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Lois H. Tiffany  
*Iowa State University*

George Knaphus  
*Iowa State University*

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## The Plant Rusts (Uredinales) of the Driftless Area of Northeastern Iowa

LOIS H. TIFFANY and GEORGE KNAPHUS

Department of Botany, Iowa State University, Ames, Iowa 50011

Several individuals have studied the plant rusts in the driftless area of Iowa. Of these, E. W. D. Holway, a Decorah banker, made by far the greatest contribution, having made the initial collection of 120 rusts in Iowa. Alois Kavorik of Spillville was also an early student of the rusts, frequently collecting with Holway.

This paper summarizes the collections of these men and others, including our collections. A total of 132 plant rusts have been found in the driftless area. Of these, 28 have been found in Iowa only in the driftless area. In many cases, the host plant(s) for these rusts are found in other parts of the state in similar habitats.

INDEX DESCRIPTORS: Rusts, Uredinales, parasitic fungi, driftless area

The rust fungi are significant plant pathogens and, for some observers, are very interesting organisms. They are obligate parasites, resisting almost all efforts to grow them in culture. They are narrowly specific in their ability to infect host plants. Many have a curious alternate host situation in which the uredospores and the aeciospores can infect only one kind of host plant and the basidiospores can only infect another.

It is not surprising, therefore, that an intensely curious man such as Edward Willet Dorland Holway would find them to be the ultimate organisms of interest as he probed the world around him. Holway was employed by the Winneshiek County bank of Decorah in 1869 and was known as an astute and prudent manager of financial affairs. He was initially interested in collecting coins and this interest spread to collecting insects and flowering plants. He became more and more aware of the curious orange and brown pustules which appeared on many of the plants he collected. Gradually the rusts became an all-consuming passion for him. Finally, in 1904, he retired from banking and pursued various interests, including study of the rusts. He moved to Minneapolis, taking with him his large collection of rusts, including those from northeastern Iowa, and became a volunteer assistant professor of botany at the University of Minnesota. The remaining years of his life were devoted to collecting rusts in Canada, Mexico, Central America, South America, Europe and Africa (Pammel, 1928).

Holway's collections of rusts from Iowa, and especially from the driftless area, dominate the information on the occurrence of this group of fungi in Iowa. Two other men made significant contributions to the study of Iowa rusts in the early part of the twentieth century. Alois Kavorik from Spillville collected rusts and other plant disease fungi. He collected with Holway on many occasions, and the notation "collected with Holway" occurs frequently in his field notes. His collection has been preserved in the herbarium of Luther College at Decorah. Apparently neither Arthur nor Gilman and Archer were aware of this material and it was not included in their discussions of the Iowa rusts. We have examined the Kavorik material and have found it of considerable help in interpreting the rusts of northeastern Iowa.

The other contributor to the study of Iowa rusts at this time was J. C. Arthur, a graduate of Iowa State College (now Iowa State University) who collected around Ames and the Lake Okoboji area of northwestern Iowa. Arthur also became closely associated with Holway. Scholarly contributions to the increasing knowledge of the rusts resulted from the careful collecting of Holway supplemented by the nomenclatorial interpretations of Arthur. Arthur's check list of the Uredinales of Iowa (Arthur, 1926) documents these contributions. Arthur admired Holway's field expertise and credited him with adding more new species of rusts to the world collections than any other person. As a result of Holway's work, we have records of 120

species of rusts from the driftless area of Iowa. These are listed in Table 1, which also includes three species apparently collected only by Kavorik. Nineteen of these rusts have not been reported from other areas of Iowa.

While studying the fungi in Iowa, we have collected 71 of the rusts listed in Table 1. In addition, we have found a few rusts not previously known from this area, and, in some cases, from Iowa. These latter species, plus species collected by other workers but not included in the Holway-Kavorik records, are listed in Table 2.

Based on our current records of rust distribution in Iowa, 28 species are known only from the driftless area. Some of these 28 species are found on plant species whose distribution in Iowa is limited to this region of the state, such as *Abies balsamea*. Other host species, such as *Hydrophyllum virginianum*, are common throughout the state in the appropriate habitat. Availability of a specific host does not seem to be the limiting factor in distribution of these rust species.

The apparently limited distribution of these twenty-eight species may be due to inadequate field observations. In the 100-plus years since Holway began his collection of Iowa rusts, no systematic survey of Iowa fungi, including the rusts, has been conducted. These organisms are of great interest to plant pathologists because of disease development in their host plants. Plant scientists have noticed rusts in the field and collections from all areas of the state have been deposited in the mycological herbaria of Iowa State University and the State University of Iowa. Our recent sporadic but intensive collecting efforts have resulted in increased information about distribution of some rust species that were previously known only from single collections.

The incidence of a particular rust species on a host species may vary tremendously from year to year. A rust may be common in one year, parasitizing almost every available host plant in a particular site. In subsequent seasons the rust may be very scarce or even absent in the same area. Such highly sporadic development contributes to difficulty in documenting distributions without long term field studies.

Equally difficult to evaluate is field information indicating development of a heteroecious rust species on only one of the alternate host species when both hosts are available in an area. For example, *Uredinopsis osmundae*, a heteroecious species, was collected in 1890 by T. H. MacBride on *Albies balsamea*. There are not other recorded observations of this rust on *Abies* in Iowa. Not until 1971 were uredia and telia of *U. osmundae* collected on the other host, *Osmunda claytoniana*, at Yellow River State Forest in Allamakee County. Since then, we have collected *U. osmundae* on *O. claytoniana* several times at other sites in the driftless area.

A different situation is illustrated by *Uredinopsis longimucronata*, which had never been recorded from Iowa prior to 1982. That year it was common on *Athyrium felix-femina* in Dubuque and Winneshiek counties in northeastern Iowa and in Emmet County in northwestern

PLANT RUSTS OF THE DRIFTLESS AREA

Table 1. Rust species collected by E.W.D. Holway and Alois Kavorik in the driftless area of northeastern Iowa, 1879 to 1903. Species known only from the driftless area and only by Holway and/or Kavorik collections are marked with an asterisk (\*). Species known only from the driftless area but collected also by other workers are indicated by two asterisks (\*\*).

Rust	Hosts		
*1) <i>Aecidium tithymali</i> Arth.	<i>Euphorbia commutata</i> Engelm.	27) <i>Puccinia angustata</i> Pk.	<i>Eriophorum angustifolium</i> Honckeny
2) <i>Cerotelium dicentrae</i> Mains & H.W. Anders	<i>Dicentra cucullaria</i> (L.) Bernh.		<i>Scirpus atrovirens</i> Muhl.
3) <i>Chrysomyxa pirolata</i> Wint.	<i>Pyrola elliptica</i> Nutt.	28) <i>Puccinia argentata</i> (Schultz) Wint.	<i>Senecio aureus</i> L.
4) <i>Coleosporium astrum</i> (Diet.) Syd.	<i>Solidago</i> sp.	29) <i>Puccinia asparagi</i> DC.	<i>Adoxa moschatellina</i> L.
5) <i>Cronartium comandrae</i> Pk.	<i>Comandra umbellata</i> (L.) Nutt.	30) <i>Puccinia atropuncta</i> Pk. & Clint.	<i>Impatiens pallida</i> Nutt.
6) <i>Frommea obtusa</i> (Strauss.) Arth.	<i>Potentilla canadensis</i> L.	*31) <i>Puccinia calthae</i> Lk.	<i>Asparagus officinalis</i> L.
7) <i>Gymnoconia peckiana</i> (Howe) Trott.	<i>Rubus villosus</i> Ait.	*32) <i>Puccinia calthaeicola</i> Schrot.	<i>Allium cepa</i> L.
**8) <i>Gymnosporangium clavariforme</i> (Pers.) DC.	<i>Amelanchier spicata</i> (Lam.) K. Koch	33) <i>Puccinia caricina</i> DC.	<i>Zygadenus glaucus</i> Nutt.
9) <i>Gymnosporangium clavipes</i> (Cke & P.) Cke. & P.	<i>Juniperus communis</i> L.		<i>Caltha palustris</i> L.
10) <i>Gymnosporangium globosum</i> (Farl.) Farl.	<i>Juniperus virginiana</i> L.	34) <i>Puccinia chloridis</i> Speg.	<i>Caltha palustris</i> L.
11) <i>Gymnosporangium juniperi-virginianae</i> Schw.	<i>Crataegus punctata</i> Jacq.	35) <i>Puccinia circaeae</i> Pers.	<i>Carex</i> sp.
**12) <i>Gymnosporangium nudis-avis</i> Thaxt.	<i>Juniperus virginiana</i> L.	36) <i>Puccinia cirsii</i> Lasch.	<i>Ribes cynosbati</i> L.
**13) <i>Hyalopsoara cheilanthis</i> (Pk.) Arth.	<i>Cryptogramma stelleri</i> (Gmel.) Prantl.		<i>Ribes missouriensis</i> Nutt.
14) <i>Hyalopsoara polypodii</i> (DC.) Magn.	<i>Cystopteris fragilis</i> (L.) Bernh.	37) <i>Puccinia cnici-oleracei</i> Pers. ex Desm.	<i>Urtica dioica</i> L.
15) <i>Kubneola uredinia</i> (Lk.) Arth.	<i>Rubus alleghiensis</i> Porter	38) <i>Puccinia convolvuli</i> Cast.	<i>Asclepias syriaca</i> L.
16) <i>Kunkelia nitens</i> (Schw.) Arth.	<i>Rubus alleghiensis</i> Porter	39) <i>Puccinia coronata</i> Cda.	<i>Asclepias tuberosa</i> L.
17) <i>Melampsora abieti-capreaearum</i> Tubeuf.	<i>Salix</i> sp.	40) <i>Puccinia cryptotaeniae</i> Pk.	<i>Bouteloua curtipendula</i> (Michx.) Torr.
18) <i>Melampsora lini</i> (Schum.) Thuem.	<i>Linum virginianum</i> L.	41) <i>Puccinia cyperi</i> Arth.	<i>Circaea quadrisulcata</i> Maxim
19) <i>Melampsora medusae</i> Thuem.	<i>Populus deltoides</i> Marsh.	*42) <i>Puccinia cypripedii</i> Arth. & Holw.	<i>Cirsium altissimum</i> (L.) Spreng.
*20) <i>Phragmidium andersoni</i> Shear	<i>Potentilla fruticosa</i> L.	*43) <i>Puccinia dayi</i> Clint.	<i>Cirsium discolor</i> (Muhl.) Spreng.
21) <i>Phragmidium rosae-arkansanae</i> Diet.	<i>Rosa suffulta</i> Greene	**44) <i>Puccinia difformis</i> Kunze	<i>Aster puniceus</i> L.
22) <i>Phragmidium rubi-idaei</i> (DC.) Karst.	<i>Rubus strigosus</i> Michx.	45) <i>Puccinia dioicae</i> P. Magn.	<i>Convolvulus sepium</i> L.
23) <i>Phragmidium speciosum</i> (Fr.) Cke.	<i>Rosa blanda</i> Ait.		<i>Avena sativa</i> L.
24) <i>Pileolaria brevipes</i> Berk. & Rav.	<i>Rhus radicans</i> L.		<i>Avena fatua</i> L.
25) <i>Puccinia andropogonis</i> Schw.	<i>Andropogon girardi</i> Vitm.		<i>Rhamnus alnifolius</i> L'Her
	<i>Andropogon scoparius</i> Michx.		<i>Cryptotaenia canadensis</i> (L.) DC.
	<i>Amphicarpa bracteata</i> (L.) Fern.		<i>Cyperus schweinitzii</i> Torr.
	<i>Castilleja coccinea</i> (L.) Spreng.	46) <i>Puccinia distichlidis</i> Ell. & Ev.	<i>Cypripedium calceolus</i> L.
	<i>Polygala senega</i> L.	47) <i>Puccinia eatoniae</i> Arth.	<i>Cypripedium reginae</i> Watt.
	<i>Xanthoxylum americanum</i> Mill.		<i>Lysimachia ciliata</i> L.
26) <i>Puccinia anemones-virginianae</i> Schw.	<i>Anemone cylindrica</i> Gray		<i>Gallium aparine</i> L.
	<i>Anemone virginiana</i> L.	48) <i>Puccinia eleocharidis</i> Arth.	<i>Aster drummondii</i> Lindl.
			<i>Carex foenea</i> Willd.
			<i>Carex pennsylvanica</i> Lam.
			<i>Carex siccata</i> Dewey
			<i>Dirca palustris</i> L.
			<i>Erigeron annuus</i> (L.) Pers.
			<i>Erigeron strigosus</i> Muhl.
			<i>Oenothera biennis</i> L.
			<i>Phryma leptostachya</i> L.
			<i>Polymnia canadensis</i> L.
			<i>Spartina pectinata</i> Lk.
			<i>Ranunculus abortivus</i> L.
			<i>Sphenopholis pallens</i> (Biehler) Scribn.
			<i>Eleocharis intermedia</i> (Muhl.) Schurt.
			<i>Eupatorium maculatum</i> L.
			<i>Andropogon scoparius</i> Michx.
			<i>Viola pedatifida</i> G. Don.

- 50) *Puccinia emaculata* Schw. *Panicum capillare* L.  
*Panicum virgatum* L.
- \*51) *Puccinia festucae* Plowr. *Lonicera flava* Sims
- 52) *Puccinia gentianae* (Strauss) *Gentiana puberula* Michx.  
Roehling
- 53) *Puccinia graminis* Pers. *Agrostis alba* L.  
*Avena fatua* L.  
*Avena sativa* L.  
*Berberis vulgaris* L.  
*Dactylis glomerata* L.  
*Hordeum jubatum* L.  
*Triticum vulgare* Vill.
- \*54) *Puccinia grindeliae* Pk. *Solidago nemoralis* Ait.
- 55) *Puccinia helianthi* Schw. *Helianthus annuus* L.  
*Helianthus laetiflorus* Pers.  
*Helianthus occidentalis* Ridd.  
*Helianthus strumosus* L.  
*Mitella diphylla* L.
- \*56) *Puccinia heuceuae* (Schw.) *Hieracium canadense* Michx.  
Diet. *Microseris cuspidata* (Parsh.)  
Mart. Schultz-Bip  
*Taraxacum officinale* Weber
- \*\*58) *Puccinia hydrophylli* Pk. & *Hydrophyllum virginianum* L.  
Clint.
- \*59) *Puccinia hyssopi* Schw. *Agastache nepetoides* (L.)  
Kuntze
- 60) *Puccinia iridis* Rab. *Iris versicolor* L.
- 61) *Puccinia kubniae* Schw. *Kubnia eupatorioides* L.
- 62) *Puccinia lobeliae* W. Gerard *Lobelia siphilitica* L.
- 63) *Puccinia magnusiana* Koern. *Phragmites communis* Trin.
- 64) *Puccinia mariae-wilsoniae* *Claytonia virginiana* L.  
G.W. Clint. var.  
*mariae-wilsoniae* Clint.
- \*\*65) *Puccinia marylandica* Lindr. *Sanicula marylandica* L.
- 66) *Puccinia menthae* Pers. *Blephila hirsuta* (Pursh.)  
Benth.  
*Mentha arvensis* L.  
*Monarda fistulosa* L.  
*Pycnanthemum virginianum*  
(L.) Durand & Jackson
- \*67) *Puccinia microica* Ell. *Cryptotaenia canadensis* (L.)  
DC.
- 68) *Puccinia montanensis* Ell. *Hystrix patula* Moench.
- 69) *Puccinia obstructa* Pk. *Scirpus validus* Vahl.
- 70) *Puccinia phragmitis* *Phragmites communis* Trin.  
(Schum.) Koern.
- \*71) *Puccinia physalidis* Pk. *Physalis lanceolata* Michx.
- 72) *Puccinia pimpinellae* *Osmorbiza claytoni* (Michx.)  
(Strauss.) Lk. Clarke
- 73) *Puccinia plumbaria* (Schw.) *Osmorbiza longistyles* (Torr.)  
Arth. DC.
- 74) *Puccinia podophyllii* (Schw.) *Pblox divaricata* L. var.  
Arth. *lamphamii* Wood
- 75) *Puccinia polygoni-amphibii* *Podophyllum peltatum* L.  
Pers.
- 76) *Puccinia pulsatillae* Kalchbr. *Geranium maculatum* L.
- 77) *Puccinia punctata* Lk. *Polygonum mublenbergii*  
(Meisn.) Wats.
- \*78) *Puccinia punctata* Lk. var. *Anemone patens* L.  
*troglydytes* (Lindr.) Arth. *Galium asperellum* Michx.  
*Galium concinnum* T. & G.  
*Galium triflorum* Michx.
- 79) *Puccinia recondita* Rob. ex *Actaea alba* (L.) Mull.  
Desm. *Anemone cylindrica* A. Gray  
*Anemone quinquefolia* L.  
*Anemone virginiana* L.  
*Bromus purgans* L.  
*Clematis virginiana* L.  
*Ellisia nyctelea* L.  
*Elymus canadensis* L.  
*Elymus virginicus* L.  
*Impatiens pallida* Nutt.  
*Isopyrum biternatum* (Raf.) T.  
& G.  
*Thalictrum purpurascens* L.  
*Triticum aestivum* L.  
*Galium boreale* L.  
*Muhlenbergia mexicana* (L.)  
Trin.  
*Napaea dioica* L.  
*Iris versicolor* L.  
*Phalaris arundinacea* L.  
*Polygonatum biflorum* (Walt.)  
Ell.  
*Smilacina racemosa* (L.) Desf.  
*Silphium laciniatum* L.  
*Silphium perfoliatum* L.  
*Oxalis violacea* L.  
*Zea mays* L.  
*Fraxinus pennsylvanica*  
Marsh.  
*Spartina pectinata* Lk.  
*Sporobolus heterolepis* Gray
- \*80) *Puccinia rubefaciens* Johans. *Stipa spartea* Trin.
- 81) *Puccinia schedonardii* Kell. *Artemisia ludoviciana* Nutt.
- & Swing. *Artemisia serrata* Nutt.
- 82) *Puccinia sessilis* Schneid. *Eupatorium rugosum* Nutt.
- 83) *Puccinia silphii* Schw. *Veronica fasciculata* Michx.
- 84) *Puccinia sorghi* Schw. *Veronica trifida* L.  
*Veronica virginicum* (L.)  
Farw.
- 85) *Puccinia sparganioides* Ell. & *Bouteloua curtipendula*  
Barth. (Michx.) Torr.
- 86) *Puccinia sporoboli* Arth. var. *Viola cucullata* Ait.
- sporoboli* Cumm. *Viola pubescens* Ait.
- 87) *Puccinia stipae* Arth. var. *Ambrosia trifida* L.
- stipae* Cumm. *Xanthium strumarium* L.
- 88) *Puccinia tanacetii* DC. *Agrimonia gryposepala* Wallr.
- \*89) *Puccinia tenuis* Burr. *Rubus strigosus* Michx.
- 90) *Puccinia veronicae* Schw. *Epilobium coloratum* Biehler
- 91) *Puccinia veronicarum* DC. *Anemone quinquefolia* L.
- 92) *Puccinia vexans* Farl. *Anemone patens* L.
- 93) *Puccinia violae* (Schum.) *Anemone quinquefolia* L.
- DC. *Hepatica acutiloba* DC.
- 94) *Puccinia xanthii* Schw. *Prunus americana* Marsh.
- 95) *Pucciniastrum agrimoniae* *Prunus serotina* Ehrh.  
(Schw.) Tranz. *Thalictrum dasycarpum* Fisch.  
& Ave'-Lall.
- \*96) *Pucciniastrum americanum* *Phlox pilosa* L.
- (Farl.) Arth. *Polemonium reptans* L.
- 97) *Pucciniastrum pustulatum* *Spartina pectinata* Lk.  
(Pers.) Diet.
- 98) *Tranzschelia anemones* (Pers.) *Uromyces acuminatus* Arth.
- Nannf.
- 99) *Tranzschelia pruni-spinosae* *Uromyces acuminatus* Arth.
- (Pers.) Dietl. var. *spinosae* Cumm.

PLANT RUSTS OF THE DRIFTLESS AREA

101) <i>Uromyces ari-triphylli</i> (Schw.) Seeler	<i>Arisaema dracontium</i> (L.) Schott. <i>Arisaema triphyllum</i> (L.) Schott.	*113) <i>Uromyces minutus</i> Diet. ex. Artk.	<i>Carex pubescens</i> Muhl.
102) <i>Uromyces asclepiadis</i> Cke.	<i>Asclepias syriaca</i> L. <i>Asclepias tuberosa</i> L.	114) <i>Uromyces perigynius</i> Halsted	<i>Rudbeckia lacinata</i> L. <i>Carex intumescens</i> Rudge
103) <i>Uromyces coloradensis</i> E.&E.	<i>Vicia americana</i> Muhl.	115) <i>Uromyces plumbarius</i> Pk.	<i>Oenothera biennis</i> L.
*104) <i>Uromyces eugentianae</i> Cummm.	<i>Gentiana quinquefolia</i> var. <i>occidentalis</i> (Gray) Hitchc.	116) <i>Uromyces polygoni-avicularis</i> (Pers.) Karst.	<i>Polygonum aviculare</i> L. <i>Polygonum erectum</i> L.
105) <i>Uromyces euphorbiae</i> Cke. & Pk.	<i>Euphorbia maculata</i> L.	117) <i>Uromyces psoraleae</i> Peck var. <i>argophyllae</i> (Seym.) Arth.	<i>Psoralea argophylla</i> Pursh.
106) <i>Uromyces graminicola</i> Burr.	<i>Panicum virgatum</i> L.	118) <i>Uromyces rudbeckiae</i> Arth. & Holw.	<i>Rudbeckia lacinata</i> L.
107) <i>Uromyces halstedii</i> DeT.	<i>Leersia virginica</i> Willd.	119) <i>Uromyces silphii</i> Arth.	<i>Juncus tenuis</i> Willd. <i>Silphium laciniatum</i> L.
108) <i>Uromyces bedysari-paniculata</i> (Schw.) Farl.	<i>Desmodium dillenii</i> Darl. <i>Desmodium sessilifolium</i> (Torr.) T.&G.	120) <i>Uromyces tritici-repentis</i> Liro var. <i>fallens</i> (Arth.) Cummm.	<i>Trifolium vepens</i> L.
*109) <i>Uromyces holwayi</i> Lagerh.	<i>Lilium superbum</i> L.	121) <i>Uromyces triquetrus</i> Cke.	<i>Hypericum pyramidatum</i> Ait.
*110) <i>Uromyces junci</i> (Desm.) Tul.	<i>Helianthus occidentalis</i> Riddell	122) <i>Uromyces viciae-fabae</i> Schroet.	<i>Lathyrus venosus</i> Muhl. <i>Vicia americana</i> Muhl.
111) <i>Uromyces lespedezae-procumbentis</i> (Schw.) Curt.	<i>Lespedeza capitata</i> Michx. <i>Lespedeza leptostachya</i> Engelm.	123) <i>Uropyxis amorphae</i> (Curt.) Schroet.	<i>Amorpha canescens</i> Pursh <i>Amorpha fruticosa</i> L.
112) <i>Uromyces lineolatus</i> (Desm.) Schroet.	<i>Cicuta maculata</i> L. <i>Scirpus fluviatilis</i> (Torr.) A. Gray		

Table 2. Rusts collected from driftless area of Iowa but not by Holway and/or Kovarik. Species known only from the driftless area are indicated by \* (an asterisk).

Rust	Hosts		
1) <i>Cronartium ribicola</i> J.C. Fischer ex. Rabh.	<i>Pinus strobus</i> L.	5) <i>Phragmidium ivesiae</i> Syd.	<i>Potentilla recta</i> L. <i>Potentilla simplex</i> Michx.
2) <i>Gymnosporangium corniculans</i> Kern	<i>Amelanchier canadensis</i> (L.) Medic.	6) <i>Puccinia cnici</i> H. Mart.	<i>Circium vulgare</i> (Sair.) Airy-Shaw
3) <i>Melampsora abietis-canadensis</i> C.A. Ludwig ex Arth.	<i>Populus sargentii</i> Dode <i>Populus grandidentata</i> Michx. <i>Populus tremuloides</i> Michx.	*7) <i>Pucciniastrum pyrolae</i> Diet. ex Arth.	<i>Pyrola elliptica</i> L.
4) <i>Phragmidium americanum</i> (Pk.) Diet.	<i>Rosa blanda</i> Ait.	*8) <i>Uredinopsis osmundae</i> Magn.	<i>Osmunda claytoniana</i> L.
		9) <i>Uredinopsis longimucronata</i> Faull.	<i>Athyrium felix-femina</i> (L.) Roth

Iowa. The alternate host of this heteroecious rust is also *Abies balsamea*, but it has been reported on this host only in the Pacific Northwest.

All of the rusts that have been recorded from this area except one are presumably native species. *Cronartium ribicola*, a heteroecious rust on *Pinus strobus* and *Ribes* species, currently is well established in north-eastern Iowa. It did not occur in the United States until after 1900, and was not reported in Arthur's 1926 listing of Iowa rusts. Gilman and Archer (1929) cited Spaulding's bulletin on white pine blister rust (Spaulding, 1922) as their source of information on the presence of *C. ribicola* in Iowa. It has not been observed on white pine in other areas of the state, but commonly occurs on *Ribes* species in central and northwestern Iowa.

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