the West Indies and Hawaii (type).

On Gentianaceae

Gentiana

1. *P. gentianae* (Str.) Link (auteu). On *G. adsurgens* Cerv., Hidalgo: Holway PUR32567 (Bartholomew-Fungi Columbiana 2560, Sydow-Uredineen 1978). Known also from Canada, U.S.A., Europe (type), and Asia.

On Labiatae

Calamintha

1. *P. menthae* Pers. (auteu). On *C. macrostema* Benth., Federal District: Zenteno PUR52098. Known also on *Hedeoma*, *Micromeria*, and *Monarda* from Mexico. Worldwide in distribution.

Hedeoma

1. *P. menthae* Pers. (auteu). On *H. palmeri* Hemsl., Nuevo Leon: Cummins PUR58657, 58658, 60594, 60595, 62875, Hennen & Rodriguez PUR63752. See under *Calamintha* for hosts and distribution.

Hyptis (see Baxter, 1960)

1. *P. distorta* Holw. (micro). On *H. albida* H.B.K., Sinaloa: Cummins PUR-63948. On *H. emoryi* Torr., Nayarit: Cummins PUR63789, Hennen PUR62540; Sonora: Cummins PUR60626, 63547, 64068. On *H. pectinata* Poir., Guerrero: Holway PUR40653 type; Jalisco: Holway PUR40655, 57418, 40657; Morelos Holway PUR40652; Sinaloa: Cummins PUR60592; Veracruz: Holway PUR40654, 40656, 40658 (Bartholomew-N. Amer. Uredinales 433). On *H. rhytidiae* Benth., Sinaloa: Cummins PUR63939. On *H. stellulata* Benth., Jalisco: Cummins PUR-

63693, 64213; Nayarit: Cummins PUR63949; Sinaloa: Cummins PUR60596. Known also from U.S.A. (Arizona, California) and Bolivia.

2. *P. fidelis* Arth. (auteu). On *H. stellulata* Benth., Jalisco: Pringle PUR-33408 type, 47662 (Reliquiae Farlowianae 755). Known also from Central America.

3. *P. hyptidis-mutabilis* Mayor (auteu). On *H. mutabilis* (A. Rich) Briq., Nayarit: Cummins PUR63814, 63820; Nuevo Leon: Cummins PUR60624, 60625, Hennen & Rodriguez PUR62300; Sinaloa: Cummins PUR60593, 63962. On *H. sp.*, San Luis Potosi: Cummins PUR60599. These are the first records for Mexico. Known also from U.S.A. (Florida), Central America, South America (type from Colombia) and Africa.

4. *P. medellinensis* Mayor (auteu). On *H. capitata* Jacq., Nayarit: Cummins PUR63894. This is the first record from Mexico. Known also from West Indies, Central and South America (type from Colombia).

5. *P. parilis* (Arth.) Arth. (II, X, III). On *H. pectinata* Poir., Jalisco: Holway PUR37126, 37124 (Bartholomew-N. Amer. Uredinales 641); Oaxaca: Holway PUR37127, 37128 type; Morelos: Holway PUR37125. On *H. sp.*, Mexico: Hennen PUR62301; Michoacan: Holway PUR52301. Known only from the above collections and one from Guatemala.

Monarda

1. *P. menthae* Pers. (auteu). On *M. citriodora* Cerv., Nuevo León: Hennen & Rodriguez PUR63753. On *M. sp.*, Chihuahua: Hennen PUR63754. These are the first records of this rust on this host genus in Mexico. See under *Calamintha* for hosts and distribution.

Leontis

1. *P. leontidicola* P. Henn. (auteu). On *L. nepetifolia* (L.) Br., Sinaloa: Cummins PUR60590, 60591, 64093. Not reported before from Mexico. Known also from U.S.A. (Florida), West Indies, South America, Africa (type) and India.

Micromeria

1. *P. menthae* Pers. (auteu). On *M. brownii* Benth., San Luis Potosi: Cummins PUR60595. See under *Calamintha* for host and geographic range.

Salvia (see Baxter & Cummins, 1951).

1. *P. badia* Holway (II, III). On *S. albicans* Fernald, Guerrero: Holway PUR33498 type, 33499. Known only from these collections.

2. *P. ballotaeflorae* Long (auteu). On *S. ballotaeflora* Benth., Coahuila: Hennen & Rodriguez PUR63464, 63465; Cummins PUR60601; Nuevo Leon: Cum-

mins PUR60600, Lorano PUR 51881, Hennen & Rodriguez 63466; 63467; San Luis Potosi; Hennen PUR63468; Tamaulipas: Cummins PUR60605. These are the first records for Mexico. Known also from Texas (*type*). Aecidioid aecia are present in PUR63464 but not previously described.

3. *P. biporula* J. W. Baxt. (II, III). On *S. candicans* Mart. & Gal., Puebla: Pringle PUR43222. On *S. coahuilensis* Fern., Coahuila: Wynd & Mueller ARIZ 87195. On *S. fulgens* Cav., Sierra Madre Occidental: Mexia PUR51916 *type*; Federal District: Holway PUR42929, 57381. On *S. gesneraeflora* Lindl. & Paxt., Colima: McVaugh PUR64699 ex SMU; Morelos: Lyonett PUR51917 ex US, Hinton PUR51923 ex F. On *S. microphylla* H.B.K., Zacatecas: Cummins PUR60618. On *S. sp.*, Durango: Hennen PUR63471; Federal District: Reiche PUR43224; Hidalgo: Rose PUR43225. Known also from U.S.A. (Arizona, Texas).

4. *P. caulicola* Tracy & Gal. (auteu). On *S. reflexa* Hornem. (*S. lanceolata* Wnlld.), Chihuahua: Cummins PUR60610, 60615; Coahuila: Cummins PUR60609, 60613, Hennen PUR63450, 63453; Hidalgo: Holway PUR33449, 33430 (Bartholomew-N. Amer. Uredinales 1535); Nuevo Leon: Cummins PUR60611, 60612, 60617; Queretaro: Hennen PUR63454; San Luis Potosi: Hennen 63449, 63451, 63452; Zacatecas: Hennen PUR60880, 60881. On *S. sp.*, Durango: Cummins PUR60614. Known also from the U.S.A. (the central plains states, *type* from Colorado).

5. *S. delicatula* (Arth.) Sacc. & Trott. (micro). On *S. albo-coerulea* Lindl., Mexico: Hinton PUR51884 ex US. On *S. cinnabarina* Mart. & Gal., Mexico: Hinton PUR51885 ex US. On *S. elegans* Vahl, Federal District: Rodriguez-Vallejo PUR51509; Mexico: Holway PUR40689 *type*. Known also from Central America.

6. *P. diutina* Mains & Holw. (auteu). On *S. corymbosa* Mart. & Gal., Oaxaca: Holway PUR33500. On *S. scorodoniifolia* Poir., Jalisco: Holway PUR33502. On *S. sp.*, Jalisco: Holway PUR57419. Known only from these collections and the *type* from Costa Rica.

7. *P. farinacea* Long var. *farinacea* (auteu). On *S. amarissima* Ort., Hidalgo: Purpus PUR51918, Holway PUR33463; Michoacan: Holway 33462; Oaxaca: Holway PUR33464; San Luis Potosi: Cummins PUR60628. On *S. arbuscula* Fern., Michoacan: Hinton PUR51891 ex US. On *S. dasycalyx* Fern., Michoacan: Hinton PUR51890 ex US. On *S. microphylla* H.B.K., Federal District: Pringle PUR51894 ex US; Mexico: Pringle PUR51892 ex US, Holway PUR33532; Hidalgo: Holway PUR33533; Michoacan: Arsene PUR51893 ex US. On *S. purpurea* Cav., Sinaloa: Cummins PUR63951. On *S. sp.*, Coahuila: Hennen PUR63459, 63460, 63461; Durango: Cummins PUR60608, 64096, 64454, 64456; Mexico: Hennen PUR63456, 63457; Nuevo Leon: Hennen PUR63458, 63463; Zacatecas: Hennen PUR63455. This variety known also from U.S.A. (*type* from Texas).

8. *P. farinacea* Long var. *azurea* J. W. Baxt. (II, III). On *S. sp.*, Guanajuato: Hennen PUR63462. Known also from U.S.A. (*type* from Alabama). This is the first record of this variety from Mexico.

9. *P. farinacea* Long var. *constricta* J. W. Baxt. (II, III). On *S. elegans* Vahl., Durango: Cummins PUR64095; Federal District: Holway PUR33468. On *S.*

lavanduloides H.B.K., Federal District: collector not recorded PUR51912. On *S. polystachya* Ort. Mexico: Niederhauser & Zenteno PUR51910. This variety is also known from Guatemala (*type*).

10. *P. gentilis* Arth. (II, III). On *S. alamosana* Rose, Oaxaca: Holway PUR33530. On *S. candicans* Mart. & Gal., Oaxaca: Purpus PUR63493 ex ARIZ. On *S. sp.*, Oaxaca: Holway PUR33531 *type*; Durango: Hennen PUR60879, 60877; Sinaloa: Hennen PUR60878. Known only from these collections and one from Honduras.

11. *P. grata* Arth. & Cum. (opsis). On *S. concolor* Lam. (*S. cyanca* Benth.), Federal District: Smyth PUR51895 ex US, Reddick PUR46834 *type*, Plunkett PUR46835. Known only from these collections.

12. *P. impedita* Mains & Holw. (branchy). On *S. hispanica* L., Hidalgo: Kenoyer PUR51924 ex F; Michoacan: Pringle PUR51896 ex US; Oaxaca: Nelson PUR51898 ex US. On *S. hyptoides* Mart. & Gal., Sonora: Cummins PUR60619, 60621. On *S. occidentalis* Swartz, Sinaloa: Cummins PUR60622, 60623. On *S. tilaefolia* Vahl, Jalisco: Cummins PUR64564, Holway PUR37122; Morelos: Holway PUR37121. On *S. sp.*, Durango: Cummins PUR60620, 64563, 64565; Jalisco: Cummins PUR64200, 64564; Nuevo Leon: Cummins PUR60598, 60606; Sinaloa: Cummins PUR60616; Sonora: Cummins PUR64000. Known also from Central America (*type* from Costa Rica), the West Indies, and South America.

13. *P. infrequens* Holw. (auteu). On *S. cinnabarina* Mart. & Gal., Oaxaca: Holway PUR33503 *type*. Known also from Central America.

14. *P. mitrata* Syd. (auteu). On *S. fluviatilis* Fern., Morelos: Holway PUR33513. On *S. galinsogifolia* Fern., Sonora: Gentry PUR54628. On *S. mexicana* L., Mexico: Holway PUR33514 (Bartholomew-N. Amer. Uredinales 247); Michoacan: Seler PUR33515 *type*; Morelos: Niederhauser PUR51911. On *S. polystachya* Ort., Federal District: Holway PUR33518; Hidalgo: Moore PUR51901 ex US; Michoacan: Holway PUR33516, 33519. On *S. purpurea* Cav. Chiapas: Nelson PUR51902 ex US; Durango: Cummins PUR64094; Jalisco: Holway PUR33522, 33525, Cummins PUR64191; Oaxaca: Holway PUR33523 (Bartholomew-N. Amer. Uredinales 1561). On *S. sessilifolia* Baker, Jalisco: Holway PUR33526. On *S. tilliaefolia* Vahl, Michoacan: Holway PUR33527; Morelos: Holway PUR57489. On *S. vitifolia* Benth., Oaxaca: Holway PUR33490. On *S. sp.*, Michoacan: Cummins PUR60607; San Luis Potosi: Cummins PUR60627. Known also from Central America.

15. *P. salviicola* Diet. & Holw. (auteu). On *S. assurgens* H.B.K., Michoacan: Holway PUR37066, 37067. On *S. cardinalis* Kunth, Federal District: Kenoyer PUR51919 ex F. On *S. coccinia* Murr., Chihuahua: Cummins PUR60603; Nuevo Leon: Cummins PUR60602; San Luis Potosi: Cummins PUR60604; Tamaulipas: Palmer PUR51913 ex U.S. On *S. Ferreri* Greene, Veracruz: Balls PUR51904 ex US. On *S. goldmanii* Fern., Sonora: Gentry PUR63942 ex ARIZ. On *S. hypoglaucia* Briq., Hidalgo: Holway PUR33457. On *S. prunelloides* H.B.K., Durango: Cummins PUR64471, 64472; Federal District: Holway PUR33459 (Bartholomew-N. Amer. Uredinales 59), 33458 *type* (Bartholomew-N. Amer.

Uredinales 1469). On *S. riparia* Kunth, Campeche: Goldman PUR51914 ex US. On *S. setosa* Fern., Sonora: Cummins PUR63490. On *S. tricuspidis* Epl., Guerrero: Hinton ARIZ 92028. On *S. sp.*, Federal District: Holway PUR33460; Jalisco: Cummins PUR63692; Puebla: Rose PUR33461; Sinaloa: Hennen PUR60883; Cummins PUR63947. Known also from U.S.A. (Florida, Texas), and Guatemala.

16. *P. vertisepta* Tracy & Gal. (auteu). On *S. regla* Cav. San Luis Potosi: Parry & Palmer PUR51915 ex US. On *S. sp.*, Durango: Hennen PUR63470, 63469. Known also from U.S.A. (Arizona, New Mexico type, Texas).

17. *P. vertiseptoides* Cum. (opsis). On *S. regla* Cav., Durango: Nelson PUR-51905 ex US. On *S. sessei* Benth., Michoacan: Martinez PUR51908; Morelos: Holway PUR36283 type (Bartholomew-N. Amer. Uredinales 875), 36284 (Bartholomew-N. Amer. Uredinales 275); Pringle PUR51907, 51906. Known only from these collections.

Stachys

1. *P. pallidissima* Speg. (micro). On *S. sp.*, Coahuila: Hennen & Rodriguez PUR62302; Durango: Cummins PUR64455. These are the first records for Mexico. Known previously from U.S.A. (Arizona, Texas), Central and South America (type from Argentina).

On Lythraceae

Cuphea

1. *P. cupheae* Holw. (micro). On *C. aequipetala* Cav. Federal District: Holway PUR40051 type. On *C. cyanea* (DC.) Standl., Coahuila: Rowntree PUR-64703 ex ARIZ. On *C. procumbens* (Cav., Federal District: Holway PUR40057 (Bartholomew-N. Amer. Uredinales 430, Bartholomew-Fungi Columb 4956). Known also from Guatemala.

2. *P. jaliscensis* Holw. (micro). On *C. cyanea* Moc. & Sessé, Oaxaca: Holway PUR40052. On *C. hookeriana* Walp., Jalisco: Holway PUR40055 type (Sydow-Uredineen 1877); Durango: Hennen PUR64759. On *C. nitidula* H.B.K., Oaxaca: Holway PUR40056. On *C. squamuligera* Koehne, Morelos: Holway PUR40059. Known also from Guatemala.

On Malpighiaceae

Banisteria

1. *P. sanguinolenta* P. Henn. (brachy). On *B. portillana* (S. Wats.) Robins., Jalisco: Holway PUR36791. Known also on *Bunchosia* and *Heteropteris* and from Guatemala and Brazil (type) three collections in all.

Echinopterys

1. *P. echinopteridis* Holw. (branchy). On *E. eglandulosa* (A. Juss.) Small, Jalisco. Holway PUR36795 type: Oaxaca: Anderson & Laskowski PUR64443 en IPN; Puebla: Holway PUR36796 (Sydow-Uredineen 1870), Rzedowski PUR-64442 ex IPN. Known only from these collections.

On Malvaceae

Abutilon

1. *P. heterospora* Berk. & Curt. (micro). On *A. abutiloides* (Jacq.) Garcke, Jalisco: Rose et al. PUR39786; Zacatecas: Rose et al. PUR39873. On *A. berlandieri* A. Gray, Sonora: Palmer PUR39793. On *A. californicum* Benth., Sinaloa: Cummins PUR60643, 64092; Sonora: Cummins PUR60644, 60645. On *A. hemsleyanum* Rose, Jalisco: Holway PUR39798 (Bartholomew-N. Amer. Uredinales 148); San Luis Potosi: Parry PUR39797. On *A. hirtum* (Lam.) Sweet, Puebla: Hitchcock PUR39803; Veracruz: Plunkett PUR47082. On *A. holwayi* Rose, Oaxaca: Holway PUR39812. On *A. incanum* (Link Sweet, Chihuahua: Cummins PUR60636; Nuevo Leon: Cummins PUR60634, 60633; Sonora: Cummins PUR60635, 60637, 60638, 60639, Thurber PUR39813; Tamaulipas: Cummins PUR60631, 60632. On *A. sonorae* Gray, Sonora: Cummins PUR60642. On *S. sp.*, Baja California: Jones PUR47083; Durango: Cummins PUR64457, 64458; Jalisco: Holway PUR57451; Morelos: Holway PUR57443, 39835; Nayarit: Hennen PUR62340, Cummins PUR60630, 64367, 64332, 64202; Puebla: Rose et al. PUR39843; Queretaro: Hennen PUR62342; San Luis Potosi: Hennen PUR-62341; Sinaloa: Hennen PUR60904; Sonora: Hennen PUR60905; Tamaulipas: Hennen PUR60906. On *A. irisulcatum* (Jacq.) Urban, Sinaloa: Cummins PUR-60640, 60641. Known also on *Anoda*, *Herissantia* (Bogenhardia), *Sida*, and *Wissadula* from Mexico and is widespread throughout the warmer parts of the world. The type is from Cuba on some malvaceous plant.

Althaea

1. *P. lobata* Berk. & Curt. (micro). On *A. rosea* (L.) Cav., Mexico: Holway PUR39988; Nuevo Leon: Rodriguez PUR62340; state not recorded: Cunningham PUR58632. Known also on *Gossypium*, *Sida*, and *Sphaeralcea* and from U.S.A. (type from Texas on *Sida*) and Argentina.

Anoda

1. *P. anodae* Syd. (micro). On *A. acerifolia* (Zucc.) DC., Veracruz: Holway PUR40017. On *A. sp.*, San Luis Potosi: Hennen PUR60915, 60916. Known also from Central America (type from Guatemala) and Ecuador.

2. *P. heterospora* Berk. & Curt. (micro). On *A. acerifolia* (Zucc.) DC., Morelos: Holway PUR57444; Oaxaca: Holway PUR57445; Veracruz: Holway PUR-39844. On *A. cristata* (L.) Schlecht., Chihuahua: Cummins PUR60651, 60652; Jalisco: Holway PUR39860, 64559, 64560, 64561 (Sydow-Uredineen 2067, Bar-

tholomew-N. Amer. Uredinales 1157); Nayarit: Hennen PUR63601, Queretaro: Hennen PUR63600, Yucatan: Gaumer PUR39859. On *A. hastata* Cav., Aguascalientes: Holway PUR39854; Hidalgo: Holway PUR39851; Jalisco: Holway PUR57448, Hitchcock PUR39855; Michoacan: Holway PUR39846; Morelos: Holway PUR39849; Oaxaca Hitchcock PUR39856; Tamaulipas: Holway PUR57449. On *A. sp.*, Jalisco: Holway PUR57450, 39863, 57452, Pringle PUR39862. See under *Abutilon* for hosts and distribution.

Bogenhardia (see *Herissantia*)

Herissantia

1. *P. heterospora* Berk. & Curt. (micro). On *H. crispa* (L.) Brizicky, aguas-calientes: Hennen PUR60907; Chihuahua: Cummins PUR60656; Oaxaca: Holway PUR57442; San Luis Potosí: Hennen PUR62343; Sonora: Cummins PUR60654, 60658, 60657; Tamaulipas: Cummins PUR60655. See under *Abutilon* for hosts and distribution.

Hibiscus

1. *P. heterospora* Berk. & Curt. (micro). On *H. sp.*, Nayarit: Cummins 70-268. See under *Abutilon* for hosts and distribution.

Malva

1. *P. malvacearum* Bert. ex Mont. (micro). On *M. sp.*, Federal District: Rodriguez-Vallejo PUR52132; Guanajuato: Barrus PUR52131, 52732, 52133; Mexico: Niederhauser PUR52134, 52135, 52733. Known also on several other malvaceous genera and wherever hollyhocks are grown. The type is from Chile on hollyhock.

Malvastrum

1. *P. malvacearum* Bert. ex Mont. (micro). On *M. coromandelianum* (L.) Garke, Jalisco: Cummins PUR64575; Morelos: Holway PUR57480, 39605, 39607; Nuevo Leon: Hennen PUR60914; San Luis Potosi: Cummins PUR60659, Hennen PUR60911, 63587; Veracruz: Plunkett PUR47068, Holway PUR57579. See under *Malva* for hosts and distribution.

2. *P. sherardiana* Koern. (micro). On *M. coromandelianum* (L.) Garke, Guanajuato: Niederhauser PUR52121, 52122. Known also on *Abutilon*, *Althaea*, *Malva*, *Sidalcea*, and *Sphaeralcea* and from Canada, U.S.A., Central and South America. Correlated with *P. interveniens* (Peck) Bethel. The type is from Armenia and on *Malva sherardiana*.

Pavonia

1. *P. exilis* Syd. (micro). On *P. rosae* Schlecht. Veracruz: Plunkett PUR47093. Known also on *Hibiscus* (from Africa-Uganda) and from Guatemala and Brazil (type).

Sida

1. *P. lobata* Berk. & Curt. (micro). On *S. lepidota* Gray, Sonora: Cummins PUR60665. See under *Althaea* for hosts and distribution.

2. *P. heterospora* Berk. & Curt. (micro). On *S. angustifolia* Lam. Nuevo Leon: Cummins PUR60649, 60648; Hennen PUR63603; Tamaulipas: Cummins PUR60650. On *S. glabra* Mill., Morelos: Holway PUR57455. On *S. holwayi* Baker & Rose, Morelos: Holway PUR39901. On *S. physocalyx* A. Gray, Chihuahua: Cummins PUR60646. On *S. procumbens* Swartz, Chihuahua: Cummins PUR60646. On *S. salviaefolia* Presl, Sinaloa: Salazar PUR39914. On *S. sp.*, Chihuahua: Jones PUR47088; Durango: Cummins PUR60664, Hennen PUR60910; Jalisco: Rose *et al.* PUR39967, Cummins PUR64201; Morelos: Holway PUR39968; Nayarit: Hennen PUR63602; Tamaulipas: Cummins PUR60629. See under *Abutilon* for hosts and distribution.

3. *P. malvacearum* Bert. ex Mont. (micro). On *S. sp.*, Nuevo Leon: Hennen PUR64680. See under *Malva* for hosts and distribution.

Sphaeralcea

1. *P. sherardiana* Koern. (micro). On *S. angustifolia* (Cav.) G. Don, Coahuila: Palmer PUR39632, 39631, Cummins PUR60660, Hitchcock PUR39634, Hennen PUR63594; Chihuahua: Cummins PUR60662; Federal District: Holway PUR39626 (Bartholomew-N. Amer. Uredinales 1174) PUR57539, 57538, Hitchcock PUR39635; Durango: Cummins PUR60663, 60661; Hidalgo: Holway PUR39628; Nuevo Leon: Hennen PUR63589; Queretaro: Hennen PUR63593; San Luis Potosi: Hennen PUR63590, 63591, 63592; Zacatecas: Hennen PUR60912. See under *Malvastrum* for hosts and distribution.

Wissadula

1. *P. heterospora* Berk. & Curt. (micro). On *W. rostrata* Planch, Colima: Palmer PUR39981. See under *Abutilon* for hosts and distribution.

On Myrtaceae

Pimenta

1. *P. psidii* Wint. (II, III). On *P. dioica* Merr., Veracruz: Campos T. PUR59952. Known also on eight other genera of the *Myrtaceae* and is widespread in the West Indies and South America (type from Brazil).

On Onagraceae

Fuchsia

1. *P. fuchsiae* Syd. & Holw. (micro). On *F. thymifolia* H.B.K., Hidalgo: Red-dick PUR47113; Mexico: Holway PUR40176 *type* (Sydow-Uredineen 1976). Known also from Central America.

Oenothera

1. *P. oenotherae* Viz (auteu). On *O. claviformis* Torr. & Frem., Sonora: Wheeler PUR64794 ex ARIZ. This is the first record from Mexico. Widespread in western United States (*type* from Washington) and southern South America on several genera of Onagraceae.

On Oxalidaceae

Oxalis

1. *P. oxalidis* Diet. & Ellis (heteru). On *O. amplifolia* Knuth, San Luis Potosi: Cummins PUR60556. On *O. divaricata* Zucc., Federal District: Hitchcock PUR31622. On *O. latifolia* H.B.K., Nayarit: Palmer PUR31623 *type*. On *O. trinervis* Knuth, Mexico: Hitchcock PUR31628. On *O. vallicola* Knuth, Federal District: Hitchcock PUR31629. On *O. sp.*, Federal District: Holway PUR31640, 31644; Rodriguez Valligo PUR52129; Durango: Cummins PUR64457, 64466, 64467, 64526; Guanajuato: Barrus PUR52730; Mexico: Holway PUR31643, 57500; Campos PUR61213; Michoacan: Barrus PUR52130; Oaxaca: Holway PUR31639; Veracruz: Plunkett PUR46502; Niederhauser PUR52128, 52731. Known also from U.S.A., the West Indies, Central and South America. The haploid stage occurs on *Mahonia* spp. in New Mexico and northern Mexico.

On Polemoniaceae

Loeselia

1. *P. fumosa* Holw. (auteu). On *L. caerulea* (Cav.) Don, Coahuila: Hennen PUR62332, 63756; Durango: Hennen PUR60921; Nuevo Leon: Cummins PUR62889; Hennen PUR62331; Zacatecas: Hennen PUR60922. On *L. ciliata* L., Jalisco: Holway PUR32765 (Bartholomew-N. Amer. Uredinales 1342); Morelos: Holway PUR32766; Nayarit: Cummins PUR64328. On *L. glandulosa* (Cav.) Don, Chihuahua: Pringle PUR3774, Guerrero: Holway PUR32775 *type*; Jalisco: Cummins PUR64205, 6429; Nayarit: Cummins PUR64365. On *L. mexicana* (Lam.) Brand, Federal District: Holway PUR32769, Pringle PUR32773, 60919, Hennen PUR62333; Durango: Cummins PUR60555, 60554, Hennen PUR60920, 63757, Hidalgo: Hennen PUR64662; Rose *et al.* PUR32771; Jalisco: Holway PUR32770 (Sydow-Uredineen 1977), Hennen PUR63758; Mexico: Holway PUR32772; Morelos: Holway PUR57438. On *L. sp.*, Federal District: Rose

et al. PUR32778; Morelos: Holway PUR32780; Oaxaca: Holway PUR32779, 32781. Known also from Central America.

On Polygonaceae

Polygonum

1. *P. polygami-amphibii* Pers. (heteru). On *P. muhlenbergii* S. Wats, Federal District: Holway PUR31260; Mexico: Holway PUR31403. On *P. persicaria* L. Durango: Cummins PUR64578. On *P. punctatum* Ell., Federal District: Holway PUR31390 (Bartholomew-N. Amer. Uredinales 2559) Pringle PUR31353; Mexico: Holway PUR31368. On *P. sp.*, Federal District: Barrus PUR52099; Mexico: Hennen PUR62344. Widespread in Eurasia (*type* from Europe), Africa, North and South America.

Rumex

1. *P. punctiformis* Diet. & Holw. (II, III). On *R. mexicanus* Meissn., Federal District: Holway PUR31513 (Bartholomew-N. Amer. Uredinales 259). Known also from U.S.A. (*type* from California).

On Ranunculaceae

Ranunculus

1. *P. andina* Diet. & Neger. (micro). On *R. sp.*, state not recorded: PUR-38976. Known also from U.S.A. and Chile (*type*); a total of three collections.
2. *P. blyttiana* Lagh. (micro). On *R. forreri* Greene, Durango: Hennen PUR-63606. The correct name of this species may be *P. gibberulosa* Schroet. It is primarily a species of the arctic and highmountains of the Northern Hemisphere. This is the first record from Mexico.

On Rhamnaceae

Gouania

1. *P. invaginata* Arth. & J.R. Johnston (auteu) On *G. lupuloides* (L.) Urban, Sinaloa: Cummins PUR63882; Nayarit: Cummins PUR64333. On *G. mexicana* Rose, Sinaloa: Cummins PUR63982; Baja California Sur: Wiggins PUR64199 ex ARIZ. On *G. stipularis* DC., Colima: Cummins PUR64198. These are the first records from Mexico. Known also from U.S.A. (Florida), West Indies (*type* from St. Croix), Central and South America.

On Rubiaceae

Borreria

1. *P. lateritia* Berk. & Curt. (micro). On *B. leavis* (Lam.) Griesb., Veracruz:

Plunkett PUR47165, 47166. On *B. sp.*, Nayarit: Hennen PUR63612; San Luis Potosi: Hennen PUR64666. Known also on *Bouvardia*, *Crusea*, *Diodia*, *Houstonia* and *Spermacoce*, and it is widespread in warmer parts of the New World (*type* from Surinam).

Bouvardia

1. *P. lateritia* Berk. & Curt. (micro). On *B. sp.*, Morelos: Holway PUR40904 (Bartholomew-N. Amer. Uredinales 153). See under *Borreria* for hosts and distribution.

2. *P. perasperata* Hennen & Cummins. 1973b. Reports of the Tottori Mycological Institute PUR64756 *type*. Known only from the *type*.

Crusea

1. *P. lateritia* Berk. & Curt. (micro). On *C. calocephala* DC., Veracruz: Plunkett PUR47168. On *C. sp.*, Morelos: Holway PUR40907 (Bartholomew-N. Amer. Uredinales 44), PUR40908 (Bartholomew-Fungi Columbiani 4854). See under *Borreria* for hosts and distribution.

Diodia

1. *P. lateritia* Berk. & Curt. (micro). On *D. rigida* Cham. & Schlecht., Colima: Hitchcock PUR40909; Tamaulipas: Cummins PUR60570, Hennen PUR60923. On *D. teres* Walt., Morelos: Holway PUR57475; Tamaulipas: Hennen PUR64672. On *D. sp.*, Veracruz: Hitchcock PUR40926; Jalisco: Hennen PUR63611. See under *Borreria* for hosts and distribution.

Galium

1. *P. difformis* Kunze (opsis). On *G. mexicanum* H.B.K. var. *asperulum* (Gray) Dempst., Durango: Cummins PUR63762. This is the record from Mexico. Known previously from U.S.A., Chile, Europe *type*, and Iraq.

2. *P. punctata* Link (auten). In *G. mexicanum* H.B.K. var. *asperulum* (Gray) Dempst., Durango: Cummins PUR64101. On *G. sp.*, Michoacan: Holway PUR33709; Oaxaca: Holway PUR57515. Widespread in North and South America, Europe (*type*), and Asia. Occurs also on *Relbunium* in Peru, and *Rubia* in Iraq.

Spermacoce

1. *P. lateritia* Berk. & Curt. (micro). On *S. haenkeana* Hemsl., Michoacan: Holway PUR40946 (Bartholomew-N. Amer. Uredinales 1557). On *S. pringlei* Wats., Oaxaca: Holway PUR4049. See under *Borreria* for hosts and distribution.

On Sapindaceae

Cardiospermum

1. *P. arechavaletae* Speg. (micro). On *C. halicacabum* L., Guerrero: Holway PUR39399; Hidalgo: Holway PUR39400 (Bartholomew-N. Amer. Uredinales 123); Jalisco: Holway PUR39409, 39401, 57374; Morelos: Holway PUR39397, 39408; Nayarit: Cummins PUR64228, 64229, 64319; Nuevo Leon: Cummins PUR62856; San Luis Potosi: Cummins PUR60559; Sinaloa: Cummins PUR64100; Sonora: Cummins PUR60560, 60561; Tamaulipas: Cummins PUR60557, 60558. On *C. microcarpum* H.B.K., Oaxaca: Holway PUR39412; Veracruz: Purpus PUR39413. On *C. sp.*, Nuevo Leon: Hennen PUR63559, 63598; San Luis Potosi: Hennen & Rodriguez PUR63597; Tamaulipas: Hennen & Rodriguez PUR63595, 63596. Known also on *Serjania* from Mexico and from the U.S.A. (Texas and Florida), West Indies, Central and South America (*type* from Argentina).

Serjania

1. *P. arechavaletae* Speg. (micro). On *S. cystocarpa* Radlk., Nuevo Leon: Pringle PUR61292. On *S. racemosa* Schum., Guerrero: Holway PUR39430; Morelos: Holway PUR39431. See under *Cardiospermum* for hosts and distribution.

On Scrophulariaceae

Antirrhinum

1. *P. antirrhini* Diet & Holw. (II, III). On *A. majus* L., Federal District: Riol PUR52095; Queretaro: Hennen & Rodriguez PUR63764. Widespread on cultivated *Antirrhinum*. *Type* from U.S.A. (California).

Castilleja

1. *P. nesodes* Arth. & Holw. (micro). On *C. tenuiflora* Benth., Coahuila: Cummins PUR60790; Hennen PUR63765. Known also on *Lamoureauxia* and from Central America (*type* from Costa Rica). These are the first Mexican records.

Lamoureauxia

1. *P. nesodes* Arth. & Holw. (micro). On *L. multifida* H.B.K., Nayarit: Cummins PUR64339. See under *Castilleja* for hosts and distribution.

Pedicularis

1. *P. clintonii* Peck (micro). On *P. aequinocalis* H.B.K., Coahuila: Hennen

& Rodriguez PUR63766. This is the first Mexican record. Known also from Canada and U.S.A. (*type* from New York).

Pentstemon

1. *P. pentstemonis* Peck (micro). On *P. apateticus* Straw ssp. *apateticus* Durango: Cummins PUR60788, 64474, 64460, Hennen PUR60924. On *P. campanulatus* Willd., Federal District: Holway PUR40750 (Bartholomew-N. Amer. Uredinales 1259). Hidalgo: Holway PUR40751; Mexico: Holway PUR40749. On *P. hartwegii* Benth., Hidalgo: Medellin PUR60804. On *P. kunthii* D. Don, Jalisco: Mexia PUR60803. On *P. sp.*, Coahuila: Hennen PUR63767; Morelos: Hennen PUR63768; Nuevo Leon: Hennen PUR63769; San Luis Potosi: Hennen PUR60925. Known also from Canada and U.S.A. (*type* from Arizona).

On Solanaceae

Capsicum

1. *P. paulensis* Rangel (opsis). On *C. ciliatum* (H.B.K.) Kuntze, Nuevo Leon: Hennen PUR64437. On *C. frutescens* L., Michoacan: Romero PUR62833. These are the first records of this fungus in Mexico. Known also from Guatemala and South America (*type* from Brazil). This may be the same as *P. pampeana* Speg. (*type* on *Salpichroa* from Argentina).

Lycium

1. *P. globosipes* Peck (brachy). On *L. andersonii* Gray, Sonora: Cummins PUR60700, 60701, 60698, 60699. On *L. cedrosense* Greene, Baja California: Palmer PUR37141. On *L. sp.*, Sonora: Cummins PUR60702, 64002. Known also from U.S.A. (*type* from California).

2. *P. tumidipes* Peck (brachy). On *L. schaffneri* Gray, Zacatecas: Shreve PUR59960. On *L. torreyi* Gray, Durango: Cummins PUR60704. On *L. sp.*, San Luis Potosi: Hennen & Rodriguez PUR63763; Tamaulipas: Hennen PUR64438. These are the first records of this species from Mexico. Known also from U.S.A. (*type* from Arizona), Cuba, and Argentina.

Solanum

1. *P. pittieriana* P. Henn. (micro). On *S. demissum* Lindl., Federal District: Reddick PUR47151. On *S. tuberosum* Lindl., Federal District: Reddick PUR47152, 47153. Known also from Costa Rica (*type*), and on *Lycopersicon* in South America.

On Tiliaceae

Triumfetta

1. *P. triumfettae* Diet. & Holw. (micro). On *T. semitriloba* Jacq., Morelos: Holway PUR39458 *type*, 39459, 39460, 57549. Known also from South America.

On Umbelliferae

Arracacia

1. *P. imperspicua* Syd. (auteu). On *A. multifida* Wats., Federal District: Pringle PUR35981 *type*, Rose *et al.* PUR35893; Hidalgo: Holway PUR35890 (Bartholomew-Fungi Columb. 2060) PUR35894 (Bartholomew-N. Amer. Uredinales 1903), Rose *et al.* PUR35892. On *A. vaginata* Coult. & Rose, Michoacan: Leavenworth ARIZ. On *A. sp.*, Morelos: Holway PUR57462, 57519. Known only from these collections.

Coulterophytum

1. *P. prionosciadii* Lindr. (auteu) (OI not reported but occurs on a Guatemalan specimen). On *C. holwayi* Rose, Michoacan: Holway PUR37027 (Bartholomew-N. Amer. Uredinales 1567); Jalisco: Holway PUR37029. On *C. laxum* Robins., Jalisco: Holway PUR37029 (Bartholomew-N. Amer. Uredinales 258, Fungi Columb. 3859), 37031 *type* (Bartholomew-N. Amer. Uredinales 466, Bartholomew-Fungi Columb. 3463) Pringle PUR37030; Nayarit: Cummins PUR64369, 64341. On *C. sp.*, locality not recorded: PUR61127. Known also on *Prionosciadium* but only from Mexico.

Hydrocotyle

1. *P. hydrocotyles* Cooke (II, III). On *H. bonariensis* Lam., Federal District: Hitchcock PUR36952. On *H. mexicana* Cham. & Schlecht., Oaxaca: Holway PUR36959, Veracruz: Plunkett PUR46877. On *H. sp.*, Federal District: Holway PUR36993; Morelos: Holway PUR36994; Nuevo Leon: Hennen PUR64727. A widespread species in both the Eastern and Western Hemisphere. *Type* from Brazil.

Osmorhiza

1. *P. pimpinellae* (Strauss) Roehl. (auteu). On *O. mexicana* Griseb., Federal District: Hennen PUR64760. Only uredinia are present. This is the first record from Mexico. Known also from Canada, U.S.A., Europe (*type*), Asia and Argentina.

Prionosciadium

1. *P. bella* Hennen & Cum. 1973b. Reports of the Tottori Mycological

Institute, No. 11 (in press). On *P. thapsoides* (DC.) Mathais, Durango: Hennen PUR63899 *type*.

2. *P. prionosciadii* Lindr. (II, III). On *P. dissectum* Coult. & Rose, Jalisco: Holway PUR37032 (Bartholomew-N. Amer. Uredinales 55, Sydow-Uredineen 1827). On *P. linearifolium* Coult. & Rose, Jalisco: Hitchcock PUR37033, Cummins PUR64187. On *P. mexicanum* (Vatke) Wats., Jalisco: Cummins PUR64186. On *P. nelsonii* Coult. & Rose, Morelos: Rose *et al.* PUR37034, Holway PUR37036; Federal District: Holway PUR37035. On *P. serratum* Coult. & Rose, Jalisco: Hitchcock PUR37037. On *P. watsonii* Coult. & Rose, Jalisco: Pringle PUR37038; PUR37041; Morelos: Holway PUR37042, PUR63585. On *P. sp.*, Durango: Cummins PUR64579, 64580. See under *Coultrophytum* for hosts and distribution.

On Verbenaceae

Cornutia

1. *P. urbaniana* P. Henn. (micro). On *C. grandifolia* (Schl. & Cham.) Schaver, Veracruz: Plunkett PUR47135, 47136. Known also on *Stachytarpheta* and from the West Indies (the type is on *Stachytarpheta* from Jamaica), Central and South America.

Lantana

1. *P. lantanae* Farlw. (micro). On *L. canescens* H.B.K., San Luis Potosi: Lundell PUR 48663. On *L. corymbosa* L. Tamaulipas: Hennen PUR60926. On *L. hispida* H.B.K., Nuevo Leon: Cummins PUR60564; Tamaulipas: Cummins PUR60567. On *L. involucrata* L., Nuevo Leon: Cummins PUR60565; Sinaloa: Cummins PUR60563; Tamaulipas: Cummins PUR60566, 60568. On *L. purpurea* Benth. & Hooker, Guerrero: Holway PUR40625; Morelos: Holway PUR40626, 40628 (Bartholomew-N. Amer. Uredinales 1161); Veracruz: Holway PUR40627. On *L. sp.*, Nuevo Leon: Hennen PUR63760, 63759, 63761, Cummins PUR62873; Tamaulipas: Hennen PUR64497, 64674. See under *Elytraria* in the Acanthaceae for hosts and distribution.

Lippia

1. *P. lantanae* Farl. (micro). On *L. graveolens* H.B.K., Tamaulipas: Cummins PUR60562. On *L. lappulacea* (L.) Pers., Tamaulipas: Cummins PUR60569. See under *Elytraria* in the Acanthaceae for hosts and distribution.

Stachytarpheta

1. *P. urbaniana* P. Henn. (micro). On *S. jamaicensis* Vahl, Veracruz: Plunkett PUR47138, Hennen PUR64414. On *S. incana* var. *angustibracteata* Moldenke, San Luis Potosi: Lundell PUR48650. See under *Cornutia* for hosts and distribution.

On Violaceae

Viola

1. *P. violae* (Schum.) DC. (auteu) On *V. grahamii* Benth., Federal District: Holway PUR31821; Hidalgo: Holway PUR31819, 31820. On *V. painteri* Rose & House, Hidalgo: Rose *et al.* PUR31875. On *V. sp.*, Morelos: Holway PUR32009, Hennen PUR63607; Hidalgo: Holway PUR57559, 57560. Widespread in Eurasia (*type* from Europe) and North America. Also in South America.

Monocot Families

On Amaryllidaceae

Bomarea

1. *P. bomareae* P. Henn. (II, III). On *B. acutifolia* Benth., Morelos: Holway PUR30882; Oaxaca: Holway PUR30883, (Bartholomew-N. Amer. Uredinales 822) PUR30884 (Bartholomew-Fungi Columb. 4563), San Luis Potosi: Hennen PUR64761; Veracruz: Holway PUR30881. On *B. ovata* Mirb., Oaxaca: Holway PUR30885. Known also from South America (*type* from Brazil).

On Bromeliaceae

Pitcairnia

1. *P. pitcairniae* Lagh. (II, III). On *P. palmeri* Wats., Jalisco: Holway PUR30442 (Bartholomew-Fungi Columb. 4065, N. Amer. Uredinales 359). Known also from South America (*type* from Ecuador).

On Commelinaceae

Commelina

1. *P. commelinae* Holw. (auteu). On *C. coelestis* Willd., Oaxaca: Holway PUR30444, 30445. On *C. erecta* L., Sinaloa: Cummins PUR60680. On *C. graminifolia* H. B. K., Morelos: Holway PUR30446. On *C. pallida* Willd., Jalisco: Holway PUR30447; Morelos: Holway PUR30448. On *C. tuberosa* L., Jalisco: Holway PUR30449 (Bartholomew-N. Amer. Uredinales 984). On *C. sp.*, Jalisco: Holway PUR30451, PUR30450 *type*; Mexico: Holway PUR30452; Nayarit: Hennen PUR62098, Cummins PUR64358, 64321; Oaxaca: Holway PUR30453; Sinaloa: Cummins PUR60679; Tamaulipas: Hennen PUR62097 (OI, II, this is the first record of OI stage). Known also on *Arthyrocarpus* and from U.S.A. (Texas), West Indies, and in South America.

On Cyperaceae

Carex

1. *P. atrofusca* ((Dudl. & C. H. Thompson) Holw. (heteru). On *C. sp.*,

Mexico: Rzedowski PUR61703 ex MSU. This is the first record from Mexico. Known also from Canada, U.S.A. (*type* from California), Asia and Chile.

2. *P. caricina* DC. (heteru). On *C. donnell-smithii* Bailey, Chiapas: Breedlove & Raven PUR61273. This is the first record from Mexico. Widespread in Northern Hemisphere (*type* from Europe) and in South America.

3. *Puccinia caricis-polystachyae* Diet. (II, III). On *C. madreensis* L. H. Bailey, Morelos: Holway PUR26992. On *C. polystachya* Vahl. Oaxaca: Holway PUR-26997 *type*. Known also from Guatemala.

4. *P. dioicae* P. Magn. (heteru). On *C. turbinata* Liebm., Hidalgo: Pringle PUR62621. On *C. sp.*, Coahuila: Cummins PUR60668, 60669, 60667, 60671, 60672; Durango: Cummins PUR60670, 64480, 64463. Widespread throughout the world (*type* from Europe). Aecial stage occurs on Compositae.

Cyperus

1. *P. canaliculata* (Schw.) Lagh. (heteru). On *C. esculentus* L., Chihuahua: Cummins PUR 60673; Federal District: Holway PUR26430, 26431, 26432 (Bartholomew-Fungi Columb. 1970); Sonora: Cummins PUR63556. On *C. seslerioides* H.B.K., Federal District: Holway PUR26471. On *C. sp.*, Coahuila: Cummins PUR60676; Durango: Cummins PUR60674; Oaxaca: Holway PUR-26538; San Luis Potosi: Cummins PUR60675. Known also from Canada, U.S.A. (*type* from Pennsylvania), West Indies, Central and South America, Europe and Asia. Aecial hosts are members of Compositae.

2. *P. cyperi* Arth. (heteru). On *C. atropurpureus* Liebm., Federal District: Holway PUR26546. On *C. buckleyi* Britt., Michoacan: Holway PUR26573. On *C. spectabilis* Schreb., Federal District: Holway PUR26610; Mexico: Holway PUR26609; Morelos: Holway PUR26611. On *C. sp.*, Jalisco: Holway PUR57403; Sinaloa: Cummins PUR64102. Widespread in the New World. *Type* from U.S.A. (Iowa). Aecial stage on Compositae.

3. *P. flavo-virens* H.S. Jacks & Holw. (II, III). On *C. thyrsoflorus* Jung., Mexico: Hitchcock PUR26525. On *C. sp.*, Oaxaca: Holway PUR26529. Known also from Guatemala, Ecuador (*type*) and Kenya.

Fimbristylis

1. *P. fimbristylidis* Arth. (II, III). On *F. polymorpha* Bock., Jalisco: Holway PUR26941, PUR57535; Morelos: Holway PUR26942 *type* (Bartholomew-N. Amer. Uredinales 1443), PUR26943. Known also from U.S.A. (Texas) and the West Indies.

Rynchospora

1. *P. angustata* Peck (heteru). On *R. schiedeana* Kunth, Veracruz: Plunkett PUR46054. Widespread, *type* from U.S.A. (New York). Aecial stage occurs on Labiatae and Compositae.

Scirpus

1. *P. obtecta* Peck (heteru). On *S. olneyi* A. Gray, Aguascalientes: Trelease PUR26042; Federal District: Holway PUR26041. On *S. sp.*, Jalisco: Holway PUR57499; Michoacan: plant quarantine interception: PUR58635. Widespread in North America, *type* from U.S.A. (New York). Aecial stage is on Compositae.

On Dioscoreaceae

Discorea

1. *P. valida* Arth. (II, III). On *D. convolvulacea* Schlecht. & Chara, Oaxaca: Holway PUR42429 *type*. Known only from the *type*.

On Gramineae

Except for the records listed here see Cummins (1967).

Bothriochloa

1. *P. duthiae* Ellis & Tracy in Ellis & Everhart (1897), (heteru). On *B. wrightii* (Hack.) Henrard, Tamaulipas: Hennen PUR64787. This is the first record of this species for the New World and may represent a new variety. Known also from Africa, India, Australia, and China and on *Chrysopogon* and *Dichanthium*. The *type* is on *Bothriochloa* from India where the aecial stage is also known on *Barleria* in the Acanthaceae (Cummins, 1971).

Brachypodium

1. *P. corteziana* Cummin. & Hennen in Cummins (1971), (II, III). On *B. mexicanum* (Roem. & Schult.) Link, Federal District: Hennen PUR63274; Mexico: Hennen PUR62783 *type*. Known only from these specimens.

Piptochetium

1. *P. durangensis* Cummins (1971), (II, III). On *P. fimbriatum* (H.B.K.) Hitchc., Durango: Hennen PUR62782 *type*. Known only from the *type*.

Trisetum

1. *P. azteca* Cummin. & Hennen in Cummins (1971), (II, III). On *T. virlettii* Fourn., Federal District: Hennen PUR63273 *type*; Durango: Cummins PUR-64077; Michoacan: Arsene PUR53508. Known also on *Calamagrostis* from Brazil.

On Iridaceae

Iris

1. *P. iridis* Rab. (heterou). On *I. sp.*, Coahuila: Hennen & Rodriguez PUR-62290. This is the first record from Mexico. Widespread in Canada, U.S.A. and Eurasia (type from Europe).

Sisyrinchium

1. *P. angulata* Diet. Neger (auteu). On *S. sp.*, Mexico Rose & Painter PUR-30963. Known also from U.S.A. (Arizona), Honduras, and Chile (type).

On Liliaceae

Allium

1. *P. bladsdalei* Diet. & Holw. (auteu). On *A. sp.*, Durango: Hennen PUR-63615; Morelos: Holway PUR30626. Known also from U.S.A. (type from California) Brazil and Eurasia.

Brodiaea

1. *P. nodosa* Ellis & Hark. (auteu). On *B. capitata* Benth., Baja California Norte: Cummins PUR60618, PUR60683, PUR60684. On *B. palmeri* Wats. (*Triteleopsis palmeri* (Wats.) Hoover), Baja California Norte: Shreve PUR59959. These are the first records from Mexico. Known also on *Dichelostemma* and along the coast of California to San Francisco. Type from California.

Calochortus

1. *P. calochorti* Peck (auteu). On *C. flavus* Schultes f., Federal District: Holway PUR35574 (Bartholomew-N. Amer. Uredinales 127), PUR35573. On *C. pringlei* Robins., Morelos: Pringle PUR35597. Known also from western U.S.A. (type from California) and Canada.

Dichelostemma

1. *P. nodosa* Ell. & Hark. (auteu). On *D. pulchellum* (Salisb.) Heller, Baja California Norte: Cummins (PUR71-11). See under *Brodiaea* for hosts and distribution.

Smilax

1. *P. smilacis* Schw. (heterou). On *S. bona-nox* L., San Luis Potosi: Cummins PUR60677, 60678, Hennen PUR60889. On *S. sp.*, Nuevo Leon: Cummins PUR-30849; San Luis Potosi: Hennen PUR63614. These are the first records for

Mexico. Widespread in Eastern U.S.A. (type from N. Carolina), West Indies, and South America. The aecial stage is on *Apocynum*, Apocynaceae.

Triteleopsis (see under *Brodiaea*)

On Marantaceae

Maranta

1. *Puccinia thaliae* Diet. (II, III). On *M. arundinacea* L., San Luis Potosi: Hennen PUR60917. This is the first record from Mexico. Known also on *Calathea*, *Ischnosiphon*, and *Thalia*, and *Canna* of the Cannaceae, and from U.S.A. (Florida, Texas), West Indies, Central America, and South America (type from Brazil).

On Orchidaceae

Oncidium

1. *P. oncidii* Cumm. (II, III). On *Oncidium* sp., state and collector not recorded; PUR55902 type. Intercepted in Customs, Miami, Florida. Known also from South America.

Host Genus undetermined

1. *Puccinia cinnamomea* Diet. & Holw. (II, III). On unidentified Orchidaceae, Morelos: Holway PUR42445 type. Known only from the type.

LITERATURE CITED

- Arthur, J. C., 1907-1927. Uredinales. N. Amer. Flora 7: 83-869.
 ———, 1934. *Manual of the rusts in United States and Canada*. Purdue Research Foundation. 438 p.
 Baxter, J. W., 1960. North American species of *Puccinia* on *Hyptis*. *Micologia* 53: 17-24.
 ——— and G. B. Cummins, 1951. A monograph of species of *Puccinia* occurring on *Salvia* in North America. *Lloydia* 14: 201-230.
 Cummins, G. B., 1967. The Uredinales on Mexican Gramineae. *Southw. Nat.* 12: 70-86.
 ———, 1971. *The rust fungi of cereals, grasses and bamboos*. Springer-Verlag, New York. 569 p.
 ———, Britton, M. P., and J. W. Baxter, 1969. The autoecious species of *Puccinia* on North American Eupatorieae. *Mycologia* 61: 924-944.
 ——— and J. A. Stevenson, 1956. A check list of North American rust fungi (Uredinales). *Pl. Dis. Reporter Suppl.* 240: 109-193.
 Ellis, J. B. and B. M. Everhart, 1897. New species of North American Fungi from various localities. *Bull. Torrey Bot. Club* 24: 283.
 Hennen, J. F. and G. B. Cummins, 1967. The Mexican species of *Uromyces* (Uredinales). *Southw. Nat.* 12: 146-155.
 ——— and ———, 1973 a. Additions to *Uromyces* from Mexico. *Southw. Nat.* 18: 73-77.
 ——— and ———, 1973b. New taxa of Mexican rust fungi. *Rept. Tottori Mycol. Inst.* 11 (in press).

- . H. M. Leon-Gallegos, and G. B. Cummins, 1972. The rust fungi (Uredinales) on Compositae in Mexico. *Southw. Nat.* 16: 357-386. Holway, E. W. D. 1967. *N. Amer. Ured.* 1: 60.
- Jackson, H. S., 1932. The rusts of South America based on the Holway collections. VI. *Mycologia* 24: 62-186.
- Lanjouw, J. and F. A. Stafleu, 1964. Index Herbariorum. Pt. I. The herbaria of the world. *Regnum Veget.* 31: 1-251.
- Laundon, G. F., 1963. Rust Fungi I: on Acanthaceae. *Commonw. Mycol. Inst. Mycol. Papers.* 89: 1-89.
- . 1965. Rust Fungi III: on Alangiaceae, Amaranthaceae and Amaryllidaceae. *Commonw. Mycol. Inst. Mycol. Papers.* 102: 1-52.
- Savile, D.B.O., 1970. Autoecious *Puccinia* species attacking Carduaceae in North America. *Can. J. Bot.* 48: 1567-1584.

ABSTRACT

We report 132 species of *Puccinia* parasitizing 41 angiosperm families. Not included are 93 species on Compositae and 72 species on Graminae that were reported earlier. This paper is based in part in Arthur Herbarium material and in those material collected by the authors in the North of Mexico. Only species that produce telial stages on Angiosperms are included.

RESUMEN

Este trabajo es parte de una serie que los autores publican desde 1967. Contiene 132 nuevos registros para México de los hongos denominados chahuiztles, los cuales pertenecen al género *Puccinia*. Anteriormente, la principal fuente de información sobre el tema eran los trabajos de Arthur de 1907-1927, basados en los materiales de Holway de la parte central de México. La clase de ciclo de vida está en paréntesis, siguiendo el nombre de la especie. Los especímenes de herbario están entre paréntesis. Las especies están arregladas de acuerdo a los hospedantes y éstos a su vez en orden alfabético de familias y géneros. Solamente se incluyen las especies que producen estado de telia sobre angiospermas. La mayoría de los registros se basan en las colecciones de Arthur en PUR, pero los autores también han efectuado colectas en los estados del norte del país; 460 de los 892 especímenes estudiados pertenecen a estas colectas. Unas pocas especies fueron encontradas sobre especímenes de fanerógamas de otros herbarios.