

Table S1. All rust specimens screened for the presence of natural enemies of rust fungi at the Arthur Fungarium. NA: not available data; latitude and longitude are approximations.

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------------|---------------------|------|---------------|--------------------|-----------------------------|-------------|-------------|--------------|
| PUR5754 | <i>Alveolaria</i> | <i>cordiae</i> | 1921 | Cordiaceae | <i>Cordia</i> | <i>corymbosa</i> | Panama | 8.907664 | -80.002 |
| PUR5758 | <i>Alveolaria</i> | <i>cordiae</i> | 1903 | Cordiaceae | <i>Cordia</i> | <i>cylindrostachya</i> | Jamaica | 17.9482 | -76.3492 |
| PURF16284 | <i>Alveolaria</i> | <i>cordiae</i> | 1958 | Cordiaceae | <i>Cordia</i> | <i>sp.</i> | Peru | -13.239075 | -71.905029 |
| PURF8745 | <i>Alveolaria</i> | <i>cordiae</i> | 1920 | Cordiaceae | <i>Cordia</i> | <i>cylindrostachya</i> | Bolivia | -16.5 | -68.15 |
| PURF8746 | <i>Alveolaria</i> | <i>cordiae</i> | 1924 | Cordiaceae | <i>Cordia</i> | <i>tarmensis</i> | Peru | -11.2333 | -75.4833 |
| PURF8747 | <i>Alveolaria</i> | <i>cordiae</i> | 1920 | Cordiaceae | <i>Cordia</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF8748 | <i>Alveolaria</i> | <i>cordiae</i> | 1924 | Cordiaceae | <i>Cordia</i> | <i>sp.</i> | Ecuador | -1.591918 | -78.222168 |
| PURF8751 | <i>Alveolaria</i> | <i>cordiae</i> | 1920 | Cordiaceae | <i>Cordia</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF8752 | <i>Alveolaria</i> | <i>cordiae</i> | 1920 | Cordiaceae | <i>Cordia</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURN3180 | <i>Alveolaria</i> | <i>cordiae</i> | 1975 | Cordiaceae | <i>Cordia</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURN23069 | <i>Angiopsora</i> | <i>paspalicola</i> | 2018 | Poaceae | <i>Paspalum</i> | <i>conjugatum</i> | Puerto Rico | 18.30149405 | -65.78420089 |
| PUR66441 | <i>Aplopsora</i> | <i>nyssae</i> | 1974 | Nyssaceae | <i>Nyssa</i> | <i>sylvatica</i> | USA | 32.48891 | -94.4028 |
| PUR87797 | <i>Aplopsora</i> | <i>qualeae</i> | 1983 | Vochysiaceae | <i>Qualea</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURF19999 | <i>Aplopsora</i> | <i>qualeae</i> | 1976 | Vochysiaceae | <i>Qualea</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PURN6496 | <i>Aplopsora</i> | <i>qualeae</i> | 1922 | Vochysiaceae | <i>Qualea</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PUR51777 | <i>Arthuria</i> | <i>columbiana</i> | 1924 | Euphorbiaceae | <i>Croton</i> | <i>gossypifolius</i> | Costa Rica | 9.858758 | -84.0923 |
| PUR66505 | <i>Arthuria</i> | <i>micra</i> | 1967 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Mexico | 22.70848 | -100.347 |
| PUR88015 | <i>Arthuria</i> | <i>columbiana</i> | 1975 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURF10477 | <i>Arthuria</i> | <i>columbiana</i> | 1939 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Venezuela | 10.500139 | -66.893838 |
| PURF1187 | <i>Arthuria</i> | <i>columbiana</i> | 1913 | Euphorbiaceae | <i>Croton</i> | <i>gossypifolius</i> | Trinidad | 10.5 | -61.25 |
| PURF1217 | <i>Arthuria</i> | <i>columbiana</i> | 1913 | Euphorbiaceae | <i>Croton</i> | <i>gossypifolius</i> | Trinidad | 10.694144 | -61.518829 |
| PURF1218 | <i>Arthuria</i> | <i>columbiana</i> | 1921 | Euphorbiaceae | <i>Croton</i> | <i>gossypifolius</i> | Trinidad | 10.5 | -61.25 |
| PURF1219 | <i>Arthuria</i> | <i>columbiana</i> | 1921 | Euphorbiaceae | <i>Croton</i> | <i>gossypifolius</i> | Trinidad | 10.5 | -61.25 |
| PURF14680 | <i>Arthuria</i> | <i>columbiana</i> | 1952 | Euphorbiaceae | <i>Croton</i> | <i>gossypifolius</i> | Trinidad | 10.5 | -61.25 |
| PURF16291 | <i>Arthuria</i> | <i>clemensiae</i> | 1955 | Euphorbiaceae | <i>Glochidium</i> | <i>sp.</i> | Australia | -21.2333 | 148.9667 |
| PURF9974 | <i>Arthuria</i> | <i>savadae</i> | 1938 | Euphorbiaceae | <i>Glochidium</i> | <i>sp.</i> | New Guinea | -6.43346 | 146.8207 |
| PURN14 | <i>Arthuria</i> | <i>columbiana</i> | 1972 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Venezuela | 10.174444 | -63.498889 |
| PURN3265 | <i>Arthuria</i> | <i>catenulata</i> | 1980 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Brazil | -22.3987 | -48.8644 |
| PURN3436 | <i>Arthuria</i> | <i>glochidii</i> | 1991 | Euphorbiaceae | <i>Glochidium</i> | <i>hohenackeri</i> | India | 17.92435 | 73.65101 |
| PUR87195 | <i>Austropuccinia</i> | <i>psidii</i> | 1983 | Myrtaceae | <i>Psidium</i> | <i>guajava</i> | Brazil | -21.2424 | -44.9979 |
| PURF10659 | <i>Austropuccinia</i> | <i>psidii</i> | 1941 | Myrtaceae | <i>Psidium</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURF6632 | <i>Austropuccinia</i> | <i>psidii</i> | 1918 | Myrtaceae | <i>Eugenia</i> | <i>glomerata</i> | Ecuador | -2.289024 | -78.983293 |
| PURF6640 | <i>Austropuccinia</i> | <i>psidii</i> | 1891 | Myrtaceae | <i>Myrtus</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURF9420 | <i>Austropuccinia</i> | <i>psidii</i> | 1938 | Myrtaceae | <i>Myrtaceae</i> | <i>sp.</i> | Argentina | -34.720562 | -58.471497 |
| PURN15011 | <i>Austropuccinia</i> | <i>psidii</i> | 2016 | Myrtaceae | <i>Syzygium</i> | <i>jambos</i> | Venezuela | 8.595241 | -71.143404 |
| PURN15012 | <i>Austropuccinia</i> | <i>psidii</i> | 2016 | Myrtaceae | <i>Syzygium</i> | <i>jambos</i> | Venezuela | 8.595241 | -71.143404 |
| PURN15013 | <i>Austropuccinia</i> | <i>psidii</i> | 2016 | Myrtaceae | <i>Syzygium</i> | <i>jambos</i> | Venezuela | 8.595241 | -71.143404 |
| PURN15014 | <i>Austropuccinia</i> | <i>psidii</i> | 2016 | Myrtaceae | <i>Syzygium</i> | <i>jambos</i> | Venezuela | 8.595241 | -71.143404 |
| PURN23059 | <i>Austropuccinia</i> | <i>sp.</i> | 2018 | Myrtaceae | <i>non-data</i> | <i>non-data</i> | Puerto Rico | 18.30149405 | -65.78420089 |
| PURN2657 | <i>Austropuccinia</i> | <i>psidii</i> | 1982 | Myrtaceae | <i>Myrtaceae</i> | <i>non-data</i> | Brazil | -21.9667 | -47.8167 |
| PURN7676 | <i>Austropuccinia</i> | <i>psidii</i> | 1998 | Myrtaceae | <i>Eugenia</i> | <i>jambosa</i> | Brazil | -22.512305 | -48.916169 |
| PUR47596 | <i>Baeodromus</i> | <i>californicus</i> | 1929 | Asteraceae | <i>Senecio</i> | <i>flaccidus douglassii</i> | USA | 34.18951 | -118.174 |
| PUR49951 | <i>Baeodromus</i> | <i>eupatorii</i> | 1941 | Asteraceae | <i>Ageratina</i> | <i>mairerianum</i> | Guatemala | 14.74122 | -91.6639 |
| PUR5781 | <i>Baeodromus</i> | <i>holwayi</i> | 1903 | Asteraceae | <i>Senecio</i> | <i>cinerarioides</i> | Mexico | 19.10268 | -99.7679 |
| PUR61230 | <i>Baeodromus</i> | <i>holwayi</i> | 1903 | Asteraceae | <i>Senecio</i> | <i>argutus</i> | Mexico | 19.22436 | -99.2019 |
| PUR62536 | <i>Baeodromus</i> | <i>eupatorii</i> | 1910 | Asteraceae | <i>Ageratina</i> | <i>adenophora</i> | Mexico | 19.71667 | -101.183 |
| PURF11229 | <i>Baeodromus</i> | <i>andina</i> | 1922 | Gentianaceae | <i>Halenia</i> | <i>umbellata</i> | Peru | -11.9379 | -75.3386 |
| PURF8721 | <i>Baeodromus</i> | <i>senecionis</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>betonicaefolius</i> | Ecuador | -0.19457 | -78.49301 |
| PURN4612 | <i>Baeodromus</i> | <i>sp.</i> | 1924 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Peru | -10.046111 | -76.621389 |
| PURN266 | <i>Blastospora</i> | <i>iotana</i> | 1992 | Smilacaceae | <i>Smilax</i> | <i>Nipponica</i> | Japan | 37.7 | 138.8333 |
| PURN270 | <i>Blastospora</i> | <i>smilacis</i> | 1995 | Smilacaceae | <i>Smilax</i> | <i>sieboldii</i> | Japan | 36.798 | 140.3456 |
| PURF19055 | <i>Botryorhiza</i> | <i>hippocrateae</i> | 1979 | Celastraceae | <i>Hippocratea</i> | <i>volubilis</i> | Brazil | -22.512305 | -48.916169 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|----------------------|----------------------|------|---------------|------------------------|------------------------|-------------|-------------|--------------|
| PUR66824 | <i>Catenulopsora</i> | <i>thaungii</i> | 1972 | Bignoniaceae | <i>Heterophragma</i> | <i>sulfureum</i> | Burma | 21.20229 | 96.01417 |
| PUR89024 | <i>Catenulopsora</i> | <i>henneneae</i> | 1984 | Sapotaceae | <i>Pouteria</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PUR9003 | <i>Catenulopsora</i> | <i>praelonga</i> | 1926 | Malvaceae | <i>Hibiscus</i> | <i>syriacus</i> | USA | 30.36742 | -89.092816 |
| PUR90044 | <i>Catenulopsora</i> | <i>praelonga</i> | 1986 | Sapotaceae | <i>Pouteria</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURF10408 | <i>Catenulopsora</i> | <i>daedaloides</i> | 1940 | Lamiaceae | <i>Clerodendrum</i> | <i>buchholzii aff.</i> | Uganda | 0.06444 | 32.44694 |
| PURF10934 | <i>Catenulopsora</i> | <i>praelonga</i> | 1943 | Malvaceae | <i>Pavonia</i> | <i>hastata</i> | Argentina | -34.921454 | -57.954533 |
| PURF10937 | <i>Catenulopsora</i> | <i>praelonga</i> | 1941 | Malvaceae | <i>Malvaviscus</i> | <i>sp.</i> | Argentina | -27.46056 | -58.983886 |
| PURF11391 | <i>Catenulopsora</i> | <i>praelonga</i> | 1941 | Malvaceae | <i>Malvaviscus</i> | <i>sp.</i> | Argentina | -27.46056 | -58.983886 |
| PURN3007 | <i>Catenulopsora</i> | <i>grewiae</i> | 1991 | Malvaceae | <i>Grewia</i> | <i>tenax</i> | India | 28.56444 | 77.33317 |
| PURN3015 | <i>Catenulopsora</i> | <i>flacourtiae</i> | 1991 | Salicaceae | <i>Flacourtia</i> | <i>sp.</i> | India | 17.92435 | 73.65101 |
| PURN3017 | <i>Catenulopsora</i> | <i>praelonga</i> | 1994 | Malvaceae | <i>Pavonia</i> | <i>malvacea</i> | Argentina | -33.008871 | -61.807463 |
| PURN3018 | <i>Catenulopsora</i> | <i>praelonga</i> | 1994 | Malvaceae | <i>Pavonia</i> | <i>sepium</i> | Argentina | -26.781676 | -65.358442 |
| PURN3019 | <i>Catenulopsora</i> | <i>thaiana</i> | 1985 | Bignoniaceae | <i>Stereospermum</i> | <i>cylindricum</i> | Thailand | 15.37939 | 100.0245 |
| PURN3579 | <i>Catenulopsora</i> | <i>henneneae</i> | 1976 | Sapotaceae | <i>Pouteria</i> | <i>sp.</i> | Brazil | -18.9757 | -44.484 |
| PURF18572 | <i>Ceratocoma</i> | <i>jacksoniae</i> | 1974 | Fabaceae | <i>Dillwynia</i> | <i>retorta</i> | Australia | -33.624 | 151.2474 |
| PURF16287 | <i>Ceropsora</i> | <i>piceae</i> | 1956 | Piceaceae | <i>Picea</i> | <i>smithiana</i> | India | 31.257157 | 77.45959 |
| PUR42934 | <i>Cerotelium</i> | <i>sabiceae</i> | 1916 | Rubiaceae | <i>Sabicea</i> | <i>villesa</i> | Puerto Rico | 18.17382 | -66.9747 |
| PUR5542 | <i>Cerotelium</i> | <i>ficicola</i> | 1919 | Moraceae | <i>Machura</i> | <i>tinctoria</i> | Cuba | 23.09025 | -82.3787 |
| PUR5645 | <i>Cerotelium</i> | <i>canavaliae</i> | 1921 | Fabaceae | <i>Canavalia</i> | <i>gladiata</i> | Puerto Rico | 18.37721 | -66.0428 |
| PUR56674 | <i>Cerotelium</i> | <i>ficicola</i> | 1959 | Moraceae | <i>Ficus</i> | <i>insipida</i> | USA | 28.02224 | -81.7329 |
| PUR66679 | <i>Cerotelium</i> | <i>muxae</i> | 1979 | Lecythidaceae | <i>Eschweilera</i> | <i>sp.</i> | Brazil | -6.7482 | -52.6348 |
| PUR66749 | <i>Cerotelium</i> | <i>allaeanthi</i> | 1925 | Moraceae | <i>Broussonetia</i> | <i>luzonica</i> | Philippines | 16.2892 | 119.95 |
| PURF1094 | <i>Cerotelium</i> | <i>indica</i> | 1925 | Moraceae | <i>Ficus</i> | <i>septica</i> | Philippines | 16.41716 | 120.591 |
| PURF1105 | <i>Cerotelium</i> | <i>ficicola</i> | 1890 | Moraceae | <i>Ficus</i> | <i>sp.</i> | Ecuador | -1.8088 | -78.4584 |
| PURF16183 | <i>Cerotelium</i> | <i>combreti</i> | 1956 | Combretaceae | <i>Combretum</i> | <i>sp.</i> | Ghana | 6.69362 | -1.62179 |
| PURF16253 | <i>Cerotelium</i> | <i>clerodendri</i> | 1951 | Lamiaceae | <i>Clerodendron</i> | <i>buchholzii</i> | Ghana | 5.333333 | -0.75 |
| PURF18316 | <i>Cerotelium</i> | <i>fici</i> | 1912 | Moraceae | <i>Ficus</i> | <i>maxima</i> | Trinidad | 10.5 | -61.25 |
| PURF9027 | <i>Cerotelium</i> | <i>sabiceae</i> | 1913 | Rubiaceae | <i>Sabicea</i> | <i>aspera</i> | Trinidad | 10.687634 | -61.395569 |
| PURF9028 | <i>Cerotelium</i> | <i>sabiceae</i> | 1913 | Rubiaceae | <i>Sabicea</i> | <i>aspera</i> | Trinidad | 10.687634 | -61.395569 |
| PURN10810 | <i>Cerotelium</i> | <i>fici</i> | 1951 | Moraceae | <i>Morus</i> | <i>indica</i> | India | 11.00555 | 76.96612 |
| PURN11409 | <i>Cerotelium</i> | <i>fici</i> | 1966 | Moraceae | <i>Ficus</i> | <i>sp.</i> | USA | 26.13969 | -80.9696 |
| PURN15504 | <i>Cerotelium</i> | <i>sabiceae</i> | 2003 | Rubiaceae | <i>Sabicea</i> | <i>sp.</i> | Guyana | - | - |
| PURN15517 | <i>Cerotelium</i> | <i>sabiceae</i> | 2003 | Rubiaceae | <i>Sabicea</i> | <i>sp.</i> | Guyana | - | - |
| PURN22416 | <i>Cerotelium</i> | <i>sabiceae</i> | 2013 | Rubiaceae | <i>Sabicea</i> | <i>cf. villosa</i> | Guyana | 4.720860779 | -59.21463777 |
| PURN3445 | <i>Cerotelium</i> | <i>trichosanthes</i> | 1991 | Cucurbitaceae | <i>Trichosanthes</i> | <i>tricuspidata</i> | India | 13.37442 | 75.55152 |
| PURN3574 | <i>Cerotelium</i> | <i>figueiredeae</i> | 1988 | Rubiaceae | <i>Randia</i> | <i>sp.</i> | Brazil | -22.5123 | -48.9162 |
| PURN3576 | <i>Cerotelium</i> | <i>coccolobae</i> | 1983 | Polygonaceae | <i>Coccoloba</i> | <i>sp.</i> | Brazil | -19.1187 | -54.5963 |
| PURN3583 | <i>Cerotelium</i> | <i>giacomatii</i> | 1988 | Caryocaraceae | <i>Caryocar</i> | <i>brasiliense</i> | Brazil | -21.9667 | -47.8167 |
| PURN3588 | <i>Cerotelium</i> | <i>ficicola</i> | 1988 | Moraceae | <i>Ficus</i> | <i>sp.</i> | Brazil | -14.7833 | -59.6066 |
| PUR88192 | <i>Cerradoa</i> | <i>palmaea</i> | 1978 | Arecaceae | <i>Arecaceae</i> | <i>sp.</i> | Colombia | 4.383333 | -72.066667 |
| PURF19230 | <i>Cerradoa</i> | <i>palmaea</i> | 1979 | Arecaceae | <i>Attalea</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PUR19092 | <i>Chaconia</i> | <i>brasiliensis</i> | 1976 | Fabaceae | <i>Stryphnodendron</i> | <i>adstringens</i> | Brazil | -15.8333 | -48.0255 |
| PUR87679 | <i>Chaconia</i> | <i>ingae</i> | 1983 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -21.922924 | -46.395979 |
| PUR89097 | <i>Chaconia</i> | <i>ingae</i> | 1984 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -19.466721 | -44.172511 |
| PUR90080 | <i>Chaconia</i> | <i>maprouneae</i> | 1986 | Euphorbiaceae | <i>Maprounea</i> | <i>brasiliensis</i> | Brazil | -19.3013 | -46.0665 |
| PUR90092 | <i>Chaconia</i> | <i>brasiliensis</i> | 1986 | Fabaceae | <i>Stryphnodendron</i> | <i>adstringens</i> | Brazil | -18.9757 | -44.484 |
| PURF10654 | <i>Chaconia</i> | <i>ingae</i> | 1941 | Fabaceae | <i>Inga</i> | <i>edulis</i> | Colombia | 6.25184 | -75.563591 |
| PURF17169 | <i>Chaconia</i> | <i>ingae</i> | 1963 | Fabaceae | <i>Inga</i> | <i>edulis</i> | Brazil | -4.016807 | -53.415039 |
| PURF18266 | <i>Chaconia</i> | <i>ingae</i> | 1971 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURF18645 | <i>Chaconia</i> | <i>ingae</i> | 1975 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Colombia | 4.495866 | -74.134521 |
| PURF18646 | <i>Chaconia</i> | <i>ingae</i> | 1975 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Colombia | 6.5 | -73.066667 |
| PURF18647 | <i>Chaconia</i> | <i>ingae</i> | 1975 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Colombia | 4.876608 | -74.43783 |
| PURF18648 | <i>Chaconia</i> | <i>ingae</i> | 1975 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Colombia | 4.567047 | -73.996909 |
| PURF18694 | <i>Chaconia</i> | <i>alutacea</i> | 1911 | Fabaceae | <i>Pithecellobium</i> | <i>glomeratum</i> | Peru | -4.583333 | -81.233333 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|---------------------|------|---------------|------------------------|----------------------|-----------|---------------------|--------------------|
| PURF19097 | <i>Chaconia</i> | <i>brasiliensis</i> | 1976 | Fabaceae | <i>Stryphnodendron</i> | <i>adstringens</i> | Brazil | -18.9757 | -44.484 |
| PURF19099 | <i>Chaconia</i> | <i>brasiliensis</i> | 1977 | Fabaceae | <i>Stryphnodendron</i> | <i>adstringens</i> | Brazil | -21.9667 | -47.8167 |
| PURF2257 | <i>Chaconia</i> | <i>ingae</i> | 1922 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURF2260 | <i>Chaconia</i> | <i>ingae</i> | 1918 | Fabaceae | <i>Inga</i> | <i>pachycarpa</i> | Ecuador | -1.252369 | -78.622781 |
| PURF2261 | <i>Chaconia</i> | <i>ingae</i> | 1892 | Fabaceae | <i>Inga</i> | <i>pachycarpa</i> | Ecuador | -0.114445 | -78.496173 |
| PURF2262 | <i>Chaconia</i> | <i>ingae</i> | 1920 | Fabaceae | <i>Inga</i> | <i>insignis</i> | Ecuador | -0.194568 | -78.493005 |
| PURN15515 | <i>Chaconia</i> | <i>ingae</i> | 2003 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Guyana | - | - |
| PURN15522 | <i>Chaconia</i> | <i>ingae</i> | 2003 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Guyana | - | - |
| PURN16391 | <i>Chaconia</i> | <i>ingae</i> | 2016 | Fabaceae | <i>Inga</i> | <i>edulis</i> | Peru | -12.239679679917382 | -76.94739070408865 |
| PURN3097 | <i>Chaconia</i> | <i>ingae</i> | 1987 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | 0.039242 | -51.10676 |
| PURN3098 | <i>Chaconia</i> | <i>ingae</i> | 1987 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | 1.62153 | -52.001953 |
| PURN3099 | <i>Chaconia</i> | <i>ingae</i> | 1982 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -3.11333 | -60.02528 |
| PURN3100 | <i>Chaconia</i> | <i>ingae</i> | 1987 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | 0.214677 | -51.066667 |
| PURN3101 | <i>Chaconia</i> | <i>ingae</i> | 1990 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | 0.214677 | -51.066667 |
| PURN3113 | <i>Chaconia</i> | <i>ingae</i> | 1993 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -22.5123 | -48.9162 |
| PURN3115 | <i>Chaconia</i> | <i>ingae</i> | 1994 | Fabaceae | <i>Inga</i> | <i>edulis</i> | Brazil | 0.214677 | -51.066667 |
| PURN3202 | <i>Chaconia</i> | <i>ingae</i> | 1983 | Fabaceae | <i>Inga</i> | <i>saltensis</i> | Bolivia | -21.526845 | -63.981612 |
| PURN3938 | <i>Chaconia</i> | <i>butleri</i> | 1948 | Oleaceae | <i>Jasminum</i> | <i>malabaricum</i> | India | 12.29617 | 75.87548 |
| PURN4019 | <i>Chaconia</i> | <i>hennenii</i> | 1920 | Moraceae | <i>Machura</i> | <i>tinctoria</i> | Bolivia | -16.139956 | -67.724731 |
| PURN4199 | <i>Chaconia</i> | <i>brasiliensis</i> | 1978 | Fabaceae | <i>Stryphnodendron</i> | <i>adstringens</i> | Brazil | -15.833275 | -48.025477 |
| PURN4200 | <i>Chaconia</i> | <i>brasiliensis</i> | 1994 | Fabaceae | <i>Stryphnodendron</i> | <i>pulcherrimum</i> | Brazil | -4.01681 | -53.415 |
| PURN4207 | <i>Chaconia</i> | <i>brasiliensis</i> | 1988 | Fabaceae | <i>Stryphnodendron</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PURN4220 | <i>Chaconia</i> | <i>maprouneae</i> | 1988 | Euphorbiaceae | <i>Maprounea</i> | <i>sp.</i> | Brazil | -18.9757 | -44.484 |
| PURN4225 | <i>Chaconia</i> | <i>hennenii</i> | 1988 | Moraceae | <i>Machura</i> | <i>tinctoria</i> | Brazil | -18.975688 | -44.484 |
| PURN4606 | <i>Chaconia</i> | <i>ingae</i> | 1987 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | 1.62153 | -52.001953 |
| PURN619 | <i>Chaconia</i> | <i>brasiliensis</i> | 1999 | Fabaceae | <i>Stryphnodendron</i> | <i>coriaceum</i> | Brazil | -22.8975 | -43.1847 |
| PURN6901 | <i>Chaconia</i> | <i>ingae</i> | 1999 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -23.56 | -48.27 |
| PURN6907 | <i>Chaconia</i> | <i>ingae</i> | 1993 | Fabaceae | <i>Stryphnodendron</i> | <i>sp.</i> | Brazil | -22.5123 | -48.9162 |
| PURN9602 | <i>Chaconia</i> | <i>ingae</i> | 1998 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURF18212 | <i>Chardoniella</i> | <i>gynoxidis</i> | 1971 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Colombia | 3.5 | -73 |
| PURF18309 | <i>Chardoniella</i> | <i>gynoxidis</i> | 1971 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURF8729 | <i>Chardoniella</i> | <i>gynoxidis</i> | 1910 | Asteraceae | <i>Ageratina</i> | <i>asclepiadea</i> | Colombia | 4.876608 | -74.437683 |
| PURF8741 | <i>Chardoniella</i> | <i>gynoxidis</i> | 1913 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Venezuela | 10.488011 | -66.879193 |
| PURF8743 | <i>Chardoniella</i> | <i>andina</i> | 1920 | Asteraceae | <i>Ageratina</i> | <i>pseudochilca</i> | Ecuador | -0.19457 | 78.49301 |
| PURN6625 | <i>Chardoniella</i> | <i>andina</i> | 1975 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Ecuador | -0.16761 | -78.4507 |
| PURN6626 | <i>Chardoniella</i> | <i>gynoxidis</i> | 1983 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Colombia | 4.495866 | -74.134521 |
| PURF11169 | <i>Chrysocelis</i> | <i>lupini</i> | 1922 | Fabaceae | <i>Lupinus</i> | <i>mutabilis</i> | Peru | -10.417881 | -76.446272 |
| PURF11170 | <i>Chrysocelis</i> | <i>lupini</i> | 1922 | Fabaceae | <i>Lupinus</i> | <i>humifusus</i> | Peru | -9.984969 | -76.433282 |
| PURF11171 | <i>Chrysocelis</i> | <i>lupini</i> | 1923 | Fabaceae | <i>Lupinus</i> | <i>bogotensis</i> | Peru | -10.441941 | -76.189861 |
| PURF16867 | <i>Chrysocelis</i> | <i>lupini</i> | 1962 | Fabaceae | <i>Lupinus</i> | <i>pubescens</i> | Ecuador | -0.19457 | -78.49301 |
| PURF18224 | <i>Chrysocelis</i> | <i>lupini</i> | 1971 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Venezuela | 8.639965 | -71.098169 |
| PURF18279 | <i>Chrysocelis</i> | <i>lupini</i> | 1914 | Fabaceae | <i>Lupinus</i> | <i>paniculatus</i> | Peru | -7.255558 | -76.475553 |
| PURF18280 | <i>Chrysocelis</i> | <i>lupini</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>paniculatus</i> | Ecuador | -1.515042 | -78.244141 |
| PURF18281 | <i>Chrysocelis</i> | <i>lupini</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>paniculatus</i> | Ecuador | -0.19457 | -78.49301 |
| PURF18282 | <i>Chrysocelis</i> | <i>lupini</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>paniculatus</i> | Ecuador | -0.19457 | -78.49301 |
| PURF18283 | <i>Chrysocelis</i> | <i>lupini</i> | 1891 | Fabaceae | <i>Lupinus</i> | <i>pubescens</i> | Ecuador | -0.19457 | -78.49301 |
| PURF18284 | <i>Chrysocelis</i> | <i>lupini</i> | 1918 | Fabaceae | <i>Lupinus</i> | <i>ramosissimus</i> | Ecuador | -1.35 | -78.4 |
| PURF18285 | <i>Chrysocelis</i> | <i>lupini</i> | 1918 | Fabaceae | <i>Lupinus</i> | <i>semperflorens</i> | Ecuador | -2.289024 | -78.983293 |
| PURF18286 | <i>Chrysocelis</i> | <i>lupini</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.6228 |
| PURF18287 | <i>Chrysocelis</i> | <i>lupini</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Ecuador | -0.684403 | -78.436631 |
| PURF18288 | <i>Chrysocelis</i> | <i>lupini</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF18651 | <i>Chrysocelis</i> | <i>lupini</i> | 1971 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Venezuela | 8.846684 | -70.716275 |
| PURF18652 | <i>Chrysocelis</i> | <i>lupini</i> | 1975 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURF18653 | <i>Chrysocelis</i> | <i>lupini</i> | 1975 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|-----------------------|----------|---------------|-----------------------|-----------------------|-------------|---------------|------------|
| PURF18654 | <i>Chrysocelis</i> | <i>lupini</i> | 1975 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURF18655 | <i>Chrysocelis</i> | <i>muehlenbeckiae</i> | 1974 | Polygonaceae | <i>Muehlenbeckia</i> | <i>sp.</i> | Colombia | 4.876608 | -74.437683 |
| PURN11562 | <i>Chrysocelis</i> | <i>lupini</i> | 2014 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Peru | -7.133333 | -78.483333 |
| PURN16383 | <i>Chrysocelis</i> | <i>lupini</i> | 2016 | Fabaceae | <i>Fabaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN19 | <i>Chrysocelis</i> | <i>lupini</i> | 1975 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Ecuador | -0.160984 | -78.647124 |
| PURN4452 | <i>Chrysocelis</i> | <i>muehlenbeckiae</i> | 1975 | Polygonaceae | <i>Muehlenbeckia</i> | <i>sp.</i> | Colombia | 4.206944 | -75.958056 |
| PURN4453 | <i>Chrysocelis</i> | <i>muehlenbeckiae</i> | 1985 | Polygonaceae | <i>Muehlenbeckia</i> | <i>sp.</i> | Peru | -7.644778 | -74.289062 |
| PUR2014 | <i>Chrysocyclus</i> | <i>cestri</i> | 1921 | Solanaceae | <i>Cestrum</i> | <i>aurantiacum</i> | Panama | 8.994484 | -79.8921 |
| PURF10670 | <i>Chrysocyclus</i> | <i>mikaniae</i> | 1939 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Venezuela | 10.492004 | -67.609711 |
| PURN10075 | <i>Chrysocyclus</i> | <i>mikaniae</i> | 1975 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Ecuador | -4.066852 | -78.954881 |
| PURN10076 | <i>Chrysocyclus</i> | <i>mikaniae</i> | 1975 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Ecuador | -2.965497 | -78.431972 |
| PURN10077 | <i>Chrysocyclus</i> | <i>mikaniae</i> | 1975 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Ecuador | -1.046947 | -79.821388 |
| PURN10078 | <i>Chrysocyclus</i> | <i>mikaniae</i> | 1975 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PURN10079 | <i>Chrysocyclus</i> | <i>mikaniae</i> | 1975 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Ecuador | -0.46714 | -78.7475 |
| PURN16399 | <i>Chrysocyclus</i> | <i>mikaniae</i> | 2016 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Peru | -5.6666666667 | -77.75 |
| PUR43491 | <i>Chrysomyxa</i> | <i>arctostaphyli</i> | 1924 | Piceaceae | <i>Picea</i> | <i>pungens</i> | USA | 39.63332 | -105.317 |
| PUR44344 | <i>Chrysomyxa</i> | <i>ilicina</i> | 1896 | Aquifoliaceae | <i>Ilex</i> | <i>opaca</i> | USA | 38.06115 | -81.0815 |
| PUR4798 | <i>Chrysomyxa</i> | <i>cassandrae</i> | non-data | Piceaceae | <i>Picea</i> | <i>mariana</i> | USA | 43.0912 | -70.6956 |
| PUR4852 | <i>Chrysomyxa</i> | <i>nagodhii</i> | 1998 | Piceaceae | <i>Picea</i> | <i>rubra</i> | Canada | 45.68316 | -62.7103 |
| PUR4877 | <i>Chrysomyxa</i> | <i>reticulata</i> | 1916 | Ericaceae | <i>Ledum</i> | <i>latifolium</i> | USA | 45.80619 | -89.1628 |
| PUR4912 | <i>Chrysomyxa</i> | <i>arctostaphyli</i> | 1998 | Ericaceae | <i>Arctostaphylos</i> | <i>uva-ursi</i> | USA | 44.48 | -88.2218 |
| PUR49164 | <i>Chrysomyxa</i> | <i>ledicola</i> | 1939 | Piceaceae | <i>Picea</i> | <i>glauca</i> | Canada | 49.61667 | -105.983 |
| PUR50507 | <i>Chrysomyxa</i> | <i>pirolata</i> | 1940 | Ericaceae | <i>Pyrola</i> | <i>secunda</i> | Guatemala | 14.74122 | -91.6639 |
| PUR50574 | <i>Chrysomyxa</i> | <i>cassandrae</i> | 1941 | Piceaceae | <i>Picea</i> | <i>glauca</i> | USA | 62.32389 | -150.109 |
| PUR52013 | <i>Chrysomyxa</i> | <i>ledicola</i> | 1949 | Ericaceae | <i>Rhododendron</i> | <i>groenlandicum</i> | Canada | 54.91451 | -71.6858 |
| PUR54247 | <i>Chrysomyxa</i> | <i>piperiana</i> | 1924 | Ericaceae | <i>Rhododendron</i> | <i>macrophyllum</i> | USA | 40.87993 | -124.058 |
| PUR54524 | <i>Chrysomyxa</i> | <i>chiogensis</i> | 1951 | Ericaceae | <i>Gualtheria</i> | <i>hispidali</i> | Canada | 51.37092 | -55.5908 |
| PUR54528 | <i>Chrysomyxa</i> | <i>vacinii</i> | 1952 | Ericaceae | <i>Vaccinium</i> | <i>parvifolium</i> | Canada | 54.01667 | -132.15 |
| PUR54529 | <i>Chrysomyxa</i> | <i>rhododendri</i> | 1955 | Ericaceae | <i>Rhododendron</i> | <i>sp.</i> | USA | 46.35232 | -124.054 |
| PUR54534 | <i>Chrysomyxa</i> | <i>rhododendri</i> | 1955 | Ericaceae | <i>Rhododendron</i> | <i>sp.</i> | USA | 46.35232 | -124.054 |
| PUR54977 | <i>Chrysomyxa</i> | <i>arctostaphyli</i> | 1955 | Piceaceae | <i>Picea</i> | <i>engelmanni</i> | USA | 40.81411 | -110.799 |
| PUR57113 | <i>Chrysomyxa</i> | <i>piperiana</i> | 1950 | Ericaceae | <i>Rhododendron</i> | <i>macrophyllum</i> | Canada | 49.74328 | -124.275 |
| PUR57118 | <i>Chrysomyxa</i> | <i>woronini</i> | 1959 | Ericaceae | <i>Ledum</i> | <i>palustre</i> | Canada | 64.05223 | -139.45 |
| PUR61362 | <i>Chrysomyxa</i> | <i>neoglandulosi</i> | 1965 | Piceaceae | <i>Picea</i> | <i>engelmannii</i> | USA | 46.71174 | -115.929 |
| PUR66507 | <i>Chrysomyxa</i> | <i>ledi</i> | 1979 | Piceaceae | <i>Picea</i> | <i>glauca</i> | Canada | 49.74328 | -124.275 |
| PURF11729 | <i>Chrysomyxa</i> | <i>rhododendri</i> | 1948 | Ericaceae | <i>Rhododendron</i> | <i>keleticum</i> | England | 51.28333 | 0.216667 |
| PURF12690 | <i>Chrysomyxa</i> | <i>menziesiae</i> | 1931 | Loasaceae | <i>Menziesia</i> | <i>pentandra</i> | Japan | 35.78255 | 137.7988 |
| PURF16188 | <i>Chrysomyxa</i> | <i>succinea</i> | 1958 | Ericaceae | <i>Rhododendron</i> | <i>aureum</i> | Japan | 43.38749 | 142.5605 |
| PURF513 | <i>Chrysomyxa</i> | <i>rhododendri</i> | 1997 | Piceaceae | <i>Picea</i> | <i>excelsa</i> | Italy | 42.08258 | 13.86523 |
| PURF539 | <i>Chrysomyxa</i> | <i>dietelii</i> | 1925 | Ericaceae | <i>Rhododendron</i> | <i>subsessile</i> | Philippines | 16.33513 | 120.5609 |
| PURF542 | <i>Chrysomyxa</i> | <i>expansa</i> | 1928 | Ericaceae | <i>Rhododendron</i> | <i>fauriae roseum</i> | Japan | 43.69698 | 142.9205 |
| PURN10808 | <i>Chrysomyxa</i> | <i>vitis</i> | 1909 | Vitaceae | <i>Vitis</i> | <i>latifolia</i> | India | 26.70266 | 92.13483 |
| PURN10809 | <i>Chrysomyxa</i> | <i>vitis</i> | 1932 | Vitaceae | <i>Vitis</i> | <i>sp.</i> | India | 20.46269 | 85.86823 |
| PURN151 | <i>Chrysomyxa</i> | <i>empetri</i> | 1917 | Ericaceae | <i>Empetrum</i> | <i>nigrum</i> | Finland | 60.24306 | 25.28746 |
| PURN152 | <i>Chrysomyxa</i> | <i>abietis</i> | 1955 | Piceaceae | <i>Picea</i> | <i>abies</i> | Finland | 60.68333 | 25.4 |
| PURN3432 | <i>Chrysomyxa</i> | <i>arctostaphyli</i> | 1962 | Ericaceae | <i>Arctostaphylos</i> | <i>uva-ursi</i> | USA | 36.37 | -105.482 |
| PURN3434 | <i>Chrysomyxa</i> | <i>pirolata</i> | 1951 | Ericaceae | <i>Pyrola</i> | <i>asarifolia</i> | USA | 41.31137 | -105.591 |
| PURN6615 | <i>Chrysomyxa</i> | <i>roanensis</i> | 1959 | Ericaceae | <i>Rhododendron</i> | <i>carolinianum</i> | USA | 35.85305 | -83.5917 |
| PURF11159 | <i>Chrysopsora</i> | <i>gynoxidis</i> | 1922 | Asteraceae | <i>Gynoxys</i> | <i>sp.</i> | Peru | -9.984969 | -76.433282 |
| PURF18260 | <i>Chrysopsora</i> | <i>gynoxidis</i> | 1964 | Asteraceae | <i>Gynoxys</i> | <i>tomentosissima</i> | Peru | -6.230554 | -77.870825 |
| PURF2282 | <i>Chrysopsora</i> | <i>gynoxidis</i> | 1920 | Asteraceae | <i>Gynoxys</i> | <i>sp.</i> | Ecuador | -3.553987 | -80.066816 |
| PURF2283 | <i>Chrysopsora</i> | <i>gynoxidis</i> | 1920 | Asteraceae | <i>Gynoxys</i> | <i>hallii</i> | Ecuador | -0.19457 | -78.49301 |
| PURF2284 | <i>Chrysopsora</i> | <i>gynoxidis</i> | 1920 | Asteraceae | <i>Gynoxys</i> | <i>buxifolia</i> | Ecuador | -0.19457 | -78.49301 |
| PURF2285 | <i>Chrysopsora</i> | <i>gynoxidis</i> | 1920 | Asteraceae | <i>Gynoxys</i> | <i>hypomalaca</i> | Bolivia | -15.76667 | -68.63333 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|----------------------|---------------------|------|-----------------|-------------------------|----------------------|--------------------------|-------------|--------------|
| PURF2286 | <i>Chrysopsora</i> | <i>gynoxidis</i> | 1890 | Asteraceae | <i>Gynoxys</i> | <i>laurifolia</i> | Ecuador | -0.19457 | -78.49301 |
| PURN3885 | <i>Chrysopsora</i> | <i>gynoxidis</i> | 1975 | Asteraceae | <i>Gynoxys</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PUR52259 | <i>Cionothrix</i> | <i>praelonga</i> | 1951 | Asteraceae | <i>Chromolaena</i> | <i>odorata</i> | Trinidad | 10.5 | -61.25 |
| PUR5683 | <i>Cionothrix</i> | <i>basicrassa</i> | 1917 | Asteraceae | <i>Critonia</i> | <i>morifolia</i> | Guatemala | 14.62111 | -90.5269 |
| PUR5687 | <i>Cionothrix</i> | <i>praelonga</i> | 1915 | Asteraceae | <i>Chromolaena</i> | <i>odorata</i> | Costa Rica | 9.933333 | -84.0833 |
| PURF15950 | <i>Cionothrix</i> | <i>praelonga</i> | 1953 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Colombia | 5.635 | -69.972778 |
| PURF8725 | <i>Cionothrix</i> | <i>praelonga</i> | 1910 | Asteraceae | <i>Chromolaena</i> | <i>odorata</i> | Colombia | 6.25184 | -75.563591 |
| PURF8726 | <i>Cionothrix</i> | <i>praelonga</i> | 1919 | Asteraceae | <i>Eupatorium</i> | <i>criticanum</i> | Paraguay | -25.27742 | -57.57611 |
| PURF8727 | <i>Cionothrix</i> | <i>praelonga</i> | 1910 | Asteraceae | <i>Austroeupatorium</i> | <i>inulifolium</i> | Colombia | 4.876608 | -78.437683 |
| PURF8728 | <i>Cionothrix</i> | <i>praelonga</i> | 1913 | Asteraceae | <i>Chromolaena</i> | <i>odorata</i> | Trinidad | 10.687634 | -61.395569 |
| PURF8730 | <i>Cionothrix</i> | <i>praelonga</i> | 1920 | Asteraceae | <i>Chromolaena</i> | <i>subscandens</i> | Bolivia | -16.5 | -68.15 |
| PURF8731 | <i>Cionothrix</i> | <i>praelonga</i> | 1910 | Asteraceae | <i>Chromolaena</i> | <i>tacotana</i> | Colombia | 6.25184 | -75.563591 |
| PURF8732 | <i>Cionothrix</i> | <i>praelonga</i> | 1910 | Asteraceae | <i>Critonia</i> | <i>morifolia</i> | Colombia | 2.5 | -76.583333 |
| PURF8734 | <i>Cionothrix</i> | <i>praelonga</i> | 1913 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8736 | <i>Cionothrix</i> | <i>praelonga</i> | 1924 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Ecuador | -1.708836 | -79.043114 |
| PURF8737 | <i>Cionothrix</i> | <i>praelonga</i> | 1924 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Ecuador | -1.708836 | -79.043114 |
| PURF8738 | <i>Cionothrix</i> | <i>praelonga</i> | 1924 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Ecuador | -0.559399 | -77.683838 |
| PURF8739 | <i>Cionothrix</i> | <i>praelonga</i> | 1891 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Ecuador | -0.559399 | -77.683838 |
| PURF11744 | <i>Coleopuccinia</i> | <i>simplex</i> | 1939 | Rosaceae | <i>Eriobotrya</i> | <i>japonica</i> | China | 32.61667 | 114.9833 |
| PURF12866 | <i>Coleopuccinia</i> | <i>idei</i> | 1933 | Rosaceae | <i>Rhaphiolepis</i> | <i>umbellata</i> | Japan | 31.93979 | 130.4765 |
| BOG02 | <i>Coleosporium</i> | <i>solidaginis</i> | 2018 | Asteraceae | <i>Solidago</i> | <i>sp.</i> | USA | 40.454389 | -86.93888 |
| MCA7983-1 | <i>Coleosporium</i> | <i>sp.</i> | 2018 | Asteraceae | <i>Helianthus</i> | <i>sp.</i> | USA | 38.78544788 | -77.17470916 |
| PUR014211 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PUR088235 | <i>Coleosporium</i> | <i>vernoniae</i> | 1977 | Asteraceae | <i>Vernonia</i> | <i>gigantea</i> | USA | 29.68243 | -82.3603 |
| PUR106 | <i>Coleosporium</i> | <i>minntum</i> | 1918 | Oleaceae | <i>Forestiera</i> | <i>ligustrina</i> | USA | 27.95286 | -82.4505 |
| PUR10766 | <i>Coleosporium</i> | <i>convolvuli</i> | 1988 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | USA | 37.98906 | -90.4998 |
| PUR10802 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1940 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Uganda | 0.83333 | 31.91667 |
| PUR10918 | <i>Coleosporium</i> | <i>plumierae</i> | 1994 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | USA | 20.89698 | -156.204 |
| PUR1100 | <i>Coleosporium</i> | <i>asterum</i> | 1899 | Asteraceae | <i>Symphyotrichum</i> | <i>navi-belgii</i> | USA | 44.82726 | -93.231 |
| PUR11067 | <i>Coleosporium</i> | <i>plumierae</i> | 2012 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Northern Mariana Islands | 15.20135 | 145.7214 |
| PUR11164 | <i>Coleosporium</i> | <i>apocynaceum</i> | 1966 | Apocynaceae | <i>Allamanda</i> | <i>blanchetii</i> | USA | 27.49559 | -81.4409 |
| PUR113 | <i>Coleosporium</i> | <i>apocynaceum</i> | 1918 | Pinaceae | <i>Pinus</i> | <i>taeda</i> | USA | 29.18372 | -82.0543 |
| PUR1238 | <i>Coleosporium</i> | <i>solidaginis</i> | 1914 | Asteraceae | <i>Symphyotrichum</i> | <i>sp.</i> | USA | 44.60889 | -87.4326 |
| PUR1368 | <i>Coleosporium</i> | <i>asterum</i> | 1916 | Asteraceae | <i>Solidago</i> | <i>caesia</i> | USA | 41.99843 | -73.924 |
| PUR143 | <i>Coleosporium</i> | <i>plumierae</i> | 1923 | Apocynaceae | <i>Plumiera</i> | <i>sp.</i> | Puerto Rico | 18.43027 | -66.4727 |
| PUR1442 | <i>Coleosporium</i> | <i>solidaginis</i> | 1923 | Asteraceae | <i>Solidago</i> | <i>odora</i> | USA | 25.77427 | -80.19366 |
| PUR15 | <i>Coleosporium</i> | <i>jonesii</i> | 1916 | Grossulariaceae | <i>Ribes</i> | <i>inermis</i> | USA | 36.55809 | -105.115 |
| PUR1656 | <i>Coleosporium</i> | <i>solidaginis</i> | 1910 | Asteraceae | <i>Solidago</i> | <i>gigantea</i> | USA | 40.0889 | -98.51951 |
| PUR1677 | <i>Coleosporium</i> | <i>solidaginis</i> | 1915 | Asteraceae | <i>Solidago</i> | <i>squarrosa</i> | USA | 41.3723 | -75.7016 |
| PUR1678 | <i>Coleosporium</i> | <i>solidaginis</i> | 1914 | Asteraceae | <i>Solidago</i> | <i>squarrosa</i> | USA | 39.51373 | -74.9246 |
| PUR1712 | <i>Coleosporium</i> | <i>asterum</i> | 1896 | Asteraceae | <i>Solidago</i> | <i>non-data</i> | USA | 42.0243 | -93.64712 |
| PUR1760 | <i>Coleosporium</i> | <i>asterum</i> | 1913 | Asteraceae | <i>Solidago</i> | <i>sp.</i> | Canada | 51 | -89.977 |
| PUR1776 | <i>Coleosporium</i> | <i>delicatulum</i> | 1982 | Asteraceae | <i>Euthamia</i> | <i>graminifolia</i> | USA | 38.5508 | -79.8167 |
| PUR18 | <i>Coleosporium</i> | <i>jonesii</i> | 1919 | Grossulariaceae | <i>Ribes</i> | <i>inermis</i> | USA | 37.75965 | -119.534 |
| PUR1892 | <i>Coleosporium</i> | <i>inconspicuum</i> | 1920 | Pinaceae | <i>Pinus</i> | <i>virginiana</i> | USA | 20.31955 | -103.896 |
| PUR1917 | <i>Coleosporium</i> | <i>anceps</i> | 1912 | Asteraceae | <i>Verbesina</i> | <i>turbacensis</i> | Costa Rica | 14.74122 | -91.6639 |
| PUR1924 | <i>Coleosporium</i> | <i>verbesinae</i> | 1914 | Asteraceae | <i>Verbesina</i> | <i>microptera</i> | USA | 9.904645 | -83.8028 |
| PUR19631 | <i>Coleosporium</i> | <i>campanulae</i> | 1970 | Campanulaceae | <i>Campanula</i> | <i>sp.</i> | India | 31.91667 | 77.20606 |
| PUR198 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1916 | Convolvulaceae | <i>Xenostegia</i> | <i>tridentata</i> | Puerto Rico | 18.42538 | -67.1537 |
| PUR1986 | <i>Coleosporium</i> | <i>paraphysatum</i> | 1923 | Asteraceae | <i>Sinclairia</i> | <i>polyantha</i> | Costa Rica | 14.59667 | -90.7547 |
| PUR2003 | <i>Coleosporium</i> | <i>sonchi</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | USA | 48.08023 | -114.222 |
| PUR201 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1886 | Convolvulaceae | <i>Ipomoea</i> | <i>batata</i> | Mexico | 23 | -102 |
| PUR363 | <i>Coleosporium</i> | <i>campanulae</i> | 1917 | Pinaceae | <i>Pinus</i> | <i>resinosa</i> | USA | 45.58095 | -84.6963 |
| PUR388 | <i>Coleosporium</i> | <i>campanulae</i> | 1916 | Campanulaceae | <i>Campanula</i> | <i>rapunculoides</i> | USA | 42.0437 | -73.9474 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|-------------------------|----------|-----------------|-----------------------|----------------------|--------------------|-----------|-------------|
| PUR416 | <i>Coleosporium</i> | <i>vernoniae</i> | 1918 | Pinaceae | <i>Pinus</i> | <i>caribraea</i> | USA | 30.37993 | -85.5013 |
| PUR418 | <i>Coleosporium</i> | <i>vernoniae</i> | 1914 | Pinaceae | <i>Pinus</i> | <i>caribaea</i> | USA | 26.63414 | -81.8504 |
| PUR43545 | <i>Coleosporium</i> | <i>jonesii</i> | 1918 | Grossulariaceae | <i>Ribes</i> | <i>uva-crispa</i> | USA | 44.67525 | -89.4891 |
| PUR43597 | <i>Coleosporium</i> | <i>campanulae</i> | 1927 | Pinaceae | <i>Pinus</i> | <i>resinosa</i> | USA | 44.28034 | -71.6881 |
| PUR43606 | <i>Coleosporium</i> | <i>campanulae</i> | 1932 | Campanulaceae | <i>Campanula</i> | <i>rapunculoides</i> | USA | 40.7934 | -77.86 |
| PUR43610 | <i>Coleosporium</i> | <i>vernoniae</i> | 1916 | Pinaceae | <i>Pinus</i> | <i>echinata</i> | USA | 32.60986 | -85.4808 |
| PUR43660 | <i>Coleosporium</i> | <i>vernoniae</i> | 1934 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | USA | 36.51928 | -81.9279 |
| PUR43666 | <i>Coleosporium</i> | <i>elephantopodis</i> | 1916 | Pinaceae | <i>Pinus</i> | <i>echinata</i> | USA | 34.85262 | -82.394 |
| PUR43744 | <i>Coleosporium</i> | <i>helianthi</i> | 1916 | Asteraceae | <i>Helianthus</i> | <i>eggertii</i> | USA | 35.132995 | -84.53038 |
| PUR43798 | <i>Coleosporium</i> | <i>tarebinthinaceae</i> | 1934 | Asteraceae | <i>Parthenium</i> | <i>integrifolium</i> | USA | 36.046732 | -85.199966 |
| PUR43820 | <i>Coleosporium</i> | <i>sonchi-arvensis</i> | 1932 | Asteraceae | <i>Sonchus</i> | <i>oleracius</i> | Dominican Republic | 18.91667 | -70.4667 |
| PUR47353 | <i>Coleosporium</i> | <i>asterum</i> | 1925 | Asteraceae | <i>Solidago</i> | <i>nemoralis</i> | USA | 38.60899 | -86.1104 |
| PUR47405 | <i>Coleosporium</i> | <i>asterum</i> | 1930 | Asteraceae | <i>Symphyotrichum</i> | <i>drummondii</i> | USA | 40.41261 | -86.8935 |
| PUR475 | <i>Coleosporium</i> | <i>vernoniae</i> | 1916 | Pinaceae | <i>Pinus</i> | <i>taeda</i> | USA | 29.65163 | -82.3248 |
| PUR48013 | <i>Coleosporium</i> | <i>elephantopodis</i> | 1938 | Pinaceae | <i>Pinus</i> | <i>palustris</i> | USA | 29.65139 | -82.325 |
| PUR48019 | <i>Coleosporium</i> | <i>vernoniae</i> | 1938 | Pinaceae | <i>Pinus</i> | <i>rigida</i> | USA | 37.45172 | -89.2681 |
| PUR48106 | <i>Coleosporium</i> | <i>solidaginis</i> | 1938 | Asteraceae | <i>Callistephus</i> | <i>chinensis</i> | USA | 27.49893 | -82.5748 |
| PUR48599 | <i>Coleosporium</i> | <i>laciniariae</i> | 1939 | Asteraceae | <i>Liatris</i> | <i>sp.</i> | USA | 39.83817 | -75.1527 |
| PUR48606 | <i>Coleosporium</i> | <i>spigeliae</i> | 1937 | Loganiaceae | <i>Spigelia</i> | <i>humboldtiana</i> | Mexico | 15.31929 | -92.6546 |
| PUR487 | <i>Coleosporium</i> | <i>vernoniae</i> | 1913 | Pinaceae | <i>Pinus</i> | <i>taeda</i> | USA | 32.60986 | -85.4808 |
| PUR48971 | <i>Coleosporium</i> | <i>paraphysatum</i> | 1938 | Asteraceae | <i>Sinclairia</i> | <i>discolor</i> | Guatemala | 37.90604 | -122.545 |
| PUR49110 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1938 | Convolvulaceae | <i>Ipomoea</i> | <i>coccinea</i> | Guatemala | 14.56111 | -90.7344 |
| PUR49462 | <i>Coleosporium</i> | <i>plumierae</i> | 1907 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Guatemala | 14.77044 | -91.2794 |
| PUR49790 | <i>Coleosporium</i> | <i>montanum</i> | 1918 | Asteraceae | <i>Solidago</i> | <i>simplex</i> | USA | 39.90499 | -105.589 |
| PUR49799 | <i>Coleosporium</i> | <i>montanum</i> | 1929 | Pinaceae | <i>Pinus</i> | <i>contorta</i> | USA | 48.91567 | -117.495 |
| PUR50247 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1940 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Guatemala | 14.16667 | -89.8333 |
| PUR50251 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1940 | Convolvulaceae | <i>Ipomoea</i> | <i>purpurea</i> | Guatemala | 14.83333 | -91.9667 |
| PUR514 | <i>Coleosporium</i> | <i>vernoniae</i> | 1916 | Pinaceae | <i>Pinus</i> | <i>taeda</i> | USA | 32.5743 | -85.2879 |
| PUR51726 | <i>Coleosporium</i> | <i>campanulae</i> | 1947 | Campanulaceae | <i>Campanula</i> | <i>rapunculoides</i> | USA | 42.68279 | -89.0187 |
| PUR53016 | <i>Coleosporium</i> | <i>viguierae</i> | 1950 | Asteraceae | <i>Verbesina</i> | <i>agricolarum</i> | Honduras | 14.05 | -87.216667 |
| PUR54211 | <i>Coleosporium</i> | <i>pacificum</i> | 1925 | Asteraceae | <i>Hemizonia</i> | <i>corigesta</i> | USA | 23.00635 | -99.2643 |
| PUR54836 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1926 | Convolvulaceae | <i>Ipomoea</i> | <i>melanotricha</i> | Mexico | 20.10759 | -97.5311 |
| PUR55499 | <i>Coleosporium</i> | <i>jonesii</i> | 1956 | Grossulariaceae | <i>Ribes</i> | <i>cereum</i> | USA | 40.58526 | -105.084 |
| PUR558 | <i>Coleosporium</i> | <i>vernoniae</i> | 1881 | Asteraceae | <i>Vernonia</i> | <i>fasciculata</i> | USA | 40.4842 | -88.9937 |
| PUR56529 | <i>Coleosporium</i> | <i>asterum</i> | 1922 | Asteraceae | <i>Solidago</i> | <i>californica</i> | USA | 37.81483 | -122.167 |
| PUR56536 | <i>Coleosporium</i> | <i>jonesii</i> | 1957 | Pinaceae | <i>Pinus</i> | <i>edulis</i> | USA | 36.21054 | -112.06128 |
| PUR56554 | <i>Coleosporium</i> | <i>campanulae</i> | 1959 | Campanulaceae | <i>Campanula</i> | <i>americana</i> | USA | 42.38898 | -94.0842 |
| PUR57 | <i>Coleosporium</i> | <i>jonesii</i> | 1922 | Grossulariaceae | <i>Ribes</i> | <i>inebrians</i> | USA | 43.43165 | -103.474 |
| PUR571 | <i>Coleosporium</i> | <i>vernoniae</i> | 1915 | Asteraceae | <i>Vernonia</i> | <i>blodgettii</i> | USA | 29.18719 | -82.1068 |
| PUR57666 | <i>Coleosporium</i> | <i>anceps</i> | 1917 | Asteraceae | <i>Verbesina</i> | <i>holwayi</i> | Guatemala | 42.27087 | -83.7263 |
| PUR58560 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1952 | Pinaceae | <i>Pinus</i> | <i>sp.</i> | Mexico | 21.25151 | -98.7825 |
| PUR587 | <i>Coleosporium</i> | <i>vernoniae</i> | 1903 | Asteraceae | <i>Vernonia</i> | <i>fasciculata</i> | USA | 39.41535 | -81.4548 |
| PUR59186 | <i>Coleosporium</i> | <i>crowellii</i> | 1963 | Pinaceae | <i>Pinus</i> | <i>cembroides</i> | USA | 31.47105 | -109.924 |
| PUR59676 | <i>Coleosporium</i> | <i>viguierae</i> | 1900 | Asteraceae | <i>Verbesina</i> | <i>virgata</i> | Mexico | 18.98603 | -99.0991 |
| PUR59985 | <i>Coleosporium</i> | <i>crowellii</i> | 1962 | Pinaceae | <i>Pinus</i> | <i>cembroides</i> | USA | 31.339269 | -110.32869 |
| PUR59986 | <i>Coleosporium</i> | <i>bletiae</i> | non-data | Orchidaceae | <i>Phaius</i> | <i>mishmiensis</i> | USA | 25.78165 | -80.2167 |
| PUR61141 | <i>Coleosporium</i> | <i>plumierae</i> | 1963 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Mexico | 24 | -98.7786 |
| PUR61406 | <i>Coleosporium</i> | <i>jonesii</i> | 1959 | Grossulariaceae | <i>Ribes</i> | <i>sp.</i> | USA | 41.27311 | -105.817 |
| PUR61407 | <i>Coleosporium</i> | <i>asterum</i> | 1960 | Asteraceae | <i>Solidago</i> | <i>missouriensis</i> | USA | 45.29114 | -110.255 |
| PUR61457 | <i>Coleosporium</i> | <i>plumierae</i> | 1963 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | Puerto Rico | 18.20085 | -67.1473 |
| PUR61707 | <i>Coleosporium</i> | <i>asterum</i> | 1966 | Asteraceae | <i>Symphyotrichum</i> | <i>sp.</i> | USA | 33.40447 | -105.551 |
| PUR61751 | <i>Coleosporium</i> | <i>jonesii</i> | 1966 | Grossulariaceae | <i>Ribes</i> | <i>pinetorum</i> | USA | 32.703708 | -109.864166 |
| PUR62250 | <i>Coleosporium</i> | <i>begoniae</i> | 1965 | Begoniaceae | <i>Begonia</i> | <i>gracilis</i> | Mexico | 23.658535 | -105.682143 |
| PUR62254 | <i>Coleosporium</i> | <i>mentzeliae</i> | 1965 | Loasaceae | <i>Mentzelia</i> | <i>hispida</i> | Mexico | 15.31929 | -92.6546 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|-----------------------|------|-----------------|-----------------------|-----------------------|-------------|-----------|-------------|
| PUR62295 | <i>Coleosporium</i> | <i>ribicola</i> | 1967 | Grossulariaceae | <i>Ribes</i> | <i>sp.</i> | Mexico | 24.76681 | -99.77161 |
| PUR62358 | <i>Coleosporium</i> | <i>steviae</i> | 1963 | Asteraceae | <i>Eupatorium</i> | <i>collinum</i> | Mexico | 24.66209 | -107.397 |
| PUR62363 | <i>Coleosporium</i> | <i>asterum</i> | 1965 | Asteraceae | <i>Solidago</i> | <i>velutina</i> | Mexico | 25.22061 | -100.766 |
| PUR62368 | <i>Coleosporium</i> | <i>steviae</i> | 1963 | Asteraceae | <i>Stevia</i> | <i>serrata</i> | Mexico | 23.98017 | -104.833 |
| PUR62373 | <i>Coleosporium</i> | <i>steviae</i> | 1939 | Asteraceae | <i>Stevia</i> | <i>elongata</i> | Guatemala | 14.61643 | -89.843 |
| PUR62384 | <i>Coleosporium</i> | <i>steviae</i> | 1965 | Asteraceae | <i>Stevia</i> | <i>sp.</i> | Mexico | 23.87899 | -105.114 |
| PUR62388 | <i>Coleosporium</i> | <i>viguierae</i> | 1962 | Asteraceae | <i>Verbesina</i> | <i>rothrockii</i> | Mexico | 25.41942 | -101.001 |
| PUR62408 | <i>Coleosporium</i> | <i>viguierae</i> | 1963 | Asteraceae | <i>Viguiera</i> | <i>dentata</i> | Mexico | 25.84841 | -103.953 |
| PUR626 | <i>Coleosporium</i> | <i>vernoniae</i> | 1916 | Asteraceae | <i>Vernonia</i> | <i>gigantea</i> | USA | 34.72286 | -84.2338 |
| PUR62770 | <i>Coleosporium</i> | <i>crowellii</i> | 1963 | Pinaceae | <i>Pinus</i> | <i>cembroides</i> | USA | 32.818933 | -114.485504 |
| PUR62991 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1969 | Asteraceae | <i>Raillardella</i> | <i>pringlei</i> | USA | 37.8718 | -122.258 |
| PUR63026 | <i>Coleosporium</i> | <i>pereziae</i> | 1969 | Asteraceae | <i>Acourtia</i> | <i>patens</i> | Mexico | 25.04553 | -105.261 |
| PUR63276 | <i>Coleosporium</i> | <i>crowellii</i> | 1969 | Pinaceae | <i>Pinus</i> | <i>cembroides</i> | Mexico | 25.04553 | -105.261 |
| PUR63285 | <i>Coleosporium</i> | <i>jonesii</i> | 1962 | Pinaceae | <i>Pinus</i> | <i>edulis</i> | USA | 36.74114 | -103.994 |
| PUR63892 | <i>Coleosporium</i> | <i>crowellii</i> | 1968 | Pinaceae | <i>Pinus</i> | <i>edulis</i> | USA | 34.250902 | -105.631772 |
| PUR63995 | <i>Coleosporium</i> | <i>viguierae</i> | 1971 | Asteraceae | <i>Viguiera</i> | <i>dentata</i> | Mexico | 28.796717 | -111.942675 |
| PUR64285 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1971 | Convolvulaceae | <i>Ipomoea</i> | <i>murucoides</i> | Mexico | 20.22419 | -103.53104 |
| PUR64289 | <i>Coleosporium</i> | <i>verbesinae</i> | 1971 | Asteraceae | <i>Verbesina</i> | <i>sphaerocephala</i> | Mexico | 30.26715 | -97.7431 |
| PUR64301 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1971 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Mexico | 21.54379 | -105.271 |
| PUR64386 | <i>Coleosporium</i> | <i>elephantopodis</i> | 1971 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Mexico | 21.544434 | -104.9227 |
| PUR64461 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1971 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Mexico | 24.20047 | -104.705 |
| PUR64462 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1971 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Mexico | 24.20047 | -104.70494 |
| PUR64529 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1971 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Mexico | 20.28474 | -103.908 |
| PUR64945 | <i>Coleosporium</i> | <i>solidaginis</i> | 1914 | Asteraceae | <i>Eurybia</i> | <i>conspicua</i> | USA | 45.35238 | -118.227 |
| PUR64957 | <i>Coleosporium</i> | <i>asterum</i> | 1914 | Asteraceae | <i>Symphyotrichum</i> | <i>hallii</i> | USA | 44.56372 | -123.274 |
| PUR653 | <i>Coleosporium</i> | <i>vernoniae</i> | 1920 | Asteraceae | <i>Vernonia</i> | <i>missurica</i> | USA | 34.74648 | -92.2896 |
| PUR65339 | <i>Coleosporium</i> | <i>steviae</i> | 1967 | Asteraceae | <i>Stevia</i> | <i>origanoides</i> | Mexico | 18.91467 | -101.698 |
| PUR65348 | <i>Coleosporium</i> | <i>steviae</i> | 1969 | Asteraceae | <i>Stevia</i> | <i>origanoides</i> | Mexico | 27.31387 | -108.03 |
| PUR65354 | <i>Coleosporium</i> | <i>steviae</i> | 1971 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Mexico | 21.5008 | -104.889 |
| PUR65361 | <i>Coleosporium</i> | <i>Lev</i> | 1967 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Mexico | 23.999997 | -98.778629 |
| PUR65364 | <i>Coleosporium</i> | <i>pereziae</i> | 1971 | Asteraceae | <i>Acourtia</i> | <i>fruticosa</i> | Mexico | 24.02032 | -104.65756 |
| PUR65447 | <i>Coleosporium</i> | <i>plumeriae</i> | 1972 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | Puerto Rico | 18.196937 | -67.141083 |
| PUR65555 | <i>Coleosporium</i> | <i>incompletum</i> | 1973 | Asteraceae | <i>Stevia</i> | <i>salicifolia</i> | Mexico | 19.65584 | -100.036 |
| PUR65556 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1974 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Guatemala | 14.74122 | -91.66394 |
| PUR65557 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1974 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Guatemala | 15.454542 | -90.438965 |
| PUR65560 | <i>Coleosporium</i> | <i>viburni</i> | 1974 | Viburnaceae | <i>Viburnum</i> | <i>sp.</i> | Mexico | 16.73788 | -92.6382 |
| PUR65674 | <i>Coleosporium</i> | <i>viburni</i> | 1976 | Pinaceae | <i>Pinus</i> | <i>banksiana</i> | Canada | 51 | -89.977 |
| PUR65846 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1979 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Mexico | 19.54483 | -96.9177 |
| PUR65858 | <i>Coleosporium</i> | <i>steviae</i> | 1979 | Asteraceae | <i>Stevia</i> | <i>ovata</i> | Mexico | 21.34565 | -97.8385 |
| PUR65908 | <i>Coleosporium</i> | <i>viguierae</i> | 1974 | Asteraceae | <i>Verbesina</i> | <i>sp.</i> | Mexico | 15.726551 | -93.062245 |
| PUR65969 | <i>Coleosporium</i> | <i>vernoniae</i> | 1977 | Asteraceae | <i>Elephantopus</i> | <i>carolinianus</i> | USA | 34.76591 | -84.7699 |
| PUR65970 | <i>Coleosporium</i> | <i>inconspicuum</i> | 1977 | Cordiaceae | <i>Coreopsis</i> | <i>major</i> | USA | 36.76203 | -83.6949 |
| PUR66226 | <i>Coleosporium</i> | <i>ribicola</i> | 1970 | Grossulariaceae | <i>Ribes</i> | <i>sp.</i> | Mexico | 19.30105 | -99.2997 |
| PUR66283 | <i>Coleosporium</i> | <i>asterum</i> | 1974 | Asteraceae | <i>Solidago</i> | <i>sp.</i> | USA | 28.30528 | -97.2753 |
| PUR66413 | <i>Coleosporium</i> | <i>vernoniae</i> | 1974 | Asteraceae | <i>Elephantopus</i> | <i>carolinianus</i> | USA | 32.5467 | -94.3673 |
| PUR66498 | <i>Coleosporium</i> | <i>plumierae</i> | 1982 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | USA | 26.12542 | -80.1427 |
| PUR66499 | <i>Coleosporium</i> | <i>viburni</i> | 1982 | Viburnaceae | <i>Viburnum</i> | <i>lentago</i> | USA | 41.68333 | -86.25 |
| PUR676 | <i>Coleosporium</i> | <i>vernoniae</i> | 1922 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | USA | 40.05812 | -82.4013 |
| PUR691 | <i>Coleosporium</i> | <i>vernoniae</i> | 1915 | Asteraceae | <i>Vernonia</i> | <i>noveboracensis</i> | USA | 39.9112 | -77.55 |
| PUR713 | <i>Coleosporium</i> | <i>vernoniae</i> | 1912 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | USA | 37.21533 | -93.2982 |
| PUR747 | <i>Coleosporium</i> | <i>elephantopodis</i> | 1921 | Pinaceae | <i>Pinus</i> | <i>taeda</i> | USA | 28.55527 | -82.3879 |
| PUR755 | <i>Coleosporium</i> | <i>elephantopodis</i> | 1917 | Pinaceae | <i>Pinus</i> | <i>sp.</i> | USA | 35.69874 | -81.697 |
| PUR778 | <i>Coleosporium</i> | <i>vernoniae</i> | 1915 | Asteraceae | <i>Elephantopus</i> | <i>carolinianus</i> | USA | 41.68102 | -87.507 |
| PUR80 | <i>Coleosporium</i> | <i>jonesii</i> | 1918 | Grossulariaceae | <i>Ribes</i> | <i>nevadense</i> | USA | 39.90516 | -121.523 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|---------------------|------|----------------|-----------------------|----------------------|---------|-------------------|-------------------|
| PUR87200 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1983 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.24243 | -44.99785 |
| PUR87201 | <i>Coleosporium</i> | <i>plumeriae</i> | 1983 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -21.229178 | -44.980742 |
| PUR87230 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -18.975688 | -44.483961 |
| PUR87294 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1983 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR87302 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PUR87388 | <i>Coleosporium</i> | <i>plumeriae</i> | 1983 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR87427 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -22.512305 | -48.916169 |
| PUR87484 | <i>Coleosporium</i> | <i>plumeriae</i> | 1983 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR87489 | <i>Coleosporium</i> | <i>plumeriae</i> | 1983 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | Brazil | -22.398698 | -48.864444 |
| PUR87500 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -22.512305 | -48.916169 |
| PUR87576 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -22.5123 | -48.9162 |
| PUR87623 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -18.975688 | -44.483961 |
| PUR87691 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.922924 | -46.395979 |
| PUR87703 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -22.512305 | -48.916169 |
| PUR87713 | <i>Coleosporium</i> | <i>vernoniae</i> | 1983 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PUR87769 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1983 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PUR87823 | <i>Coleosporium</i> | <i>vernoniae</i> | 1984 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PUR87845 | <i>Coleosporium</i> | <i>vernoniae</i> | 1984 | Asteraceae | <i>Elephantopus</i> | <i>angustifolius</i> | Brazil | -22.5123 | -48.9162 |
| PUR87861 | <i>Coleosporium</i> | <i>sp.</i> | 1984 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR87874 | <i>Coleosporium</i> | <i>vernoniae</i> | 1984 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PUR87905 | <i>Coleosporium</i> | <i>vernoniae</i> | 1984 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PUR87923 | <i>Coleosporium</i> | <i>vernoniae</i> | 1984 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PUR87937 | <i>Coleosporium</i> | <i>vernoniae</i> | 1984 | Asteraceae | <i>Elephantopus</i> | <i>angustifolius</i> | Brazil | -21.9667 | -47.8167 |
| PUR87982 | <i>Coleosporium</i> | <i>vernoniae</i> | 1984 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -22.512305 | -48.916169 |
| PUR88233 | <i>Coleosporium</i> | <i>helianthi</i> | 1977 | Asteraceae | <i>Silphium</i> | <i>compositum</i> | USA | 34.760848 | -84.093362 |
| PUR88507 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1984 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Mexico | 19.31669 | -96.83356 |
| PUR88551 | <i>Coleosporium</i> | <i>asterum</i> | 1980 | Asteraceae | <i>Symphyotrichum</i> | <i>ciliatum</i> | Canada | 50.58707 | -113.128 |
| PUR88756 | <i>Coleosporium</i> | <i>helianthi</i> | 1935 | Asteraceae | <i>Helianthus</i> | <i>decapetalus</i> | USA | 38.97028 | -86.4419 |
| PUR88759 | <i>Coleosporium</i> | <i>helianthi</i> | 1985 | Asteraceae | <i>Helianthus</i> | <i>tuberosus</i> | USA | 35.89233 | -82.82903 |
| PUR88784 | <i>Coleosporium</i> | <i>delicatulum</i> | 1984 | Asteraceae | <i>Euthamia</i> | <i>graminifolia</i> | USA | 42.23285 | -84.7392 |
| PUR88840 | <i>Coleosporium</i> | <i>asterum</i> | 1872 | Asteraceae | <i>Solidago</i> | <i>canadensis</i> | USA | 37.33157 | -79.5295 |
| PUR88856 | <i>Coleosporium</i> | <i>asterum</i> | 1958 | Asteraceae | <i>Solidago</i> | <i>altissima</i> | USA | 41.334185 | -86.250427 |
| PUR88868 | <i>Coleosporium</i> | <i>asterum</i> | 1985 | Asteraceae | <i>Solidago</i> | <i>ulmifolia</i> | USA | 40.43860989916858 | -86.9335632717994 |
| PUR88873 | <i>Coleosporium</i> | <i>asterum</i> | 1906 | Asteraceae | <i>Solidago</i> | <i>radula</i> | USA | 39.30524 | -93.9656 |
| PUR88879 | <i>Coleosporium</i> | <i>asterum</i> | 1873 | Asteraceae | <i>Solidago</i> | <i>sempervirens</i> | USA | 41.69941 | -71.4171 |
| PUR89000 | <i>Coleosporium</i> | <i>vernoniae</i> | 1984 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PUR89054 | <i>Coleosporium</i> | <i>plumeriae</i> | 1984 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PUR89111 | <i>Coleosporium</i> | <i>plumeriae</i> | 1984 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -19.466721 | -44.172511 |
| PUR89287 | <i>Coleosporium</i> | <i>delicatum</i> | 1979 | Asteraceae | <i>Euthamia</i> | <i>graminifolia</i> | USA | 39.06808 | -86.4096 |
| PUR89536 | <i>Coleosporium</i> | <i>helianthi</i> | 1985 | Asteraceae | <i>Silphium</i> | <i>perfoliatum</i> | USA | 36.105636 | -94.33271 |
| PUR89640 | <i>Coleosporium</i> | <i>plumeriae</i> | 1982 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | Brazil | -16.246089 | -50.198506 |
| PUR89641 | <i>Coleosporium</i> | <i>plumeriae</i> | 1981 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | Brazil | -22.512305 | -48.916169 |
| PUR89642 | <i>Coleosporium</i> | <i>plumeriae</i> | 1982 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PUR89643 | <i>Coleosporium</i> | <i>plumeriae</i> | 1982 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PUR89644 | <i>Coleosporium</i> | <i>plumeriae</i> | 1982 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | Brazil | -22.398698 | -48.864444 |
| PUR89645 | <i>Coleosporium</i> | <i>plumeriae</i> | 1983 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR89646 | <i>Coleosporium</i> | <i>plumeriae</i> | 1983 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PUR897 | <i>Coleosporium</i> | <i>laciniariae</i> | 1916 | Pinaceae | <i>Pinus</i> | <i>rigida</i> | USA | 39.39928 | -74.5504 |
| PUR90027 | <i>Coleosporium</i> | <i>vernoniae</i> | 1986 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR90034 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1986 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR90061 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1986 | Asteraceae | <i>Senecio</i> | <i>Braziliensis</i> | Brazil | -21.9229 | -46.396 |
| PUR90198 | <i>Coleosporium</i> | <i>vernoniae</i> | 1986 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PUR944 | <i>Coleosporium</i> | <i>solidaginis</i> | 1915 | Pinaceae | <i>Pinus</i> | <i>echinata</i> | USA | 35.30289 | -84.4998 |
| PUR981 | <i>Coleosporium</i> | <i>solidaginis</i> | 1922 | Pinaceae | <i>Pinus</i> | <i>rigida</i> | USA | 39.6854 | -74.6057 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|------------------------------|------|----------------|-------------------------|-------------------------------|-------------|------------|-------------|
| PUR996 | <i>Coleosporium</i> | <i>solidaginis</i> | 1914 | Pinaceae | <i>Pinus</i> | <i>sp.</i> | USA | 45.5379 | -121.568 |
| PUR998 | <i>Coleosporium</i> | <i>solidaginis</i> | 1916 | Asteraceae | <i>Oclemena</i> | <i>acuminata</i> | USA | 43.41449 | -73.4886 |
| PURF10165 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1935 | Asteraceae | <i>Senecio</i> | <i>chilensis</i> | Chile | -41.870699 | -73.81622 |
| PURF10667 | <i>Coleosporium</i> | <i>plumeriae</i> | 1941 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Colombia | 10 | -74.5 |
| PURF11160 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1923 | Convolvulaceae | <i>Ipomoea</i> | <i>purpurea</i> | Peru | -13.623764 | -71.828125 |
| PURF11161 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1923 | Convolvulaceae | <i>Ipomoea</i> | <i>purpurea</i> | Peru | -7.808077 | -76.233643 |
| PURF11162 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1923 | Convolvulaceae | <i>Ipomoea</i> | <i>hederifolia</i> | Peru | -9.221411 | -76.995552 |
| PURF11513 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1940 | Asteraceae | <i>Senecio</i> | <i>candicans</i> | Chile | -51.289225 | -59.622356 |
| PURF11540 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1922 | Asteraceae | <i>Senecio</i> | <i>cacalia</i> | Peru | -11.846081 | -76.386809 |
| PURF11617 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1922 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Peru | -11.93787 | -75.338627 |
| PURF11631 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1922 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Peru | -10.28797 | -76.160577 |
| PURF11863 | <i>Coleosporium</i> | <i>clematidis</i> | 1947 | Ranunculaceae | <i>Clematis</i> | <i>caracasana</i> | Trinidad | 10.5 | -61.25 |
| PURF11892 | <i>Coleosporium</i> | <i>clematidis</i> | 1949 | Ranunculaceae | <i>Clematis</i> | <i>caracasana</i> | Trinidad | 10.5 | -61.25 |
| PURF12187 | <i>Coleosporium</i> | <i>petasitis</i> | 1930 | Asteraceae | <i>Petasites</i> | <i>japonicus</i> | Japan | 35.461399 | 133.791992 |
| PURF12203 | <i>Coleosporium</i> | <i>saussureae</i> | 1928 | Asteraceae | <i>Saussurea</i> | <i>nupunpoensis</i> | Japan | 51 | 143 |
| PURF12212 | <i>Coleosporium</i> | <i>neocacaliae</i> | 1924 | Asteraceae | <i>Senecio</i> | <i>cannabifolius</i> | Japan | 42.062326 | 140.684076 |
| PURF12217 | <i>Coleosporium</i> | <i>xanthoxyli</i> | 1929 | Rutaceae | <i>Zanthoxylum</i> | <i>schinifolium</i> | Japan | 35.43389 | 136.7822 |
| PURF12222 | <i>Coleosporium</i> | <i>campanulae</i> | 1931 | Campanulaceae | <i>Wahlenbergia</i> | <i>marginata</i> | Japan | 31.56019 | 130.5581 |
| PURF12225 | <i>Coleosporium</i> | <i>carpesii</i> | 1939 | Asteraceae | <i>Carpesium</i> | <i>divaricatum</i> | Japan | 31.18285 | 130.52856 |
| PURF12227 | <i>Coleosporium</i> | <i>cimicifugatum</i> | 1929 | Ranunculaceae | <i>Actaea</i> | <i>dahurica</i> | China | 33.12371 | 104.6013 |
| PURF12235 | <i>Coleosporium</i> | <i>clematidis</i> | 1940 | Ranunculaceae | <i>Clematis</i> | <i>ternifolia mandshurica</i> | China | 49.6 | 117.4333 |
| PURF12245 | <i>Coleosporium</i> | <i>clerodendri</i> | 1940 | Lamiaceae | <i>Clerodendron</i> | <i>chinense</i> | Japan | 26.22083 | 127.7175 |
| PURF12252 | <i>Coleosporium</i> | <i>evodiae</i> | 1933 | Rutaceae | <i>Tetradium</i> | <i>glabrifolium</i> | Japan | 31.18677 | 131.0264 |
| PURF12256 | <i>Coleosporium</i> | <i>faunae</i> | 1924 | Menyanthaceae | <i>Nephrophyllidium</i> | <i>crista-galli</i> | Russia | 45.11293 | 147.9094 |
| PURF12258 | <i>Coleosporium</i> | <i>horianum</i> | 1924 | Campanulaceae | <i>Codonopsis</i> | <i>lanceolata</i> | Japan | 43.02206 | 141.32293 |
| PURF12293 | <i>Coleosporium</i> | <i>asterum</i> | 1940 | Asteraceae | <i>Kalimeris</i> | <i>indica</i> | Japan | 26.7 | 128.1833 |
| PURF14100 | <i>Coleosporium</i> | <i>asterum</i> | 1932 | Asteraceae | <i>Aster</i> | <i>sp.</i> | China | 32 | 117 |
| PURF14109 | <i>Coleosporium</i> | <i>carpesii</i> | 1932 | Asteraceae | <i>Carpesium</i> | <i>sp.</i> | China | 29.5 | 115.91667 |
| PURF14123 | <i>Coleosporium</i> | <i>bletieae</i> | 1931 | Orchidaceae | <i>Anthogonium</i> | <i>sp.</i> | China | 28.15469 | 107.0748 |
| PURF14126 | <i>Coleosporium</i> | <i>campanulae</i> | 1932 | Campanulaceae | <i>Adenophora</i> | <i>sp.</i> | China | 29.55 | 115.9667 |
| PURF14682 | <i>Coleosporium</i> | <i>vernoniae</i> | 1952 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Trinidad | 10.5 | -61.25 |
| PURF15290 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1949 | Asteraceae | <i>Senecio</i> | <i>deferens</i> | Argentina | -26.781676 | -65.358442 |
| PURF15949 | <i>Coleosporium</i> | <i>vernoniae</i> | 1953 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Colombia | 5.635 | -69.972778 |
| PURF16187 | <i>Coleosporium</i> | <i>phellodendri</i> | 1957 | Rutaceae | <i>Phellodendron</i> | <i>lavalleyi</i> | Japan | 43.6441717 | 142.9007709 |
| PURF16773 | <i>Coleosporium</i> | <i>inulae</i> | 1957 | Asteraceae | <i>Inula</i> | <i>ensifolia</i> | Bulgaria | 41.95 | 24.866667 |
| PURF17054 | <i>Coleosporium</i> | <i>campanulae</i> | 1961 | Campanulaceae | <i>Campanula</i> | <i>persicifolia</i> | Sweden | 59.9 | 17.633333 |
| PURF17058 | <i>Coleosporium</i> | <i>pulsatillae</i> | 1960 | Ranunculaceae | <i>Anemone</i> | <i>pratensis</i> | Sweden | 56.583333 | 16.466667 |
| PURF17161 | <i>Coleosporium</i> | <i>rhinanthacearnm</i> | 1962 | Pinaceae | <i>Pinas</i> | <i>sylvestris</i> | Germany | 51.16613 | 10.30566 |
| PURF17170 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1963 | Convolvulaceae | <i>Ipomoea</i> | <i>glabra</i> | Brazil | -4.016807 | -53.415039 |
| PURF17178 | <i>Coleosporium</i> | <i>petasitis</i> | 1963 | Pinaceae | <i>Pinus</i> | <i>koraensis</i> | Japan | 43.44192 | 142.7507 |
| PURF17180 | <i>Coleosporium</i> | <i>petasitis</i> | 1963 | Asteraceae | <i>Petasites</i> | <i>japonicus</i> | Japan | 43.441921 | 142.75074 |
| PURF17410 | <i>Coleosporium</i> | <i>clematidis</i> | 1927 | Ranunculaceae | <i>Clematis</i> | <i>leschenaultiana</i> | Philippines | 15.15844 | 120.3644 |
| PURF17846 | <i>Coleosporium</i> | <i>xanthoxyli</i> | 1986 | Rutaceae | <i>Zanthoxylum</i> | <i>piperitum</i> | India | 26.176076 | 91.762932 |
| PURF18124 | <i>Coleosporium</i> | <i>bletieae</i> | 1967 | Orchidaceae | <i>Habenaria</i> | <i>arietina</i> | India | 27.035373 | 88.2603 |
| PURF18338 | <i>Coleosporium</i> | <i>doronici</i> | 1972 | Asteraceae | <i>Doronicum</i> | <i>austriacum</i> | Romania | 45.45 | 25.43333 |
| PURF18599 | <i>Coleosporium</i> | <i>clematidis-apiifoliae</i> | 1976 | Ranunculaceae | <i>Clematis</i> | <i>apiifolia</i> | Japan | 35.171577 | 134.180306 |
| PURF18866 | <i>Coleosporium</i> | <i>vernoniae</i> | 1976 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -22.512305 | -48.916169 |
| PURF18868 | <i>Coleosporium</i> | <i>vernoniae</i> | 1977 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PURF18869 | <i>Coleosporium</i> | <i>vernoniae</i> | 1979 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -22.512305 | -48.916169 |
| PURF18870 | <i>Coleosporium</i> | <i>vernoniae</i> | 1979 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -21.966667 | -47.816667 |
| PURF18872 | <i>Coleosporium</i> | <i>vernoniae</i> | 1975 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -28.758462 | -51.433333 |
| PURF18877 | <i>Coleosporium</i> | <i>vernoniae</i> | 1977 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Brazil | -20.756822 | -42.876638 |
| PURF19563 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1959 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Uruguay | -34.392574 | -56.721924 |
| PURF19573 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1925 | Asteraceae | <i>Senecio</i> | <i>nigrescens</i> | Chile | -41.870669 | -73.81622 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|------------------------------|----------|----------------|----------------------|------------------------|-------------|------------|------------|
| PURF19574 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1925 | Asteraceae | <i>Senecio</i> | <i>richii</i> | Peru | -11.456102 | -76.645825 |
| PURF19575 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1925 | Asteraceae | <i>Senecio</i> | <i>richii</i> | Peru | -11.468178 | -76.623737 |
| PURF19576 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1925 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF19647 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1976 | Asteraceae | <i>Emilia</i> | <i>sonchifolia</i> | Brazil | -21.9229 | -46.396 |
| PURF19838 | <i>Coleosporium</i> | <i>asterum</i> | 1980 | Asteraceae | <i>Aster</i> | <i>ageratoides</i> | China | 25.760743 | -117.7373 |
| PURF19839 | <i>Coleosporium</i> | <i>asterum</i> | 1980 | Asteraceae | <i>Aster</i> | <i>ageratoides</i> | China | 43 | 126 |
| PURF19841 | <i>Coleosporium</i> | <i>asterum</i> | 1980 | Asteraceae | <i>Kalimeris</i> | <i>indica</i> | China | 25.76074 | -117.737 |
| PURF19843 | <i>Coleosporium</i> | <i>campanulae</i> | 1980 | Campanulaceae | <i>Adenophora</i> | <i>tetraphylla</i> | China | 43 | 126 |
| PURF19844 | <i>Coleosporium</i> | <i>cimicifugatum</i> | 1980 | Ranunculaceae | <i>Actaea</i> | <i>dahurica</i> | China | 48 | 128 |
| PURF19845 | <i>Coleosporium</i> | <i>clematidis-apiifoliae</i> | 1980 | Ranunculaceae | <i>Clematis</i> | <i>apiifolia</i> | China | 25.760743 | -117.7373 |
| PURF19846 | <i>Coleosporium</i> | <i>evodiae</i> | 1980 | Rutaceae | <i>Tetradium</i> | <i>glabfolium</i> | China | 25.760743 | -117.7373 |
| PURF19848 | <i>Coleosporium</i> | <i>perillae</i> | 1980 | Lamiaceae | <i>Mosla</i> | <i>dianthera</i> | China | 25.760743 | -117.7373 |
| PURF19852 | <i>Coleosporium</i> | <i>pulsatillae</i> | 1980 | Ranunculaceae | <i>Anemone</i> | <i>dahurica</i> | China | 43 | 126 |
| PURF19853 | <i>Coleosporium</i> | <i>saussureae</i> | 1980 | Asteraceae | <i>Saussurea</i> | <i>bullockii</i> | China | 25.760743 | -117.7373 |
| PURF553 | <i>Coleosporium</i> | <i>merrillii</i> | 1925 | Orchidaceae | <i>Calanthe</i> | <i>furcata</i> | Philippines | 16.42411 | 120.5871 |
| PURF555 | <i>Coleosporium</i> | <i>merrillii</i> | 1930 | Orchidaceae | <i>Spathoglottis</i> | <i>plicata</i> | Philippines | 14.26122 | 121.4579 |
| PURF572 | <i>Coleosporium</i> | <i>clematidis</i> | 1922 | Ranunculaceae | <i>Clematis</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURF577 | <i>Coleosporium</i> | <i>pulsatillae</i> | 1919 | Ranunculaceae | <i>Anemone</i> | <i>pulsatilla</i> | Germany | 47.78465 | 11.86488 |
| PURF580 | <i>Coleosporium</i> | <i>pulsatillae</i> | 1899 | Ranunculaceae | <i>Anemone</i> | <i>cernua</i> | Japan | 35.72494 | 139.4445 |
| PURF593 | <i>Coleosporium</i> | <i>exaci</i> | 1924 | Gentianaceae | <i>Exacum</i> | <i>chironoides</i> | Philippines | 17.61577 | 121.7228 |
| PURF594 | <i>Coleosporium</i> | <i>plumeriae</i> | 1918 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Ecuador | -2.289024 | -78.983293 |
| PURF596 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1922 | Convolvulaceae | <i>Ipomoea</i> | <i>indica</i> | Brazil | -22.8656 | -43.4272 |
| PURF598 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1918 | Convolvulaceae | <i>Ipomoea</i> | <i>tiliacea</i> | Ecuador | -4.005579 | -79.202235 |
| PURF599 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1922 | Convolvulaceae | <i>Ipomoea</i> | <i>glabra</i> | Brazil | -18.975688 | -44.483961 |
| PURF600 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1921 | Convolvulaceae | <i>Ipomoea</i> | <i>glabra</i> | Brazil | 10.5 | -61.25 |
| PURF601 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1921 | Convolvulaceae | <i>Ipomoea</i> | <i>glabra</i> | Brazil | 10.5 | -61.25 |
| PURF602 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1921 | Convolvulaceae | <i>Ipomoea</i> | <i>glabra</i> | Trinidad | 10.5 | -61.25 |
| PURF603 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1913 | Convolvulaceae | <i>Ipomoea</i> | <i>glabra</i> | Trinidad | 10.5 | -61.25 |
| PURF604 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1882 | Convolvulaceae | <i>Ipomoea</i> | <i>gossypoides</i> | Paraguay | -23.30108 | -58.523682 |
| PURF605 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1918 | Convolvulaceae | <i>Ipomoea</i> | <i>parasitica</i> | Ecuador | -2.289024 | -78.983293 |
| PURF608 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1920 | Convolvulaceae | <i>Ipomoea</i> | <i>purpurea</i> | Peru | -5.533333 | -74.633333 |
| PURF609 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1922 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.865557 | -43.42723 |
| PURF610 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1921 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.94874 | -43.21798 |
| PURF611 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1921 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF612 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1921 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF613 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1920 | Convolvulaceae | <i>Ipomoea</i> | <i>glabra</i> | Bolivia | -16.5 | -68.15 |
| PURF614 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1918 | Convolvulaceae | <i>Ipomoea</i> | <i>coccinea</i> | Ecuador | -2.205842 | -79.907948 |
| PURF617 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1921 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF625 | <i>Coleosporium</i> | <i>euphrasiae</i> | 1899 | Orobanchaceae | <i>Rhinanthus</i> | <i>major</i> | Germany | 54.27527 | 13.71526 |
| PURF659 | <i>Coleosporium</i> | <i>campanulae</i> | 1922 | Campanulaceae | <i>Campanula</i> | <i>canescens</i> | Pakistan | 33.6007 | 73.0679 |
| PURF660 | <i>Coleosporium</i> | <i>campanulae</i> | 1926 | Campanulaceae | <i>Campanula</i> | <i>cochleariifolia</i> | Switzerland | 47.01458 | 9.086182 |
| PURF695 | <i>Coleosporium</i> | <i>sonchi</i> | 1874 | Asteraceae | <i>Sonchus</i> | <i>arvensis</i> | Germany | 49.94327 | 11.57684 |
| PURF704 | <i>Coleosporium</i> | <i>vernoniae</i> | 1920 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Bolivia | -16.5 | -68.15 |
| PURF735 | <i>Coleosporium</i> | <i>doronici</i> | non-data | Asteraceae | <i>Doronicum</i> | <i>altaicum</i> | Russia | 63.33332 | 110.7227 |
| PURF752 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1919 | Asteraceae | <i>Senecio</i> | <i>adenotrichius</i> | Chile | -41.870699 | -73.81622 |
| PURF753 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>adenotrichius</i> | Chile | -41.870699 | -73.81622 |
| PURF754 | <i>Coleosporium</i> | <i>vernoniae</i> | 1916 | Pinaceae | <i>Pinus</i> | <i>taeda</i> | USA | 34.257038 | -85.164673 |
| PURF755 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>adenotrichius</i> | Chile | -41.870699 | -73.81622 |
| PURF756 | <i>Coleosporium</i> | <i>vernoniae</i> | 1890 | Asteraceae | <i>Senecio</i> | <i>adenotrichius</i> | non-data | 13.128501 | -61.231812 |
| PURF757 | <i>Coleosporium</i> | <i>vernoniae</i> | 1885 | Asteraceae | <i>Senecio</i> | <i>adenotrichius</i> | USA | 30.884137 | -92.196777 |
| PURF758 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1919 | Asteraceae | <i>Senecio</i> | <i>glabratus</i> | Chile | -32.507255 | -71.439812 |
| PURF764 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>collinus</i> | Bolivia | -16.49667 | -68.13 |
| PURF767 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>fistulosus</i> | Chile | -30.765877 | -70.822244 |
| PURF770 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>glabratus</i> | Chile | -41.870699 | -73.81622 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|---------------------|------|-----------------|-----------------------|-------------------------|------------------|-------------------|--------------------|
| PURF772 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>viscosissimus</i> | Chile | -29.904529 | -71.248935 |
| PURF773 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>viscosissimus</i> | Chile | -41.870699 | -73.81622 |
| PURF779 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>rudbeckiaefolius</i> | Bolivia | -17.118938 | -65.950439 |
| PURF782 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>troncosii</i> | Chile | -29.904529 | -71.248935 |
| PURF789 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1919 | Asteraceae | <i>Senecio</i> | <i>vulgaris</i> | Chile | -34.430805 | -71.924236 |
| PURF791 | <i>Coleosporium</i> | <i>senecionis</i> | 1916 | Asteraceae | <i>Senecio</i> | <i>vulgaris</i> | Chile | -41.8707 | -73.8162 |
| PURF794 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1924 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Peru | -11.417007 | -75.686686 |
| PURF795 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Chile | -29.904529 | -71.248935 |
| PURF796 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF797 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1914 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.18 |
| PURF798 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Peru | -7.255558 | -76.475553 |
| PURF800 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1919 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF802 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1919 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Chile | -37.089938 | -73.157701 |
| PURF803 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Bolivia | -17.118938 | -65.950439 |
| PURF804 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF805 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Peru | -7.255558 | -76.475553 |
| PURF806 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1922 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF807 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Bolivia | -17.703752 | -66.574277 |
| PURF9292 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1933 | Asteraceae | <i>Senecio</i> | <i>goldsacki</i> | Argentina | -32.984459 | -68.788388 |
| PURF9489 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1938 | Asteraceae | <i>Senecio</i> | <i>brasiliensis</i> | Argentina | -28.509176 | -59.040086 |
| PURF9490 | <i>Coleosporium</i> | <i>argentinum</i> | 1937 | Asteraceae | <i>Symphyotrichum</i> | <i>squamatum</i> | Argentina | -34.921454 | -57.954533 |
| PURF9491 | <i>Coleosporium</i> | <i>argentinum</i> | 1937 | Asteraceae | <i>Symphyotrichum</i> | <i>squamatum</i> | Argentina | -34.921454 | -57.954533 |
| PURF9493 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1938 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Peru | -7.255558 | -76.475553 |
| PURF9952 | <i>Coleosporium</i> | <i>merrillii</i> | 1936 | Orchidaceae | <i>Orchidaceae</i> | <i>non-data</i> | Papua New Guinea | -6.88191 | 146.9316 |
| PURN10767 | <i>Coleosporium</i> | <i>vernoniae</i> | 1988 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | USA | 38.37922 | -90.3948 |
| PURN10768 | <i>Coleosporium</i> | <i>helianthi</i> | 1988 | Asteraceae | <i>Silphium</i> | <i>perfoliatum</i> | USA | 37.98906 | -90.49975 |
| PURN10774 | <i>Coleosporium</i> | <i>asterum</i> | 1988 | Asteraceae | <i>Solidago</i> | <i>sp.</i> | USA | 37.98906 | -90.4998 |
| PURN10786 | <i>Coleosporium</i> | <i>asterum</i> | 1986 | Asteraceae | <i>Solidago</i> | <i>sp.</i> | USA | 40.71321 | -86.8717 |
| PURN10889 | <i>Coleosporium</i> | <i>plumeriae</i> | 1999 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Palau | 6 | 134 |
| PURN10918 | <i>Coleosporium</i> | <i>plumeriae</i> | 1994 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | USA | 20.896984 | -156.204407 |
| PURN11066 | <i>Coleosporium</i> | <i>plumeriae</i> | 2012 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Guam | 13.44181667 | 144.78725 |
| PURN11174 | <i>Coleosporium</i> | <i>asterum</i> | 1965 | Asteraceae | <i>Solidago</i> | <i>rugosa</i> | USA | 39.03483 | -76.9075 |
| PURN11192 | <i>Coleosporium</i> | <i>elephantopi</i> | 1892 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | USA | 38.90509 | -77.0377 |
| PURN11193 | <i>Coleosporium</i> | <i>elephantopi</i> | 1889 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | USA | 38.79975 | -77.3034 |
| PURN11194 | <i>Coleosporium</i> | <i>pinicola</i> | 1907 | Pinaceae | <i>Pinus</i> | <i>virginiana</i> | USA | 38.95844 | -77.1258 |
| PURN11198 | <i>Coleosporium</i> | <i>vernoniae</i> | 1928 | Pinaceae | <i>Pinus</i> | <i>taeda</i> | USA | 29.65139 | -82.325 |
| PURN11388 | <i>Coleosporium</i> | <i>asterum</i> | 1966 | Asteraceae | <i>Solidago</i> | <i>juncea</i> | USA | 39.09928 | -76.8483 |
| PURN11413 | <i>Coleosporium</i> | <i>delicatulum</i> | 1930 | Asteraceae | <i>Euthamia</i> | <i>graminifolia</i> | USA | 39.03483 | -76.9075 |
| PURN11431 | <i>Coleosporium</i> | <i>asterum</i> | 1965 | Asteraceae | <i>Solidago</i> | <i>altissima</i> | USA | 39.03483 | -76.9075 |
| PURN11449 | <i>Coleosporium</i> | <i>asterum</i> | 1961 | Pinaceae | <i>Pinus</i> | <i>resinosa</i> | USA | 43.03981 | -89.4296 |
| PURN11563 | <i>Coleosporium</i> | <i>campanulae</i> | 2014 | Campanulaceae | <i>Campanula</i> | <i>sp.</i> | Russia | 43.68575556 | -132.1519444 |
| PURN11596 | <i>Coleosporium</i> | <i>clematidis</i> | 2012 | Ranunculaceae | <i>Clematis</i> | <i>grata</i> | Taiwan | 25.02055556 | 121.5455556 |
| PURN15093 | <i>Coleosporium</i> | <i>sp.</i> | 2012 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Japan | 36.1158333333 | 140.1014666667 |
| PURN15155 | <i>Coleosporium</i> | <i>neocacaliae</i> | 2012 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Japan | 35.92295 | -138.4935 |
| PURN15245 | <i>Coleosporium</i> | <i>horianum</i> | 2011 | Campanulaceae | <i>Campanula</i> | <i>sp.</i> | Taiwan | 23.4757833333 | 120.7191333333 |
| PURN15492 | <i>Coleosporium</i> | <i>vernoniae</i> | 2004 | Rubiaceae | <i>Manettia</i> | <i>sp.</i> | Ecuador | - | - |
| PURN15503 | <i>Coleosporium</i> | <i>vernoniae</i> | 2003 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Guyana | - | - |
| PURN15509 | <i>Coleosporium</i> | <i>vernoniae</i> | 2003 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Guyana | 5.309318525730168 | -58.98250911727238 |
| PURN15528 | <i>Coleosporium</i> | <i>plumeriae</i> | 2003 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | Guyana | - | - |
| PURN15531 | <i>Coleosporium</i> | <i>vernoniae</i> | 2004 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Guyana | - | - |
| PURN15534 | <i>Coleosporium</i> | <i>vernoniae</i> | 2004 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Guyana | - | - |
| PURN16072 | <i>Coleosporium</i> | <i>senecionis</i> | 2004 | Asteraceae | <i>Senecio</i> | <i>triangularis</i> | USA | - | - |
| PURN16113 | <i>Coleosporium</i> | <i>plumeriae</i> | 2006 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | India | - | - |
| PURN16340 | <i>Coleosporium</i> | <i>ipomoeae</i> | 2008 | Convolvulaceae | <i>Convolvulaceae</i> | <i>sp.</i> | South Africa | - | - |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|---------------------|------|----------------|-----------------------|----------------------|-------------|--------------|--------------|
| PURN16395 | <i>Coleosporium</i> | <i>plumeriae</i> | 2016 | Apocynaceae | <i>Apocynaceae</i> | <i>sp.</i> | Peru | -8.533333333 | -74.75 |
| PURN16396 | <i>Coleosporium</i> | <i>plumeriae</i> | 2016 | Apocynaceae | <i>Apocynaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN16398 | <i>Coleosporium</i> | <i>plumeriae</i> | 2016 | Apocynaceae | <i>Apocynaceae</i> | <i>sp.</i> | Ecuador | - | - |
| PURN16479 | <i>Coleosporium</i> | <i>ligulariae</i> | 2011 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | China | - | - |
| PURN16568 | <i>Coleosporium</i> | <i>ipomoeae</i> | 2010 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | USA | 30.95981154 | -90.29510966 |
| PURN166 | <i>Coleosporium</i> | <i>petasitis</i> | 1964 | Asteraceae | <i>Petasites</i> | <i>hybridus</i> | Finland | 60.4 | 25.116667 |
| PURN16639 | <i>Coleosporium</i> | <i>plumeriae</i> | 2007 | Apocynaceae | <i>Apocynaceae</i> | <i>sp.</i> | Malaysia | 5.9749 | 116.0724 |
| PURN170 | <i>Coleosporium</i> | <i>campanulae</i> | 1977 | Campanulaceae | <i>Campanula</i> | <i>rotundifolia</i> | Finland | 60.833333 | 24.666667 |
| PURN22426 | <i>Coleosporium</i> | <i>campanulae</i> | 2016 | Campanulaceae | <i>Campanula</i> | <i>sp.</i> | Turkey | - | - |
| PURN2294 | <i>Coleosporium</i> | <i>asterum</i> | 1996 | Asteraceae | <i>Eurybia</i> | <i>macrophylla</i> | USA | 45.946446 | -92.605168 |
| PURN2303 | <i>Coleosporium</i> | <i>asterum</i> | 1991 | Asteraceae | <i>Symphyotrichum</i> | <i>puniceum</i> | USA | 46.482743 | -94.651685 |
| PURN23056 | <i>Coleosporium</i> | <i>solidaginis</i> | 2017 | Asteraceae | <i>Solidago</i> | <i>sp.</i> | USA | 40.454389 | -86.93888 |
| PURN23057 | <i>Coleosporium</i> | <i>sp.</i> | 2018 | Asteraceae | <i>non-data</i> | <i>non-data</i> | Puerto Rico | 18.30149405 | -65.78420089 |
| PURN2306 | <i>Coleosporium</i> | <i>asterum</i> | 1995 | Asteraceae | <i>Symphyotrichum</i> | <i>urophyllum</i> | USA | 45.04313 | -93.1697 |
| PURN2314 | <i>Coleosporium</i> | <i>asterum</i> | 1994 | Asteraceae | <i>Solidago</i> | <i>canadensis</i> | USA | 45.823565 | -92.763538 |
| PURN2326 | <i>Coleosporium</i> | <i>campanulae</i> | 1985 | Campanulaceae | <i>Campanula</i> | <i>americana</i> | USA | 41.348 | -85.6464 |
| PURN2328 | <i>Coleosporium</i> | <i>campanulae</i> | 1993 | Campanulaceae | <i>Campanula</i> | <i>rapunculoides</i> | USA | 44.90406 | -93.1499 |
| PURN2332 | <i>Coleosporium</i> | <i>vernoniae</i> | 1996 | Asteraceae | <i>Vernonia</i> | <i>gigantea</i> | USA | 41.29806 | -81.1244 |
| PURN3037 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1981 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURN3038 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1982 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN3048 | <i>Coleosporium</i> | <i>sp.</i> | 1988 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN3052 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1988 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.3269 | -46.3654 |
| PURN3053 | <i>Coleosporium</i> | <i>vernoniae</i> | 1979 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | Brazil | -13.2506 | -39.7356 |
| PURN3058 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1987 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -6.748202 | -52.634766 |
| PURN3059 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1990 | Convolvulaceae | <i>Ipomoea</i> | <i>glabra</i> | Brazil | 0.214677 | -51.066667 |
| PURN3060 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1983 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN3061 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1982 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN3062 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1976 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN3063 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1976 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURN3064 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1977 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN3065 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1977 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN3066 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1978 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN3067 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1978 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN3068 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1979 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURN3069 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1982 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN3070 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1976 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN3206 | <i>Coleosporium</i> | <i>sp.</i> | 1967 | Convolvulaceae | <i>Convolvulaceae</i> | <i>non-data</i> | Mexico | 22.70848 | -100.347 |
| PURN3208 | <i>Coleosporium</i> | <i>vernoniae</i> | 1970 | Asteraceae | <i>Vernonia</i> | <i>schaffneri</i> | Mexico | 25.66349 | -99.4925 |
| PURN3209 | <i>Coleosporium</i> | <i>ligulariae</i> | 1979 | Asteraceae | <i>Ligularia</i> | <i>glauca</i> | Russia | 55.0415 | 82.9346 |
| PURN3219 | <i>Coleosporium</i> | <i>sp.</i> | 1969 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Mexico | 26.81063 | -101.988 |
| PURN3229 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1971 | Convolvulaceae | <i>Ipomoea</i> | <i>coccinea</i> | Mexico | 21.345649 | -97.838467 |
| PURN3232 | <i>Coleosporium</i> | <i>mentzeliae</i> | 1967 | Loasaceae | <i>Mentzelia</i> | <i>hispida</i> | Mexico | 20.8587 | -100.852054 |
| PURN3254 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1976 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN3255 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1976 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN3602 | <i>Coleosporium</i> | <i>plumeriae</i> | 1982 | Apocynaceae | <i>Plumeria</i> | <i>rubra</i> | Brazil | -22.512305 | -48.916169 |
| PURN3603 | <i>Coleosporium</i> | <i>plumeriae</i> | 1987 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | 0.214677 | -51.066667 |
| PURN3604 | <i>Coleosporium</i> | <i>plumeriae</i> | 1984 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -19.466721 | -44.172511 |
| PURN3605 | <i>Coleosporium</i> | <i>plumeriae</i> | 1990 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -2.607423 | -44.195963 |
| PURN385 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1975 | Asteraceae | <i>Emilia</i> | <i>sonchifolia</i> | Brazil | -22.5123 | -48.9162 |
| PURN391 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1976 | Asteraceae | <i>Emilia</i> | <i>sp.</i> | Brazil | -22.5123 | -48.9162 |
| PURN3951 | <i>Coleosporium</i> | <i>dahliae</i> | 1974 | Asteraceae | <i>Dahlia</i> | <i>sp.</i> | Mexico | 34.87508 | -84.2555 |
| PURN3954 | <i>Coleosporium</i> | <i>vernoniae</i> | 1975 | Asteraceae | <i>Elephantopus</i> | <i>mollis</i> | Ecuador | -0.167606 | -78.45071 |
| PURN3955 | <i>Coleosporium</i> | <i>vernoniae</i> | 1924 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | Ecuador | -2.218369 | -80.228825 |
| PURN396 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1977 | Asteraceae | <i>Emilia</i> | <i>sonchifolia</i> | Brazil | -21.9667 | -47.8167 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|--------------------|---------------------|---------------------|----------|-----------------|-----------------------|----------------------|----------------|------------|------------|
| PURN4056 | <i>Coleosporium</i> | <i>vernoniae</i> | 1988 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURN4066 | <i>Coleosporium</i> | <i>vernoniae</i> | 1979 | Asteraceae | <i>Elephantopus</i> | <i>angustifolius</i> | Brazil | -18.9757 | -44.484 |
| PURN4179 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1976 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Brazil | -18.9757 | -44.484 |
| PURN4187 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1924 | Asteraceae | <i>Senecio</i> | <i>brasilensis</i> | Uruguay | -34.858056 | -56.170833 |
| PURN441 | <i>Coleosporium</i> | <i>asterum</i> | 1999 | Asteraceae | <i>Solidago</i> | <i>curtisii</i> | USA | 35.6121 | -83.4889 |
| PURN4443 | <i>Coleosporium</i> | <i>steviae</i> | 1967 | Asteraceae | <i>Stevia</i> | <i>sp.</i> | Mexico | 24.83333 | -100.067 |
| PURN4538 | <i>Coleosporium</i> | <i>asterum</i> | 1984 | Asteraceae | <i>Solidago</i> | <i>gigantea</i> | USA | 43.60527 | -85.817 |
| PURN479 | <i>Coleosporium</i> | <i>plumeriae</i> | 2000 | Apocynaceae | <i>Plumeria</i> | <i>alba</i> | Nigeria | 6.8561 | 7.3927 |
| PURN5655 | <i>Coleosporium</i> | <i>tussilaginis</i> | 2005 | Asteraceae | <i>Tussilago</i> | <i>farfara</i> | Germany | 50.918898 | 14.150173 |
| PURN6391 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1944 | Asteraceae | <i>Senecio</i> | <i>bravensis</i> | Argentina | -34.661846 | -58.482483 |
| PURN6395 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1997 | Asteraceae | <i>Senecio</i> | <i>cremeiflorus</i> | Argentina | -28.469574 | -65.785239 |
| PURN6500 | <i>Coleosporium</i> | <i>arundina</i> | non-data | Poaceae | <i>Arundina</i> | <i>sp.</i> | Indonesia | -6.58694 | 106.7669 |
| PURN6501 | <i>Coleosporium</i> | <i>apocynaceum</i> | 1975 | Apocynaceae | <i>Catharanthus</i> | <i>rosea</i> | USA | 28.02224 | -81.7329 |
| PURN6503 | <i>Coleosporium</i> | <i>plumeriae</i> | 1986 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURN6518 | <i>Coleosporium</i> | <i>paederiae</i> | 1988 | Rubiaceae | <i>Paederia</i> | <i>foetida</i> | USA | 21.38659 | -157.805 |
| PURN6520 | <i>Coleosporium</i> | <i>jonesii</i> | 1992 | Grossulariaceae | <i>Ribes</i> | <i>uva-crispa</i> | USA | 41.31137 | -105.591 |
| PURN6529 | <i>Coleosporium</i> | <i>campanulae</i> | 1913 | Campanulaceae | <i>Campanula</i> | <i>americana</i> | USA | 39.05252 | -85.2158 |
| PURN6532 | <i>Coleosporium</i> | <i>campanulae</i> | 1991 | Campanulaceae | <i>Campanula</i> | <i>sp.</i> | England | 51.269738 | -0.402165 |
| PURN6541 | <i>Coleosporium</i> | <i>vernoniae</i> | 1958 | Asteraceae | <i>Vernonia</i> | <i>gigantea</i> | USA | 40.34661 | -87.1224 |
| PURN6546 | <i>Coleosporium</i> | <i>vernoniae</i> | 1954 | Pinaceae | <i>Pinus</i> | <i>palustris</i> | USA | 29.65163 | -82.3248 |
| PURN6562 | <i>Coleosporium</i> | <i>steviae</i> | 1938 | Asteraceae | <i>Eupatorium</i> | <i>collinum</i> | Guatemala | 14.59667 | -90.7547 |
| PURN6564 | <i>Coleosporium</i> | <i>delicatulum</i> | 1954 | Pinaceae | <i>Pinus</i> | <i>palustris</i> | USA | 29.65163 | -82.3248 |
| PURN6587 | <i>Coleosporium</i> | <i>viguierae</i> | 1987 | Asteraceae | <i>Verbesina</i> | <i>encelioides</i> | USA | 29.12026 | -98.3425 |
| PURN6589 | <i>Coleosporium</i> | <i>inconspicuum</i> | 1990 | Cordiaceae | <i>Coreopsis</i> | <i>major</i> | USA | 38.94098 | -77.1144 |
| PURN6593 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1949 | Asteraceae | <i>Senecio</i> | <i>candolii</i> | Bolivia | -15.7313 | -64.5293 |
| PURN6594 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1973 | Asteraceae | <i>Kleinia</i> | <i>neriifolia</i> | Canary Islands | 28.12868 | -16.52772 |
| PURN6595 | <i>Coleosporium</i> | <i>petasitis</i> | 1965 | Asteraceae | <i>Petasites</i> | <i>hybridus</i> | Sweden | 59.866667 | 17.633333 |
| PURN6597 | <i>Coleosporium</i> | <i>sonchi</i> | 1973 | Asteraceae | <i>Sonchus</i> | <i>arvensis</i> | Sweden | 59.519624 | 17.929832 |
| PURN6726 | <i>Coleosporium</i> | <i>tussilaginis</i> | 2011 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | China | 25.69946 | 100.19839 |
| PURN6729 | <i>Coleosporium</i> | <i>plumeriae</i> | 2011 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Guyana | 6.8 | -58.15 |
| PURN751 | <i>Coleosporium</i> | <i>asterum</i> | 1992 | Asteraceae | <i>Symphyotrichum</i> | <i>ericoides</i> | USA | 44.53934 | -92.7385 |
| PURN752 | <i>Coleosporium</i> | <i>asterum</i> | 1992 | Asteraceae | <i>Symphyotrichum</i> | <i>lanceolatum</i> | USA | 44.56372 | -123.274 |
| PURN759 | <i>Coleosporium</i> | <i>asterum</i> | 1978 | Asteraceae | <i>Solidago</i> | <i>canadensis</i> | USA | 42.2431 | -84.753 |
| PURN770 | <i>Coleosporium</i> | <i>campanulae</i> | 1991 | Campanulaceae | <i>Campanula</i> | <i>rapunculoides</i> | USA | 44.98526 | -93.1577 |
| PURN7785 | <i>Coleosporium</i> | <i>plumeriae</i> | 2013 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Guyana | 3.57 | -59.07 |
| PURN891 | <i>Coleosporium</i> | <i>campanulae</i> | 1993 | Campanulaceae | <i>Campanula</i> | <i>rapunculoides</i> | USA | 44.98551 | -93.1576 |
| PURN93955/PURN3955 | <i>Coleosporium</i> | <i>vernoniae</i> | 1924 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | Ecuador | -2.218369 | -80.228825 |
| PURN9620 | <i>Coleosporium</i> | <i>vernoniae</i> | 1961 | Asteraceae | <i>Vernonia</i> | <i>missurica</i> | USA | 40.45544 | -86.9393 |
| PURN9625 | <i>Coleosporium</i> | <i>plumeriae</i> | 1996 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Honduras | 15.781944 | -86.790278 |
| PURN9632 | <i>Coleosporium</i> | <i>asterum</i> | 1998 | Asteraceae | <i>Solidago</i> | <i>chulensis</i> | Brazil | -22.5123 | -48.9162 |
| PURN9634 | <i>Coleosporium</i> | <i>asterum</i> | 1998 | Asteraceae | <i>Solidago</i> | <i>sp.</i> | Brazil | -22.5123 | -48.9162 |
| PURN9641 | <i>Coleosporium</i> | <i>tussilaginis</i> | 1998 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Brazil | -22.3987 | -48.8644 |
| PURN9646 | <i>Coleosporium</i> | <i>pacificum</i> | 1997 | Asteraceae | <i>Madia</i> | <i>sp.</i> | USA | 40.44013 | -124.41 |
| PURN9647 | <i>Coleosporium</i> | <i>plumeriae</i> | 1998 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN9648 | <i>Coleosporium</i> | <i>plumeriae</i> | 1999 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -24.18 | -46.59 |
| PURN9649 | <i>Coleosporium</i> | <i>plumeriae</i> | 1990 | Apocynaceae | <i>Plumeria</i> | <i>alba</i> | Brazil | -4 | -39 |
| PURN9650 | <i>Coleosporium</i> | <i>plumeriae</i> | 1990 | Apocynaceae | <i>Plumeria</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN9656 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1998 | Convolvulaceae | <i>Merremia</i> | <i>macrocalyx</i> | Brazil | -22.512305 | -48.916169 |
| PURN9657 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1996 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Honduras | 14.712 | -86.807983 |
| PURN9658 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1997 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURN9659 | <i>Coleosporium</i> | <i>ipomoeae</i> | 1998 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN9660 | <i>Coleosporium</i> | <i>ipomoeae</i> | non-data | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Brazil | -19.118652 | -54.596288 |
| PURN9663 | <i>Coleosporium</i> | <i>vernoniae</i> | 1997 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | Brazil | -4.01681 | -53.415 |
| PURN9677 | <i>Coleosporium</i> | <i>vernoniae</i> | 1999 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | Brazil | -22.3987 | -48.8644 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|------------------------|------|-----------------|-----------------------|--------------------------|-------------|-----------|-------------|
| PURN9691 | <i>Coleosporium</i> | <i>asterum</i> | 1970 | Asteraceae | <i>Solidago</i> | <i>altissimum</i> | USA | 43.387274 | -88.022964 |
| PURN9692 | <i>Coleosporium</i> | <i>asterum</i> | 1964 | Asteraceae | <i>Solidago</i> | <i>sp.</i> | USA | 43.42528 | -88.1834 |
| PURN9699 | <i>Coleosporium</i> | <i>elephantopidis</i> | 1996 | Asteraceae | <i>Elephantopus</i> | <i>sp.</i> | Honduras | 15.781944 | -86.790278 |
| PURN970 | <i>Coleosporium</i> | <i>asterum</i> | 1990 | Asteraceae | <i>Symphyotrichum</i> | <i>cordifolium</i> | USA | 45.48417 | -93.7124 |
| PURN972 | <i>Coleosporium</i> | <i>asterum</i> | 1991 | Asteraceae | <i>Symphyotrichum</i> | <i>sp.</i> | USA | 45.23107 | -93.9858 |
| PURF9958 | <i>Corbulopsora</i> | <i>gravida</i> | 1939 | Asteraceae | <i>Olearia</i> | <i>sp.</i> | New Guinea | -6.91463 | 147.0195 |
| PUR44407 | <i>Cronartium</i> | <i>comptoniae</i> | 1910 | Pinaceae | <i>Pinus</i> | <i>banksiana</i> | USA | 43.90702 | -69.86 |
| PUR44424 | <i>Cronartium</i> | <i>comptoniae</i> | 1916 | Pinaceae | <i>Pinus</i> | <i>nigra austriaca</i> | USA | 40.80506 | -81.9351 |
| PUR44567 | <i>Cronartium</i> | <i>comandrae</i> | 1928 | Santalaceae | <i>Comandra</i> | <i>livida</i> | Canada | 53.96667 | -97.8333 |
| PUR48249 | <i>Cronartium</i> | <i>quercuum</i> | 1934 | Fagaceae | <i>Quercus</i> | <i>garryana</i> | USA | 40.99972 | -123.62 |
| PUR48514 | <i>Cronartium</i> | <i>comandrae</i> | 1937 | Santalaceae | <i>Comandra</i> | <i>livida</i> | Canada | 61.79155 | -113.231 |
| PUR49138 | <i>Cronartium</i> | <i>quercuum</i> | 1939 | Pinaceae | <i>Pinus</i> | <i>montezumae</i> | Guatemala | 14.64 | -90.9186 |
| PUR49386 | <i>Cronartium</i> | <i>quercuum</i> | 1936 | Fagaceae | <i>Quercus</i> | <i>corrugata</i> | Guatemala | 14.85852 | -91.96312 |
| PUR49463 | <i>Cronartium</i> | <i>conigenum</i> | 1907 | Pinaceae | <i>Pinus</i> | <i>sp.</i> | Guatemala | 15.05707 | -90.417 |
| PUR4959 | <i>Cronartium</i> | <i>comptoniae</i> | 1887 | Myricaceae | <i>Comptonia</i> | <i>peregrina</i> | USA | 41.67454 | -72.8582 |
| PUR5012 | <i>Cronartium</i> | <i>quercuum</i> | 1989 | Pinaceae | <i>Pinus</i> | <i>ponderosa</i> | USA | 42.53639 | -99.7007 |
| PUR50428 | <i>Cronartium</i> | <i>coleosporoides</i> | 1941 | Orobanchaceae | <i>Castilleja</i> | <i>integrifolia</i> | Guatemala | 14.74122 | -91.6639 |
| PUR5058 | <i>Cronartium</i> | <i>quercuum</i> | 1916 | Fagaceae | <i>Quercus</i> | <i>agrifolia</i> | USA | 36.55289 | -121.954 |
| PUR52800 | <i>Cronartium</i> | <i>filamentosum</i> | 1917 | Pinaceae | <i>Pinus</i> | <i>ponderosa</i> | USA | 42.32215 | -111.298 |
| PUR52816 | <i>Cronartium</i> | <i>quercuum</i> | 1918 | Fagaceae | <i>Quercus</i> | <i>oblongifolia</i> | USA | 31.9137 | -109.141 |
| PUR5408 | <i>Cronartium</i> | <i>coleosporoides</i> | 1911 | Pinaceae | <i>Pinus</i> | <i>contorta</i> | USA | 40.20725 | -120.908 |
| PUR54501 | <i>Cronartium</i> | <i>quercuum</i> | 1919 | Fagaceae | <i>Quercus</i> | <i>germinata</i> | USA | 28.02986 | -82.781 |
| PUR5487 | <i>Cronartium</i> | <i>coleosporoides</i> | 1920 | Orobanchaceae | <i>Cordylanthus</i> | <i>tenuis</i> | USA | 40.13961 | -120.951 |
| PUR56434 | <i>Cronartium</i> | <i>conigenum</i> | 1957 | Pinaceae | <i>Pinus</i> | <i>chihuahuana</i> | USA | 31.75287 | -109.43 |
| PUR59405 | <i>Cronartium</i> | <i>conigenum</i> | 1939 | Fagaceae | <i>Quercus</i> | <i>emoryi</i> | Mexico | 28.622859 | -106.065885 |
| PUR59949 | <i>Cronartium</i> | <i>ribicola</i> | 1955 | Pinaceae | <i>Pinus</i> | <i>albicaulis</i> | USA | 48.31941 | -113.246 |
| PUR61743 | <i>Cronartium</i> | <i>filamentosum</i> | 1966 | Orobanchaceae | <i>Castilleja</i> | <i>sp.</i> | USA | 32.44531 | -110.785 |
| PUR62299 | <i>Cronartium</i> | <i>fusiforme</i> | 1967 | Fagaceae | <i>Quercus</i> | <i>sp.</i> | Mexico | 20.76963 | -99.8754 |
| PUR63903 | <i>Cronartium</i> | <i>filamentosum</i> | 1968 | Pinaceae | <i>Pinus</i> | <i>durangensis</i> | Mexico | 24.05731 | -104.644 |
| PUR65304 | <i>Cronartium</i> | <i>comptoniae</i> | 1887 | Myricaceae | <i>Comptonia</i> | <i>peregrina</i> | USA | 41.67454 | -72.8582 |
| PUR65823 | <i>Cronartium</i> | <i>conigenum</i> | 1977 | Fagaceae | <i>Quercus</i> | <i>sp.</i> | El Salvador | 14.3 | -89.1833 |
| PUR65940 | <i>Cronartium</i> | <i>quercuum</i> | 1977 | Pinaceae | <i>Pinus</i> | <i>virginiana</i> | USA | 34.76491 | -84.1795 |
| PURF12501 | <i>Cronartium</i> | <i>quercuum</i> | 1927 | Pinaceae | <i>Pinus</i> | <i>densiflora</i> | Japan | 43.6267 | 141.4283 |
| PURF12503 | <i>Cronartium</i> | <i>quercuum</i> | 1930 | Fagaceae | <i>Quercus</i> | <i>acutissima</i> | Japan | 35.47528 | 134.2489 |
| PURF14719 | <i>Cronartium</i> | <i>himalayense</i> | 1930 | Pinaceae | <i>Pinus</i> | <i>longifolia</i> | India | 29.37953 | 79.46538 |
| PURF15713 | <i>Cronartium</i> | <i>quercuum</i> | 1951 | Fagaceae | <i>Castanea</i> | <i>sp.</i> | Pakistan | 34.541667 | 73.35 |
| PURF400 | <i>Cronartium</i> | <i>ribicola</i> | 1890 | Grossulariaceae | <i>Ribes</i> | <i>aconitifolium</i> | Germany | 52.45496 | 13.48537 |
| PURF401 | <i>Cronartium</i> | <i>ribicola</i> | 1889 | Grossulariaceae | <i>Ribes</i> | <i>albidum</i> | Germany | 52.4527 | 13.32989 |
| PURF437 | <i>Cronartium</i> | <i>coleosporioides</i> | 1920 | Orobanchaceae | <i>Castilleja</i> | <i>sp.</i> | Ecuador | -0.16136 | -78.48289 |
| PURF456 | <i>Cronartium</i> | <i>flaccidum</i> | 1875 | Paeoniaceae | <i>Paeonia</i> | <i>edulis</i> | Italy | 44.8 | 10.33333 |
| PURF457 | <i>Cronartium</i> | <i>flaccidum</i> | 1895 | Paeoniaceae | <i>Paeonia</i> | <i>herbacea</i> | Germany | 52.45496 | 13.48537 |
| PURF9189 | <i>Cronartium</i> | <i>byrsonimatis</i> | 1921 | Malpighiaceae | <i>Byrsonima</i> | <i>verbascifolia</i> | Trinidad | 10.5 | -61.25 |
| PURN2338 | <i>Cronartium</i> | <i>quercuum</i> | 1991 | Fagaceae | <i>Quercus</i> | <i>rubra</i> | USA | 47.03542 | -94.6969 |
| PURN4814 | <i>Cronartium</i> | <i>quercuum</i> | 1919 | Fagaceae | <i>Quercus</i> | <i>agrifolia</i> | USA | 36.61774 | -121.917 |
| PURN4821 | <i>Cronartium</i> | <i>quercuum</i> | 1904 | Fagaceae | <i>Quercus</i> | <i>alba</i> | USA | 38.84694 | -86.0978 |
| PURN5146 | <i>Cronartium</i> | <i>quercuum</i> | 2005 | Fagaceae | <i>Quercus</i> | <i>alba</i> | USA | 41.15837 | -86.9014 |
| PUR42807 | <i>Crossopsora</i> | <i>hymenaeae</i> | 1915 | Fabaceae | <i>Hymenaea</i> | <i>courbaril</i> | Cuba | 23.131944 | -82.364167 |
| PUR42883 | <i>Crossopsora</i> | <i>bixae</i> | 1916 | Bixaceae | <i>Bixa</i> | <i>orellana</i> | Puerto Rico | 18.17382 | -66.9747 |
| PUR49566 | <i>Crossopsora</i> | <i>mateleae</i> | 1908 | Apocynaceae | <i>Macroscepis</i> | <i>sp.</i> | Guatemala | 15.21667 | -89.2833 |
| PUR49570 | <i>Crossopsora</i> | <i>wilsoniana</i> | 1905 | Vitaceae | <i>Cissus</i> | <i>alata</i> | Guatemala | 15.45454 | -90.439 |
| PUR50433 | <i>Crossopsora</i> | <i>stevensii</i> | 1940 | Apocynaceae | <i>Mandevilla</i> | <i>subsagittata</i> | Guatemala | 14.07417 | -90.4167 |
| PUR66796 | <i>Crossopsora</i> | <i>uleana</i> | 1924 | Solanaceae | <i>Cyphomandra</i> | <i>arctocarpophyllos</i> | Ecuador | -2.218369 | -80.228825 |
| PUR88041 | <i>Crossopsora</i> | <i>notata</i> | 1974 | Malpighiaceae | <i>Byrsonima</i> | <i>crassifolia</i> | Mexico | 16.4185 | -93.8332 |
| PUR88261 | <i>Crossopsora</i> | <i>notata</i> | 1977 | Malpighiaceae | <i>Byrsonima</i> | <i>coccolobifolia</i> | Brazil | -15.7833 | -47.8228 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|--------------------|------------------------|------|------------------|---------------------|-----------------------|------------------------------|------------|-------------|
| PUR88273 | <i>Crossopora</i> | <i>byrsonimatis</i> | 1976 | Malpighiaceae | <i>Byrsonima</i> | <i>affinis</i> | Brazil | -18.9757 | -44.484 |
| PURF10798 | <i>Crossopora</i> | <i>fici</i> | 1942 | Moraceae | <i>Ficus</i> | <i>sp.</i> | Uganda | 1.209301 | 32.476074 |
| PURF11857 | <i>Crossopora</i> | <i>mateleae</i> | 1946 | Apocynaceae | <i>Matelea</i> | <i>maritima</i> | Grenada | 12.114055 | -61.672638 |
| PURF11859 | <i>Crossopora</i> | <i>stevensii</i> | 1947 | Apocynaceae | <i>Mandevilla</i> | <i>hirsuta</i> | Trinidad | 10.5 | -61.25 |
| PURF14458 | <i>Crossopora</i> | <i>mateleae</i> | 1948 | Apocynaceae | <i>Matelea</i> | <i>denticulata</i> | St. Vincent & the Grenadines | 13.128501 | -61.231812 |
| PURF14681 | <i>Crossopora</i> | <i>mateleae</i> | 1952 | Apocynaceae | <i>Gonolobus</i> | <i>broadwayi</i> | Trinidad | 10.76721 | -61.40533 |
| PURF14931 | <i>Crossopora</i> | <i>asclepiadiaceae</i> | 1953 | Apocynaceae | <i>Metastelma</i> | <i>parviflorum</i> | Trinidad | 10.688447 | -61.754619 |
| PURF16191 | <i>Crossopora</i> | <i>gilgiana</i> | 1952 | Ebenaceae | <i>Euclea</i> | <i>multiflora</i> | Zambia | -16.8065 | 26.98189 |
| PURF18512 | <i>Crossopora</i> | <i>mateleae</i> | 1947 | Apocynaceae | <i>Matelea</i> | <i>denticulata</i> | Trinidad | 11.25 | -60.66667 |
| PURF468 | <i>Crossopora</i> | <i>brysonimatis</i> | 1920 | Malpighiaceae | <i>Brysonima</i> | <i>crassifolia</i> | Bolivia | -16.139956 | -67.724731 |
| PURF480 | <i>Crossopora</i> | <i>premae</i> | 1923 | Lamiaceae | <i>Premna</i> | <i>nauseosa</i> | Philippines | 14.57666 | 121.0415 |
| PURF8985 | <i>Crossopora</i> | <i>stevensii</i> | 1913 | Apocynaceae | <i>Mandevilla</i> | <i>tomentosa</i> | Trinidad | 10.5 | -61.25 |
| PURF8986 | <i>Crossopora</i> | <i>stevensii</i> | 1913 | Apocynaceae | <i>Mandevilla</i> | <i>tomentosa</i> | Trinidad | 10.687634 | -61.395569 |
| PURF8987 | <i>Crossopora</i> | <i>stevensii</i> | 1921 | Apocynaceae | <i>Mandevilla</i> | <i>tomentosa</i> | Trinidad | 10.5 | -61.25 |
| PURF8988 | <i>Crossopora</i> | <i>stevensii</i> | 1921 | Apocynaceae | <i>Mandevilla</i> | <i>tomentosa</i> | Trinidad | 10.5 | -61.25 |
| PURF8989 | <i>Crossopora</i> | <i>stevensii</i> | 1921 | Apocynaceae | <i>Mandevilla</i> | <i>tomentosa</i> | Trinidad | 10.5 | -61.25 |
| PURN3093 | <i>Crossopora</i> | <i>byrsonimatis</i> | 1978 | Malpighiaceae | <i>Byrsonima</i> | <i>coccolobifolia</i> | Brazil | -15.8333 | -48.0255 |
| PURN3182 | <i>Crossopora</i> | <i>brysonimatis</i> | 1983 | Malpighiaceae | <i>Brysonima</i> | <i>crassifolia</i> | Venezuela | 8.672295 | -62.630815 |
| PURN3282 | <i>Crossopora</i> | <i>piperis</i> | 1959 | Piperaceae | <i>Piperaceae</i> | <i>non-data</i> | Brazil | -22.8656 | -43.4272 |
| PURN4131 | <i>Crossopora</i> | <i>crassa</i> | 1976 | Bignoniaceae | <i>Xylophragma</i> | <i>myrantha</i> | Brazil | -18.9757 | -44.484 |
| PURN4136 | <i>Crossopora</i> | <i>angustata</i> | 1988 | Apocynaceae | <i>Mesochites</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURN4232 | <i>Crossopora</i> | <i>hymenaeae</i> | 1978 | Fabaceae | <i>Hymenaea</i> | <i>stigonocaupa</i> | Brazil | -15.8333 | -48.0255 |
| PURN4233 | <i>Crossopora</i> | <i>hymenaeae</i> | 1989 | Fabaceae | <i>Hymenaea</i> | <i>sp.</i> | Brazil | 0.214677 | -51.0667 |
| PURN6553 | <i>Crossopora</i> | <i>byrsonimatis</i> | 1968 | Malpighiaceae | <i>Byrsonima</i> | <i>crassifolia</i> | Costa Rica | 10.20411 | -85.105 |
| PUR62095 | <i>Cumminsia</i> | <i>texana</i> | 1917 | Berberidaceae | <i>Mahonia</i> | <i>trifoliata</i> | Mexico | 24.866667 | -100.226611 |
| PUR62791 | <i>Cumminsia</i> | <i>standleyana</i> | 1968 | Berberidaceae | <i>Mahonia</i> | <i>moranensis</i> | Mexico | 19.044417 | -100.04405 |
| PUR66111 | <i>Cumminsia</i> | <i>umbrosa</i> | 1927 | Berberidaceae | <i>Mahonia</i> | <i>lanceolata</i> | Mexico | 39.25027 | -96.31472 |
| PUR7159 | <i>Cumminsia</i> | <i>texana</i> | 1916 | Berberidaceae | <i>Berberis</i> | <i>trifoliata</i> | USA | 29.424122 | -98.493628 |
| PURN11559 | <i>Cumminsia</i> | <i>mirabilissima</i> | 2013 | Berberidaceae | <i>Mahonia</i> | <i>aquifolium</i> | France | 50.610216 | 3.142184 |
| PURN6379 | <i>Cumminsia</i> | <i>mirabilissima</i> | 1975 | Berberidaceae | <i>Mahonia</i> | <i>aquifolium</i> | Australia | -33.695512 | 149.556007 |
| PURN6380 | <i>Cumminsia</i> | <i>stolpiana</i> | 1897 | Berberidaceae | <i>Berberis</i> | <i>buxifolia</i> | Argentina | -39.422243 | -71.304901 |
| PUR60025 | <i>Dasyspora</i> | <i>mesoamericana</i> | 1944 | Annonaceae | <i>Xylopia</i> | <i>frutescens</i> | Mexico | 21.345649 | -97.838467 |
| PUR85672 | <i>Dasyspora</i> | <i>gregaria</i> | 1977 | Annonaceae | <i>Xylopia</i> | <i>aromatica</i> | Brazil | -21.9667 | -47.8167 |
| PUR88967 | <i>Dasyspora</i> | <i>gregaria</i> | 1980 | Annonaceae | <i>Xylopia</i> | <i>aromatica</i> | Brazil | -21.9667 | -47.8167 |
| PUR88604 | <i>Desmella</i> | <i>superficialis</i> | 1975 | Pteridaceae | <i>Pteris</i> | <i>podophylla</i> | Colombia | 3.5 | -73 |
| PUR88977 | <i>Desmella</i> | <i>anemia</i> | 1975 | Pteridaceae | <i>Pityrogramma</i> | <i>calomelanos</i> | Ecuador | -2.965497 | -78.431972 |
| PUR89165 | <i>Desmella</i> | <i>anemoiae</i> | 1977 | Thelypteridaceae | <i>Cyclosorus</i> | <i>non-data</i> | Brazil | -20.7568 | -42.8766 |
| PUR89228 | <i>Desmella</i> | <i>aneimiae</i> | 1975 | Anemiaceae | <i>Fern</i> | <i>non-data</i> | Ecuador | -3.553987 | -80.066816 |
| PUR89229 | <i>Desmella</i> | <i>aneimiae</i> | 1975 | Anemiaceae | <i>Fern</i> | <i>non-data</i> | Ecuador | -2.9655 | -78.43197 |
| PUR89336 | <i>Desmella</i> | <i>anemiae</i> | 1982 | Nephrolepidaceae | <i>Nephrolepis</i> | <i>sp.</i> | Jamaica | 18.15714 | -77.3872 |
| PURF1233 | <i>Desmella</i> | <i>superficialis</i> | 1921 | Pteridaceae | <i>Adiantum</i> | <i>latifolium</i> | Trinidad | 10.5 | -61.25 |
| PURF1234 | <i>Desmella</i> | <i>superficialis</i> | 1906 | Anemiaceae | <i>Anemia</i> | <i>sp.</i> | Ecuador | -2.754284 | -79.739918 |
| PURF1235 | <i>Desmella</i> | <i>superficialis</i> | 1913 | Lomariopsidaceae | <i>Cyclopetis</i> | <i>semicordata</i> | Trinidad | 10.5 | -61.25 |
| PURF1239 | <i>Desmella</i> | <i>superficialis</i> | 1891 | Pteridaceae | <i>Pityrogramma</i> | <i>calomelanos</i> | Ecuador | -1.515042 | -78.244141 |
| PURN15502 | <i>Desmella</i> | <i>aneimiae</i> | 2003 | Thelypteridaceae | <i>Thelypteris</i> | <i>sp.</i> | Guyana | - | - |
| PURN15505 | <i>Desmella</i> | <i>aneimiae</i> | 2003 | Thelypteridaceae | <i>Thelypteris</i> | <i>sp.</i> | Guyana | - | - |
| PURN15525 | <i>Desmella</i> | <i>aneimiae</i> | 2003 | Thelypteridaceae | <i>Thelypteris</i> | <i>sp.</i> | Guyana | - | - |
| PURN20 | <i>Desmella</i> | <i>aneimiae</i> | 1975 | Anemiaceae | <i>Fern</i> | <i>non-data</i> | Ecuador | -3.553987 | -80.066816 |
| PURN4294 | <i>Desmella</i> | <i>anemoiae</i> | 1979 | Nephrolepidaceae | <i>Nephrolepis</i> | <i>exaltata</i> | Brazil | -22.3987 | -48.8644 |
| PURN4306 | <i>Desmella</i> | <i>anemoiae</i> | 1988 | Thelypteridaceae | <i>Cyclosorus</i> | <i>non-data</i> | Brazil | -21.9667 | -47.8167 |
| PUR6512 | <i>Dicheirinia</i> | <i>binata</i> | 1924 | Fabaceae | <i>Erythrina</i> | <i>crista-galli</i> | Puerto Rico | 18.271936 | -66.521729 |
| PUR89709 | <i>Dicheirinia</i> | <i>ormosiae</i> | 1941 | Fabaceae | <i>Ormosia</i> | <i>nobilis</i> | Brazil | -5.113167 | -45.264909 |
| PURF10337 | <i>Dicheirinia</i> | <i>archeri</i> | 1940 | Fabaceae | <i>Deguelia</i> | <i>utilis</i> | Peru | -12.087145 | -77.22104 |
| PURF11000 | <i>Dicheirinia</i> | <i>archeri</i> | 1944 | Fabaceae | <i>Lonchocarpus</i> | <i>sp.</i> | Peru | -3.749125 | -73.253828 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------------|------------------------|----------|---------------|-----------------------|-----------------------|--------------|------------|------------|
| PURF11001 | <i>Dicheimia</i> | <i>archeri</i> | 1944 | Fabaceae | <i>Deguelia</i> | <i>utilis</i> | Peru | -3.749112 | -73.4078 |
| PURF11002 | <i>Dicheimia</i> | <i>archeri</i> | 1944 | Fabaceae | <i>Deguelia</i> | <i>utilis</i> | Peru | -3.749125 | -73.253828 |
| PURF11081 | <i>Dicheimia</i> | <i>manaosensis</i> | 1943 | Fabaceae | <i>Lonchocarpus</i> | <i>sp.</i> | Colombia | -1.38997 | -71.525677 |
| PURF2222 | <i>Dicheimia</i> | <i>binata</i> | 1916 | Fabaceae | <i>Erythrina</i> | <i>mitis</i> | Trinidad | 10.5 | -61.25 |
| PURF9487 | <i>Dicheimia</i> | <i>guianensis</i> | 1938 | Fabaceae | <i>Lonchocarpus</i> | <i>sp.</i> | Guyana | 4.719669 | -58.666504 |
| PURN10446 | <i>Dicheimia</i> | <i>manaosensis</i> | non-data | Fabaceae | <i>Lonchocarpus</i> | <i>rariflorus</i> | Guyana | 3.832262 | -53.272217 |
| PURN10447 | <i>Dicheimia</i> | <i>guianensis</i> | non-data | Fabaceae | <i>Lonchocarpus</i> | <i>nicou</i> | Colombia | 3.5 | -73 |
| PURN10461 | <i>Dicheimia</i> | <i>archeri</i> | 1942 | Fabaceae | <i>Lonchocarpus</i> | <i>sp.</i> | Colombia | 0.729444 | -76.591389 |
| PURN10462 | <i>Dicheimia</i> | <i>archeri</i> | 1944 | Fabaceae | <i>Lonchocarpus</i> | <i>nicou</i> | Colombia | 3.5 | -73 |
| PURN10463 | <i>Dicheimia</i> | <i>archeri</i> | 1966 | Fabaceae | <i>Lonchocarpus</i> | <i>nicou</i> | Colombia | 3.442371 | -73.310196 |
| PURN10464 | <i>Dicheimia</i> | <i>archeri</i> | 1976 | Fabaceae | <i>Lonchocarpus</i> | <i>utilis</i> | Venezuela | 7.633544 | -64.889253 |
| PURN10467 | <i>Dicheimia</i> | <i>archeri</i> | 1966 | Fabaceae | <i>Lonchocarpus</i> | <i>martynii</i> | Venezuela | 8.129234 | -63.540855 |
| PURN10469 | <i>Dicheimia</i> | <i>manaosensis</i> | 1942 | Fabaceae | <i>Lonchocarpus</i> | <i>sp.</i> | Colombia | -58.666504 | -76.591389 |
| PURF19366 | <i>Didymopora</i> | <i>solani-argentei</i> | 1977 | Solanaceae | <i>Solanum</i> | <i>argenteum</i> | Brazil | -21.9667 | -47.8167 |
| PURN6941 | <i>Didymopora</i> | <i>triumfettae</i> | 1998 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Brazil | -24.1 | -48.22 |
| PUR5750 | <i>Dietelia</i> | <i>portoricensis</i> | 1925 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF10849 | <i>Dietelia</i> | <i>portoricensis</i> | 1938 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Venezuela | 10.460393 | -67.768044 |
| PURF8659 | <i>Dietelia</i> | <i>holwayi</i> | 1920 | Solanaceae | <i>Salpichroa</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8672 | <i>Dietelia</i> | <i>portoricensis</i> | 1921 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8673 | <i>Dietelia</i> | <i>portoricensis</i> | 1921 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURN6660 | <i>Diorchidium</i> | <i>woodii</i> | 1912 | Fabaceae | <i>Milletia</i> | <i>grandis</i> | South Africa | -28.194507 | 30.416475 |
| PURN6661 | <i>Diorchidium</i> | <i>guadrifidum</i> | 1981 | Fabaceae | <i>Dalbergia</i> | <i>sp.</i> | Nigeria | 6.8561 | 7.3927 |
| PUR64127 | <i>Dipyxis</i> | <i>mexicana</i> | 1971 | Bignoniaceae | <i>Adenocalymma</i> | <i>imundatum</i> | Mexico | 20.0131 | -97.5311 |
| PURF11900 | <i>Edythea</i> | <i>quitensis</i> | 1946 | Berberidaceae | <i>Berberis</i> | <i>boliviana</i> | Bolivia | -17.118938 | -65.950439 |
| PURF1949 | <i>Edythea</i> | <i>berberidis</i> | 1891 | Berberidaceae | <i>Berberis</i> | <i>glaucescens</i> | Ecuador | -1.515042 | -78.244141 |
| PURF1951 | <i>Edythea</i> | <i>quitensis</i> | 1920 | Berberidaceae | <i>Berberis</i> | <i>phyllacantha</i> | Bolivia | -15.76667 | -68.63333 |
| PURF1952 | <i>Edythea</i> | <i>quitensis</i> | 1920 | Berberidaceae | <i>Berberis</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF1953 | <i>Edythea</i> | <i>quitensis</i> | 1920 | Berberidaceae | <i>Berberis</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURF19692 | <i>Edythea</i> | <i>quitensis</i> | 1975 | Berberidaceae | <i>Berberis</i> | <i>sp.</i> | Ecuador | -4.009957 | -79.204071 |
| PURF19693 | <i>Edythea</i> | <i>quitensis</i> | 1975 | Berberidaceae | <i>Berberis</i> | <i>sp.</i> | Ecuador | -4.009957 | -79.204071 |
| PURF68850 | <i>Edythea</i> | <i>quitensis</i> | 1891 | Berberidaceae | <i>Berberis</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURN3389 | <i>Edythea</i> | <i>quitensis</i> | 1937 | Berberidaceae | <i>Berberis</i> | <i>schwerini</i> | Ecuador | -0.167606 | -78.45071 |
| PUR50579 | <i>Endocronartium</i> | <i>harknessii</i> | 1941 | Pinaceae | <i>Pinus</i> | <i>contorta</i> | USA | 58.38169 | -134.599 |
| PUR65683 | <i>Endocronartium</i> | <i>harknesii</i> | 1977 | Pinaceae | <i>Pinus</i> | <i>banksiana</i> | Canada | 46.79785 | -64.9641 |
| PUR54746 | <i>Endophyllum</i> | <i>lacus-regis</i> | 1955 | Montiaceae | <i>Claytonia</i> | <i>caroliniana</i> | Canada | 51 | -89.977 |
| PUR56924 | <i>Endophyllum</i> | <i>circumscriptum</i> | 1959 | Vitaceae | <i>Cissus</i> | <i>verticillata</i> | USA | 25.77427 | -80.1937 |
| PUR5910 | <i>Endophyllum</i> | <i>stachytarphetae</i> | 1924 | Verbenaceae | <i>Stachytarpheta</i> | <i>cayennensis</i> | Puerto Rico | 18.35754 | -66.1128 |
| PUR5918 | <i>Endophyllum</i> | <i>decoloratum</i> | 1898 | Asteraceae | <i>Clibadium</i> | <i>arborescens</i> | Mexico | 19.54483 | -96.9177 |
| PURF14688 | <i>Endophyllum</i> | <i>decoloratum</i> | 1952 | Asteraceae | <i>Clibadium</i> | <i>surinamense</i> | Trinidad | 10.5 | -61.25 |
| PURF15190 | <i>Endophyllum</i> | <i>griffithiae</i> | 1920 | Rubiaceae | <i>Benkara</i> | <i>sinensis</i> | China | 23.11667 | 113.25 |
| PURF15937 | <i>Endophyllum</i> | <i>decoloratum</i> | 1953 | Asteraceae | <i>Clibadium</i> | <i>sp.</i> | Colombia | 5.635 | -69.972778 |
| PURF7172 | <i>Endophyllum</i> | <i>stachytarphetae</i> | 1921 | Verbenaceae | <i>Stachytarpheta</i> | <i>cayennensis</i> | Trinidad | 10.5 | -61.25 |
| PURF7173 | <i>Endophyllum</i> | <i>stachytarphetae</i> | 1921 | Verbenaceae | <i>Stachytarpheta</i> | <i>cayennensis</i> | Trinidad | 10.6 | -61.26 |
| PURF7174 | <i>Endophyllum</i> | <i>stachytarphetae</i> | 1921 | Verbenaceae | <i>Stachytarpheta</i> | <i>cayennensis</i> | Trinidad | 10.5 | -61.25 |
| PURF8652 | <i>Endophyllum</i> | <i>circumscriptum</i> | 1920 | Vitaceae | <i>Cissus</i> | <i>verticillata</i> | Ecuador | -2.20584 | -79.90795 |
| PURF8653 | <i>Endophyllum</i> | <i>stachytarphetae</i> | 1913 | Vitaceae | <i>Cissus</i> | <i>verticillata</i> | Trinidad | 10.5 | -61.25 |
| PURF8654 | <i>Endophyllum</i> | <i>circumscriptum</i> | 1921 | Vitaceae | <i>Cissus</i> | <i>verticillata</i> | Trinidad | 10.5 | -61.25 |
| PURF8657 | <i>Endophyllum</i> | <i>stachytarphetae</i> | 1912 | Verbenaceae | <i>Stachytarpheta</i> | <i>cayennensis</i> | Bolivia | -16.14 | -67.7247 |
| PURF8665 | <i>Endophyllum</i> | <i>decoloratum</i> | 1921 | Asteraceae | <i>Clibadium</i> | <i>surinamense</i> | Trinidad | 10.5 | -61.25 |
| PURF8666 | <i>Endophyllum</i> | <i>decoloratum</i> | 1913 | Asteraceae | <i>Clibadium</i> | <i>surinamense</i> | Trinidad | 10.5 | -61.25 |
| PURF8667 | <i>Endophyllum</i> | <i>decoloratum</i> | 1910 | Asteraceae | <i>Clibadium</i> | <i>surinamense</i> | Colombia | 6.25184 | -75.563591 |
| PURF8670 | <i>Endophyllum</i> | <i>decoloratum</i> | 1913 | Asteraceae | <i>Sphagneticola</i> | <i>trilobata</i> | Trinidad | 10.5 | -61.25 |
| PURF8671 | <i>Endophyllum</i> | <i>decoloratum</i> | 1921 | Asteraceae | <i>Sphagneticola</i> | <i>trilobata</i> | Trinidad | 10.5 | -61.25 |
| PURF9162 | <i>Endophyllum</i> | <i>machili</i> | 1925 | Lauraceae | <i>Cinnamomum</i> | <i>philippinensis</i> | Philippines | 16.33513 | 120.5609 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|--------------------|------------------------------|----------|---------------|-----------------------|---------------------|--------------|------------|------------|
| PURF9289 | <i>Endophyllum</i> | <i>superficiale</i> | 1925 | Lamiaceae | <i>Clerodendrum</i> | <i>intermedium</i> | Philippines | 15.89481 | 120.6138 |
| PURF9354 | <i>Endophyllum</i> | <i>flumeae</i> | 1925 | Asteraceae | <i>Blumea</i> | <i>balsamifera</i> | Philippines | 15.88765 | 120.6234 |
| PURN10333 | <i>Endophyllum</i> | <i>pavettae</i> | 1954 | Rubiaceae | <i>Pavetta</i> | <i>indica</i> | India | 17.92369 | 73.65857 |
| PURN15512 | <i>Endophyllum</i> | <i>stachytarphetae</i> | 2003 | Verbenaceae | <i>Stachytarpheta</i> | <i>cayennensis</i> | Guyana | - | - |
| PURN4774 | <i>Endophyllum</i> | <i>macowanianum</i> | 1998 | Asteraceae | <i>Conyza</i> | <i>scabrida</i> | South Africa | -34 | 20 |
| PURN4779 | <i>Endophyllum</i> | <i>macowanii</i> | 2002 | Rhamnaceae | <i>Rhamnus</i> | <i>prinoides</i> | South Africa | -33.963 | 22.46173 |
| PURN4782 | <i>Endophyllum</i> | <i>nairobianum</i> | 2004 | Verbenaceae | <i>Lippia</i> | <i>javanica</i> | South Africa | -26.2052 | 28.04982 |
| PURN5683 | <i>Endophyllum</i> | <i>euphorbiae-silvaticae</i> | 2006 | Euphorbiaceae | <i>Euphorbia</i> | <i>amygdaloides</i> | Germany | 48.24567 | 12.08521 |
| PURN6622 | <i>Endophyllum</i> | <i>emiliae-sonchifoliae</i> | 1985 | Asteraceae | <i>Emilia</i> | <i>sonchifolia</i> | Nigeria | 6.867008 | 7.409523 |
| PUR66159 | <i>Frommeella</i> | <i>mexicana</i> | 1974 | Rosaceae | <i>Duchesnea</i> | <i>indica</i> | Mexico | 23.006354 | -99.264267 |
| PURF17747 | <i>Frommeella</i> | <i>mexicana</i> | 1966 | Rosaceae | <i>Duchesnea</i> | <i>indica</i> | Argentina | -21.946528 | -66.050163 |
| PURN2514 | <i>Frommeella</i> | <i>mexicana</i> | 2001 | Rosaceae | <i>Duchesnea</i> | <i>indica</i> | USA | 40.42271 | -86.91876 |
| PURN8020 | <i>Frommeella</i> | <i>mexicana</i> | 1996 | Rosaceae | <i>Duchesnea</i> | <i>indica</i> | USA | 41.25861 | -95.937792 |
| PUR49082 | <i>Gerwasia</i> | <i>holwayi</i> | 1939 | Rosaceae | <i>Rubus</i> | <i>adenotrichus</i> | Guatemala | 14.64 | -90.9186 |
| PURF1804 | <i>Gerwasia</i> | <i>tenella</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>eggersii</i> | Haiti | 18.36667 | -73.6792 |
| PUR8818 | <i>Gerwasia</i> | <i>pitteriana</i> | non-data | Rosaceae | <i>Rubus</i> | <i>adenotrichos</i> | Costa Rica | 9.933333 | -84.0833 |
| PUR8823 | <i>Gerwasia</i> | <i>rubi</i> | 1922 | Rosaceae | <i>Rubus</i> | <i>adenotrichos</i> | El Salvador | 13.73806 | -89.2875 |
| PURF11163 | <i>Gerwasia</i> | <i>holwayi</i> | 1923 | Rosaceae | <i>Rubus</i> | <i>bogotensis</i> | Peru | -9.89883 | -75.9926 |
| PURF11164 | <i>Gerwasia</i> | <i>holwayi</i> | 1922 | Rosaceae | <i>Rubus</i> | <i>floribundus</i> | Peru | -9.835933 | -76.495945 |
| PURF11165 | <i>Gerwasia</i> | <i>holwayi</i> | 1922 | Rosaceae | <i>Rubus</i> | <i>floribundus</i> | Peru | -10.516667 | -76.498611 |
| PURF12065 | <i>Gerwasia</i> | <i>chinensis</i> | 1941 | Rosaceae | <i>Rubus</i> | <i>buergeri</i> | Japan | 33.59592 | 130.411 |
| PURF1651 | <i>Gerwasia</i> | <i>holwayi</i> | 1927 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Peru | -10.576819 | -75.403817 |
| PURF1653 | <i>Gerwasia</i> | <i>holwayi</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>floribundus</i> | Bolivia | -16.5 | -68.15 |
| PURF1654 | <i>Gerwasia</i> | <i>holwayi</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>floribundus</i> | Bolivia | -16.139956 | -67.724731 |
| PURF1655 | <i>Gerwasia</i> | <i>holwayi</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>floribundus</i> | Bolivia | -16.139956 | -67.724731 |
| PURF1656 | <i>Gerwasia</i> | <i>lagerheimii</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>bogotensis</i> | Ecuador | -0.19457 | -78.49301 |
| PURF1657 | <i>Gerwasia</i> | <i>lagerheimii</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURF1659 | <i>Gerwasia</i> | <i>variabilis</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>megalococcus</i> | Ecuador | -0.223593 | -78.458008 |
| PURF1660 | <i>Gerwasia</i> | <i>variabilis</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>nubigenus</i> | Ecuador | -0.19457 | -78.49301 |
| PURF1661 | <i>Gerwasia</i> | <i>variabilis</i> | 1913 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Venezuela | 10.488011 | -66.879193 |
| PURF1663 | <i>Gerwasia</i> | <i>clara</i> | 1918 | Rosaceae | <i>Rubus</i> | <i>boliviensis</i> | Ecuador | -4.005579 | -79.202235 |
| PURF1666 | <i>Gerwasia</i> | <i>clara</i> | 1918 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURF1668 | <i>Gerwasia</i> | <i>cundinamarcensis</i> | 1918 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | 1.18333 | -78.8 |
| PURF1670 | <i>Gerwasia</i> | <i>quitensis</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>bogotensis</i> | Ecuador | -0.19457 | -78.49301 |
| PURF1671 | <i>Gerwasia</i> | <i>quitensis</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>floribundus</i> | Bolivia | -16.5 | -68.15 |
| PURF18221 | <i>Gerwasia</i> | <i>variabilis</i> | 1971 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Venezuela | 7.983964 | -71.998413 |
| PURF18223 | <i>Gerwasia</i> | <i>mayorii</i> | 1971 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Venezuela | 10.352867 | -67.319186 |
| PURF19860 | <i>Gerwasia</i> | <i>rubi</i> | 1960 | Rosaceae | <i>Rubus</i> | <i>amphidasys</i> | China | 25.76074 | -117.737 |
| PURF9499 | <i>Gerwasia</i> | <i>holwayi</i> | 1911 | Rosaceae | <i>Rubus</i> | <i>imperialis</i> | Argentina | -24.731859 | -65.483849 |
| PURF9775 | <i>Gerwasia</i> | <i>holwayi</i> | 1927 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Peru | -10.576819 | -75.4038 |
| PURF9816 | <i>Gerwasia</i> | <i>lagerheimii</i> | 1939 | Rosaceae | <i>Rubus</i> | <i>glaucus</i> | Colombia | 3.5 | -73 |
| PURN16384 | <i>Gerwasia</i> | <i>imperialis</i> | 2016 | non-data | non-data | non-data | Peru | - | - |
| PURN3784 | <i>Gerwasia</i> | <i>variabilis</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -0.083333 | -78.5 |
| PURN3785 | <i>Gerwasia</i> | <i>variabilis</i> | 1971 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Venezuela | 10.269859 | -66.461304 |
| PURN3786 | <i>Gerwasia</i> | <i>variabilis</i> | 1972 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Venezuela | 10.500239 | -66.893838 |
| PURN3787 | <i>Gerwasia</i> | <i>variabilis</i> | 1972 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Venezuela | 10.500139 | -66.893838 |
| PURN3788 | <i>Gerwasia</i> | <i>tenella</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURN3789 | <i>Gerwasia</i> | <i>quitensis</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN3844 | <i>Gerwasia</i> | <i>sp.</i> | 1924 | Rosaceae | <i>Rubus</i> | <i>urticifolius</i> | Peru | -11.233333 | -75.483333 |
| PURN3850 | <i>Gerwasia</i> | <i>peruviana</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>urticifolius</i> | Ecuador | -0.194568 | -78.493005 |
| PURN3851 | <i>Gerwasia</i> | <i>peruviana</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -1.83333 | -80.11667 |
| PURN3852 | <i>Gerwasia</i> | <i>mayorii</i> | 1973 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Venezuela | 9.087624 | -70.681741 |
| PURN3853 | <i>Gerwasia</i> | <i>lagerheimii</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -0.083333 | -78.5 |
| PURN3854 | <i>Gerwasia</i> | <i>holwayi</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -3.553987 | -80.066816 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|------------------------|-----------------------------|------|---------------|--------------------|-----------------------|------------------|-------------|--------------|
| PURN3855 | <i>Gerwasia</i> | <i>holwayi</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -3.553987 | -80.066816 |
| PURN3856 | <i>Gerwasia</i> | <i>mayorii</i> | 1973 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Venezuela | 8.533018 | -71.24585 |
| PURN3857 | <i>Gerwasia</i> | <i>holwayi</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PURN3862 | <i>Gerwasia</i> | <i>clara</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURN3863 | <i>Gerwasia</i> | <i>clara</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURN3864 | <i>Gerwasia</i> | <i>clara</i> | 1974 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Colombia | 2.5 | -76.583333 |
| PURN5593 | <i>Gerwasia</i> | <i>clara</i> | 1892 | Rosaceae | <i>Rubus</i> | <i>roseus</i> | Bolivia | -15.731265 | -64.529297 |
| PURF10033 | <i>Gopiana</i> | <i>australis</i> | 1951 | Dioscoreaceae | <i>Dioscorea</i> | <i>sp.</i> | Papua New Guinea | -5.179537 | 142.443656 |
| PURF11038 | <i>Gopiana</i> | <i>dioscoreae</i> | 1943 | Dioscoreaceae | <i>Dioscorea</i> | <i>transversa</i> | Australia | -28.1841 | 153.2825 |
| PURF9983 | <i>Gopiana</i> | <i>dioscoreae</i> | 1936 | Dioscoreaceae | <i>Dioscorea</i> | <i>sp.</i> | Papua New Guinea | -7.04044 | 147.0535 |
| PURN4451 | <i>Gopiana</i> | <i>andina</i> | 1937 | Rubiaceae | <i>Manettia</i> | <i>lobbii</i> | Ecuador | -1.252369 | -78.622781 |
| MCA3888 | <i>Gymnoconia</i> | <i>sp.</i> | 2010 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | USA | 30.64138586 | -92.02546349 |
| PUR65645 | <i>Gymnoconia</i> | <i>peckiana</i> | 1978 | Rosaceae | <i>Rubus</i> | <i>alleghehiensis</i> | USA | 40.412609 | -86.893471 |
| PUR8783 | <i>Gymnoconia</i> | <i>peckiana</i> | 1909 | Rosaceae | <i>Rubus</i> | <i>pubescens</i> | USA | 43.87896 | -71.21979 |
| PUR89499 | <i>Gymnoconia</i> | <i>nitens</i> | 1985 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | USA | 36.06315 | -94.1139 |
| PUR9206 | <i>Gymnoconia</i> | <i>nitens</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>alleghehiensis</i> | USA | 33.4504 | -88.8184 |
| PURF1627 | <i>Gymnoconia</i> | <i>peckiana</i> | 1906 | Rosaceae | <i>Rubus</i> | <i>articus</i> | Sweden | 63.824106 | 20.27301 |
| PURN2382 | <i>Gymnoconia</i> | <i>peckiana</i> | 1995 | Rosaceae | <i>Rubus</i> | <i>alleghehiensis</i> | USA | 45.076621 | -93.202887 |
| PURN4517 | <i>Gymnoconia</i> | <i>nitens</i> | 1978 | Rosaceae | <i>Rubus</i> | <i>alleghehiensis</i> | USA | 41.32556 | -85.6688 |
| PUR10012 | <i>Gymnosporangium</i> | <i>clavipes</i> | 1897 | Rosaceae | <i>Crataegus</i> | <i>flava</i> | USA | 32.60986 | -85.4808 |
| PUR10038 | <i>Gymnosporangium</i> | <i>clavipes</i> | 1892 | Rosaceae | <i>Crataegus</i> | <i>spatulata</i> | USA | 32.60986 | -85.48078 |
| PUR10076 | <i>Gymnosporangium</i> | <i>clavipes</i> | 1897 | Rosaceae | <i>Cydonia</i> | <i>vulgaris</i> | USA | 34.73037 | -86.5861 |
| PUR10098 | <i>Gymnosporangium</i> | <i>clavipes</i> | 1907 | Cupressaceae | <i>Juniperus</i> | <i>communis</i> | USA | 42.25863 | -87.8406 |
| PUR10154 | <i>Gymnosporangium</i> | <i>clavipes</i> | 1913 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 32.60986 | -85.4808 |
| PUR10184 | <i>Gymnosporangium</i> | <i>cornutum</i> | 1908 | Rosaceae | <i>Sorbus</i> | <i>americana</i> | USA | 40.41667 | -86.8753 |
| PUR10221 | <i>Gymnosporangium</i> | <i>cornutum</i> | 1909 | Cupressaceae | <i>Juniperus</i> | <i>communis</i> | USA | 39.12221 | -104.917 |
| PUR10225 | <i>Gymnosporangium</i> | <i>exterum</i> | 1884 | Rosaceae | <i>Gillenia</i> | <i>stipulata</i> | USA | 37.72945 | -89.8695 |
| PUR10227 | <i>Gymnosporangium</i> | <i>exterum</i> | 1918 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 37.82933 | -86.6405 |
| PUR10258 | <i>Gymnosporangium</i> | <i>tremelloides</i> | 1914 | Rosaceae | <i>Sorbus</i> | <i>scopolina</i> | USA | 39.12221 | -104.917 |
| PUR10311 | <i>Gymnosporangium</i> | <i>speciosum</i> | 1924 | Cupressaceae | <i>Juniperus</i> | <i>monosperma</i> | USA | 38.8742 | -104.887 |
| PUR10348 | <i>Gymnosporangium</i> | <i>clavariiforme</i> | 1908 | Rosaceae | <i>Amelanchier</i> | <i>alnifolia</i> | USA | 39.93249 | -105.277 |
| PUR10363 | <i>Gymnosporangium</i> | <i>clavariiforme</i> | 1924 | Rosaceae | <i>Amelanchier</i> | <i>canadensis</i> | USA | 41.7075 | -86.895 |
| PUR10415 | <i>Gymnosporangium</i> | <i>clavariiforme</i> | 1908 | Cupressaceae | <i>Juniperus</i> | <i>communis</i> | USA | 39.8936 | -105.276 |
| PUR10430 | <i>Gymnosporangium</i> | <i>ellisii</i> | 1916 | Myricaceae | <i>Comptonia</i> | <i>peregrina</i> | USA | 39.95412 | -74.2005 |
| PUR10528 | <i>Gymnosporangium</i> | <i>connersii</i> | 1922 | Rosaceae | <i>Crataegus</i> | <i>flava</i> | USA | 44.23194 | -103.387 |
| PUR10652 | <i>Gymnosporangium</i> | <i>globosum</i> | 1902 | Rosaceae | <i>Crataegus</i> | <i>eamesi</i> | USA | 41.18454 | -73.1332 |
| PUR10726 | <i>Gymnosporangium</i> | <i>globosum</i> | 1900 | Rosaceae | <i>Crataegus</i> | <i>pentandra</i> | USA | 44.30977 | -73.261 |
| PUR10810 | <i>Gymnosporangium</i> | <i>globosum</i> | 1911 | Rosaceae | <i>Crataegus</i> | <i>roanensis</i> | USA | 37.18616 | -86.1 |
| PUR10881 | <i>Gymnosporangium</i> | <i>globosum</i> | 1920 | Rosaceae | <i>Malus</i> | <i>angustifolia</i> | USA | 34.67444 | -82.8359 |
| PUR10952 | <i>Gymnosporangium</i> | <i>globosum</i> | 1911 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 38.95171 | -92.3341 |
| PUR11388 | <i>Gymnosporangium</i> | <i>juniperi-virginianae</i> | 1912 | Rosaceae | <i>Malus</i> | <i>sylvestris</i> | USA | 38.95917 | -85.8903 |
| PUR11393 | <i>Gymnosporangium</i> | <i>juniperi-virginianae</i> | 1911 | Rosaceae | <i>Malus</i> | <i>sylvestris</i> | USA | 39.62583 | -85.3003 |
| PUR11494 | <i>Gymnosporangium</i> | <i>juniperi-virginianae</i> | 1892 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 38.69011 | -75.3855 |
| PUR11532 | <i>Gymnosporangium</i> | <i>juniperi-virginianae</i> | 1916 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 42.03204 | -73.9288 |
| PUR44928 | <i>Gymnosporangium</i> | <i>trachyporum</i> | 1921 | Rosaceae | <i>Crataegus</i> | <i>crus-gallii</i> | USA | 33.45151 | -88.7834 |
| PUR45090 | <i>Gymnosporangium</i> | <i>juniperi-virginianae</i> | 1933 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 43.68841 | -70.7937 |
| PUR47731 | <i>Gymnosporangium</i> | <i>nidus-avis</i> | 1936 | Rosaceae | <i>Amelanchier</i> | <i>arborea</i> | USA | 44.88313 | -68.672 |
| PUR47749 | <i>Gymnosporangium</i> | <i>fraternum</i> | 1936 | Rosaceae | <i>Aronia</i> | <i>arbutifolia</i> | USA | 43.69157 | -70.6535 |
| PUR47849 | <i>Gymnosporangium</i> | <i>inconspicuum</i> | 1917 | Rosaceae | <i>Amelanchier</i> | <i>alnifolia</i> | USA | 39.54142 | -107.322 |
| PUR48173 | <i>Gymnosporangium</i> | <i>juniperi-virginianae</i> | 1938 | Rosaceae | <i>Crataegus</i> | <i>sp.</i> | USA | 39.3376 | -78.9181 |
| PUR50571 | <i>Gymnosporangium</i> | <i>nidus-avis</i> | 1935 | Cupressaceae | <i>Juniperus</i> | <i>chinensis</i> | USA | 41.54726 | -89.1176 |
| PUR50749 | <i>Gymnosporangium</i> | <i>cornutum</i> | 1942 | Rosaceae | <i>Sorbus</i> | <i>americana</i> | USA | 44.37236 | -68.0608 |
| PUR51591 | <i>Gymnosporangium</i> | <i>globosum</i> | 1934 | Rosaceae | <i>Crataegus</i> | <i>sherdani</i> | USA | 43.65081 | -104.985 |
| PUR51765 | <i>Gymnosporangium</i> | <i>floriforme</i> | 1946 | Rosaceae | <i>Crataegus</i> | <i>newelliana</i> | USA | 29.25302 | -82.7309 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|--------------------|------------------------|-----------------------------|------|---------------|--------------------|----------------------|--------------|-------------------|--------------------|
| PUR53431 | <i>Gymnosporangium</i> | <i>inconspicuum</i> | 1919 | Cupressaceae | <i>Juniperus</i> | <i>occidentalis</i> | USA | 36.63388 | -119.553 |
| PUR56573 | <i>Gymnosporangium</i> | <i>globosum</i> | 1959 | Rosaceae | <i>Crataegus</i> | <i>calpodendron</i> | USA | 43.06083 | -89.6557 |
| PUR56995 | <i>Gymnosporangium</i> | <i>fuscum</i> | 1960 | Rosaceae | <i>Pyrus</i> | <i>communis</i> | USA | 37.8864 | -122.119 |
| PUR59994 | <i>Gymnosporangium</i> | <i>speciosum</i> | 1961 | Hydrangeaceae | <i>Fendlera</i> | <i>rupicola</i> | USA | 31.36538 | -110.774 |
| PUR60971 | <i>Gymnosporangium</i> | <i>juniperi-virginianae</i> | 1966 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 40.41261 | -86.8935 |
| PUR61344 | <i>Gymnosporangium</i> | <i>kernianum</i> | 1965 | Cupressaceae | <i>Juniperus</i> | <i>californica</i> | USA | 32.6183 | -116.188 |
| PUR63658 | <i>Gymnosporangium</i> | <i>nootkatense</i> | 1964 | Rosaceae | <i>Pyrus</i> | <i>fusca</i> | Canada | 53.32307 | -132.298 |
| PUR66884 | <i>Gymnosporangium</i> | <i>clavipes</i> | 1977 | Cupressaceae | <i>Juniperus</i> | <i>communis</i> | USA | 29.68243 | -82.3603 |
| PUR88190 | <i>Gymnosporangium</i> | <i>globosum</i> | 1900 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 40.40442 | -86.8677 |
| PUR9486 | <i>Gymnosporangium</i> | <i>inconspicuum</i> | 1918 | Cupressaceae | <i>Juniperus</i> | <i>osteosperma</i> | USA | 37.34576 | -108.292 |
| PUR9513 | <i>Gymnosporangium</i> | <i>exiguum</i> | 1910 | Rosaceae | <i>Crataegus</i> | <i>tracyi</i> | USA | 30.1839 | -98.7556 |
| PUR9555 | <i>Gymnosporangium</i> | <i>nidus-avis</i> | 1898 | Rosaceae | <i>Amelanchier</i> | <i>alnifolia</i> | USA | 42.72801 | -107.841 |
| PUR9641 | <i>Gymnosporangium</i> | <i>nidus-avis</i> | 1907 | Rosaceae | <i>Sorbus</i> | <i>americana</i> | USA | 40.40442 | -86.8677 |
| PUR9708 | <i>Gymnosporangium</i> | <i>kernianum</i> | 1922 | Rosaceae | <i>Amelanchier</i> | <i>alnifolia</i> | USA | 42.18877 | -120.346 |
| PUR9872 | <i>Gymnosporangium</i> | <i>nidus-avis</i> | 1890 | Rosaceae | <i>Amelanchier</i> | <i>intermedia</i> | Canada | 42.98333 | -81.25 |
| PURF12081 | <i>Gymnosporangium</i> | <i>amelanchieris</i> | 1929 | Rosaceae | <i>Amelanchier</i> | <i>asiatica</i> | Japan | 35.4256 | 133.7371 |
| PURF12090 | <i>Gymnosporangium</i> | <i>miyabei</i> | 1930 | Rosaceae | <i>Malus</i> | <i>sieboldii</i> | Japan | 35.97511 | 138.3671 |
| PURF12095 | <i>Gymnosporangium</i> | <i>yamadae</i> | 1926 | Rosaceae | <i>Malus</i> | <i>pumila</i> | Japan | 35.8 | 138.8333 |
| PURF16669 | <i>Gymnosporangium</i> | <i>confusum</i> | 1960 | Rosaceae | <i>Mespilus</i> | <i>germanica</i> | Turkey | 40.2973 | 41.54771 |
| PURF1775 | <i>Gymnosporangium</i> | <i>cornutum</i> | 1905 | Rosaceae | <i>Sorbus</i> | <i>aucuparia</i> | Austria | 44.39889 | 12.03944 |
| PURF1837 | <i>Gymnosporangium</i> | <i>fuscum</i> | 1899 | Rosaceae | <i>Pyrus</i> | <i>betulifolia</i> | Germany | 52.45413 | 13.30564 |
| PURN11418 | <i>Gymnosporangium</i> | <i>clavipes</i> | 1968 | Cupressaceae | <i>Juniperus</i> | <i>virginiana</i> | USA | 38.53929 | -76.7486 |
| PURN193 | <i>Gymnosporangium</i> | <i>tremelloides</i> | 1912 | Rosaceae | <i>Malus</i> | <i>silvestris</i> | Finland | 59.83333 | 22.95 |
| PURN2388 | <i>Gymnosporangium</i> | <i>clavariiforme</i> | 1993 | Rosaceae | <i>Amelanchier</i> | <i>sp.</i> | USA | 44.56457 | -123.262 |
| PURN4873 | <i>Gymnosporangium</i> | <i>clavipes</i> | 1989 | Rosaceae | <i>Crataegus</i> | <i>aestivalis</i> | USA | 31.55545 | -83.996 |
| PURN4887 | <i>Gymnosporangium</i> | <i>globosum</i> | 1989 | Rosaceae | <i>Crataegus</i> | <i>aestivalis</i> | USA | 31.55545 | -83.996 |
| PURN4890 | <i>Gymnosporangium</i> | <i>juniperi-virginianae</i> | 1989 | Rosaceae | <i>Malus</i> | <i>coronaria</i> | USA | 40.14838 | -89.3648 |
| PURF11039 | <i>Hamaspora</i> | <i>acutissima</i> | 1943 | Rosaceae | <i>Rubus</i> | <i>moluccanus</i> | Australia | -28.18396 | 153.25885 |
| PURF11639 | <i>Hamaspora</i> | <i>gedeana</i> | 1919 | Rosaceae | <i>Rubus</i> | <i>alpestris</i> | Indonesia | -9 | 120 |
| PURF14171 | <i>Hamaspora</i> | <i>sinica</i> | 1933 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | China | 24 | 109 |
| PURF1731 | <i>Hamaspora</i> | <i>acutissima</i> | 1930 | Rosaceae | <i>Rubus</i> | <i>fraxinifolius</i> | Philippines | 14.078682 | 121.21873 |
| PURF17841 | <i>Hamaspora</i> | <i>benguetensis</i> | 1968 | Rosaceae | <i>Rubus</i> | <i>ellipticus</i> | India | 26.176076 | 91.762932 |
| PURN10912 | <i>Hamaspora</i> | <i>longissima</i> | 1949 | Rosaceae | <i>Rubus</i> | <i>hillii</i> | Australia | -15.95 | 143.96667 |
| PURN7815 | <i>Hamaspora</i> | <i>longissima</i> | 1985 | Rosaceae | <i>Rubus</i> | <i>pinnatus</i> | Nigeria | 6.66737 | 9.17157 |
| PURF15561 | <i>Haplophragmium</i> | <i>millettiae</i> | 1936 | Fabaceae | <i>Millettia</i> | <i>rhodantha</i> | Sierra Leone | 8.576598 | -11.655151 |
| PURF15562 | <i>Haplophragmium</i> | <i>millettiae</i> | 1937 | Fabaceae | <i>Millettia</i> | <i>lane-polei</i> | Sierra Leone | 8.576598 | -11.655151 |
| PURF19740 | <i>Haplophragmium</i> | <i>ornatum</i> | 1981 | Fabaceae | <i>Millettia</i> | <i>sp.</i> | Nigeria | 6.785706 | 7.403086 |
| PURF10789 | <i>Hemileia</i> | <i>hansfordii</i> | 1942 | Oleaceae | <i>Jasminum</i> | <i>pubescens</i> | Uganda | 0.83333 | 31.91667 |
| PURF11676 | <i>Hemileia</i> | <i>sp.</i> | 1947 | Apocynaceae | <i>Tassadia</i> | <i>obovata</i> | Trinidad | 10.5 | -61.25 |
| PURF11677 | <i>Hemileia</i> | <i>sp.</i> | 1947 | Apocynaceae | <i>Tassadia</i> | <i>obovata</i> | Trinidad | 10.5 | -61.25 |
| PURF15213 | <i>Hemileia</i> | <i>coffeicola</i> | 1952 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Cameroon | 5.441913 | 10.04199 |
| PURF19290 | <i>Hemileia</i> | <i>vastatrix</i> | 1976 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Brazil | -22.5123 | -48.9162 |
| PURF19619 | <i>Hemileia</i> | <i>vastatrix</i> | 1971 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Burma | 22.02826 | 96.47066 |
| PURN11725 | <i>Hemileia</i> | <i>vastatrix</i> | 2014 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Puerto Rico | 18.26249747 | -66.69901098 |
| PURN15328-PURF3514 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>sp.</i> | Bolivia | 15.5605555556 | -67.3216666667 |
| PURN22439 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN22441 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN22442 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN22443 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN22444 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Cameroon | - | - |
| PURN22445 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Peru | -5.27294774000814 | -78.77595630514574 |
| PURN22446 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN22447 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN22448 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>sp.</i> | Peru | - | - |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|---------------------|------|------------------|---------------------|-----------------------|-------------|--------------|--------------|
| PURN22449 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>sp.</i> | Peru | - | - |
| PURN22450 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Rubiaceae</i> | <i>sp.</i> | Peru | -4.858497095 | -80.68540851 |
| PURN22451 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>sp.</i> | Peru | - | - |
| PURN22532 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica catuai</i> | Panama | - | - |
| PURN22533 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica geisha</i> | Panama | - | - |
| PURN22534 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica geisha</i> | Panama | - | - |
| PURN22536 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica catuai</i> | Panama | - | - |
| PURN22537 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica catuai</i> | Panama | 8.777576138 | -82.45222736 |
| PURN22538 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica geisha</i> | Panama | - | - |
| PURN22539 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica geisha</i> | Panama | - | - |
| PURN22577 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Panama | - | - |
| PURN22578 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Panama | - | - |
| PURN22579 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Panama | - | - |
| PURN22580 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica catuai</i> | Panama | - | - |
| PURN22625 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Panama | 8.881418852 | -82.59953272 |
| PURN22626 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica geisha</i> | Panama | - | - |
| PURN22648 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica geisha</i> | Panama | - | - |
| PURN22649 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica catuai</i> | Panama | - | - |
| PURN22650 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica geisha</i> | Panama | - | - |
| PURN22651 | <i>Hemileia</i> | <i>vastatrix</i> | 2016 | Rubiaceae | <i>Coffea</i> | <i>arabica catuai</i> | Panama | - | - |
| PURN22666 | <i>Hemileia</i> | <i>vastatrix</i> | 2018 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Cameroon | - | - |
| PURN22667 | <i>Hemileia</i> | <i>vastatrix</i> | 2018 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Cameroon | - | - |
| PURN22668 | <i>Hemileia</i> | <i>vastatrix</i> | 2018 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Cameroon | - | - |
| PURN6946 | <i>Hemileia</i> | <i>vastatrix</i> | 1996 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Honduras | 14.712 | -86.808 |
| PURN6950 | <i>Hemileia</i> | <i>vastatrix</i> | 1990 | Rubiaceae | <i>Coffea</i> | <i>arabica</i> | Brazil | 0.214677 | -51.066667 |
| PUR44334 | <i>Hyalopsora</i> | <i>aspidiotus</i> | 1923 | Cystopteridaceae | <i>Gymnocarpium</i> | <i>dryopteris</i> | USA | 44.261578 | -114.916504 |
| PUR4512 | <i>Hyalopsora</i> | <i>aspidiotus</i> | 1915 | Cystopteridaceae | <i>Gymnocarpium</i> | <i>dryopteris</i> | USA | 48.17963 | -117.04326 |
| PUR4528 | <i>Hyalopsora</i> | <i>polypodii</i> | 1910 | Cystopteridaceae | <i>Cystopteris</i> | <i>fragilis</i> | USA | 40.01499 | -105.27055 |
| PUR50833 | <i>Hyalopsora</i> | <i>POLYPODII</i> | 1943 | Cystopteridaceae | <i>Cystopteris</i> | <i>fragilis</i> | USA | 37.36037 | -80.5345 |
| PUR51180 | <i>Hyalopsora</i> | <i>POLYPODII</i> | 1944 | Cystopteridaceae | <i>Cystopteris</i> | <i>fragilis</i> | Canada | 61.00241 | -138.45245 |
| PUR54249 | <i>Hyalopsora</i> | <i>polypodii</i> | 1932 | Cystopteridaceae | <i>Cystopteris</i> | <i>fragilis</i> | USA | 40.97575 | -123.12927 |
| PUR54254 | <i>Hyalopsora</i> | <i>cheilanthis</i> | 1941 | Pteridaceae | <i>Gymnogramme</i> | <i>triangularis</i> | USA | 40.89014 | -123.58449 |
| PUR59464 | <i>Hyalopsora</i> | <i>aspidiotus</i> | 1931 | Pinaceae | <i>Abies</i> | <i>balsamea</i> | USA | 45.36556 | -122.612598 |
| PURF107 | <i>Hyalopsora</i> | <i>cheilanthis</i> | 1890 | Pteridaceae | <i>Pellaea</i> | <i>ternifolia</i> | Ecuador | -0.19457 | -78.49301 |
| PURF108 | <i>Hyalopsora</i> | <i>cheilanthis</i> | 1890 | Pteridaceae | <i>Pellaea</i> | <i>ternifolia</i> | Ecuador | -0.19457 | -78.49301 |
| PURF112 | <i>Hyalopsora</i> | <i>aculeata</i> | 1930 | Blechnaceae | <i>Blechnum</i> | <i>spicant</i> | Japan | 35.43255 | 134.15576 |
| PURF115 | <i>Hyalopsora</i> | <i>hakodatensis</i> | 1925 | Athyriaceae | <i>Deparia</i> | <i>acrostichoides</i> | Japan | 43.69698 | 142.92046 |
| PURF12717 | <i>Hyalopsora</i> | <i>POLYPODII</i> | 1932 | Athyriaceae | <i>Athyrium</i> | <i>iseanum</i> | Japan | 35.43255 | 134.15576 |
| PURF12732 | <i>Hyalopsora</i> | <i>yamadana</i> | 1930 | Pteridaceae | <i>Coniogramme</i> | <i>fraxinea</i> | Japan | 43.10889 | 141.24 |
| PURF15554 | <i>Hyalopsora</i> | <i>cheilanthis</i> | 1951 | Pteridaceae | <i>Pellaea</i> | <i>ternifolia</i> | Argentina | -31.47717 | -64.83728 |
| PURF88 | <i>Hyalopsora</i> | <i>aspidiotus</i> | 1922 | Pinaceae | <i>Abies</i> | <i>pectinata</i> | Switzerland | 46.94675 | 6.8186 |
| PURN11387 | <i>Hyalopsora</i> | <i>polypodii</i> | 1963 | Cystopteridaceae | <i>Cystopteris</i> | <i>fragilis</i> | USA | 40.42809 | -86.92251 |
| PURN2436 | <i>Hyalopsora</i> | <i>POLYPODII</i> | 1995 | Cystopteridaceae | <i>Cystopteris</i> | <i>fragilis</i> | USA | 44.86247 | -92.78354 |
| PUR66830 | <i>Kuehneola</i> | <i>uleana</i> | 1976 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR66833 | <i>Kuehneola</i> | <i>uleana</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PUR66834 | <i>Kuehneola</i> | <i>sp.</i> | 1975 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PUR8861 | <i>Kuehneola</i> | <i>uredinis</i> | 1908 | Rosaceae | <i>Rubus</i> | <i>alleganiensis</i> | USA | 36.322485 | -94.149597 |
| PUR8953 | <i>Kuehneola</i> | <i>uredinis</i> | 1909 | Rosaceae | <i>Rubus</i> | <i>plicatifolius</i> | USA | 44.053157 | -68.634045 |
| PUR8986 | <i>Kuehneola</i> | <i>uredinis</i> | 1912 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | USA | 32.6089 | -85.485504 |
| PURF10364 | <i>Kuehneola</i> | <i>loseneriana</i> | 1915 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Peru | -5.855585 | -76.706055 |
| PURF11037 | <i>Kuehneola</i> | <i>papuana</i> | 1943 | Rosaceae | <i>Rubus</i> | <i>rosifolius</i> | Australia | -35.0985 | 149.0846 |
| PURF11167 | <i>Kuehneola</i> | <i>uleana</i> | 1923 | Rosaceae | <i>Rubus</i> | <i>roseus</i> | Peru | -9.654994 | -75.803496 |
| PURF11168 | <i>Kuehneola</i> | <i>uleana</i> | 1923 | Rosaceae | <i>Rubus</i> | <i>roseus</i> | Peru | -9.654994 | -75.803496 |
| PURF11634 | <i>Kuehneola</i> | <i>sp.</i> | 1947 | Rosaceae | <i>Rubus</i> | <i>boliviensis</i> | Bolivia | -15.731265 | -64.529297 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|--------------------|---------------------|-----------------------|----------|-----------------|----------------------|--------------------|--------------------|-------------|--------------|
| PURF11708 | <i>Kuehneola</i> | <i>loseneriana</i> | 1948 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Argentina | -26.815306 | -65.219849 |
| PURF1692 | <i>Kuehneola</i> | <i>sp.</i> | 1918 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | Ecuador | -2.289024 | -78.983293 |
| PURF1695 | <i>Kuehneola</i> | <i>loseneriana</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>floribundus</i> | Bolivia | -16.5 | -68.15 |
| PURF1696 | <i>Kuehneola</i> | <i>sp.</i> | 1920 | Rosaceae | <i>Rubus</i> | <i>floribundus</i> | Bolivia | -16.5 | -68.15 |
| PUR52719 | <i>Kweilingia</i> | <i>americana</i> | 1951 | Costaceae | <i>Costus</i> | <i>sp.</i> | Costa Rica | 9.904645 | -83.8028 |
| PURF15493 | <i>Kweilingia</i> | <i>wangii</i> | 1918 | Poaceae | <i>Dendrocalamus</i> | <i>latiflorus</i> | Taiwan | 23.5 | 121 |
| PURF18200 | <i>Kweilingia</i> | <i>bambusina</i> | 1971 | Poaceae | <i>Bambusa</i> | <i>sp.</i> | Burma | 21.20229 | 96.01417 |
| PURF19971 | <i>Kweilingia</i> | <i>bagchii</i> | 1982 | Poaceae | <i>Bambusa</i> | <i>sp.</i> | Taiwan | 23.5 | 121 |
| PURN10826 | <i>Kweilingia</i> | <i>divina</i> | 2013 | Poaceae | <i>Bambusa</i> | <i>sp.</i> | USA | 29.9544 | -90.075 |
| PURN11077 | <i>Kweilingia</i> | <i>divina</i> | 2012 | Poaceae | <i>Bambusa</i> | <i>sp.</i> | Taiwan | 25.0169 | 121.5340667 |
| PURN329 | <i>Leptinia</i> | <i>Braziliensis</i> | 1979 | Anacardiaceae | <i>Astronium</i> | <i>sp.</i> | Brazil | -14.5246 | -49.1468 |
| PURF1307 | <i>Leucotelium</i> | <i>cerasi</i> | 1875 | Ranunculaceae | <i>Eranthis</i> | <i>hyemalis</i> | Italy | 44.8 | 10.333333 |
| PURF14192/PUR81092 | <i>Leucotelium</i> | <i>pruni-persicae</i> | 1931 | Rosaceae | <i>Prunus</i> | <i>persica</i> | China | 34.79528 | 116.08167 |
| PUR44618 | <i>Lipocystis</i> | <i>caesalpiniae</i> | 1930 | Fabaceae | <i>Mimosa</i> | <i>ceratonia</i> | Dominican Republic | 18.91667 | -70.4667 |
| PURN271 | <i>Macruropyxis</i> | <i>fraxini</i> | 1997 | Oleaceae | <i>Fraxinus</i> | <i>japonica</i> | Japan | 40.824445 | 140.74 |
| PUR87630 | <i>Maravalia</i> | <i>erythroxyli</i> | 1983 | Erythroxylaceae | <i>Erythroxylum</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PUR88048 | <i>Maravalia</i> | <i>ecuadorica</i> | 1975 | Rubiaceae | <i>Manettia</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PUR88049 | <i>Maravalia</i> | <i>ecuadorica</i> | 1975 | Rubiaceae | <i>Manettia</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PURF11225 | <i>Maravalia</i> | <i>ecuadorica</i> | 1922 | Rubiaceae | <i>Manettia</i> | <i>peruviana</i> | Peru | -9.897669 | -76.433282 |
| PURF18728 | <i>Maravalia</i> | <i>ecuadorica</i> | 1975 | Rubiaceae | <i>Manettia</i> | <i>sp.</i> | Ecuador | -1.046947 | -79.821388 |
| PURF19503 | <i>Maravalia</i> | <i>africana</i> | 1970 | Fabaceae | <i>Crotalaria</i> | <i>rosenii</i> | Ethiopia | 8.896515 | 38.61984 |
| PURF19802 | <i>Maravalia</i> | <i>pura</i> | 1924 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | Ecuador | -1.708836 | -79.043114 |
| PURF3571 | <i>Maravalia</i> | <i>ecuadorica</i> | 1892 | Rubiaceae | <i>Manettia</i> | <i>sp.</i> | Ecuador | -0.467137 | -78.7475 |
| PURF9572 | <i>Maravalia</i> | <i>pallida</i> | 1913 | Fabaceae | <i>Zygia</i> | <i>latifolia</i> | Trinidad | 10.5 | -65.25 |
| PURF9575 | <i>Maravalia</i> | <i>elata</i> | non-data | Fabaceae | <i>Lupinus</i> | <i>mutabilis</i> | Bolivia | -17.118938 | -65.950439 |
| PURF9576 | <i>Maravalia</i> | <i>elata</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>paniculatus</i> | Peru | -7.25556 | -76.4756 |
| PURF9577 | <i>Maravalia</i> | <i>elata</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>paniculatus</i> | Bolivia | -16.49667 | -68.13 |
| PURF9578 | <i>Maravalia</i> | <i>elata</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>paniculatus</i> | Bolivia | -16.49667 | -68.13 |
| PURF9580 | <i>Maravalia</i> | <i>elata</i> | 1914 | Fabaceae | <i>Lupinus</i> | <i>saxatilis</i> | Bolivia | -15.731265 | -64.529297 |
| PURF9581 | <i>Maravalia</i> | <i>elata</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>soratensis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF9582 | <i>Maravalia</i> | <i>elata</i> | 1917 | Fabaceae | <i>Lupinus</i> | <i>tomentosus</i> | Peru | -12.118889 | -75.821389 |
| PURF9583 | <i>Maravalia</i> | <i>elata</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF9584 | <i>Maravalia</i> | <i>elata</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF9585 | <i>Maravalia</i> | <i>elata</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF9586 | <i>Maravalia</i> | <i>elata</i> | 1920 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Bolivia | -16.496667 | -68.13 |
| PURF8702 | <i>Masseella</i> | <i>capparidis</i> | 1879 | Phyllanthaceae | <i>Flueggea</i> | <i>virosa</i> | India | 19.078682 | 72.876272 |
| MT3-merie | <i>Melampsora</i> | <i>sp.</i> | 2011 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 64.83822649 | -147.7163877 |
| PUR10529 | <i>Melampsora</i> | <i>euphorbiae</i> | 1990 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -2.607423 | -44.195963 |
| PUR19464 | <i>Melampsora</i> | <i>medusae</i> | 1970 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PUR2020 | <i>Melampsora</i> | <i>medusae</i> | 1905 | Pinaceae | <i>Larix</i> | <i>decidua</i> | USA | 40.41667 | -86.87528 |
| PUR2021 | <i>Melampsora</i> | <i>medusae</i> | 1904 | Pinaceae | <i>Larix</i> | <i>decidua</i> | USA | 40.41667 | -86.87528 |
| PUR2024 | <i>Melampsora</i> | <i>medusae</i> | 1908 | Pinaceae | <i>Larix</i> | <i>laricina</i> | USA | 40.41667 | -86.87528 |
| PUR2026 | <i>Melampsora</i> | <i>medusae</i> | 1905 | Pinaceae | <i>Larix</i> | <i>laricina</i> | USA | 40.41667 | -86.87528 |
| PUR2027 | <i>Melampsora</i> | <i>medusae</i> | 1910 | Pinaceae | <i>Larix</i> | <i>laricina</i> | Canada | 45.68316 | -62.7103 |
| PUR2034 | <i>Melampsora</i> | <i>medusae</i> | 1883 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 43.07305 | -89.40123 |
| PUR2035 | <i>Melampsora</i> | <i>medusae</i> | 1882 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 43.06636 | -92.67241 |
| PUR2036 | <i>Melampsora</i> | <i>medusae</i> | 1921 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 43.537761 | -89.300117 |
| PUR2037 | <i>Melampsora</i> | <i>medusae</i> | 1906 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 39.531745 | -78.457344 |
| PUR2038 | <i>Melampsora</i> | <i>medusae</i> | 1912 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 42.277971 | -71.729248 |
| PUR2039 | <i>Melampsora</i> | <i>medusae</i> | 1901 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 39.961176 | -82.998794 |
| PUR2040 | <i>Melampsora</i> | <i>medusae</i> | 1901 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 39.961176 | -82.998794 |
| PUR2041 | <i>Melampsora</i> | <i>medusae</i> | 1883 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 43.07305 | -89.40123 |
| PUR2042 | <i>Melampsora</i> | <i>medusae</i> | 1896 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.41667 | -86.87528 |
| PUR2044 | <i>Melampsora</i> | <i>medusae</i> | 1921 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 43.07305 | -89.40123 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|---------------------------|----------|-------------|--------------------|-----------------------------|---------|-----------|-------------|
| PUR2045 | <i>Melampsora</i> | <i>medusae</i> | 1905 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.40814 | -86.91971 |
| PUR2047 | <i>Melampsora</i> | <i>medusae</i> | 1919 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 43.07305 | -89.40123 |
| PUR2048 | <i>Melampsora</i> | <i>medusae</i> | 1902 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.46865 | -86.85279 |
| PUR2049 | <i>Melampsora</i> | <i>medusae</i> | 1914 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 42.282331 | -83.794288 |
| PUR2051 | <i>Melampsora</i> | <i>medusae</i> | 1909 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.30781 | -87.29256 |
| PUR2052 | <i>Melampsora</i> | <i>medusae</i> | 1909 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.42583 | -86.90806 |
| PUR2054 | <i>Melampsora</i> | <i>medusae</i> | 1905 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.07019 | -86.05316 |
| PUR2058 | <i>Melampsora</i> | <i>medusae</i> | 1905 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.44153 | -86.90443 |
| PUR2059 | <i>Melampsora</i> | <i>medusae</i> | 1902 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 39.961176 | -82.998794 |
| PUR2060 | <i>Melampsora</i> | <i>medusae</i> | 1904 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.40814 | -86.91971 |
| PUR2063 | <i>Melampsora</i> | <i>medusae</i> | 1903 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.41667 | -86.87528 |
| PUR2064 | <i>Melampsora</i> | <i>medusae</i> | 1910 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.41667 | -86.87528 |
| PUR2065 | <i>Melampsora</i> | <i>medusae</i> | 1899 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.41667 | -86.87528 |
| PUR2067 | <i>Melampsora</i> | <i>medusae</i> | 1909 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 39.97833 | -86.11806 |
| PUR2069 | <i>Melampsora</i> | <i>medusae</i> | 1914 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.42583 | -86.90806 |
| PUR2077 | <i>Melampsora</i> | <i>medusae</i> | 1915 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 42.338371 | -82.977973 |
| PUR2082 | <i>Melampsora</i> | <i>medusae</i> | 1899 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.41667 | -86.87528 |
| PUR2086 | <i>Melampsora</i> | <i>medusae</i> | 1990 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 44.145049 | -85.216836 |
| PUR2090 | <i>Melampsora</i> | <i>medusae</i> | 1918 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 37.90202 | -86.64265 |
| PUR2091 | <i>Melampsora</i> | <i>medusae</i> | 1917 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.450823 | -94.842192 |
| PUR2095 | <i>Melampsora</i> | <i>medusae</i> | 1919 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.22755 | -90.35957 |
| PUR2098 | <i>Melampsora</i> | <i>medusae</i> | 1921 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 32.5007 | -94.74049 |
| PUR2102 | <i>Melampsora</i> | <i>medusae</i> | 1923 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 37.31783 | -89.43148 |
| PUR2123 | <i>Melampsora</i> | <i>medusae</i> | 1893 | Salicaceae | <i>Populus</i> | <i>Tremuloides</i> | USA | 41.20583 | -86.41889 |
| PUR2127 | <i>Melampsora</i> | <i>medusae</i> | 1904 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 42.72613 | -87.78285 |
| PUR2129 | <i>Melampsora</i> | <i>medusae</i> | 1916 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 42.282331 | -83.794288 |
| PUR2132 | <i>Melampsora</i> | <i>medusae</i> | 1915 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 43.850813 | -89.121783 |
| PUR2135 | <i>Melampsora</i> | <i>medusae</i> | 1914 | Salicaceae | <i>Populus</i> | <i>Tremuloides</i> | USA | 42.27087 | -83.72633 |
| PUR2137 | <i>Melampsora</i> | <i>medusae</i> | 1919 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 40.676734 | -77.694718 |
| PUR2143 | <i>Melampsora</i> | <i>medusae</i> | 1914 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 44.608888 | -87.432589 |
| PUR2145 | <i>Melampsora</i> | <i>medusae</i> | 1909 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 38.418109 | -90.325673 |
| PUR2146 | <i>Melampsora</i> | <i>medusae</i> | 1909 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 30.26715 | -97.74306 |
| PUR2155 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1913 | Pinaceae | <i>Tsuga</i> | <i>canadensis</i> | USA | 45.254709 | -87.071503 |
| PUR2158 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1913 | Pinaceae | <i>Tsuga</i> | <i>canadensis</i> | Canada | 45.68316 | -62.7103 |
| PUR2161 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1919 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | USA | 42.98333 | -81.25 |
| PUR2179 | <i>Melampsora</i> | <i>aecidioides</i> | 1920 | Salicaceae | <i>Populus</i> | <i>alba</i> | USA | 41.19177 | -71.574501 |
| PUR2182 | <i>Melampsora</i> | <i>aecidioides</i> | 1920 | Salicaceae | <i>Populus</i> | <i>alba</i> | USA | 38.895112 | -77.036366 |
| PUR2188 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1908 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 41.72288 | -71.90674 |
| PUR2190 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1912 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 41.58887 | -70.52339 |
| PUR2193 | <i>Melampsora</i> | <i>abietis-canadensis</i> | non-data | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | Canada | 45.45 | -74.15 |
| PUR2196 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1902 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | USA | 41.374774 | -83.651323 |
| PUR2199 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1913 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | USA | 45.023054 | -85.760151 |
| PUR2201 | <i>Melampsora</i> | <i>abietis-canadensis</i> | non-data | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | Canada | 61.312881 | -100.23877 |
| PUR2202 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1911 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | Canada | 45.66667 | -62.70000 |
| PUR2204 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1914 | Salicaceae | <i>Populus</i> | <i>heterophylla</i> | USA | 40.44153 | -86.90443 |
| PUR2205 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1882 | Salicaceae | <i>Populus</i> | <i>deltoides monilifera</i> | USA | 43.06636 | -92.67241 |
| PUR2206 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1882 | Salicaceae | <i>Populus</i> | <i>deltoides monilifera</i> | USA | 43.06636 | -92.67241 |
| PUR2210 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1910 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | Canada | 42.98333 | -81.25 |
| PUR2213 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1919 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 41.67649 | -71.91507 |
| PUR2216 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1916 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | Canada | 50.999998 | -89.977013 |
| PUR2217 | <i>Melampsora</i> | <i>medusae</i> | 1909 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 39.321033 | -105.314992 |
| PUR2219 | <i>Melampsora</i> | <i>medusae</i> | 1910 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 40.41667 | -86.87528 |
| PUR2224 | <i>Melampsora</i> | <i>medusae</i> | 1920 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 37.8486 | -111.006268 |
| PUR2226 | <i>Melampsora</i> | <i>medusae</i> | 1909 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 39.75554 | -105.2211 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|--------------------------|------|-----------------|--------------------|--------------------------------|---------|-------------------|---------------------|
| PUR2227 | <i>Melampsora</i> | <i>medusae</i> | 1910 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 39.93249 | -105.27694 |
| PUR2228 | <i>Melampsora</i> | <i>medusae</i> | 1921 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 39.73915 | -104.9847 |
| PUR2229 | <i>Melampsora</i> | <i>medusae</i> | 1908 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 39.93249 | -105.27694 |
| PUR2234 | <i>Melampsora</i> | <i>medusae</i> | 1916 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 39.12221 | -104.9172 |
| PUR2236 | <i>Melampsora</i> | <i>medusae</i> | 1921 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 41.08832 | -105.48971 |
| PUR2239 | <i>Melampsora</i> | <i>medusae</i> | 1911 | Salicaceae | <i>Populus</i> | <i>acuminata</i> | USA | 39.73915 | -104.9847 |
| PUR2245 | <i>Melampsora</i> | <i>medusae</i> | 1921 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 40.00605 | -105.35339 |
| PUR2274 | <i>Melampsora</i> | <i>medusae</i> | 1911 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 48.38829 | -115.556 |
| PUR2278 | <i>Melampsora</i> | <i>medusae</i> | 1912 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 40.01499 | -105.27055 |
| PUR2281 | <i>Melampsora</i> | <i>medusae</i> | 1914 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 39.90499 | -105.58917 |
| PUR2314 | <i>Melampsora</i> | <i>medusae</i> | 1911 | Salicaceae | <i>Populus</i> | <i>acuminata</i> | USA | 48.38829 | -115.556 |
| PUR2321 | <i>Melampsora</i> | <i>medusae</i> | 1906 | Salicaceae | <i>Populus</i> | <i>angustifolia</i> | USA | 47.603062 | -122.299316 |
| PUR2368 | <i>Melampsora</i> | <i>occidentalis</i> | 1920 | Salicaceae | <i>Populus</i> | <i>balsamifera trichocarpa</i> | USA | 45.40146 | -122.65064 |
| PUR2378 | <i>Melampsora</i> | <i>paradoxa</i> | 1920 | Pinaceae | <i>Larix</i> | <i>laricina</i> | USA | 43.78469 | -75.4488 |
| PUR2392 | <i>Melampsora</i> | <i>paradoxa</i> | 1909 | Salicaceae | <i>Salix</i> | <i>amygdaloides</i> | USA | 42.84193 | -91.80211 |
| PUR2398 | <i>Melampsora</i> | <i>paradoxa</i> | 1904 | Salicaceae | <i>Salix</i> | <i>amygdaloides</i> | USA | 42.72613 | -87.78285 |
| PUR2416 | <i>Melampsora</i> | <i>paradoxa</i> | 1910 | Salicaceae | <i>Salix</i> | <i>amygdaloides</i> | USA | 41.42334 | -99.1262 |
| PUR2448 | <i>Melampsora</i> | <i>paradoxa</i> | 1920 | Salicaceae | <i>Salix</i> | <i>amygdaloides</i> | USA | 39.69361 | -105.177 |
| PUR2464 | <i>Melampsora</i> | <i>paradoxa</i> | 1911 | Salicaceae | <i>Salix</i> | <i>brachycarpa</i> | USA | 41.29831 | -106.142 |
| PUR2479 | <i>Melampsora</i> | <i>paradoxa</i> | 1912 | Salicaceae | <i>Salix</i> | <i>lucida</i> | USA | 43.66294 | -116.68736 |
| PUR2503 | <i>Melampsora</i> | <i>paradoxa</i> | 1898 | Salicaceae | <i>Salix</i> | <i>exigua</i> | USA | 32.27593 | -106.767 |
| PUR2526 | <i>Melampsora</i> | <i>paradoxa</i> | 1920 | Salicaceae | <i>Salix</i> | <i>glauca villosa</i> | USA | 46.09156 | -115.976 |
| PUR2529 | <i>Melampsora</i> | <i>paradoxa</i> | 1899 | Salicaceae | <i>Salix</i> | <i>irrorata</i> | USA | 38.76388 | -107.048 |
| PUR2542 | <i>Melampsora</i> | <i>paradoxa</i> | 1909 | Salicaceae | <i>Salix</i> | <i>lucida lasiandra</i> | USA | 47.64287 | -122.542 |
| PUR2545 | <i>Melampsora</i> | <i>paradoxa</i> | 1920 | Salicaceae | <i>Salix</i> | <i>lucida lasiandra</i> | USA | 46.98093 | -123.889 |
| PUR2566 | <i>Melampsora</i> | <i>paradoxa</i> | 1920 | Salicaceae | <i>Salix</i> | <i>pseudomyrsinites</i> | USA | 44.59293 | -118.509 |
| PUR2581 | <i>Melampsora</i> | <i>paradoxa</i> | 1919 | Salicaceae | <i>Salix</i> | <i>scouleriana</i> | USA | 37.71632 | -119.665 |
| PUR2586 | <i>Melampsora</i> | <i>paradoxica</i> | 1923 | Salicaceae | <i>Salix</i> | <i>sitchensis</i> | USA | 58.68836 | -134.41772 |
| PUR2594 | <i>Melampsora</i> | <i>paradoxica</i> | 1908 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 39.95554 | -105.22971 |
| PUR2607 | <i>Melampsora</i> | <i>paradoxica</i> | 1918 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 41.22286018199334 | -106.80516175101273 |
| PUR2619 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1919 | Grossulariaceae | <i>Ribes</i> | <i>nevadense</i> | USA | 37.75965 | -119.533 |
| PUR2644 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1913 | Salicaceae | <i>Salix</i> | <i>lutea</i> | USA | 45.78329 | -108.501 |
| PUR2662 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1889 | Salicaceae | <i>Salix</i> | <i>bebbiana</i> | USA | 42.54969 | -103.357 |
| PUR2711 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1920 | Salicaceae | <i>Salix</i> | <i>scouleriana</i> | USA | 44.91101 | -116.099 |
| PUR2729 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1921 | Salicaceae | <i>Salix</i> | <i>scouleriana</i> | USA | 45.20133 | -109.64128 |
| PUR2754 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1920 | Salicaceae | <i>Salix</i> | <i>drummondiana</i> | USA | 45.82685 | -115.437 |
| PUR2770 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1916 | Salicaceae | <i>Salix</i> | <i>lutea</i> | USA | 36.55809 | -105.115 |
| PUR2784 | <i>Melampsora</i> | <i>epitea</i> | 1917 | Pinaceae | <i>Abies</i> | <i>balsamea</i> | USA | 44.44978 | -72.22316 |
| PUR2794 | <i>Melampsora</i> | <i>epitea</i> | 1923 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 45.826853 | -115.436794 |
| PUR2803 | <i>Melampsora</i> | <i>epitea</i> | 1906 | Salicaceae | <i>salix</i> | <i>babylonica</i> | USA | 39.14703 | -80.7718 |
| PUR2812 | <i>Melampsora</i> | <i>epitea</i> | 1917 | Salicaceae | <i>salix</i> | <i>bebbiana</i> | USA | 45.58095 | -84.69626 |
| PUR2818 | <i>Melampsora</i> | <i>epitea</i> | 1910 | Salicaceae | <i>salix</i> | <i>eriocephala</i> | USA | 42.440628 | -76.496607 |
| PUR2866 | <i>Melampsora</i> | <i>epitea</i> | 1879 | Salicaceae | <i>salix</i> | <i>humilis</i> | USA | 39.290385 | -76.612189 |
| PUR2871 | <i>Melampsora</i> | <i>epitea</i> | 1909 | Salicaceae | <i>salix</i> | <i>interior</i> | USA | 39.319722 | -94.888019 |
| PUR2906 | <i>Melampsora</i> | <i>epitea</i> | 1914 | Salicaceae | <i>Salix</i> | <i>lucida</i> | USA | 44.608888 | -87.432589 |
| PUR2908 | <i>Melampsora</i> | <i>epitea</i> | 1920 | Salicaceae | <i>salix</i> | <i>prolixa</i> | USA | 44.592934 | -118.508556 |
| PUR2916 | <i>Melampsora</i> | <i>epitea</i> | 1904 | Salicaceae | <i>Salix</i> | <i>nigra</i> | USA | 38.834683 | -79.374143 |
| PUR2933 | <i>Melampsora</i> | <i>epitea</i> | 1919 | Salicaceae | <i>Salix</i> | <i>nigra</i> | USA | 41.823989 | -71.412834 |
| PUR2956 | <i>Melampsora</i> | <i>epitea</i> | 1909 | Salicaceae | <i>Salix</i> | <i>nigra</i> | Canada | 42.98333 | -81.25 |
| PUR2960 | <i>Melampsora</i> | <i>epitea</i> | 1899 | Salicaceae | <i>salix</i> | <i>nigra</i> | USA | 40.47417 | -95.73361 |
| PUR2981 | <i>Melampsora</i> | <i>epitea</i> | 1915 | Salicaceae | <i>Salix</i> | <i>bebbiana</i> | USA | 48.18074 | -116.90937 |
| PUR2992 | <i>Melampsora</i> | <i>epitea</i> | 1922 | Salicaceae | <i>Salix</i> | <i>petiolaris</i> | USA | 42.28201 | -83.79418 |
| PUR2998 | <i>Melampsora</i> | <i>epitea</i> | 1912 | Salicaceae | <i>salix</i> | <i>scouleriana</i> | Canada | 48.433333 | -123.35 |
| PUR3007 | <i>Melampsora</i> | <i>epitea</i> | 1911 | Salicaceae | <i>salix</i> | <i>scouleriana</i> | USA | 48.38829 | -115.556 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|-------------------------------|------|---------------|--------------------|----------------------|-------------|-----------|-------------|
| PUR3027 | <i>Melampsora</i> | <i>epitea</i> | 1922 | Salicaceae | <i>Salix</i> | <i>amygdaloides</i> | USA | 32.270094 | -106.800838 |
| PUR3100 | <i>Melampsora</i> | <i>lini</i> | 1916 | Linaceae | <i>linum</i> | <i>lewisii</i> | USA | 36.55809 | -105.115 |
| PUR3105 | <i>Melampsora</i> | <i>lini</i> | 1921 | Linaceae | <i>linum</i> | <i>lewisii</i> | USA | 38.694264 | -119.776967 |
| PUR3132 | <i>Melampsora</i> | <i>lini</i> | 1886 | Linaceae | <i>linum</i> | <i>sulcatum</i> | USA | 43.40704 | -94.6939 |
| PUR3148 | <i>Melampsora</i> | <i>lini</i> | 1912 | Linaceae | <i>linum</i> | <i>usitatisimum</i> | USA | 44.31136 | -96.7984 |
| PUR3160 | <i>Melampsora</i> | <i>monticola</i> | 1921 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | USA | 34.14806 | -117.999 |
| PUR3183 | <i>Melampsora</i> | <i>monticola</i> | 1925 | Euphorbiaceae | <i>Euphorbia</i> | <i>brachycera</i> | USA | 40.73164 | -106.284 |
| PUR43822 | <i>Melampsora</i> | <i>medusae</i> | 1931 | Pinaceae | <i>Larix</i> | <i>laricina</i> | USA | 44.267171 | -71.553982 |
| PUR43824 | <i>Melampsora</i> | <i>medusae</i> | 1928 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | Canada | 48.772167 | -56.543396 |
| PUR43833 | <i>Melampsora</i> | <i>medusae</i> | 1920 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 33.97611 | -117.323 |
| PUR43834 | <i>Melampsora</i> | <i>medusae</i> | 1917 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 39.80313 | -86.12217 |
| PUR43836 | <i>Melampsora</i> | <i>aecidioides</i> | 1932 | Salicaceae | <i>Populus</i> | <i>alba</i> | Mexico | 19.420472 | -99.184535 |
| PUR43840 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1934 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 45.06499 | -87.12427 |
| PUR43841 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1932 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | USA | 37.464279 | -81.698166 |
| PUR43842 | <i>Melampsora</i> | <i>medusae</i> | 1933 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | Canada | 52.88333 | -118.08333 |
| PUR43846 | <i>Melampsora</i> | <i>medusae</i> | 1918 | Salicaceae | <i>Populus</i> | <i>acuminata</i> | USA | 40.01499 | -105.27055 |
| PUR43889 | <i>Melampsora</i> | <i>paradoxa</i> | 1923 | Salicaceae | <i>Salix</i> | <i>exigua</i> | USA | 44.03413 | -107.451 |
| PUR43891 | <i>Melampsora</i> | <i>paradoxa</i> | 1933 | Salicaceae | <i>Salix</i> | <i>melanopsis</i> | USA | 40.31416 | -123.803 |
| PUR43923 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1898 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 40.227703 | -105.817917 |
| PUR43975 | <i>Melampsora</i> | <i>epitea</i> | 1930 | Salicaceae | <i>salix</i> | <i>sericea</i> | USA | 42.44063 | -76.49661 |
| PUR43982 | <i>Melampsora</i> | <i>arctica Rostr.</i> | 1923 | Salicaceae | <i>Salix</i> | <i>sitchensis</i> | USA | 58.68836 | -134.41772 |
| PUR47425 | <i>Melampsora</i> | <i>farlowii</i> | 1932 | Pinaceae | <i>Tsuga</i> | <i>canadensis</i> | USA | 38.281207 | -80.852535 |
| PUR47760 | <i>Melampsora</i> | <i>epitea</i> | 1925 | Salicaceae | <i>salix</i> | <i>hebbiana</i> | USA | 41.31137 | -105.5911 |
| PUR47819 | <i>Melampsora</i> | <i>medusae</i> | 1934 | Salicaceae | <i>Populus</i> | <i>angustifolia</i> | USA | 44.79719 | -106.95618 |
| PUR47887 | <i>Melampsora</i> | <i>medusae</i> | 1936 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 39.0023 | -77.253243 |
| PUR47936 | <i>Melampsora</i> | <i>medusae</i> | 1937 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 32.887875 | -105.478038 |
| PUR48089 | <i>Melampsora</i> | <i>medusae</i> | 1937 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 32.88788 | -105.47804 |
| PUR48576 | <i>Melampsora</i> | <i>medusae</i> | 1939 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 67.41 | -150.1075 |
| PUR48690 | <i>Melampsora</i> | <i>medusae</i> | 1931 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | USA | 64.85694 | -147.80278 |
| PUR48727 | <i>Melampsora</i> | <i>medusae</i> | 1885 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.11059 | -88.20727 |
| PUR49152 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1939 | Salicaceae | <i>Salix</i> | <i>discolor</i> | Canada | 49.61667 | -105.983 |
| PUR49833 | <i>Melampsora</i> | <i>medusae</i> | 1941 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 49.616667 | -105.983333 |
| PUR50410 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1941 | Salicaceae | <i>Salix</i> | <i>bonplandiana</i> | Guatemala | 14.74122 | -91.6639 |
| PUR50949 | <i>Melampsora</i> | <i>occidentalis</i> | 1943 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 43.216505 | -123.341738 |
| PUR51195 | <i>Melampsora</i> | <i>paradoxa</i> | 1944 | Salicaceae | <i>Salix</i> | <i>arbusculoides</i> | USA | 62.30194 | -145.302 |
| PUR51446 | <i>Melampsora</i> | <i>epitea</i> | 1947 | Salicaceae | <i>salix</i> | <i>humboldtiana</i> | El Salvador | 14.086699 | -89.654369 |
| PUR51758 | <i>Melampsora</i> | <i>arctica Rostr.</i> | 1947 | Salicaceae | <i>Salix</i> | <i>fuscescens</i> | USA | 71.38361 | -156.47552 |
| PUR52649 | <i>Melampsora</i> | <i>aecidioides</i> | 1915 | Salicaceae | <i>Populus</i> | <i>alba</i> | USA | 46.415756 | -117.049225 |
| PUR52651 | <i>Melampsora</i> | <i>euphorbiae-gerardianae</i> | 1948 | Euphorbiaceae | <i>Euphorbia</i> | <i>peplus</i> | Canada | 49.743284 | -124.274722 |
| PUR53212 | <i>Melampsora</i> | <i>lini</i> | 1950 | Linaceae | <i>linum</i> | <i>lewisii</i> | Canada | 58.73721 | -94.1075 |
| PUR53349 | <i>Melampsora</i> | <i>medusae</i> | 1952 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | Canada | 48.55 | -123.366667 |
| PUR53443 | <i>Melampsora</i> | <i>medusae</i> | 1954 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 29.76328 | -95.36327 |
| PUR53487 | <i>Melampsora</i> | <i>occidentalis</i> | 1950 | Salicaceae | <i>Populus</i> | <i>angustifolia</i> | USA | 46.0227 | -114.17814 |
| PUR53800 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1936 | Salicaceae | <i>Salix</i> | <i>sitchensis</i> | USA | 39.555159 | -123.429735 |
| PUR54886 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1955 | Salicaceae | <i>Salix</i> | <i>scouleriana</i> | USA | 43.81816 | -110.705 |
| PUR54888 | <i>Melampsora</i> | <i>lini</i> | 1955 | Linaceae | <i>linum</i> | <i>lewisii</i> | USA | 43.81816 | -110.70549 |
| PUR54960 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1956 | Salicaceae | <i>Salix</i> | <i>geyeriana</i> | USA | 43.65576 | -110.746 |
| PUR55326 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1955 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 48.67553 | -113.59289 |
| PUR55356 | <i>Melampsora</i> | <i>paradoxa</i> | 1955 | Salicaceae | <i>Salix</i> | <i>amygdaloides</i> | USA | 41.27311 | -105.817 |
| PUR55642 | <i>Melampsora</i> | <i>lini</i> | 1956 | Linaceae | <i>linum</i> | <i>lewisii</i> | USA | 37.31977 | -105.07262 |
| PUR55848 | <i>Melampsora</i> | <i>epitea</i> | 1955 | Salicaceae | <i>salix</i> | <i>sitchensis</i> | Canada | 49.743284 | -124.274722 |
| PUR56629 | <i>Melampsora</i> | <i>medusae</i> | 1959 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 43.07305 | -89.40123 |
| PUR56630 | <i>Melampsora</i> | <i>medusae</i> | 1959 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 42.98556 | -91.12267 |
| PUR56632 | <i>Melampsora</i> | <i>medusae</i> | 1958 | Pinaceae | <i>Larix</i> | <i>laricina</i> | USA | 45.64875 | -89.15512 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|---------------------------|------|----------------|--------------------|----------------------|--------------|------------|-------------|
| PUR56803 | <i>Melampsora</i> | <i>epitea</i> | 1957 | Salicaceae | <i>salix</i> | <i>scoleriana</i> | USA | 43.656538 | -111.417793 |
| PUR57063 | <i>Melampsora</i> | <i>medusae</i> | 1925 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | Canada | 51.166667 | -115.566667 |
| PUR58584 | <i>Melampsora</i> | <i>medusae</i> | 1963 | Salicaceae | <i>Populus</i> | <i>Simoni</i> | USA | 43.046964 | -89.426293 |
| PUR59457 | <i>Melampsora</i> | <i>epitea</i> | 1937 | Salicaceae | <i>salix</i> | <i>sp.</i> | Mexico | 19.329426 | -99.144104 |
| PUR59458 | <i>Melampsora</i> | <i>epitea</i> | 1961 | Saxifragaceae | <i>Saxifraga</i> | <i>oppositifolia</i> | Canada | 49.883333 | -97.166667 |
| PUR60930 | <i>Melampsora</i> | <i>medusae</i> | 1961 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 41.31137 | -105.5911 |
| PUR60931 | <i>Melampsora</i> | <i>medusae</i> | 1961 | Pinaceae | <i>Pseudotsuga</i> | <i>menziesii</i> | USA | 41.31137 | -105.5911 |
| PUR61204 | <i>Melampsora</i> | <i>paradoxa</i> | 1965 | Salicaceae | <i>Salix</i> | <i>drummondiana</i> | USA | 44.48304 | -106.132 |
| PUR61404 | <i>Melampsora</i> | <i>medusae</i> | 1966 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 41.173163 | -106.525065 |
| PUR61497 | <i>Melampsora</i> | <i>epitea</i> | 1959 | Salicaceae | <i>Salix</i> | <i>eriocephala</i> | USA | 43.390264 | -89.402896 |
| PUR61976 | <i>Melampsora</i> | <i>monticola Mains</i> | 1965 | Euphorbiaceae | <i>Euphorbia</i> | <i>brachycera</i> | USA | 44.06588 | -107.31445 |
| PUR61977 | <i>Melampsora</i> | <i>monticola Mains</i> | 1965 | Euphorbiaceae | <i>Euphorbia</i> | <i>incisa</i> | USA | 32.443131 | -110.78843 |
| PUR63250 | <i>Melampsora</i> | <i>epitea</i> | 1968 | Salicaceae | <i>salix</i> | <i>bonplandiana</i> | USA | 31.36538 | -110.77397 |
| PUR64823 | <i>Melampsora</i> | <i>arctica</i> | 1973 | Salicaceae | <i>Salix</i> | <i>nivalis</i> | USA | 38.84054 | -105.04442 |
| PUR65287 | <i>Melampsora</i> | <i>medusae</i> | 1913 | Pinaceae | <i>Pseudotsuga</i> | <i>macrocarpa</i> | USA | 39.75554 | -105.2211 |
| PUR65293 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1914 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.02085 | -98.07004 |
| PUR65427 | <i>Melampsora</i> | <i>medusae</i> | 1914 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 44.56457 | -123.26204 |
| PUR65628 | <i>Melampsora</i> | <i>medusae</i> | 1978 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.42417 | -86.93367 |
| PUR66879 | <i>Melampsora</i> | <i>medusae</i> | 1975 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 41.623116 | -83.210535 |
| PUR8284 | <i>Melampsora</i> | <i>monticola</i> | 1994 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | USA | 37.90604 | -122.545 |
| PUR87208 | <i>Melampsora</i> | <i>euphorbiae</i> | 1983 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.229178 | -44.980742 |
| PUR87298 | <i>Melampsora</i> | <i>euphorbiae</i> | 1983 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PUR87494 | <i>Melampsora</i> | <i>euphorbiae</i> | 1983 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PUR87657 | <i>Melampsora</i> | <i>euphorbiae</i> | 1983 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PUR87718 | <i>Melampsora</i> | <i>euphorbiae</i> | 1983 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PUR87770 | <i>Melampsora</i> | <i>euphorbiae</i> | 1983 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PUR87777 | <i>Melampsora</i> | <i>euphorbiae</i> | 1983 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PUR88401 | <i>Melampsora</i> | <i>medusae</i> | 1984 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.45074 | -86.88932 |
| PUR88581 | <i>Melampsora</i> | <i>occidentalis</i> | 1980 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | Canada | 55.624447 | -114.93973 |
| PUR88596 | <i>Melampsora</i> | <i>medusae</i> | 1922 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 37.8881 | -87.28281 |
| PUR89296 | <i>Melampsora</i> | <i>medusae</i> | 1978 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.46974 | -86.88907 |
| PUR89348 | <i>Melampsora</i> | <i>medusae</i> | 1978 | Salicaceae | <i>Populus</i> | <i>Tremuloides</i> | USA | 44.735511 | -84.676409 |
| PUR894347 | <i>Melampsora</i> | <i>medusae</i> | 1932 | Salicaceae | <i>Populus</i> | <i>Nigra</i> | USA | 38.84786 | -86.48781 |
| PUR89638 | <i>Melampsora</i> | <i>medusae</i> | 1988 | Salicaceae | <i>Xylosma</i> | <i>congestum</i> | USA | 35.282752 | -120.659616 |
| PUR89814 | <i>Melampsora</i> | <i>epitea</i> | 1967 | Salicaceae | <i>salix</i> | <i>paradoxa</i> | Mexico | 19.287858 | -99.653237 |
| PUR89865 | <i>Melampsora</i> | <i>yoshinagai</i> | 1987 | Thymelaeaceae | <i>Wikstroemia</i> | <i>oahuensis</i> | USA | 21.4425 | -158.163204 |
| PUR90005 | <i>Melampsora</i> | <i>euphorbiae</i> | 1986 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PUR90026 | <i>Melampsora</i> | <i>epitea</i> | 1986 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -21.966667 | -47.816667 |
| PUR90083 | <i>Melampsora</i> | <i>euphorbiae</i> | 1986 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -19.301327 | -46.066549 |
| PUR90182 | <i>Melampsora</i> | <i>euphorbiae</i> | 1986 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -18.975689 | -44.483962 |
| PUR90183 | <i>Melampsora</i> | <i>larici-populina</i> | 1986 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Brazil | -18.975688 | -44.483961 |
| PUR90242 | <i>Melampsora</i> | <i>epitea</i> | 1986 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -21.229178 | -44.980742 |
| PURF1008 | <i>Melampsora</i> | <i>galanthi-fragilis</i> | 1887 | Amaryllidaceae | <i>Galanthus</i> | <i>nivialis</i> | Slovenia | 46.055278 | 14.514444 |
| PURF1009 | <i>Melampsora</i> | <i>galanthi-fragilis</i> | 1914 | Amaryllidaceae | <i>Galanthus</i> | <i>nivialis</i> | Ukraine | 48.55747 | 24.92856 |
| PURF1010 | <i>Melampsora</i> | <i>galanthi-fragilis</i> | 1883 | Amaryllidaceae | <i>Galanthus</i> | <i>nivialis</i> | Hungary | 47.867885 | 17.269935 |
| PURF1014 | <i>Melampsora</i> | <i>vernalis</i> | 1894 | Saxifragaceae | <i>Saxifraga</i> | <i>granulata</i> | Germany | 51.09719 | 13.07422 |
| PURF10344 | <i>Melampsora</i> | <i>aecidioides</i> | 1941 | Salicaceae | <i>Populus</i> | <i>alba</i> | Argentina | -31.621051 | -60.697601 |
| PURF10345 | <i>Melampsora</i> | <i>lini</i> | 1941 | Linaceae | <i>Linum</i> | <i>usitatissimum</i> | Argentina | -31.621051 | -60.697601 |
| PURF10348 | <i>Melampsora</i> | <i>larici-populina</i> | 1941 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Argentina | -31.621051 | -60.697601 |
| PURF10349 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1941 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Argentina | -31.621051 | -60.697601 |
| PURF1063 | <i>Melampsora</i> | <i>ricini Pass.</i> | 1874 | Euphorbiaceae | <i>ricinus</i> | <i>communis</i> | South Africa | -32.724775 | 25.596139 |
| PURF11112 | <i>Melampsora</i> | <i>larici-populina</i> | 1943 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Colombia | 1.452505 | -77.323158 |
| PURF11837 | <i>Melampsora</i> | <i>larici-populina</i> | 1948 | Salicaceae | <i>Populus</i> | <i>robusta</i> | Belgium | 51.057816 | 3.273591 |
| PURF11952 | <i>Melampsora</i> | <i>kusanoi</i> | 1933 | Hypericaceae | <i>Hypericum</i> | <i>sp.</i> | China | 24 | 108.6484 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|-------------------------------|----------|---------------|--------------------|-----------------------------|----------------|------------|------------|
| PURF1955 | <i>Melampsora</i> | <i>euphorbiae-dulcis</i> | 1932 | Euphorbiaceae | <i>Euphorbia</i> | <i>pekinensis</i> | China | 29.5 | 115.91667 |
| PURF12132 | <i>Melampsora</i> | <i>laricis-epitea</i> | 1924 | Salicaceae | <i>salix</i> | <i>miyabeana</i> | Japan | 42.99383 | 141.2494 |
| PURF12142 | <i>Melampsora</i> | <i>larici-populina</i> | 1925 | Salicaceae | <i>Populus</i> | <i>maximowiczii</i> | Japan | 42.99383 | 141.24935 |
| PURF12143 | <i>Melampsora</i> | <i>larici-populina</i> | 1926 | Salicaceae | <i>Populus</i> | <i>maximowiczii</i> | Japan | 42.66667 | 141.68333 |
| PURF12144 | <i>Melampsora</i> | <i>larici-populina</i> | 1928 | Salicaceae | <i>Populus</i> | <i>maximowiczii</i> | Russia | 50.691909 | 142.85524 |
| PURF12148 | <i>Melampsora</i> | <i>larici-populina</i> | 1941 | Salicaceae | <i>Populus</i> | <i>deltoides monilifera</i> | South Korea | 37.55655 | 126.98135 |
| PURF12153 | <i>Melampsora</i> | <i>magnusiana</i> | 1940 | Salicaceae | <i>Populus</i> | <i> davidiana</i> | China | 49.6 | 117.433333 |
| PURF12158 | <i>Melampsora</i> | <i>yoshinagai</i> | 1939 | Thymelaeaceae | <i>Diplomorpha</i> | <i>trichotoma</i> | Japan | 31.9 | 130.8833 |
| PURF14714 | <i>Melampsora</i> | <i>larici-populina</i> | 1951 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Colombia | 4.876608 | -74.437683 |
| PURF16401 | <i>Melampsora</i> | <i>ricini</i> | 1960 | Euphorbiaceae | <i>ricinus</i> | <i>communis</i> | Morocco | 30.51464 | -7.68491 |
| PURF17006 | <i>Melampsora</i> | <i>euphorbiae</i> | 1960 | Euphorbiaceae | <i>Euphorbia</i> | <i>dulcis cfr.</i> | Switzerland | 46.006182 | 8.951142 |
| PURF17322 | <i>Melampsora</i> | <i>aecidioides</i> | 1965 | Salicaceae | <i>Populus</i> | <i>alba</i> | Chile | -41.870699 | -73.81622 |
| PURF17363 | <i>Melampsora</i> | <i>yoshinagai</i> | 1965 | Thymelaeaceae | <i>Wikstroemia</i> | <i>sp.</i> | USA | 20.77108 | -157.439 |
| PURF17535 | <i>Melampsora</i> | <i>allii-fragilis</i> | 1966 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Iraq | 33.29713 | 44.082956 |
| PURF17620 | <i>Melampsora</i> | <i>euphorbiae</i> | 1960 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Pakistan | 25.354215 | 68.276449 |
| PURF18027 | <i>Melampsora</i> | <i>epitea</i> | 1967 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Iraq | 33.31419 | 44.35144 |
| PURF18028 | <i>Melampsora</i> | <i>allii-populina</i> | 1967 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Iraq | 35.581305 | 45.382658 |
| PURF18193 | <i>Melampsora</i> | <i>euphorbiae</i> | 1922 | Euphorbiaceae | <i>Euphorbia</i> | <i>helioscopia</i> | Spain | 42.31475 | 2.36903 |
| PURF18346 | <i>Melampsora</i> | <i>hypericorum</i> | 1973 | Hypericaceae | <i>Hypericum</i> | <i>montanum</i> | Romania | 44.45 | 24.68333 |
| PURF18348 | <i>Melampsora</i> | <i>ribesii-viminalis</i> | 1972 | Salicaceae | <i>Salix</i> | <i>viminalis</i> | Romania | 47.533333 | 22.383333 |
| PURF18569 | <i>Melampsora</i> | <i>medusae</i> | 1973 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | Australia | -35.30833 | 149.12444 |
| PURF19313 | <i>Melampsora</i> | <i>larici-populina</i> | 1978 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Brazil | -21.966667 | -47.816667 |
| PURF19420 | <i>Melampsora</i> | <i>coleosporioides</i> | 1978 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Australia | -33.8152 | 151.0346 |
| PURF19424 | <i>Melampsora</i> | <i>coleosporioides Dietel</i> | 1978 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Australia | -33.804028 | 151.035072 |
| PURF19428 | <i>Melampsora</i> | <i>medusae</i> | 1972 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | Australia | -33.4985 | 150.5179 |
| PURF19564 | <i>Melampsora</i> | <i>aecidioides</i> | 1960 | Salicaceae | <i>Populus</i> | <i>alba</i> | Uruguay | -34.87 | -56.22 |
| PURF19863 | <i>Melampsora</i> | <i>idesiae miyabe</i> | 1980 | Salicaceae | <i>Idesia</i> | <i>polycarpa</i> | China | 25.760743 | -117.7373 |
| PURF19864 | <i>Melampsora</i> | <i>kusanoi</i> | 1980 | Hypericaceae | <i>Hypericum</i> | <i>sp.</i> | China | 43 | 126 |
| PURF19865 | <i>Melampsora</i> | <i>laricis</i> | 1980 | Salicaceae | <i>Populus</i> | <i>sp.</i> | China | 48 | 128 |
| PURF19866 | <i>Melampsora</i> | <i>magnusiana</i> | 1980 | Salicaceae | <i>Populus</i> | <i>davidiana</i> | China | 48 | 128 |
| PURF824 | <i>Melampsora</i> | <i>aecidioides</i> | 1923 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | Argentina | -34.661846 | -58.515442 |
| PURF825 | <i>Melampsora</i> | <i>medusae</i> | 1923 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Argentina | -34.921454 | -57.954533 |
| PURF826 | <i>Melampsora</i> | <i>medusae</i> | 1931 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURF827 | <i>Melampsora</i> | <i>medusae</i> | 1935 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PURF828 | <i>Melampsora</i> | <i>medusae</i> | 1920 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURF829 | <i>Melampsora</i> | <i>medusae</i> | 1920 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Bolivia | -17.118938 | -65.950439 |
| PURF833 | <i>Melampsora</i> | <i>aecidioides</i> | 1923 | Salicaceae | <i>Populus</i> | <i>alba</i> | Argentina | -34.921454 | -57.954533 |
| PURF834 | <i>Melampsora</i> | <i>magnusiana</i> | non-data | Papaveraceae | <i>Chelidonium</i> | <i>majus</i> | Germany | 52.412753 | 13.139434 |
| PURF835 | <i>Melampsora</i> | <i>magnusiana</i> | 1887 | Papaveraceae | <i>Chelidonium</i> | <i>majus</i> | Germany | 50.918898 | 14.150173 |
| PURF836 | <i>Melampsora</i> | <i>magnusiana</i> | 1885 | Papaveraceae | <i>Chelidonium</i> | <i>majus</i> | Germany | 52.502034 | 13.821804 |
| PURF837 | <i>Melampsora</i> | <i>magnusiana</i> | 1900 | Papaveraceae | <i>Chelidonium</i> | <i>majus</i> | Germany | 53.575323 | 10.01534 |
| PURF838 | <i>Melampsora</i> | <i>magnusiana</i> | 1892 | Papaveraceae | <i>Corydalis</i> | <i>cava</i> | Slovakia | 48.357186 | 18.924953 |
| PURF839 | <i>Melampsora</i> | <i>magnusiana</i> | 1868 | Papaveraceae | <i>Corydalis</i> | <i>cava</i> | Germany | 51.252652 | 12.379463 |
| PURF840 | <i>Melampsora</i> | <i>magnusiana</i> | 1882 | Papaveraceae | <i>Corydalis</i> | <i>cava</i> | Hungary | 47.867885 | 17.269935 |
| PURF841 | <i>Melampsora</i> | <i>magnusiana</i> | 1898 | Papaveraceae | <i>Corydalis</i> | <i>digitata</i> | Czech Republic | 49.922021 | 18.082619 |
| PURF842 | <i>Melampsora</i> | <i>magnusiana</i> | 1888 | Papaveraceae | <i>Corydalis</i> | <i>solida</i> | Slovakia | 48.44858 | 18.910028 |
| PURF843 | <i>Melampsora</i> | <i>magnusiana</i> | 1902 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Romania | 47.166667 | 27.6 |
| PURF844 | <i>Melampsora</i> | <i>magnusiana</i> | 1892 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Germany | 52.412753 | 13.139434 |
| PURF845 | <i>Melampsora</i> | <i>magnusiana</i> | 1889 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Germany | 52.516667 | 13.4 |
| PURF846 | <i>Melampsora</i> | <i>magnusiana</i> | 1896 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Germany | 50.834263 | 10.701172 |
| PURF847 | <i>Melampsora</i> | <i>magnusiana</i> | 1883 | Salicaceae | <i>Populus</i> | <i>tremula</i> | England | 52.5 | -1.866667 |
| PURF848 | <i>Melampsora</i> | <i>magnusiana</i> | 1904 | Salicaceae | <i>Populus</i> | <i>tremula</i> | England | 52.166667 | -2.166667 |
| PURF849 | <i>Melampsora</i> | <i>magnusiana</i> | 1874 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Germany | 49.94327 | 11.57684 |
| PURF850 | <i>Melampsora</i> | <i>magnusiana</i> | 1910 | Salicaceae | <i>Populus</i> | <i>tremula</i> | England | 52.466667 | -1.916667 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|-------------------------------|------|----------------|--------------------|-----------------------------|----------------|-------------------|--------------------|
| PURF851 | <i>Melampsora</i> | <i>magnusiana</i> | 1887 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Germany | 50.353573 | 7.578835 |
| PURF852 | <i>Melampsora</i> | <i>magnusiana</i> | 1874 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Italy | 44.8 | 10.333333 |
| PURF853 | <i>Melampsora</i> | <i>magnusiana</i> | 1887 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Germany | 51.386053 | 11.052734 |
| PURF854 | <i>Melampsora</i> | <i>magnusiana</i> | 1898 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Czech Republic | 49.922021 | 18.082619 |
| PURF855 | <i>Melampsora</i> | <i>magnusiana</i> | 1900 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Germany | 53.575323 | 10.01534 |
| PURF857 | <i>Melampsora</i> | <i>magnusiana</i> | 1900 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Germany | 53.575323 | 10.01534 |
| PURF859 | <i>Melampsora</i> | <i>larici-populina</i> | 1906 | Pinaceae | <i>Larix</i> | <i>decidua</i> | Germany | 53.21031 | 12.10226 |
| PURF860 | <i>Melampsora</i> | <i>larici-populina</i> | 1890 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | Germany | 52.516667 | 13.4 |
| PURF861 | <i>Melampsora</i> | <i>larici-populina</i> | 1906 | Salicaceae | <i>Populus</i> | <i>canadensis</i> | Germany | 53.21031 | 12.10226 |
| PURF862 | <i>Melampsora</i> | <i>larici-populina</i> | 1906 | Salicaceae | <i>Populus</i> | <i>canadensis</i> | Germany | 53.21031 | 12.10226 |
| PURF863 | <i>Melampsora</i> | <i>larici-populina</i> | 1881 | Salicaceae | <i>Populus</i> | <i>cordata</i> | Sweden | 59.3283 | 18.072 |
| PURF865 | <i>Melampsora</i> | <i>larici-populina</i> | 1891 | Salicaceae | <i>Populus</i> | <i>laurifolia</i> | Germany | 52.45496 | 13.48537 |
| PURF869 | <i>Melampsora</i> | <i>larici-populina</i> | 1895 | Salicaceae | <i>Populus</i> | <i>deltoides monilifera</i> | Germany | 52.45496 | 13.48537 |
| PURF870 | <i>Melampsora</i> | <i>larici-populina</i> | 1889 | Salicaceae | <i>Populus</i> | <i>pyramidalis</i> | Germany | 51.550515 | 14.712403 |
| PURF871 | <i>Melampsora</i> | <i>larici-populina</i> | 1925 | Salicaceae | <i>Populus</i> | <i>pyramidalis</i> | Sweden | 55.595734 | 13.014995 |
| PURF872 | <i>Melampsora</i> | <i>larici-populina</i> | 1891 | Salicaceae | <i>Populus</i> | <i>angustifolia</i> | Germany | 52.516667 | 13.4 |
| PURF873 | <i>Melampsora</i> | <i>larici-populina</i> | 1895 | Salicaceae | <i>Populus</i> | <i>sieboldii</i> | Germany | 52.45496 | 13.48537 |
| PURF886 | <i>Melampsora</i> | <i>rostrupii</i> | 1928 | Euphorbiaceae | <i>Mercurialis</i> | <i>perennis</i> | Germany | 50.330336 | 11.704628 |
| PURF889 | <i>Melampsora</i> | <i>rostrupii</i> | 1911 | Salicaceae | <i>Populus</i> | <i>tremula</i> | England | 52.5 | -1.866667 |
| PURF891 | <i>Melampsora</i> | <i>allii-populina</i> | 1901 | Amoryllidaceae | <i>Allium</i> | <i>schoenoprasum</i> | Germany | 53.21031 | 12.10226 |
| PURF892 | <i>Melampsora</i> | <i>allii-populina</i> | 1901 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Germany | 53.21031 | 12.10226 |
| PURF900 | <i>Melampsora</i> | <i>epitea</i> | 1924 | Salicaceae | <i>Salix</i> | <i>humboldtiana</i> | Peru | -9.788353 | -76.201195 |
| PURF901 | <i>Melampsora</i> | <i>epitea</i> | 1920 | Salicaceae | <i>Salix</i> | <i>humboldtiana</i> | Peru | -9.643195 | -74.992188 |
| PURF903 | <i>Melampsora</i> | <i>epitea</i> | 1929 | Salicaceae | <i>Salix</i> | <i>humboldtiana</i> | Peru | -11.900963 | -76.664378 |
| PURF918 | <i>Melampsora</i> | <i>ribesii-purpureae</i> | 1929 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Japan | 42.91722 | 143.2044 |
| PURF958 | <i>Melampsora</i> | <i>laricis-pentandrae</i> | 1890 | Salicaceae | <i>salix</i> | <i>pentandra</i> | Poland | 54.40519 | 16.37669 |
| PURF9783 | <i>Melampsora</i> | <i>epitea</i> | 1939 | Salicaceae | <i>Salix</i> | <i>humboldtiana</i> | Chile | -41.870699 | -73.81622 |
| PURF9845 | <i>Melampsora</i> | <i>epitea</i> | 1941 | Salicaceae | <i>Salix</i> | <i>humboldtiana</i> | Bolivia | -17.118938 | -65.950439 |
| PURFN4111 | <i>Melampsora</i> | <i>larici-populina</i> | 1981 | Salicaceae | <i>Populus</i> | <i>Nigra</i> | Brazil | -21.966667 | -47.816667 |
| PURN10529 | <i>Melampsora</i> | <i>euphorbiae</i> | 1990 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -2.607423 | -44.195963 |
| PURN10783 | <i>Melampsora</i> | <i>medusae</i> | 1994 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.44904 | -86.93078 |
| PURN11045 | <i>Melampsora</i> | <i>medusae</i> | 1986 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.79009 | -86.59361 |
| PURN11084 | <i>Melampsora</i> | <i>epiphylla Dietel</i> | 2012 | Salicaceae | <i>Salix</i> | <i>sachalinensis</i> | Japan | 36.92295 | 138.4935 |
| PURN11205 | <i>Melampsora</i> | <i>occidentalis</i> | 1928 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | USA | 48.916022 | -117.78165 |
| PURN11209 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1931 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | Canada | 49.743284 | -124.274722 |
| PURN11379 | <i>Melampsora</i> | <i>medusae</i> | 1963 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.42583 | -86.90806 |
| PURN11392 | <i>Melampsora</i> | <i>medusae</i> | 1963 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.41709 | -86.91911 |
| PURN11398 | <i>Melampsora</i> | <i>medusae</i> | 1963 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 41.760326 | -81.140932 |
| PURN11462 | <i>Melampsora</i> | <i>medusae</i> | 1963 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 40.42587 | -86.90807 |
| PURN11584 | <i>Melampsora</i> | <i>yoshinagai</i> | 2012 | Salicaceae | <i>Salix</i> | <i>bakko</i> | Japan | 36.49398333 | 138.3564167 |
| PURN11585 | <i>Melampsora</i> | <i>sp.</i> | 2012 | Salicaceae | <i>Salix</i> | <i>sachalinensis</i> | Japan | 36.652567 | 138.116938 |
| PURN11669 | <i>Melampsora</i> | <i>laricis</i> | 2014 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Russia | 43.73568611 | 131.6336361 |
| PURN11700 | <i>Melampsora</i> | <i>medusae</i> | 2013 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | Canada | 52.02080292 | -116.6437694 |
| PURN11701 | <i>Melampsora</i> | <i>paradoxa</i> | 2013 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Canada | 55.624447 | -114.93973 |
| PURN11705 | <i>Melampsora</i> | <i>occidentalis</i> | 2013 | non-data | non-data | non-data | Canada | 52.01661990749974 | -116.6398740941124 |
| PURN11732 | <i>Melampsora</i> | <i>euphorbiae</i> | 2015 | Euphorbiaceae | <i>Euphorbia</i> | <i>orientalis</i> | Turkey | 38.857826 | 40.376129 |
| PURN12029 | <i>Melampsora</i> | <i>kupreviczii cf.</i> | 2014 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Russia | 43.69890605449423 | 132.16211386795524 |
| PURN12037 | <i>Melampsora</i> | <i>humboldtiana</i> | 2014 | Salicaceae | <i>Salix</i> | <i>nigra</i> | USA | 29.72556 | -84.98333 |
| PURN12557 | <i>Melampsora</i> | <i>salicis warburgii aff.</i> | 2014 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Russia | 43.69890605449423 | 132.16211386795524 |
| PURN12879 | <i>Melampsora</i> | <i>occidentalis</i> | 2015 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | Canada | 49.743284 | -124.274722 |
| PURN12880 | <i>Melampsora</i> | <i>humboldtiana</i> | 2013 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 55.624447 | -114.93973 |
| PURN12881 | <i>Melampsora</i> | <i>occidentalis</i> | 2013 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | Canada | 55.624447 | -114.93973 |
| PURN12884 | <i>Melampsora</i> | <i>ferrinii</i> | 2015 | Salicaceae | <i>Salix</i> | non-data | Peru | -11.590556 | -76.148889 |
| PURN12886 | <i>Melampsora</i> | <i>larici-populina</i> | 2015 | Salicaceae | <i>Populus</i> | <i>pyramidalis</i> | Peru | -12.05 | -77.05 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|---------------------------|-----------------|----------------------|----------------------|----------------------|-------------|-------------------|---------------------|
| PURN14662 | <i>Melampsora</i> | <i>hypericorum</i> | 1984 | Hypericaceae | <i>Hypericum</i> | <i>erectum</i> | Japan | - | - |
| PURN14665 | <i>Melampsora</i> | <i>kusanoi</i> | 1991 | Hypericaceae | <i>Hypericum</i> | <i>kamtschaticum</i> | Japan | 45.180556 | 141.243056 |
| PURN14667 | <i>Melampsora</i> | <i>kusanoi</i> | 1991 | Hypericaceae | <i>Hypericum</i> | <i>kamtschaticum</i> | Japan | 45.382634 | 141.028393 |
| PURN15020 | <i>Melampsora</i> | <i>aecidioides</i> | 1997 | Salicaceae | <i>Populus</i> | <i>alba</i> | Argentina | -31.413496 | -64.181052 |
| PURN15036 | <i>Melampsora</i> | <i>paradoxa</i> | 2014 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Canada | 51.466667 | -116.583333 |
| PURN15051 | <i>Melampsora</i> | <i>humboldtiana</i> | 2015 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Canada | 49.666667 | -125.833333 |
| PURN15091 | <i>Melampsora</i> | <i>tremulae</i> | 2012 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Japan | 36.11055 | 140.1008166667 |
| PURN15095 | <i>Melampsora</i> | <i>hypericorum</i> | 2012 | Clusiaceae | <i>Clusiaceae</i> | <i>sp.</i> | Japan | 36.11055 | 140.1008166667 |
| PURN15117 | <i>Melampsora</i> | <i>larici-populina</i> | 2012 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Japan | 36.516667 | 138.316667 |
| PURN15118 | <i>Melampsora</i> | <i>tremulae</i> | 2012 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Japan | 36.516667 | 138.316667 |
| PURN15121 | <i>Melampsora</i> | <i>larici-populina</i> | 2012 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Japan | 36.516667 | 138.316667 |
| PURN15128 | <i>Melampsora</i> | <i>tremulae</i> | 2012 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Japan | 36.516667 | 138.316667 |
| PURN15153 | <i>Melampsora</i> | <i>kusanoi</i> | 2012 | Clusiaceae | <i>Clusiaceae</i> | <i>sp.</i> | Japan | 35.92295 | -138.4935 |
| PURN15661 | <i>Melampsora</i> | <i>albertensis</i> | 1993 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | - | - |
| PURN15731 | <i>Melampsora</i> | <i>albertensis</i> | 1989 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | - | - |
| PURN15739 | <i>Melampsora</i> | <i>occidentalis</i> | 1989 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | USA | - | - |
| PURN15753 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1989 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | USA | - | - |
| PURN15762 | <i>Melampsora</i> | <i>occidentalis</i> | 1989 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | USA | - | - |
| PURN15766 | <i>Melampsora</i> | <i>albertensis</i> | 1989 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | - | - |
| PURN15773 | <i>Melampsora</i> | <i>occidentalis</i> | 1988 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | USA | - | - |
| PURN158 | <i>Melampsora</i> | <i>larici-populina</i> | 1906 | Salicaceae | <i>Populus</i> | <i>balsamifera</i> | Finland | 60.45 | 22.283333 |
| PURN15818 | <i>Melampsora</i> | <i>sp.</i> | 2017 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | - | - |
| PURN15871 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1989 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | USA | - | - |
| PURN16026 | <i>Melampsora</i> | <i>occidentalis</i> | 2006 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | USA | - | - |
| PURN16030 | <i>Melampsora</i> | <i>sp.</i> | 2004 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 46.79473315542271 | -121.87968946912429 |
| PURN16034 | <i>Melampsora</i> | <i>sp.</i> | 2004 | Salicaceae | <i>Salix</i> | <i>sitchensis</i> | USA | 46.80525555481213 | -121.84793265556213 |
| PURN16037 | <i>Melampsora</i> | <i>sp.</i> | 2005 | Salicaceae | <i>Salix</i> | <i>exigua</i> | USA | - | - |
| PURN16049 | <i>Melampsora</i> | <i>sp.</i> | 2004 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 43.6135 | -116.20345 |
| PURN16055 | <i>Melampsora</i> | <i>epitea complex</i> | 2009 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | USA | - | - |
| PURN16097 | <i>Melampsora</i> | <i>sp.</i> | 2006 | Salicaceae | <i>Populus</i> | <i>alba</i> | USA | - | - |
| PURN161 | <i>Melampsora</i> | <i>capraearum</i> | 1963 | Salicaceae | <i>Salix</i> | <i>caprea</i> | Finland | 63.78333 | 25.3 |
| PURN16119 | <i>Melampsora</i> | <i>sp.</i> | 2004 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Germany | 50.98834089 | 11.31156509 |
| PURN16123 | <i>Melampsora</i> | <i>sp.</i> | 2006 | Salicaceae | <i>Populus</i> | <i>alba</i> | Spain | - | - |
| PURN16138 | <i>Melampsora</i> | <i>medusae</i> | 2005 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | - | - |
| PURN16141 | <i>Melampsora</i> | <i>medusae</i> | 2004 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | USA | 43.6135 | -116.20345 |
| PURN16142 | <i>Melampsora</i> | <i>sp.</i> | 2005 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | - | - |
| PURN16144 | <i>Melampsora</i> | <i>occidentalis</i> | 2005 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | USA | 43.76175 | -114.5725666667 |
| PURN16276 | <i>Melampsora</i> | <i>yoshinagai</i> | 2014 | <i>Thymelaeaceae</i> | <i>Thymelaeaceae</i> | <i>sp.</i> | Pakistan | - | - |
| PURN16290 | <i>Melampsora</i> | <i>sp.</i> | 2008 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Spain | - | - |
| PURN16300 | <i>Melampsora</i> | <i>sp.</i> | 2007 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | USA | 43.76175 | -114.5725666667 |
| PURN16518 | <i>Melampsora</i> | <i>ferrinii</i> | 2008 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | USA | 29.95465 | -90.07507 |
| PURN16527 | <i>Melampsora</i> | <i>medusae</i> | 2008 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | USA | - | - |
| PURN16532 | <i>Melampsora</i> | <i>laricis-epitea</i> | 2006 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Spain | - | - |
| PURN16547 | <i>Melampsora</i> | <i>sp.</i> | 2006 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Spain | - | - |
| PURN16569 | <i>Melampsora</i> | <i>sp.</i> | 2010 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | Switzerland | - | - |
| PURN16664 | <i>Melampsora</i> | <i>epitea complex</i> | 2009 | Salicaceae | <i>Salicaceae</i> | <i>sp.</i> | USA | - | - |
| PURN2 | <i>Melampsora</i> | <i>yoshinagai</i> | 1997 | <i>Thymelaeaceae</i> | <i>Wikstroemia</i> | <i>uva-ursi</i> | USA | 19.395039 | -155.240851 |
| PURN21933 | <i>Melampsora</i> | <i>sp.</i> | <i>non-data</i> | Salicaceae | <i>Salix</i> | <i>viminialis</i> | Estonia | - | - |
| PURN21934 | <i>Melampsora</i> | <i>sp.</i> | 2007 | Salicaceae | <i>Salix</i> | <i>dasyclados</i> | Estonia | - | - |
| PURN21975 | <i>Melampsora</i> | <i>sp.</i> | 2007 | Salicaceae | <i>Salix</i> | <i>viminialis</i> | Estonia | - | - |
| PURN21976 | <i>Melampsora</i> | <i>sp.</i> | 2007 | Salicaceae | <i>Salix</i> | <i>dasyclados</i> | Estonia | - | - |
| PURN22470 | <i>Melampsora</i> | <i>hypericorum</i> | 1991 | Hypericaceae | <i>Hypericum</i> | <i>calycinum</i> | Germany | - | - |
| PURN22674 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 2004 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | USA | - | - |
| PURN22739 | <i>Melampsora</i> | <i>sp.</i> | 2006 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Canada | 48.10426047710316 | -70.82480208702809 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|---------------------------|------|---------------|------------------|----------------------|------------|--------------------|------------------|
| PURN22989 | <i>Melampsora</i> | <i>sp.</i> | 2001 | Salicaceae | <i>Salix</i> | <i>sp.</i> | China | non-data | non-data |
| PURN22990 | <i>Melampsora</i> | <i>sp.</i> | 2011 | Salicaceae | <i>Salix</i> | <i>sp.</i> | China | 25.999767854014664 | 99.8334190791688 |
| PURN2443 | <i>Melampsora</i> | <i>medusae</i> | 1991 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 47.024593 | -94.69693 |
| PURN2444 | <i>Melampsora</i> | <i>medusae</i> | 1994 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 45.807049 | -92.726743 |
| PURN2445 | <i>Melampsora</i> | <i>abietis-canadensis</i> | 1988 | Salicaceae | <i>Populus</i> | <i>grandidentata</i> | USA | 46.08814 | -92.55246 |
| PURN2446 | <i>Melampsora</i> | <i>arctica Rostr.</i> | 1991 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Canada | 63.66104 | -128.65 |
| PURN2447 | <i>Melampsora</i> | <i>epitea</i> | 1992 | Salicaceae | <i>salix</i> | <i>drummondiana</i> | USA | 45.30303 | -121.75529 |
| PURN2448 | <i>Melampsora</i> | <i>epitea</i> | 1991 | Salicaceae | <i>Salix</i> | <i>interior</i> | USA | 45.057466 | -93.073831 |
| PURN2476 | <i>Melampsora</i> | <i>medusae</i> | 1995 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 45.779081 | -92.689574 |
| PURN2477 | <i>Melampsora</i> | <i>medusae</i> | 1995 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 43.08462 | -91.19142 |
| PURN2611 | <i>Melampsora</i> | <i>humilis</i> | 1983 | Salicaceae | <i>Salix</i> | <i>integra</i> | Japan | 36.68333 | 138 |
| PURN3929 | <i>Melampsora</i> | <i>euphorbiae</i> | 1994 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | USA | 39.418519 | -77.414415 |
| PURN3972 | <i>Melampsora</i> | <i>hypericorum</i> | 1991 | Hypericaceae | <i>Hypericum</i> | <i>sp.</i> | Portugal | 38.80097 | -9.37826 |
| PURN3978 | <i>Melampsora</i> | | 1969 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 31.40666 | -93.9615 |
| PURN3993 | <i>Melampsora</i> | <i>epitea</i> | 1990 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -21.966667 | -47.816667 |
| PURN3995 | <i>Melampsora</i> | <i>ferrinii</i> | 1993 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Argentina | -28.24258 | -59.454445 |
| PURN3996 | <i>Melampsora</i> | <i>epitea</i> | 1993 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Argentina | -24.785299 | -65.424469 |
| PURN3997 | <i>Melampsora</i> | <i>epitea</i> | 1994 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Argentina | -26.238136 | -65.495747 |
| PURN3998 | <i>Melampsora</i> | <i>epitea</i> | 1994 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Argentina | -26.80015 | -65.22697 |
| PURN3999 | <i>Melampsora</i> | <i>ferrinii</i> | 1994 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Argentina | -26.070411 | -65.979296 |
| PURN4000 | <i>Melampsora</i> | <i>epitea</i> | 1993 | Salicaceae | <i>Salix</i> | <i>humboldtiana</i> | Argentina | -26.781676 | -65.358442 |
| PURN4001 | <i>Melampsora</i> | <i>epitea</i> | 1994 | Salicaceae | <i>Salix</i> | <i>humboldtiana</i> | Argentina | -26.238136 | -65.495747 |
| PURN4002 | <i>Melampsora</i> | <i>epitea</i> | 1996 | Salicaceae | <i>Salix</i> | <i>humboldtiana</i> | Bolivia | -21.526845 | -63.981612 |
| PURN4003 | <i>Melampsora</i> | <i>epitea</i> | 1995 | Salicaceae | <i>Salix</i> | <i>caprea</i> | Argentina | -26.815306 | -65.219849 |
| PURN4005 | <i>Melampsora</i> | <i>epitea</i> | 1994 | Salicaceae | <i>Salix</i> | <i>sp.</i> | USA | 40.4491 | -86.93456 |
| PURN4006 | <i>Melampsora</i> | <i>epitea</i> | 1973 | Salicaceae | <i>salix</i> | <i>sp.</i> | USA | 39.982737 | -120.907026 |
| PURN4009 | <i>Melampsora</i> | <i>castagne</i> | 1980 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Canada | 50.75 | -116 |
| PURN4010 | <i>Melampsora</i> | <i>medusae</i> | 1986 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.44995 | -86.93464 |
| PURN4011 | <i>Melampsora</i> | <i>medusae</i> | 1980 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.42583 | -86.90806 |
| PURN4013 | <i>Melampsora</i> | <i>medusae</i> | 1957 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 44.269652 | -96.685606 |
| PURN4014 | <i>Melampsora</i> | <i>medusae</i> | 1992 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 29.757405 | -95.375946 |
| PURN4015 | <i>Melampsora</i> | <i>larici-populina</i> | 1989 | Salicaceae | <i>Populus</i> | <i>Nigra</i> | Colombia | 6.25184 | -75.563591 |
| PURN4016 | <i>Melampsora</i> | <i>larici-populina</i> | 1992 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 45.904559 | -122.743991 |
| PURN4017 | <i>Melampsora</i> | <i>larici-populina</i> | 1986 | Salicaceae | <i>Populus</i> | <i>sp.</i> | Costa Rica | 9.816877 | -84.112852 |
| PURN4023 | <i>Melampsora</i> | <i>larici-populina</i> | 1994 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Argentina | -26.070411 | -65.979296 |
| PURN4037 | <i>Melampsora</i> | <i>sp.</i> | 1983 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -8.570739 | -40.507734 |
| PURN4038 | <i>Melampsora</i> | <i>sp.</i> | 1984 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PURN4039 | <i>Melampsora</i> | <i>sp.</i> | 1988 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PURN4040 | <i>Melampsora</i> | <i>sp.</i> | 1988 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -16.246089 | -50.198506 |
| PURN4041 | <i>Melampsora</i> | <i>sp.</i> | 1988 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -21.326889 | -46.365393 |
| PURN4042 | <i>Melampsora</i> | <i>sp.</i> | 1988 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.326889 | -46.365393 |
| PURN4043 | <i>Melampsora</i> | <i>sp.</i> | 1988 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -18.975688 | -44.483961 |
| PURN4075 | <i>Melampsora</i> | <i>sp.</i> | 1981 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -24.630612 | -53.114858 |
| PURN4076 | <i>Melampsora</i> | <i>sp.</i> | 1980 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -22.398698 | -48.864444 |
| PURN4077 | <i>Melampsora</i> | <i>sp.</i> | 1980 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -22.512305 | -48.916169 |
| PURN4078 | <i>Melampsora</i> | <i>sp.</i> | 1980 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PURN4079 | <i>Melampsora</i> | <i>sp.</i> | 1982 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.966667 | -47.816667 |
| PURN4080 | <i>Melampsora</i> | <i>sp.</i> | 1982 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -22.398698 | -48.864444 |
| PURN4091 | <i>Melampsora</i> | <i>sp.</i> | 1981 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -16.246089 | -50.198506 |
| PURN4092 | <i>Melampsora</i> | <i>sp.</i> | 1986 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.24243 | -44.99785 |
| PURN4093 | <i>Melampsora</i> | <i>sp.</i> | 1986 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Brazil | -21.24243 | -44.99785 |
| PURN4108 | <i>Melampsora</i> | <i>aecidioides</i> | 1989 | Salicaceae | <i>Populus</i> | <i>alba</i> | Brazil | -28.758462 | -51.43333 |
| PURN4109 | <i>Melampsora</i> | <i>larici-populina</i> | 1988 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Brazil | -18.975688 | -44.483961 |
| PURN4110 | <i>Melampsora</i> | <i>larici-populina</i> | 1982 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Brazil | -22.398698 | -48.864444 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------------|----------------------|--------------------------|----------|-----------------|--------------------|-------------------------|----------------|------------|-------------|
| PURN4111 | <i>Melampsora</i> | <i>larici-populina</i> | 1981 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Brazil | -21.966667 | -47.816667 |
| PURN4112 | <i>Melampsora</i> | <i>larici-populina</i> | 1976 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Brazil | -22.398698 | -48.864444 |
| PURN4113 | <i>Melampsora</i> | <i>larici-populina</i> | 1980 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Brazil | -21.966667 | -47.816667 |
| PURN4114 | <i>Melampsora</i> | <i>larici-populina</i> | 1977 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Brazil | -22.398698 | -48.864444 |
| PURN4115 | <i>Melampsora</i> | <i>larici-populina</i> | 1987 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Argentina | -29.536049 | -62.263628 |
| PURN4116 | <i>Melampsora</i> | <i>larici-populina</i> | 1987 | Salicaceae | <i>Populus</i> | <i>nigra</i> | Argentina | -29.536049 | -62.26328 |
| PURN4117 | <i>Melampsora</i> | <i>larici-populina</i> | 1989 | Salicaceae | <i>Populus</i> | <i>Nigra</i> | Brazil | -21.966667 | -47.816667 |
| PURN4118 | <i>Melampsora</i> | <i>epitea</i> | 1986 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -16.246089 | -50.198506 |
| PURN4119 | <i>Melampsora</i> | <i>epitea</i> | 1982 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -21.966667 | -47.816667 |
| PURN4120 | <i>Melampsora</i> | <i>ferrinii</i> | 1988 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -22.398698 | -48.864444 |
| PURN4121 | <i>Melampsora</i> | <i>ferrinii</i> | 1988 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -22.398698 | -48.864444 |
| PURN4122 | <i>Melampsora</i> | <i>epitea</i> | 1982 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -21.966667 | -47.816667 |
| PURN4123 | <i>Melampsora</i> | <i>epitea</i> | 1982 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -22.398698 | -48.864444 |
| PURN4124 | <i>Melampsora</i> | <i>epitea</i> | 1984 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -22.512305 | -48.916169 |
| PURN4125 | <i>Melampsora</i> | <i>epitea</i> | 1988 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -22.398698 | -48.864444 |
| PURN4126 | <i>Melampsora</i> | <i>epitea</i> | 1994 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -21.966667 | -47.816667 |
| PURN4127 | <i>Melampsora</i> | <i>ferrinii</i> | 1988 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Brazil | -21.966667 | -47.816667 |
| PURN4510 | <i>Melampsora</i> | <i>medusae</i> | 1981 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.42003 | -86.92014 |
| PURN456 | <i>Melampsora</i> | <i>euphorbiae</i> | 1973 | Euphorbiaceae | <i>Euphorbia</i> | <i>peplus</i> | Canary Islands | 28.306812 | -16.729106 |
| PURN4576 | <i>Melampsora</i> | <i>sp.</i> | 1982 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -9.675687 | -54.469727 |
| PURN4652 | <i>Melampsora</i> | <i>medusae</i> | 1967 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | Mexico | 25.42343 | -101.4917 |
| PURN467 | <i>Melampsora</i> | <i>lini</i> | 1913 | Linaceae | <i>linum</i> | <i>catharticum</i> | Romania | 47.183333 | 25.783333 |
| PURN5424 | <i>Melampsora</i> | <i>medusae</i> | 2006 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.45087 | -86.89332 |
| PURN5731 | <i>Melampsora</i> | <i>larici-tremulae</i> | 1963 | Salicaceae | <i>Populus</i> | <i>tremula</i> | Sweden | 58.298414 | 12.195313 |
| PURN5735 | <i>Melampsora</i> | <i>epitea</i> | 1975 | Saxifragaceae | <i>Saxifraga</i> | <i>aizoides</i> | Sweden | 62.32452 | 13.70044 |
| PURN5745 | <i>Melampsora</i> | <i>hypericorum</i> | 1990 | Hypericaceae | <i>Hypericum</i> | <i>calycinum</i> | USA | 39.00934 | -120.771 |
| PURN5748 | <i>Melampsora</i> | <i>hypericorum</i> | 1993 | Hypericaceae | <i>Hypericum</i> | <i>sp.</i> | USA | 32.82457 | -96.7153 |
| PURN5750 | <i>Melampsora</i> | <i>larici-populina</i> | 2004 | Salicaceae | <i>Populus</i> | <i>cf. nigra</i> | Germany | 52.922691 | 10.305664 |
| PURN581 | <i>Melampsora</i> | <i>magnusiana</i> | 1949 | Papaveraceae | <i>Chelidonium</i> | <i>majus</i> | Finland | 60.366667 | 22.216667 |
| PURN6730 | <i>Melampsora</i> | <i>medusae</i> | 2012 | Salicaceae | <i>Populus</i> | <i>sp.</i> | USA | 40.45921 | -90.6718 |
| PURN6741 | <i>Melampsora</i> | <i>ferrinii</i> | 2008 | Salicaceae | <i>Salix</i> | <i>matsudana</i> | USA | 30.884137 | -92.196777 |
| PURN6742 | <i>Melampsora</i> | <i>ferrinii</i> | 2013 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | USA | 40.42147 | -86.90469 |
| PURN6743 | <i>Melampsora</i> | <i>ferrinii</i> | 2013 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | USA | 40.414724 | -86.868178 |
| PURN6744 | <i>Melampsora</i> | <i>yezoensis</i> | 2012 | Salicaceae | <i>Salix</i> | <i>sp.</i> | Taiwan | 25.019619 | 121.536564 |
| PURN808 | <i>Melampsora</i> | <i>epitea</i> | 1994 | Salicaceae | <i>salix</i> | <i>sp.</i> | USA | 45.776342 | -92.682704 |
| PURN8265 | <i>Melampsora</i> | <i>epitea</i> | 1989 | Salicaceae | <i>Salix</i> | <i>babylonica</i> | Colombia | 6.25184 | -75.569084 |
| PURN8278 | <i>Melampsora</i> | <i>sp.</i> | 1988 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN8290 | <i>Melampsora</i> | <i>medusae</i> | 1996 | Salicaceae | <i>Populus</i> | <i>tremuloides</i> | USA | 41.298306 | -106.141677 |
| PURN8298 | <i>Melampsora</i> | <i>medusae</i> | 1962 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 43.038902 | -87.906474 |
| PURN8299 | <i>Melampsora</i> | <i>medusae</i> | 1950 | Salicaceae | <i>Populus</i> | <i>candicans</i> | USA | 43.083623 | -87.895363 |
| PURN8300 | <i>Melampsora</i> | <i>medusae</i> | 1964 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 43.662971 | -87.742682 |
| PURN8301 | <i>Melampsora</i> | <i>medusae</i> | 1964 | Salicaceae | <i>Populus</i> | <i>Deltoides</i> | USA | 43.168185 | -87.884558 |
| PURN8303 | <i>Melampsora</i> | <i>occidentalis</i> | 1992 | Salicaceae | <i>Populus</i> | <i>trichocarpa</i> | USA | 47.603062 | -122.299316 |
| PURN897 | <i>Melampsora</i> | <i>epitea</i> | 1992 | Salicaceae | <i>salix</i> | <i>drummondiana</i> | USA | 45.30303 | -121.75529 |
| WTHC1 (PURN15307) | <i>Melampsora</i> | <i>medusae</i> | 2015 | Salicaceae | <i>Populus</i> | <i>deltoides</i> | USA | 40.434 | -87.034 |
| PUR4020 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | non-data | Pinaceae | <i>Abies</i> | <i>amabilis</i> | USA | 46.852825 | -121.760488 |
| PUR4042 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1919 | Pinaceae | <i>Abies</i> | <i>balsamea</i> | Canada | 43.55 | -80.25 |
| PUR4084 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1922 | Caryophyllaceae | <i>Stellaria</i> | <i>borealis</i> | USA | 43.96951 | -74.1646 |
| PUR4087 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1925 | Caryophyllaceae | <i>Stellaria</i> | <i>longifolia</i> | USA | 41.388395 | -77.060264 |
| PUR4101 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1911 | Caryophyllaceae | <i>Cerastium</i> | <i>beeringianum</i> | USA | 38.31221 | -109.248167 |
| PUR4111 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1910 | Caryophyllaceae | <i>Cerastium</i> | <i>arvense strictum</i> | USA | 40.01499 | -105.27055 |
| PUR4113 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1893 | Caryophyllaceae | <i>Cerastium</i> | <i>arvense strictum</i> | USA | 44.31136 | -96.79839 |
| PUR4125 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1915 | Caryophyllaceae | <i>Cerastium</i> | <i>fontanum vulgare</i> | USA | 44.56457 | -123.26204 |
| PUR44179 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1927 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 48.548576 | -114.578198 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|----------------------|--------------------------|----------|-----------------|------------------------|---------------------|-------------|--------------------|-------------------|
| PUR4726 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1936 | Caryophyllaceae | <i>Cerastium</i> | <i>arvense</i> | USA | 41.31137 | -105.5911 |
| PUR48076 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1937 | Pinaceae | <i>Abies</i> | <i>concolor</i> | USA | 32.88788 | -105.47804 |
| PUR48865 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1939 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 43.81816 | -110.70549 |
| PUR49201 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1936 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 41.189167 | -107.047222 |
| PUR49620 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1895 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 39.268295 | -111.636863 |
| PUR57262 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1960 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 43.81816 | -110.70549 |
| PUR59489 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1901 | Pinaceae | <i>Abies</i> | <i>religiosa</i> | Mexico | 21.345649 | -97.838467 |
| PUR63069 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1963 | Piceaceae | <i>Picea</i> | <i>engelmannii</i> | USA | 38.018542 | -107.375612 |
| PURF15947 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1924 | Caryophyllaceae | <i>Stellaria</i> | <i>holostea</i> | Germany | 49.37278 | 8.554835 |
| PURF298 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1891 | Pinaceae | <i>Abies</i> | <i>pectinata</i> | Italy | 43.733333 | 11.533333 |
| PURF317 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1911 | Caryophyllaceae | <i>Malachia</i> | <i>aquatica</i> | Switzerland | 46.977212 | 6.87636 |
| PURF318 | <i>Melampsorella</i> | <i>caryophyllacearum</i> | 1906 | Caryophyllaceae | <i>Caryophyllaceae</i> | <i>non-data</i> | Chile | -53.130267 | -70.853963 |
| PURF68 | <i>Melampsorella</i> | <i>dieliana</i> | 1911 | Polypodiaceae | <i>Polypodium</i> | <i>vulgare</i> | France | 48.96943 | -0.22492 |
| PUR3993 | <i>Melampsorium</i> | <i>betulinum</i> | 1908 | Betulaceae | <i>Betula</i> | <i>occidentalis</i> | USA | 42.867058 | -110.592697 |
| PUR3998 | <i>Melampsorium</i> | <i>betulinum</i> | 1909 | Betulaceae | <i>Betula</i> | <i>populifolia</i> | USA | 44.053157 | -68.634045 |
| PUR4006 | <i>Melampsorium</i> | <i>betulinum</i> | 1919 | Betulaceae | <i>Betula</i> | <i>populifolia</i> | USA | 41.67649 | -71.91507 |
| PUR4014 | <i>Melampsorium</i> | <i>hiratsukanum</i> | 1886 | Betulaceae | <i>Alnus</i> | <i>rhombifolia</i> | USA | 34.42083 | -119.69819 |
| PUR48516 | <i>Melampsorium</i> | <i>betulinum</i> | 1938 | Betulaceae | <i>Betula</i> | <i>sp.</i> | USA | 57.79 | -152.40722 |
| PUR53809 | <i>Melampsorium</i> | <i>hiratsukanum</i> | 1934 | Betulaceae | <i>Alnus</i> | <i>rubra</i> | USA | 41.17812 | -124.11579 |
| PUR57151 | <i>Melampsorium</i> | <i>betulinum</i> | 1962 | Betulaceae | <i>Betula</i> | <i>glandulosa</i> | Canada | 64.191111 | -140.356111 |
| PUR59488 | <i>Melampsorium</i> | <i>hiratsukanum</i> | 1937 | Betulaceae | <i>Alnus</i> | <i>forlensis</i> | Mexico | 18.93373 | -99.22849 |
| PURF12899 | <i>Melampsorium</i> | <i>alni</i> | 1926 | Betulaceae | <i>Alnus</i> | <i>maximowiczii</i> | Japan | 43.267778 | 141.373333 |
| PURF12902 | <i>Melampsorium</i> | <i>alni</i> | 1929 | Betulaceae | <i>Alnus</i> | <i>pendula</i> | Japan | 35.3703 | 133.53865 |
| PURF12920 | <i>Melampsorium</i> | <i>hiratsukanum</i> | 1924 | Betulaceae | <i>Alnus</i> | <i>hirsuta</i> | Japan | 43.10889 | 141.24 |
| PURF18583 | <i>Melampsorium</i> | <i>carpini</i> | 1976 | Betulaceae | <i>Carpinus</i> | <i>tschonoskii</i> | Japan | 35.48731 | 134.103965 |
| PURF19559 | <i>Melampsorium</i> | <i>inermis</i> | non-data | Magnoliaceae | <i>Yulania</i> | <i>campbellii</i> | India | 30.32443 | 78.03392 |
| PURF341 | <i>Melampsorium</i> | <i>betulinum</i> | 1894 | Betulaceae | <i>Betula</i> | <i>laciniata</i> | Germany | 52.05773 | 14.110329 |
| PURF345 | <i>Melampsorium</i> | <i>betulinum</i> | 1924 | Betulaceae | <i>Betula</i> | <i>humilis</i> | Germany | 48.141966 | 11.564025 |
| PURF366 | <i>Melampsorium</i> | <i>hiratsukanum</i> | 1920 | Betulaceae | <i>Alnus</i> | <i>acuminata</i> | Ecuador | -2.900545 | -79.004527 |
| PURF368 | <i>Melampsorium</i> | <i>hiratsukanum</i> | 1889 | Betulaceae | <i>Alnus</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURN173 | <i>Melampsorium</i> | <i>betulinum</i> | 1911 | Betulaceae | <i>Betula</i> | <i>pendula</i> | Finland | 59.966667 | 23.45 |
| PURN2542 | <i>Melampsorium</i> | <i>hiratsukanum</i> | 1991 | Betulaceae | <i>Alnus</i> | <i>forlensis</i> | Ecuador | -3.625536 | -79.238997 |
| PURF17323 | <i>Mikronegeria</i> | <i>fagi</i> | 1965 | Nothofagaceae | <i>Nothofagus</i> | <i>obliqua</i> | Chile | -41.870699 | -73.81622 |
| PURF17372 | <i>Mikronegeria</i> | <i>fagi</i> | 1965 | Araucariaceae | <i>Araucaria</i> | <i>araucana</i> | Chile | -39.827598 | -73.224246 |
| PURF17419 | <i>Mikronegeria</i> | <i>fagi</i> | 1948 | Araucariaceae | <i>Araucaria</i> | <i>araucana</i> | Chile | -41.870699 | -73.81622 |
| PURF19465 | <i>Mikronegeria</i> | <i>fagi</i> | 1970 | Nothofagaceae | <i>Nothofagus</i> | <i>obliqua</i> | Chile | -41.870699 | -73.81622 |
| PURF19466 | <i>Mikronegeria</i> | <i>fagi</i> | 1970 | Nothofagaceae | <i>Nothofagus</i> | <i>obliqua</i> | Chile | -41.870699 | -73.8162 |
| PURN1120 | <i>Mikronegeria</i> | <i>fagi</i> | 2001 | Araucariaceae | <i>Araucaria</i> | <i>araucana</i> | Argentina | -40.155234 | -71.351015 |
| PURN1121 | <i>Mikronegeria</i> | <i>fagi</i> | 2001 | Araucariaceae | <i>Araucaria</i> | <i>araucana</i> | Argentina | -40.155234 | -71.351015 |
| PURN1122 | <i>Mikronegeria</i> | <i>alba</i> | 2000 | Nothofagaceae | <i>Nothofagus</i> | <i>alpina</i> | Argentina | -41.140293 | -71.301369 |
| PURN16373 | <i>Mikronegeria</i> | <i>alba</i> | 2017 | Nothofagaceae | <i>Nothofagaceae</i> | <i>sp.</i> | Chile | -40.56553637934329 | -73.0896474748263 |
| PURN477 | <i>Mikronegeria</i> | <i>fagi</i> | 1925 | Nothofagaceae | <i>Nothofagus</i> | <i>alpina</i> | Chile | -41.870699 | -73.81622 |
| PURN6480 | <i>Mikronegeria</i> | <i>alba</i> | 1975 | Nothofagaceae | <i>Nothofagus</i> | <i>alpina</i> | Chile | -39.80372 | -73.2596 |
| PURN6481 | <i>Mikronegeria</i> | <i>alba</i> | 1975 | Nothofagaceae | <i>Nothofagus</i> | <i>alpina</i> | Chile | -39.80372 | -73.2596 |
| PURN6482 | <i>Mikronegeria</i> | <i>alba</i> | 1977 | Nothofagaceae | <i>Nothofagus</i> | <i>glauca</i> | Chile | -41.870699 | -73.81622 |
| PURN6483 | <i>Mikronegeria</i> | <i>alba</i> | 1974 | Nothofagaceae | <i>Nothofagus</i> | <i>obliqua</i> | Argentina | -40.16947 | -71.508989 |
| PURN6484 | <i>Mikronegeria</i> | <i>alba</i> | 1974 | Nothofagaceae | <i>Nothofagus</i> | <i>obliqua</i> | Chile | -41.870699 | -73.81622 |
| PURN6485 | <i>Mikronegeria</i> | <i>alba</i> | 1977 | Nothofagaceae | <i>Nothofagus</i> | <i>obliqua</i> | Chile | -41.870699 | -73.81622 |
| PURN6486 | <i>Mikronegeria</i> | <i>alba</i> | 1975 | Nothofagaceae | <i>Nothofagus</i> | <i>obliqua</i> | Chile | -39.824726 | -73.234375 |
| PURN6487 | <i>Mikronegeria</i> | <i>alba</i> | 1974 | Nothofagaceae | <i>Nothofagus</i> | <i>obliqua</i> | Chile | -41.870699 | -73.81622 |
| PURN6488 | <i>Mikronegeria</i> | <i>alba</i> | 1974 | Cupressaceae | <i>Austrocedrus</i> | <i>chilensis</i> | Argentina | -40.16947 | -71.508989 |
| PURN6489 | <i>Mikronegeria</i> | <i>alba</i> | 1975 | Cupressaceae | <i>Austrocedrus</i> | <i>chilensis</i> | Chile | -41.870699 | -73.81622 |
| PURN6490 | <i>Mikronegeria</i> | <i>alba</i> | 1975 | Cupressaceae | <i>Austrocedrus</i> | <i>chilensis</i> | Chile | -41.870699 | -73.81622 |
| PURN6491 | <i>Mikronegeria</i> | <i>alba</i> | 1975 | Cupressaceae | <i>Austrocedrus</i> | <i>chilensis</i> | Chile | -41.870699 | -73.8162 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|------------------------|----------|------------------|----------------------|----------------------|-------------|--------------------|-------------------|
| PUR44273 | <i>Milesia</i> | <i>polypodophila</i> | 1927 | Polypodiaceae | <i>Polypodium</i> | <i>virginianum</i> | USA | 41.01216 | -77.656 |
| PUR44295 | <i>Milesia</i> | <i>fructosa</i> | 1932 | Dryopteridaceae | <i>Dryopteris</i> | <i>expansa</i> | USA | 44.36588 | -73.90265 |
| PUR44304 | <i>Milesia</i> | <i>fructosa</i> | 1932 | Dryopteridaceae | <i>Dryopteris</i> | <i>intermedia</i> | USA | 43.66368 | -72.83288 |
| PUR4477 | <i>Milesia</i> | <i>marginalis</i> | 1925 | Dryopteridaceae | <i>Dryopteris</i> | <i>marginalis</i> | USA | 42.78662 | -76.05036 |
| PUR4486 | <i>Milesia</i> | <i>polystichi</i> | 1913 | Dryopteridaceae | <i>Polystichum</i> | <i>munitum</i> | USA | 48.46328 | -115.88962 |
| PUR52398 | <i>Milesia</i> | <i>polystichi</i> | 1949 | Dryopteridaceae | <i>Polystichum</i> | <i>munitum</i> | USA | 39.27286 | -123.78794 |
| PUR53818 | <i>Milesia</i> | <i>laeviuscula</i> | 1936 | Polypodiaceae | <i>Polypodium</i> | <i>glycyrrhiza</i> | USA | 40.76124 | -123.99478 |
| PUR54730 | <i>Milesia</i> | <i>vogesiaca</i> | 1955 | Dryopteridaceae | <i>Polystichum</i> | <i>munitum</i> | USA | 46.20317 | -123.38318 |
| PUR64859 | <i>Milesia</i> | <i>marginalis</i> | 1973 | Dryopteridaceae | <i>Dryopteris</i> | <i>marginalis</i> | USA | 40.39912 | -87.11111 |
| PURF51 | <i>Milesia</i> | <i>australis</i> | 1905 | Blechnaceae | <i>Blechnum</i> | <i>auriculatum</i> | Chile | -39.88418 | -73.43045 |
| PURN6449 | <i>Milesia</i> | <i>australis</i> | 1975 | Thelypteridaceae | <i>Thelypteris</i> | <i>sp.</i> | Ecuador | -2.9655 | -78.43197 |
| PUR54683 | <i>Milesina</i> | <i>laeviuscula</i> | 1952 | Polypodiaceae | <i>Polypodium</i> | <i>glycyrrhiza</i> | Canada | 48.49306 | -123.34667 |
| PURF11633 | <i>Milesina</i> | <i>odontosoriae</i> | 1947 | Davalliaceae | <i>Davallia</i> | <i>sp.</i> | Australia | -36.22513 | 142.85947 |
| PURF12448 | <i>Milesina</i> | <i>neoexigua</i> | 1931 | Dryopteridaceae | <i>Polystichum</i> | <i>braunii</i> | Japan | 36.25 | 136.36667 |
| PURF12461 | <i>Milesina</i> | <i>jezoensis</i> | 1931 | Polypodiaceae | <i>Polypodium</i> | <i>vulgare</i> | Japan | 43.27944 | 143.11972 |
| PURF12471 | <i>Milesina</i> | <i>miyabei</i> | 1929 | Dryopteridaceae | <i>Dryopteris</i> | <i>crassirhizoma</i> | Japan | 35.247845 | 134.356702 |
| PURF18575 | <i>Milesina</i> | <i>coniogrammicola</i> | 1932 | Pteridaceae | <i>Coniogramme</i> | <i>intermedia</i> | Japan | 35.43255 | 134.15576 |
| PURF42 | <i>Milesina</i> | <i>blechni</i> | 1915 | Pinaceae | <i>Abies</i> | <i>alba</i> | Germany | 48.79329 | 10.67184 |
| PURF12535 | <i>Miyagia</i> | <i>anaphalidis</i> | 1923 | Asteraceae | <i>Anaphalis</i> | <i>margaritacea</i> | Japan | 42.92152 | 140.615 |
| PURF17978 | <i>Miyagia</i> | <i>pseudosphaeria</i> | 1968 | Asteraceae | <i>Sonchus</i> | <i>arvensis</i> | India | 26.4478 | 80.34627 |
| PURF19713 | <i>Newinia</i> | <i>heterophragmae</i> | 1979 | Bignoniaceae | <i>Kigelia</i> | <i>africana</i> | Nigeria | 6.8561 | 7.3927 |
| PAZ14 | <i>non-data</i> | <i>sp.</i> | 2019 | Poaceae | <i>Cenchrus</i> | <i>purpureus</i> | Puerto Rico | 18.304872218909114 | -65.8328381611447 |
| PUR68963 | <i>non-data</i> | <i>sp.</i> | non-data | non-data | <i>non-data</i> | <i>non-data</i> | non-data | non-data | non-data |
| PURF69289 | <i>non-data</i> | <i>sp.</i> | non-data | non-data | <i>non-data</i> | <i>non-data</i> | non-data | non-data | non-data |
| PUR47914 | <i>Nyssopsora</i> | <i>clavellosa</i> | 1937 | Araliaceae | <i>Aralia</i> | <i>californica</i> | USA | 41.915613 | -123.852396 |
| PUR8632 | <i>Nyssopsora</i> | <i>echinata</i> | 1916 | Apiaceae | <i>Conioselinum</i> | <i>pacificum</i> | USA | 65.063245 | -153.126953 |
| PUR8668 | <i>Nyssopsora</i> | <i>clavellosa</i> | 1900 | Araliaceae | <i>Aralia</i> | <i>nudicaulis</i> | USA | 45.85334 | -84.619644 |
| PURN275 | <i>Nyssopsora</i> | <i>asiatica</i> | 1991 | Araliaceae | <i>Aralia</i> | <i>elata</i> | Japan | 45.180556 | 141.243056 |
| PURF1284 | <i>Ochropsora</i> | <i>ariae</i> | 1910 | Rosaceae | <i>Sorbus</i> | <i>aucuparia</i> | Sweden | 59.86667 | 17.63333 |
| PURF1293 | <i>Ochropsora</i> | <i>ariae</i> | 1907 | Ranunculaceae | <i>Anemone</i> | <i>nemorosa</i> | Germany | 53.21031 | 12.10226 |
| PURF1298 | <i>Ochropsora</i> | <i>ariae</i> | 1884 | Rosaceae | <i>Amelanchier</i> | <i>canadensis</i> | Germany | 51.06103 | 14.5769 |
| PUR18277 | <i>Olivea</i> | <i>capituliformis</i> | 1922 | Euphorbiaceae | <i>Alchornea</i> | <i>pyncogyne</i> | Brazil | -22.398698 | -48.864444 |
| PUR86938 | <i>Olivea</i> | <i>capituliformis</i> | 1983 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR86966 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87073 | <i>Olivea</i> | <i>sp.</i> | 1983 | Euphorbiaceae | <i>Euphorbiaceae</i> | <i>sp.</i> | Brazil | -19.118652 | -54.596288 |
| PUR87091 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>sp.</i> | Brazil | -19.118652 | -54.596288 |
| PUR87146 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -16.064364 | -56.687104 |
| PUR87181 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87253 | <i>Olivea</i> | <i>capituliformis</i> | 1983 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR87272 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87282 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87312 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PUR87360 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87522 | <i>Olivea</i> | <i>capituliformis</i> | 1983 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.66667 | -47.816667 |
| PUR87548 | <i>Olivea</i> | <i>sp.</i> | 1983 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR87549 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR87702 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87735 | <i>Olivea</i> | <i>sp.</i> | 1983 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87790 | <i>Olivea</i> | <i>sp.</i> | 1983 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PUR87838 | <i>Olivea</i> | <i>sp.</i> | 1984 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87867 | <i>Olivea</i> | <i>sp.</i> | 1984 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR87913 | <i>Olivea</i> | <i>capituliformis</i> | 1984 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PUR87944 | <i>Olivea</i> | <i>sp.</i> | 1984 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PUR87962 | <i>Olivea</i> | <i>sp.</i> | 1984 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------|-----------------------|----------|---------------|----------------------|----------------------|---------|---------------|----------------|
| PUR88988 | <i>Olivea</i> | <i>sp.</i> | 1979 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR88989 | <i>Olivea</i> | <i>sp.</i> | 1979 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966671 | -47.816671 |
| PUR88990 | <i>Olivea</i> | <i>sp.</i> | 1980 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966669 | -47.816669 |
| PUR88991 | <i>Olivea</i> | <i>sp.</i> | 1980 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966668 | -47.816668 |
| PUR88992 | <i>Olivea</i> | <i>sp.</i> | 1980 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR88993 | <i>Olivea</i> | <i>sp.</i> | 1982 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR88994 | <i>Olivea</i> | <i>sp.</i> | 1976 | Lamiaceae | <i>Vitex</i> | <i>sp.</i> | Brazil | -24.630612 | -53.114858 |
| PUR88995 | <i>Olivea</i> | <i>sp.</i> | 1981 | Lamiaceae | <i>Vitex</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR89129 | <i>Olivea</i> | <i>sp.</i> | 1984 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR89131 | <i>Olivea</i> | <i>sp.</i> | 1984 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PUR89138 | <i>Olivea</i> | <i>sp.</i> | 1984 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PUR89173 | <i>Olivea</i> | <i>capituliformis</i> | 1924 | Euphorbiaceae | <i>Alchornea</i> | <i>costaricensis</i> | Brazil | 9.066667 | -79.65 |
| PUR89174 | <i>Olivea</i> | <i>sp.</i> | 1976 | Euphorbiaceae | <i>Euphorbiaceae</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PUR89175 | <i>Olivea</i> | <i>capituliformis</i> | 1975 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR89176 | <i>Olivea</i> | <i>capituliformis</i> | 1982 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PUR89177 | <i>Olivea</i> | <i>sp.</i> | 1983 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURF15161 | <i>Olivea</i> | <i>capituliformis</i> | 1922 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURF15162 | <i>Olivea</i> | <i>capituliformis</i> | 1922 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.72046 | -45.5294 |
| PURF15164 | <i>Olivea</i> | <i>capituliformis</i> | 1922 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURF18276 | <i>Olivea</i> | <i>capituliformis</i> | 1921 | Euphorbiaceae | <i>Alchornea</i> | <i>iricurana</i> | Brazil | -22.865557 | -43.42723 |
| PURF18277 | <i>Olivea</i> | <i>capituliformis</i> | 1922 | Euphorbiaceae | <i>Alchornea</i> | <i>pyncogyne</i> | Brazil | -22.3987 | -48.8644 |
| PURF18278 | <i>Olivea</i> | <i>capituliformis</i> | non-data | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -16.246089 | -50.198506 |
| PURF18992 | <i>Olivea</i> | <i>capituliformis</i> | 1975 | Euphorbiaceae | <i>Alchornea</i> | <i>iricurana</i> | Brazil | -21.966667 | -47.816667 |
| PURF18993 | <i>Olivea</i> | <i>capituliformis</i> | 1975 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURF18994 | <i>Olivea</i> | <i>capituliformis</i> | 1976 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURF18995 | <i>Olivea</i> | <i>capituliformis</i> | 1977 | Euphorbiaceae | <i>Alchornea</i> | <i>iricurana</i> | Brazil | -21.966668 | -47.816668 |
| PURF18996 | <i>Olivea</i> | <i>capituliformis</i> | 1977 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURF18997 | <i>Olivea</i> | <i>capituliformis</i> | 1977 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURF18998 | <i>Olivea</i> | <i>capituliformis</i> | 1978 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURF18999 | <i>Olivea</i> | <i>capituliformis</i> | 1978 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURF19000 | <i>Olivea</i> | <i>capituliformis</i> | 1977 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -20.756822 | -42.876638 |
| PURF19001 | <i>Olivea</i> | <i>capituliformis</i> | 1979 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -20.756822 | -42.876638 |
| PURF19002 | <i>Olivea</i> | <i>capituliformis</i> | 1979 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -12.218759 | -41.471673 |
| PURF19657 | <i>Olivea</i> | <i>sp.</i> | 1979 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966670 | -47.816670 |
| PURF9004 | <i>Olivea</i> | <i>viticis</i> | 1908 | Lamiaceae | <i>Vitex</i> | <i>flavens</i> | Brazil | -4.016807 | -53.415039 |
| PURN10280 | <i>Olivea</i> | <i>capituliformis</i> | 1998 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN10281 | <i>Olivea</i> | <i>capituliformis</i> | 1998 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN10282 | <i>Olivea</i> | <i>capituliformis</i> | 1998 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -24.33 | -47.33 |
| PURN10284 | <i>Olivea</i> | <i>capituliformis</i> | 1998 | Euphorbiaceae | <i>Euphorbiaceae</i> | <i>non-data</i> | Brazil | -21.966667 | -47.816667 |
| PURN10285 | <i>Olivea</i> | <i>capituliformis</i> | 1998 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN10551 | <i>Olivea</i> | <i>sp.</i> | 1999 | Lamiaceae | <i>Vitex</i> | <i>sp.</i> | Brazil | -24.43 | -47.46 |
| PURN15331 | <i>Olivea</i> | <i>tectonae</i> | 2016 | Bignoniaceae | <i>Tectona</i> | <i>grandis</i> | Bolivia | 15.5605555556 | -67.3216666667 |
| PURN2885 | <i>Olivea</i> | <i>sp.</i> | 1983 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -19.118652 | -54.596288 |
| PURN2887 | <i>Olivea</i> | <i>sp.</i> | 1987 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | 1.62153 | -52.001953 |
| PURN2888 | <i>Olivea</i> | <i>capituliformis</i> | 1988 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN2890 | <i>Olivea</i> | <i>capituliformis</i> | 1992 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | 1.62153 | -52.002 |
| PURN2892 | <i>Olivea</i> | <i>capituliformis</i> | 1989 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN2893 | <i>Olivea</i> | <i>capituliformis</i> | 1988 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN2984 | <i>Olivea</i> | <i>capituliformis</i> | 1988 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN3240 | <i>Olivea</i> | <i>capituliformis</i> | 1990 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN3266 | <i>Olivea</i> | <i>sp.</i> | 1988 | Lamiaceae | <i>Vitex</i> | <i>megapotamica</i> | Brazil | -21.966667 | -47.816667 |
| PURN3267 | <i>Olivea</i> | <i>sp.</i> | 1990 | Lamiaceae | <i>Vitex</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN4646 | <i>Olivea</i> | <i>capituliformis</i> | 1989 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN6919 | <i>Olivea</i> | <i>capituliformis</i> | 1988 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|-------------------------|----------|----------------|----------------------|----------------------|--------------------|------------|------------|
| PURN6920 | <i>Olivea</i> | <i>capituliformis</i> | 1995 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN6921 | <i>Olivea</i> | <i>capituliformis</i> | 1995 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN6922 | <i>Olivea</i> | <i>capituliformis</i> | 1995 | Euphorbiaceae | <i>Alchornea</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN6923 | <i>Olivea</i> | <i>capituliformis</i> | 1999 | Euphorbiaceae | <i>Alchornea</i> | <i>haeterifolia</i> | Brazil | -24.22 | -47.03 |
| PUR1156 | <i>Phakopsora</i> | <i>meibomia</i> | 1921 | Fabaceae | <i>Desmodium</i> | <i>triflorum</i> | Trinidad | 10.5 | -61.25 |
| PUR17498 | <i>Phakopsora</i> | <i>pallescens</i> | 1916 | Poaceae | <i>Tripsacum</i> | <i>latifolium</i> | Guatemala | 14.07417 | -90.4167 |
| PUR18403 | <i>Phakopsora</i> | <i>compressa</i> | 1921 | Poaceae | <i>Paspalum</i> | <i>conjugation</i> | USA | 28.55527 | -82.3879 |
| PUR18450 | <i>Phakopsora</i> | <i>compressa</i> | 1917 | Poaceae | <i>Paspalum</i> | <i>plicatulum</i> | Cuba | 22.4175 | -83.698056 |
| PUR3209 | <i>Phakopsora</i> | <i>muscadini</i> | 1921 | Vitaceae | <i>Vitis</i> | <i>rotundifolia</i> | USA | 25.78165 | -80.2167 |
| PUR3218 | <i>Phakopsora</i> | <i>uva</i> | 1916 | Vitaceae | <i>Vitis</i> | <i>vinifera</i> | Puerto Rico | 18.18161 | -66.9828 |
| PUR3223 | <i>Phakopsora</i> | <i>uva</i> | 1941 | Vitaceae | <i>Vitis</i> | <i>vinifera</i> | Costa Rica | 9.933333 | -84.0833 |
| PUR3229 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1916 | Fabaceae | <i>Lablab</i> | <i>purpureus</i> | Puerto Rico | 18.27128 | -65.8021 |
| PUR3251 | <i>Phakopsora</i> | <i>fenestrata</i> | 1916 | Phyllanthaceae | <i>Phyllanthus</i> | <i>acidus</i> | Puerto Rico | 17.96867 | -66.9097 |
| PUR3307 | <i>Phakopsora</i> | <i>crotonis</i> | 1919 | Euphorbiaceae | <i>Croton</i> | <i>monanthogynus</i> | USA | 36.16589 | -86.7844 |
| PUR42861 | <i>Phakopsora</i> | <i>arthuriana</i> | 1916 | Euphorbiaceae | <i>Jatropha</i> | <i>gossypifolia</i> | Puerto Rico | 18.08405 | -66.8554 |
| PUR44002 | <i>Phakopsora</i> | <i>uva</i> | 1920 | Vitaceae | <i>Vitis</i> | <i>vinifera</i> | USA | 28.517825 | -81.329798 |
| PUR44004 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1930 | Fabaceae | <i>Aeschynomene</i> | <i>americana</i> | Dominican Republic | 19.39352 | -70.526 |
| PUR44010 | <i>Phakopsora</i> | <i>crotonis</i> | 1925 | Euphorbiaceae | <i>Croton</i> | <i>capitatus</i> | USA | 36.1084 | -91.0974 |
| PUR44594 | <i>Phakopsora</i> | <i>nishidana</i> | 1930 | Moraceae | <i>Ficus</i> | <i>carica</i> | Dominican Republic | 19.39352 | -70.52598 |
| PUR47272 | <i>Phakopsora</i> | <i>vernoniae</i> | 1930 | Asteraceae | <i>Vernonia</i> | <i>cinerea</i> | Dominican Republic | 19.39352 | -70.526 |
| PUR47989 | <i>Phakopsora</i> | <i>nishidana</i> | 1936 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 29.65163 | -82.32483 |
| PUR48034 | <i>Phakopsora</i> | <i>nishidana</i> | 1932 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 26.15952 | -97.990837 |
| PUR48330 | <i>Phakopsora</i> | <i>zizyphi-vulgaris</i> | 1938 | Rhamnaceae | <i>Zizyphus</i> | <i>jujuba</i> | USA | 25.46376 | -80.4487 |
| PUR49095 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1938 | Fabaceae | <i>Vigna</i> | <i>repens</i> | Guatemala | 14.68313 | -90.4215 |
| PUR49121 | <i>Phakopsora</i> | <i>nishidana</i> | 1938 | Moraceae | <i>Ficus</i> | <i>carica</i> | Guatemala | 14.596667 | -90.754722 |
| PUR50307 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1982 | Fabaceae | <i>Canavalia</i> | <i>villosa</i> | Guatemala | 14.59667 | -90.7547 |
| PUR50424 | <i>Phakopsora</i> | <i>nishidana</i> | 1941 | Moraceae | <i>Ficus</i> | <i>carica</i> | Guatemala | 14.452835 | -91.763504 |
| PUR50425 | <i>Phakopsora</i> | <i>nishidana</i> | 1940 | Moraceae | <i>Ficus</i> | <i>carica</i> | Guatemala | 15.666667 | -91.583333 |
| PUR50426 | <i>Phakopsora</i> | <i>nishidana</i> | 1940 | Moraceae | <i>Ficus</i> | <i>carica</i> | Guatemala | 14.83333 | -91.96667 |
| PUR51173 | <i>Phakopsora</i> | <i>arthuriana</i> | non-data | Euphorbiaceae | <i>Jatropha</i> | <i>gossypifolia</i> | USA | 25.96545 | -97.4446 |
| PUR51302 | <i>Phakopsora</i> | <i>aurea</i> | 1946 | Poaceae | <i>Dichantherium</i> | <i>sphaerocarpon</i> | Honduras | 14.83131 | -87.88239 |
| PUR51308 | <i>Phakopsora</i> | <i>nishidana</i> | 1947 | Moraceae | <i>Ficus</i> | <i>carica</i> | Honduras | 15.43333 | -87.91667 |
| PUR51309 | <i>Phakopsora</i> | <i>nishidana</i> | 1947 | Moraceae | <i>Ficus</i> | <i>carica</i> | Honduras | 15.43333 | -87.91667 |
| PUR51735 | <i>Phakopsora</i> | <i>zeae</i> | 1949 | Poaceae | <i>Zea</i> | <i>mays</i> | USA | 40.42271 | -86.91876 |
| PUR52258 | <i>Phakopsora</i> | <i>compressa</i> | 1950 | Poaceae | <i>Paspalum</i> | <i>conjugatum</i> | Trinidad | 10.5 | -61.25 |
| PUR52702 | <i>Phakopsora</i> | <i>compressa</i> | 1949 | Poaceae | <i>Paspalum</i> | <i>conjugation</i> | Costa Rica | 9.904645 | -83.802758 |
| PUR52753 | <i>Phakopsora</i> | <i>aurea</i> | 1945 | Poaceae | <i>Panicum</i> | <i>antidotale</i> | USA | 27.7903 | -97.66888 |
| PUR53042 | <i>Phakopsora</i> | <i>uva</i> | 1950 | Vitaceae | <i>Vitis</i> | <i>tilifolia</i> | Honduras | 14.712 | -86.808 |
| PUR5549 | <i>Phakopsora</i> | <i>nishidana</i> | 1894 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.18968 | -82.63929 |
| PUR5550 | <i>Phakopsora</i> | <i>nishidana</i> | 1903 | Moraceae | <i>Ficus</i> | <i>carica</i> | Puerto Rico | 18.240636 | -66.57666 |
| PUR5551 | <i>Phakopsora</i> | <i>nishidana</i> | 1890 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 32.44958 | -87.51417 |
| PUR5552 | <i>Phakopsora</i> | <i>nishidana</i> | 1890 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.69436 | -88.04305 |
| PUR5553 | <i>Phakopsora</i> | <i>nishidana</i> | 1900 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.26715 | -97.74306 |
| PUR5554 | <i>Phakopsora</i> | <i>nishidana</i> | 1921 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 32.265833 | -64.807222 |
| PUR5555 | <i>Phakopsora</i> | <i>nishidana</i> | 1906 | Moraceae | <i>Ficus</i> | <i>carica</i> | Cuba | 23.131944 | -82.364167 |
| PUR5556 | <i>Phakopsora</i> | <i>nishidana</i> | 1906 | Moraceae | <i>Ficus</i> | <i>carica</i> | Cuba | 23.131944 | -82.364167 |
| PUR5557 | <i>Phakopsora</i> | <i>nishidana</i> | 1891 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.18968 | -82.63929 |
| PUR5558 | <i>Phakopsora</i> | <i>nishidana</i> | 1888 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 32.36431 | -88.703656 |
| PUR5559 | <i>Phakopsora</i> | <i>nishidana</i> | 1908 | Moraceae | <i>Ficus</i> | <i>carica</i> | Costa Rica | 9.933333 | -84.083333 |
| PUR5560 | <i>Phakopsora</i> | <i>nishidana</i> | 1886 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.884137 | -92.196777 |
| PUR5561 | <i>Phakopsora</i> | <i>nishidana</i> | 1886 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.884137 | -92.196777 |
| PUR5562 | <i>Phakopsora</i> | <i>nishidana</i> | 1891 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.18968 | -82.63929 |
| PUR5563 | <i>Phakopsora</i> | <i>nishidana</i> | 1907 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 32.42403 | -85.69162 |
| PUR5564 | <i>Phakopsora</i> | <i>nishidana</i> | 1890 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 32.7218 | -85.50773 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|---------------------|----------|-----------------|---------------------|----------------------------|--------------------|-------------------|--------------------|
| PUR5566 | <i>Phakopsora</i> | <i>nishidana</i> | 1909 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 27.22699 | -98.14417 |
| PUR5567 | <i>Phakopsora</i> | <i>nishidana</i> | 1897 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.396032 | -88.885308 |
| PUR5568 | <i>Phakopsora</i> | <i>nishidana</i> | 1909 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 35.772096 | -78.638614 |
| PUR5569 | <i>Phakopsora</i> | <i>nishidana</i> | 1916 | Moraceae | <i>Ficus</i> | <i>carica</i> | Cuba | 23.131944 | -82.364167 |
| PUR5570 | <i>Phakopsora</i> | <i>nishidana</i> | 1918 | Moraceae | <i>Ficus</i> | <i>carica</i> | Cuba | 23.131944 | -82.364167 |
| PUR5571 | <i>Phakopsora</i> | <i>nishidana</i> | 1916 | Moraceae | <i>Ficus</i> | <i>carica</i> | Cuba | 23.131944 | -82.364167 |
| PUR5572 | <i>Phakopsora</i> | <i>nishidana</i> | 1915 | Moraceae | <i>Ficus</i> | <i>carica</i> | Cuba | 22.3 | -80.5 |
| PUR5573 | <i>Phakopsora</i> | <i>nishidana</i> | 1926 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 33.030957 | -91.002049 |
| PUR5574 | <i>Phakopsora</i> | <i>nishidana</i> | 1924 | Moraceae | <i>Ficus</i> | <i>carica</i> | Puerto Rico | 18.357538 | -66.112831 |
| PUR5575 | <i>Phakopsora</i> | <i>nishidana</i> | 1926 | Moraceae | <i>Ficus</i> | <i>carica</i> | Dominican Republic | 18.41496 | -70.03252 |
| PUR5576 | <i>Phakopsora</i> | <i>nishidana</i> | non-data | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 33.56042 | -81.71955 |
| PUR5597 | <i>Phakopsora</i> | <i>nishidana</i> | 1920 | Moraceae | <i>Ficus</i> | <i>carica</i> | Cuba | 23.131944 | -82.364167 |
| PUR5647 | <i>Phakopsora</i> | <i>gossypii</i> | 1907 | Malvaceae | <i>Gossypium</i> | <i>berbadense</i> | USA | 25.78165 | -80.2167 |
| PUR56673 | <i>Phakopsora</i> | <i>nishidana</i> | 1959 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 27.947522 | -82.458428 |
| PUR56680 | <i>Phakopsora</i> | <i>nishidana</i> | 1957 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 35.24338 | -91.72485 |
| PUR5676 | <i>Phakopsora</i> | <i>gossypii</i> | 1924 | Malvaceae | <i>Gossypium</i> | <i>sp.</i> | Puerto Rico | 18.33636 | -66.4697 |
| PUR58141 | <i>Phakopsora</i> | <i>cameliae</i> | 1962 | Poaceae | <i>Setaria</i> | <i>reverchonii formula</i> | USA | 26.54047 | -97.77403 |
| PUR60421 | <i>Phakopsora</i> | <i>zeae</i> | 1949 | Poaceae | <i>Zea</i> | <i>mays</i> | Mexico | 19.14583798800618 | -96.96795280786114 |
| PUR61104 | <i>Phakopsora</i> | <i>lenticularis</i> | 1965 | Poaceae | <i>Lasiacis</i> | <i>sorghoidea</i> | Mexico | 22.708479 | -100.346918 |
| PUR62269 | <i>Phakopsora</i> | <i>mexicana</i> | 1967 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Mexico | 27.08166 | -99.7132 |
| PUR62524 | <i>Phakopsora</i> | <i>crotonis</i> | 1963 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Mexico | 24.80421 | -99.7551 |
| PUR63382 | <i>Phakopsora</i> | <i>sede</i> | 1970 | Poaceae | <i>Zea</i> | <i>perennis</i> | USA | 25.67638 | -80.273 |
| PUR64034 | <i>Phakopsora</i> | <i>compressa</i> | 1971 | Poaceae | <i>Zuloagaea</i> | <i>bulbosa</i> | Mexico | 28.79672 | -111.943 |
| PUR64283 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1971 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Mexico | 20.88961 | -103.442 |
| PUR64916 | <i>Phakopsora</i> | <i>nova</i> | 1971 | Euphorbiaceae | <i>Acalypha</i> | <i>sp.</i> | Mexico | 24.66209 | -107.397 |
| PUR65309 | <i>Phakopsora</i> | <i>nishidana</i> | 1913 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 27.89642 | -81.84314 |
| PUR66312 | <i>Phakopsora</i> | <i>coca</i> | 1974 | Erythroxylaceae | <i>Erythroxylum</i> | <i>mexicanum</i> | Mexico | 16.75239 | -93.348 |
| PUR66523 | <i>Phakopsora</i> | <i>cherimoliae</i> | 1975 | Annonaceae | <i>Annona</i> | <i>cherimola</i> | Ecuador | -0.167606 | -78.45071 |
| PUR66591 | <i>Phakopsora</i> | <i>apoda</i> | 1974 | Poaceae | <i>Pennisetum</i> | <i>clandestinum</i> | New Zealand | -44.843 | 169.822 |
| PUR66593 | <i>Phakopsora</i> | <i>apoda</i> | 1975 | Poaceae | <i>Pennisetum</i> | <i>clandestinum</i> | Ecuador | -1.252369 | -78.622781 |
| PUR66621 | <i>Phakopsora</i> | <i>crotonis</i> | 1969 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Mexico | 26.81063 | -101.988 |
| PUR66626 | <i>Phakopsora</i> | <i>hansfordii</i> | 1981 | Euphorbiaceae | <i>Alchornea</i> | <i>laxiflora</i> | Nigeria | 6.593827 | 7.425097 |
| PUR66628 | <i>Phakopsora</i> | <i>candelariae</i> | 1951 | Phyllanthaceae | <i>Bridelia</i> | <i>ferruginea</i> | Ivory Coast | 7.755424 | -5.80029 |
| PUR66638 | <i>Phakopsora</i> | <i>pavida</i> | 1975 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Brazil | -22.5123 | -48.9162 |
| PUR66641 | <i>Phakopsora</i> | <i>arthuriana</i> | 1981 | Euphorbiaceae | <i>Jatropha</i> | <i>sp.</i> | Mexico | 14.90696 | -92.2619 |
| PUR66669 | <i>Phakopsora</i> | <i>coca</i> | 1979 | Erythroxylaceae | <i>Erythroxylum</i> | <i>engleri</i> | Brazil | -19.4667 | -44.1725 |
| PUR66686 | <i>Phakopsora</i> | <i>cupheae</i> | 1975 | Lythraceae | <i>Cuphea</i> | <i>sp.</i> | Ecuador | -3.55399 | -80.0668 |
| PUR66692 | <i>Phakopsora</i> | <i>pachyrhizi</i> | 1913 | Fabaceae | <i>Pachyrhizus</i> | <i>erosus</i> | Philippines | 14.17884 | 121.2419 |
| PUR66693 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1980 | Fabaceae | <i>Macroptilium</i> | <i>lathyroides</i> | Brazil | -21.2292 | -44.9807 |
| PUR66739 | <i>Phakopsora</i> | <i>nishidana</i> | 1974 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.450746 | -91.154551 |
| PUR66740 | <i>Phakopsora</i> | <i>nishidana</i> | 1974 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.450746 | -91.154551 |
| PUR66741 | <i>Phakopsora</i> | <i>nishidana</i> | 1974 | Moraceae | <i>Ficus</i> | <i>carica</i> | Mexico | 17.051561 | -96.726083 |
| PUR66742 | <i>Phakopsora</i> | <i>nishidana</i> | 1976 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PUR66744 | <i>Phakopsora</i> | <i>fici-erectae</i> | 1978 | Moraceae | <i>Ficus</i> | <i>erecta</i> | Japan | 32.78206 | 129.8272 |
| PUR66782 | <i>Phakopsora</i> | <i>uva</i> | 1974 | Vitaceae | <i>Vitis</i> | <i>sp.</i> | Mexico | 23.00635 | -99.2643 |
| PUR66783 | <i>Phakopsora</i> | <i>uva</i> | 1972 | Vitaceae | <i>Vitis</i> | <i>sp.</i> | Colombia | 2.8 | -76.0833 |
| PUR66847 | <i>Phakopsora</i> | <i>cumminisiana</i> | 1969 | Poaceae | <i>Tripsacum</i> | <i>sp.</i> | Mexico | 20.2064 | -104.822 |
| PUR66872 | <i>Phakopsora</i> | <i>apoda</i> | 1982 | Poaceae | <i>Pennisetum</i> | <i>clandestinum</i> | Hawaii | 20.82211 | -156.923 |
| PUR87217 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1983 | Fabaceae | <i>Glycine</i> | <i>max</i> | Brazil | -21.2292 | -44.9807 |
| PUR87231 | <i>Phakopsora</i> | <i>coca</i> | 1983 | Erythroxylaceae | <i>Erythroxylum</i> | <i>sp.</i> | Brazil | -18.9757 | -44.484 |
| PUR87807 | <i>Phakopsora</i> | <i>nishidana</i> | 1983 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PUR88336 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1983 | Fabaceae | <i>Pachyrhizus</i> | <i>erosus</i> | Mexico | 21.34565 | -97.8385 |
| PUR89660 | <i>Phakopsora</i> | <i>meibomiae</i> | 1982 | Fabaceae | <i>Crotalaria</i> | <i>sp.</i> | Colombia | 3.5 | -73 |
| PUR89678 | <i>Phakopsora</i> | <i>cingens</i> | 1985 | Phyllanthaceae | <i>Bridelia</i> | <i>tomentosa</i> | Thailand | 16.76753 | 101.6692 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|-----------------------------|----------|-----------------|----------------------|----------------------|------------------------------|------------|-------------|
| PUR89684 | <i>Phakopsora</i> | <i>phyllanthi</i> | 1971 | Phyllanthaceae | <i>Phyllanthus</i> | <i>distichus</i> | Burma | 21.20229 | 96.01417 |
| PUR90068 | <i>Phakopsora</i> | <i>nishidana</i> | 1986 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -21.922924 | -46.395979 |
| PUR90176 | <i>Phakopsora</i> | <i>tocoyenae</i> | 1986 | Rubiaceae | <i>Tocoyena</i> | <i>sp.</i> | Brazil | -18.9757 | -44.484 |
| PUR90210 | <i>Phakopsora</i> | <i>coca</i> | 1986 | Erythroxylaceae | <i>Erythroxylum</i> | <i>tortuosum</i> | Brazil | -18.975688 | -44.483961 |
| PUR90237 | <i>Phakopsora</i> | <i>chavesii</i> | 1986 | Combretaceae | <i>Terminalia</i> | <i>sp.</i> | Brazil | -18.9757 | -44.484 |
| PURF10022 | <i>Phakopsora</i> | <i>dioscoreae</i> | 1939 | Dioscoreaceae | <i>Dioscorea</i> | <i>sp.</i> | New Guinea | -6.82056 | 146.8506 |
| PURF10088 | <i>Phakopsora</i> | <i>elettariae</i> | 1936 | Zingiberaceae | <i>Amomum</i> | <i>sp.</i> | New Guinea | -6.42962 | 147.7873 |
| PURF10338 | <i>Phakopsora</i> | <i>arthuriana</i> | 1980 | Euphorbiaceae | <i>Jatropha</i> | <i>curcas</i> | Peru | -4.45291 | -73.4487 |
| PURF10355 | <i>Phakopsora</i> | <i>nishidana</i> | 1941 | Moraceae | <i>Ficus</i> | <i>carica</i> | Argentina | -31.621051 | -60.697601 |
| PURF10448 | <i>Phakopsora</i> | <i>mangalorica</i> | 1982 | Fabaceae | <i>Uraria</i> | <i>lagopodioides</i> | New Guinea | -6.96916 | 147.0195 |
| PURF10658 | <i>Phakopsora</i> | <i>nishidana</i> | 1941 | Moraceae | <i>Ficus</i> | <i>carica</i> | Colombia | 6.25184 | -75.563591 |
| PURF10664 | <i>Phakopsora</i> | <i>cherimoliae</i> | 1941 | Annonaceae | <i>Annona</i> | <i>cherimola</i> | Colombia | 6.25184 | -75.563591 |
| PURF1084 | <i>Phakopsora</i> | <i>nishidana</i> | 1898 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PURF1085 | <i>Phakopsora</i> | <i>nishidana</i> | 1933 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PURF1086 | <i>Phakopsora</i> | <i>nishidana</i> | 1900 | Moraceae | <i>Ficus</i> | <i>carica</i> | Italy | 39.216667 | 9.116667 |
| PURF1088 | <i>Phakopsora</i> | <i>nishidana</i> | 1918 | Moraceae | <i>Ficus</i> | <i>carica</i> | Ecuador | -1.252369 | -78.622781 |
| PURF1089 | <i>Phakopsora</i> | <i>nishidana</i> | 1925 | Moraceae | <i>Ficus</i> | <i>carica</i> | Philippines | 16.59778 | 120.89914 |
| PURF10969 | <i>Phakopsora</i> | <i>phyllanthi-discoidei</i> | 1932 | Phyllanthaceae | <i>Phyllanthus</i> | <i>discoidea</i> | Sierra Leone | 8.11277 | -12.0729 |
| PURF1098 | <i>Phakopsora</i> | <i>nishidana</i> | 1913 | Moraceae | <i>Ficus</i> | <i>maxima</i> | Trinidad | 10.5 | -61.25 |
| PURF10996 | <i>Phakopsora</i> | <i>lenticularis</i> | 1938 | Poaceae | <i>Lasiacis</i> | <i>procerrima</i> | Venezuela | 10.349255 | -67.684516 |
| PURF11041 | <i>Phakopsora</i> | <i>nishidana</i> | 1943 | Moraceae | <i>Ficus</i> | <i>carica</i> | Australia | -27.40285 | 152.9283 |
| PURF1106 | <i>Phakopsora</i> | <i>nishidana</i> | 1900 | Moraceae | <i>Ficus</i> | <i>sp.</i> | Italy | 37.5 | 15.1 |
| PURF1107 | <i>Phakopsora</i> | <i>nishidana</i> | 1938 | Moraceae | <i>Ficus</i> | <i>sp.</i> | Uganda | 0.058264 | 32.45793 |
| PURF1131 | <i>Phakopsora</i> | <i>gossypii</i> | 1921 | Malvaceae | <i>Gossypium</i> | <i>sp.</i> | Trinidad | 10.68107 | -61.5488 |
| PURF1148 | <i>Phakopsora</i> | <i>tecta</i> | 1921 | Commelinaceae | <i>Commelina</i> | <i>erecta</i> | Trinidad | 10.5 | -61.25 |
| PURF1150 | <i>Phakopsora</i> | <i>tecta</i> | non-data | Commelinaceae | <i>Commelina</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF11507 | <i>Phakopsora</i> | <i>zeae</i> | 1946 | Poaceae | <i>Zea</i> | <i>mays</i> | St. Vincent & the Grenadines | 13.128501 | -61.231812 |
| PURF11508 | <i>Phakopsora</i> | <i>zeae</i> | 1947 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF11509 | <i>Phakopsora</i> | <i>zeae</i> | 1946 | Poaceae | <i>Zea</i> | <i>mays</i> | Grenada | 12.114055 | -61.672638 |
| PURF11510 | <i>Phakopsora</i> | <i>zeae</i> | 1944 | Poaceae | <i>Zea</i> | <i>mays</i> | Grenada | 12.124796 | -61.675385 |
| PURF11511 | <i>Phakopsora</i> | <i>zeae</i> | 1948 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF11515 | <i>Phakopsora</i> | <i>elettariae</i> | 1907 | Zingiberaceae | <i>Elettaria</i> | <i>sp.</i> | Indonesia | -7.49167 | 110.0044 |
| PURF1152 | <i>Phakopsora</i> | <i>tecta</i> | 1906 | Commelinaceae | <i>Tradescantia</i> | <i>sp.</i> | Argentina | -34.6 | -58.45 |
| PURF1153 | <i>Phakopsora</i> | <i>tecta</i> | 1906 | Commelinaceae | <i>Tradescantia</i> | <i>sp.</i> | Argentina | -34.6 | -58.45 |
| PURF1155 | <i>Phakopsora</i> | <i>meibomia</i> | 1921 | Fabaceae | <i>Desmodium</i> | <i>incanum</i> | Trinidad | 10.5 | -61.25 |
| PURF1157 | <i>Phakopsora</i> | <i>meibomia</i> | 1924 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Ecuador | -2.218369 | -80.228825 |
| PURF1158 | <i>Phakopsora</i> | <i>mangalorica</i> | 1924 | Fabaceae | <i>Desmodium</i> | <i>dasylobum</i> | Philippines | 6.960556 | 125.3475 |
| PURF11601 | <i>Phakopsora</i> | <i>zeae</i> | 1948 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF11608 | <i>Phakopsora</i> | <i>stratosa</i> | 1944 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Uganda | 0.93333 | 32.3 |
| PURF11616 | <i>Phakopsora</i> | <i>nishidana</i> | 1944 | Moraceae | <i>Ficus</i> | <i>carica</i> | Peru | -12 | -76.8333333 |
| PURF11667 | <i>Phakopsora</i> | <i>arrabida</i> | 1947 | Bignoniaceae | <i>Xylophragma</i> | <i>seemanianum</i> | Trinidad | 10.5 | -61.25 |
| PURF11685 | <i>Phakopsora</i> | <i>camelia</i> | 1946 | Poaceae | <i>Setaria</i> | <i>setosa</i> | Trinidad | 10.5 | -61.25 |
| PURF1174 | <i>Phakopsora</i> | <i>crotalaria</i> | 1923 | Fabaceae | <i>Crotalaria</i> | <i>albida</i> | Philippines | 16.02496 | 120.2429 |
| PURF1175 | <i>Phakopsora</i> | <i>meibomia</i> | 1920 | Fabaceae | <i>Crotalaria</i> | <i>micans</i> | Bolivia | -16.139956 | -67.724731 |
| PURF11802 | <i>Phakopsora</i> | <i>incompleta</i> | 1920 | Poaceae | <i>Ischaemum</i> | <i>ciliana</i> | China | 16.03054 | 108.1959 |
| PURF1208 | <i>Phakopsora</i> | <i>phakopsorides</i> | 1920 | Poaceae | <i>Olyra</i> | <i>latifolia</i> | Ecuador | -3.553987 | -80.066816 |
| PURF1209 | <i>Phakopsora</i> | <i>compressa</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>elongatum</i> | Bolivia | -17.055929 | -65.565918 |
| PURF12108 | <i>Phakopsora</i> | <i>compositarum</i> | 1933 | Asteraceae | <i>Chrysanthemum</i> | <i>japonicum</i> | Japan | 34.96003 | 137.9488 |
| PURF1211 | <i>Phakopsora</i> | <i>compressa</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>elongatum</i> | Bolivia | -17.055929 | -65.565918 |
| PURF1212 | <i>Phakopsora</i> | <i>compressa</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>elongatum</i> | Bolivia | -15.76667 | -68.63333 |
| PURF1220 | <i>Phakopsora</i> | <i>argentinensis</i> | 1912 | Euphorbiaceae | <i>Croton</i> | <i>hirtus</i> | Argentina | -31.4005 | -64.2316 |
| PURF1221 | <i>Phakopsora</i> | <i>pavida</i> | 1921 | Euphorbiaceae | <i>Croton</i> | <i>hirtus</i> | Trinidad | 10.5 | -61.25 |
| PURF14050 | <i>Phakopsora</i> | <i>punctiformis</i> | 1931 | Rubiaceae | <i>Galium</i> | <i>aparine</i> | China | 28.15469 | 107.0748 |
| PURF14460 | <i>Phakopsora</i> | <i>rolliniae</i> | 1948 | Annonaceae | <i>Annona</i> | <i>exsucca</i> | Trinidad | 10.5 | -61.25 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|-------------------------|------|-----------------|---------------------|-------------------------|-------------|------------|-------------|
| PURF14478 | <i>Phakopsora</i> | <i>clemensiae</i> | 1948 | Poaceae | <i>Panicum</i> | <i>notatum</i> | India | 11.348545 | 76.694088 |
| PURF14657 | <i>Phakopsora</i> | <i>cameliae</i> | 1944 | Poaceae | <i>Setaria</i> | <i>setosa</i> | Trinidad | 10.5 | -61.25 |
| PURF14757 | <i>Phakopsora</i> | <i>africana</i> | 1914 | Rubiaceae | <i>Brachiaria</i> | <i>brizantha</i> | Uganda | 1.209301 | 32.476074 |
| PURF14951 | <i>Phakopsora</i> | <i>loudetiae</i> | 1950 | Poaceae | <i>Loudetia</i> | <i>kagerensis</i> | Kenya | -1.283333 | 36.824907 |
| PURF14989 | <i>Phakopsora</i> | <i>apoda</i> | 1952 | Poaceae | <i>Pennisetum</i> | <i>pedicellatum</i> | Sudan | 12.79125 | 31.00391 |
| PURF15133 | <i>Phakopsora</i> | <i>setariae</i> | 1949 | Poaceae | <i>Setaria</i> | <i>sphacelata</i> | Malawi | -13.5 | 34 |
| PURF15314 | <i>Phakopsora</i> | <i>ehretiae</i> | 1927 | Ehretiaceae | <i>Ehretia</i> | <i>acuminata</i> | Taiwan | 22.99083 | 120.2133 |
| PURF15337 | <i>Phakopsora</i> | <i>nishidana</i> | 1925 | Moraceae | <i>Ficus</i> | <i>carica</i> | Taiwan | 23.5 | 121 |
| PURF15338 | <i>Phakopsora</i> | <i>ampelopsidis</i> | 1932 | Vitaceae | <i>Ampelopsis</i> | <i>brevipedunculata</i> | Taiwan | 23.5 | 121 |
| PURF15450 | <i>Phakopsora</i> | <i>pallescens</i> | 1951 | Poaceae | <i>Tripsacum</i> | <i>latifolium</i> | Colombia | 3.5 | -73 |
| PURF15896 | <i>Phakopsora</i> | <i>zeae</i> | 1957 | Poaceae | <i>Zea</i> | <i>mays</i> | Venezuela | 9.554514 | -69.195639 |
| PURF16212 | <i>Phakopsora</i> | <i>pachyrhizi</i> | 1957 | Fabaceae | <i>Vigna</i> | <i>unguiculata</i> | Ghana | 6.69362 | -1.62179 |
| PURF17626 | <i>Phakopsora</i> | <i>zizyphi-vulgaris</i> | 1960 | Rhamnaceae | <i>Zizyphus</i> | <i>jujuba</i> | Pakistan | 25.42718 | 68.53619 |
| PURF18031 | <i>Phakopsora</i> | <i>zeae</i> | 1955 | Poaceae | <i>Zea</i> | <i>mays</i> | Colombia | 6.25184 | -75.569084 |
| PURF18065 | <i>Phakopsora</i> | <i>vinoi</i> | 1968 | Vitaceae | <i>Vitis</i> | <i>unifera</i> | Vietnam | 11 | 108.1167 |
| PURF18066 | <i>Phakopsora</i> | <i>nishidana</i> | 1969 | Moraceae | <i>Ficus</i> | <i>sp.</i> | Vietnam | 11.583333 | 108.95 |
| PURF18135 | <i>Phakopsora</i> | <i>zeae</i> | 1956 | Poaceae | <i>Zea</i> | <i>mays</i> | Colombia | 625184 | -75.569,084 |
| PURF18137 | <i>Phakopsora</i> | <i>zeae</i> | 1957 | Poaceae | <i>Zea</i> | <i>mays</i> | Peru | -14.035278 | -75.713889 |
| PURF18138 | <i>Phakopsora</i> | <i>zeae</i> | 1957 | Poaceae | <i>Zea</i> | <i>mays</i> | Peru | -14.338681 | -71.766731 |
| PURF18514 | <i>Phakopsora</i> | <i>pachyrhizi</i> | 1972 | Fabaceae | <i>Glycine</i> | <i>max</i> | Thailand | 16.00482 | 101.2925 |
| PURF18990 | <i>Phakopsora</i> | <i>coca</i> | 1976 | Erythroxylaceae | <i>Erythroxylum</i> | <i>vacciniifolium</i> | Brazil | -15.833275 | -48.025477 |
| PURF19149 | <i>Phakopsora</i> | <i>nishidana</i> | 1976 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -21.966667 | -47.816667 |
| PURF19150 | <i>Phakopsora</i> | <i>nishidana</i> | 1976 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PURF19151 | <i>Phakopsora</i> | <i>nishidana</i> | 1975 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PURF19152 | <i>Phakopsora</i> | <i>nishidana</i> | 1976 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -21.966667 | -47.816667 |
| PURF19153 | <i>Phakopsora</i> | <i>nishidana</i> | 1977 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.865557 | -43.42723 |
| PURF19154 | <i>Phakopsora</i> | <i>nishidana</i> | 1975 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PURF19155 | <i>Phakopsora</i> | <i>nishidana</i> | 1975 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PURF19156 | <i>Phakopsora</i> | <i>nishidana</i> | 1975 | Moraceae | <i>Ficus</i> | <i>pumila</i> | Brazil | -21.9667 | -47.8167 |
| PURF19157 | <i>Phakopsora</i> | <i>nishidana</i> | 1976 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.512305 | -48.916169 |
| PURF19435 | <i>Phakopsora</i> | <i>apoda</i> | 1978 | Poaceae | <i>Pennisetum</i> | <i>clandestinum</i> | Australia | -33.7177 | 151.1185 |
| PURF19562 | <i>Phakopsora</i> | <i>nishidana</i> | 1963 | Moraceae | <i>Ficus</i> | <i>carica</i> | Uruguay | -34.87 | -56.22 |
| PURF19637 | <i>Phakopsora</i> | <i>zeae</i> | 1977 | Poaceae | <i>Zea</i> | <i>mays</i> | Peru | -7.644778 | -74.289062 |
| PURF19805 | <i>Phakopsora</i> | <i>apoda</i> | 1975 | Poaceae | <i>Pennisetum</i> | <i>clandestinum</i> | Brazil | -21.9667 | -47.8167 |
| PURF19822 | <i>Phakopsora</i> | <i>nishidana</i> | 1980 | Moraceae | <i>Ficus</i> | <i>variegata</i> | China | 25.760743 | -117.7373 |
| PURF19828 | <i>Phakopsora</i> | <i>vitis</i> | 1980 | Vitaceae | <i>Cissus</i> | <i>modecoides</i> | China | 25.76074 | -117.737 |
| PURF2452 | <i>Phakopsora</i> | <i>lenticularis</i> | 1921 | Poaceae | <i>Lasiacis</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF4845 | <i>Phakopsora</i> | <i>compressa</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>humboldtianum</i> | Bolivia | -16.5 | -68.15 |
| PURF4937 | <i>Phakopsora</i> | <i>compressa</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>virgatum</i> | Bolivia | -16.139956 | -67.724731 |
| PURF5119 | <i>Phakopsora</i> | <i>zeae</i> | 1921 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF5120 | <i>Phakopsora</i> | <i>zeae</i> | 1921 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF8883 | <i>Phakopsora</i> | <i>cherimoliae</i> | 1890 | Annonaceae | <i>Annona</i> | <i>cherimola</i> | Ecuador | -2.754284 | -79.739918 |
| PURF8885 | <i>Phakopsora</i> | <i>rolliniae</i> | 1913 | Annonaceae | <i>Annona</i> | <i>exsucca</i> | Trinidad | 10.694144 | -61.518829 |
| PURF8928 | <i>Phakopsora</i> | <i>coca</i> | 1915 | Erythroxylaceae | <i>Erythroxylum</i> | <i>coca</i> | Peru | -14.338681 | -71.766731 |
| PURF8929 | <i>Phakopsora</i> | <i>coca</i> | 1914 | Erythroxylaceae | <i>Erythroxylum</i> | <i>coca</i> | Bolivia | -16.49667 | -68.13 |
| PURF8930 | <i>Phakopsora</i> | <i>coca</i> | 1982 | Erythroxylaceae | <i>Erythroxylum</i> | <i>coca</i> | Peru | -7.64478 | -74.2891 |
| PURF8932 | <i>Phakopsora</i> | <i>coca</i> | 1920 | Erythroxylaceae | <i>Erythroxylum</i> | <i>coca</i> | Bolivia | -16.139956 | -67.724731 |
| PURF8951 | <i>Phakopsora</i> | <i>tijucae</i> | 1921 | Phyllanthaceae | <i>Phyllanthus</i> | <i>lathyroides</i> | Brazil | -22.8656 | -43.4272 |
| PURF9044 | <i>Phakopsora</i> | <i>elephantopodis</i> | 1924 | Asteraceae | <i>Elephantopus</i> | <i>scaber</i> | Philippines | 16.3865 | 121.1066 |
| PURF9486 | <i>Phakopsora</i> | <i>tecta</i> | 1936 | Commelinaceae | <i>Commelina</i> | <i>sp.</i> | Argentina | -34.921454 | -57.954533 |
| PURF9599 | <i>Phakopsora</i> | <i>cronartiiformis</i> | 1934 | Vitaceae | <i>Vitis</i> | <i>sp.</i> | India | 29.37953 | 79.46538 |
| PURF9790 | <i>Phakopsora</i> | <i>compressa</i> | 1939 | Poaceae | <i>Paspalum</i> | <i>trachycauleon</i> | Venezuela | 10.411574 | -66.927222 |
| PURF9791 | <i>Phakopsora</i> | <i>compressa</i> | 1939 | Poaceae | <i>Paspalum</i> | <i>trachycauleon</i> | Venezuela | 10.205241 | -68.18187 |
| PURF9792 | <i>Phakopsora</i> | <i>compressa</i> | 1939 | Poaceae | <i>Paspalum</i> | <i>paniculatum</i> | Venezuela | 10.349255 | -67.684516 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-------------------|---------------------|----------|-----------------|------------------------|-------------------------|--------------|----------------|----------------|
| PURF9811 | <i>Phakopsora</i> | <i>compressa</i> | 1934 | Poaceae | <i>Paspalum</i> | <i>decumbens</i> | Venezuela | 10.460393 | -67.768044 |
| PURF9812 | <i>Phakopsora</i> | <i>compressa</i> | 1934 | Poaceae | <i>Paspalum</i> | <i>humboldtianum</i> | Venezuela | 10.500139 | -66.893838 |
| PURF9937 | <i>Phakopsora</i> | <i>guinea</i> | 1935 | Ehretiaceae | <i>Ehretia</i> | <i>sp.</i> | New Guinea | -6.42962 | 147.7873 |
| PURN10042 | <i>Phakopsora</i> | <i>nishidana</i> | 1998 | Moraceae | <i>Moraceae</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURN10225 | <i>Phakopsora</i> | <i>compressa</i> | 1998 | Poaceae | <i>Paspalum</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PURN10600 | <i>Phakopsora</i> | <i>amphigena</i> | 1995 | Polygonaceae | <i>Coccoloba</i> | <i>sp.</i> | Mexico | 19.17079 | -96.1623 |
| PURN11560 | <i>Phakopsora</i> | <i>apoda</i> | 2014 | Poaceae | <i>Pennisetum</i> | <i>clandestinum</i> | Peru | -7.133333 | -78.483333 |
| PURN15016 | <i>Phakopsora</i> | <i>tecta</i> | 2016 | Commelinaceae | <i>Commelina</i> | <i>sp.</i> | Venezuela | 8.595241 | -71.143404 |
| PURN15263 | <i>Phakopsora</i> | <i>sp.</i> | 2011 | Poaceae | <i>Gramineae</i> | <i>sp.</i> | Taiwan | 23.8624833333 | 120.9034166667 |
| PURN16394 | <i>Phakopsora</i> | <i>coca</i> | 2016 | Erythroxylaceae | <i>Erythroxylaceae</i> | <i>non-data</i> | Peru | -12.7666666667 | -72.5833333333 |
| PURN206 | <i>Phakopsora</i> | <i>meliosmae</i> | 1986 | Sabiaceae | <i>Meliosma</i> | <i>dillenifolia</i> | Japan | 27.5736 | 85.41099 |
| PURN224 | <i>Phakopsora</i> | <i>vitis</i> | 1994 | Vitaceae | <i>Parthenocissus</i> | <i>tricuspidata</i> | Japan | 36.798 | 140.3456 |
| PURN257 | <i>Phakopsora</i> | <i>euvitis</i> | 1992 | Vitaceae | <i>Vitis</i> | <i>coignetiae</i> | Japan | 37.7 | 138.8333 |
| PURN2582 | <i>Phakopsora</i> | <i>crotonis</i> | 1995 | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | USA | 32.70763 | -97.3809 |
| PURN2583 | <i>Phakopsora</i> | <i>crotonis</i> | 1959 | Euphorbiaceae | <i>Croton</i> | <i>monanthogynus</i> | USA | 40.42583 | -86.9081 |
| PURN2585 | <i>Phakopsora</i> | <i>crotonis</i> | 1990 | Euphorbiaceae | <i>Croton</i> | <i>willdenowii</i> | USA | 35.27842 | -93.1338 |
| PURN2594 | <i>Phakopsora</i> | <i>coca</i> | 1982 | Erythroxylaceae | <i>Erythroxylum</i> | <i>sp.</i> | Venezuela | 8.672295 | -62.630815 |
| PURN2595 | <i>Phakopsora</i> | <i>coca</i> | 1983 | Erythroxylaceae | <i>Erythroxylum</i> | <i>sp.</i> | Venezuela | 9.25433 | -62.63082 |
| PURN285 | <i>Phakopsora</i> | <i>ampelopsidis</i> | 1991 | Vitaceae | <i>Ampelopsis</i> | <i>brevipedunculata</i> | Japan | 36.798 | 140.3456 |
| PURN2875 | <i>Phakopsora</i> | <i>coca</i> | 1988 | Erythroxylaceae | <i>Erythroxylum</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURN2901 | <i>Phakopsora</i> | <i>meibomeiae</i> | 1986 | Fabaceae | <i>Phaseolus</i> | <i>sp.</i> | Brazil | -21.229178 | -44.980742 |
| PURN2908 | <i>Phakopsora</i> | <i>rossmanii</i> | 1983 | Myrtaceae | <i>Campomanesia</i> | <i>cambessediana</i> | Brazil | -21.966667 | -47.816667 |
| PURN2911 | <i>Phakopsora</i> | <i>nishidana</i> | 1982 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -16.246089 | -50.198506 |
| PURN2985 | <i>Phakopsora</i> | <i>nishidana</i> | 1980 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.398698 | -48.864444 |
| PURN2986 | <i>Phakopsora</i> | <i>nishidana</i> | 1986 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -21.229178 | -44.980742 |
| PURN2987 | <i>Phakopsora</i> | <i>nishidana</i> | 1988 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -21.326889 | -46.365393 |
| PURN2988 | <i>Phakopsora</i> | <i>nishidana</i> | 1982 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.398698 | -48.864444 |
| PURN2989 | <i>Phakopsora</i> | <i>nishidana</i> | 1981 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.398698 | -48.864444 |
| PURN2990 | <i>Phakopsora</i> | <i>nishidana</i> | 1982 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.398698 | -48.864444 |
| PURN2993 | <i>Phakopsora</i> | <i>gossypii</i> | 1990 | Malvaceae | <i>Hibiscus</i> | <i>syriacus</i> | Brazil | -21.9667 | -47.8167 |
| PURN3001 | <i>Phakopsora</i> | <i>rossmanii</i> | 1988 | Myrtaceae | <i>Campomanesia</i> | <i>sp.</i> | Brazil | -18.2832 | -44.6172 |
| PURN3003 | <i>Phakopsora</i> | <i>rossmanii</i> | 1988 | Myrtaceae | <i>Campomanesia</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURN308 | <i>Phakopsora</i> | <i>euvitis</i> | 1992 | Vitaceae | <i>Vitis</i> | <i>vinifera</i> | Japan | 36.37102 | 140.4765 |
| PURN3125 | <i>Phakopsora</i> | <i>butleri</i> | 1988 | Calophyllaceae | <i>Kielmeyera</i> | <i>grandiflora</i> | Brazil | -14.7833 | -59.6066 |
| PURN3127 | <i>Phakopsora</i> | <i>tecta</i> | 1982 | Commelinaceae | <i>Commelina</i> | <i>sp.</i> | Brazil | -22.3987 | -48.8644 |
| PURN3744 | <i>Phakopsora</i> | <i>melaena</i> | 1983 | Rubiaceae | <i>Randia</i> | <i>sp.</i> | Brazil | -19.118652 | -54.596288 |
| PURN3752 | <i>Phakopsora</i> | <i>colubrinae</i> | 1983 | Rhamnaceae | <i>Colubrina</i> | <i>ruffa</i> | Brazil | -21.9667 | -47.8167 |
| PURN3764 | <i>Phakopsora</i> | <i>ampelopsidis</i> | 1959 | Vitaceae | <i>Parthenocissus</i> | <i>tricuspidata</i> | Japan | 35.62253 | 138.5956 |
| PURN3795 | <i>Phakopsora</i> | <i>ampelopsidis</i> | 1985 | Vitaceae | <i>Vitis</i> | <i>sp.</i> | Thailand | 19.54661 | 98.82676 |
| PURN3809 | <i>Phakopsora</i> | <i>ampelopsidis</i> | 1964 | Vitaceae | <i>Vitis</i> | <i>coignetiae</i> | Japan | 38.16694 | 140.3914 |
| PURN3827 | <i>Phakopsora</i> | <i>ampelopsidis</i> | 1998 | Vitaceae | <i>Vitis</i> | <i>sp.</i> | Japan | 36.64836 | 140.5054 |
| PURN3868 | <i>Phakopsora</i> | <i>gossypii</i> | 1955 | Malvaceae | <i>Thespesia</i> | <i>populnea</i> | India | 9.58692 | 76.521324 |
| PURN3875 | <i>Phakopsora</i> | <i>pachyrhizi</i> | 1970 | Fabaceae | <i>Glycine</i> | <i>max</i> | India | 29.05 | 79.51667 |
| PURN3884 | <i>Phakopsora</i> | <i>nishidana</i> | 1897 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 30.396032 | -88.885308 |
| PURN4311 | <i>Phakopsora</i> | <i>compressa</i> | non-data | Poaceae | <i>Paspalum</i> | <i>virgata</i> | Brazil | 1.62153 | -52.002 |
| PURN4683 | <i>Phakopsora</i> | <i>nishidana</i> | 1880 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 33.559094 | -81.711536 |
| PURN4776 | <i>Phakopsora</i> | <i>vernoniae</i> | 2002 | Asteraceae | <i>Vernonia</i> | <i>mespilifolia</i> | South Africa | -33.8868 | 22.39035 |
| PURN4789 | <i>Phakopsora</i> | <i>nishidana</i> | 1907 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 25.775503 | -80.199152 |
| PURN4790 | <i>Phakopsora</i> | <i>nishidana</i> | 1990 | Moraceae | <i>Ficus</i> | <i>carica</i> | USA | 21.298951 | -157.816909 |
| PURN4792 | <i>Phakopsora</i> | <i>nishidana</i> | 1881 | Moraceae | <i>Ficus</i> | <i>ibophy</i> | Paraguay | -26.176526 | -56.436737 |
| PURN4801 | <i>Phakopsora</i> | <i>artemisiae</i> | 1985 | Asteraceae | <i>Artemisia</i> | <i>princeps</i> | Japan | 26.58806 | 127.9761 |
| PURN496 | <i>Phakopsora</i> | <i>rossmanii</i> | 1983 | Myrtaceae | <i>Myrtaceae</i> | <i>non-data</i> | Brazil | -19.1187 | -54.5963 |
| PURN7484 | <i>Phakopsora</i> | <i>crotonis</i> | non-data | Euphorbiaceae | <i>Croton</i> | <i>sp.</i> | Brazil | -4.31356 | -38.7437 |
| PURN8421 | <i>Phakopsora</i> | <i>cheoana</i> | 1983 | Meliaceae | <i>Cedrela</i> | <i>sinensis</i> | Taiwan | 23.5 | 121 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|----------------------|----------------------|-------------------------------|----------|---------------|---------------------|------------------------|--------------|------------|-------------|
| PURN8422 | <i>Phakopsora</i> | <i>nishidana</i> | 1998 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -24.48 | -47.44 |
| PURN8428 | <i>Phakopsora</i> | <i>gossypii</i> | 1998 | Malvaceae | <i>Gossypium</i> | <i>sp.</i> | Brazil | -22.3987 | -48.8644 |
| PURN8434 | <i>Phakopsora</i> | <i>colubrinae</i> | non-data | Rhamnaceae | <i>Hovenia</i> | <i>non-data</i> | Brazil | -21.9667 | -47.8167 |
| PURN8435 | <i>Phakopsora</i> | <i>nishidana</i> | 1982 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.398698 | -48.864444 |
| PURN8436 | <i>Phakopsora</i> | <i>nishidana</i> | 1980 | Moraceae | <i>Ficus</i> | <i>carica</i> | Brazil | -22.398698 | -48.864444 |
| PUR5646 | <i>Phragmidiella</i> | <i>aliena</i> | 1992 | Anacardiaceae | <i>Spondias</i> | <i>mombin</i> | Puerto Rico | 18.43027 | -66.4727 |
| PUR9011 | <i>Phragmidiella</i> | <i>praelonga</i> | 1916 | Malvaceae | <i>Malvaviscus</i> | <i>arboreus</i> | Cuba | 23.13194 | -82.3642 |
| PURF10986 | <i>Phragmidiella</i> | <i>minuta</i> | 1939 | Bignoniaceae | <i>Bignoniaceae</i> | <i>sp.</i> | Venezuela | 10.23535 | -67.591128 |
| PURF11234 | <i>Phragmidiella</i> | <i>minuta</i> | 1945 | Bignoniaceae | <i>Fridericia</i> | <i>pubescens</i> | Trinidad | 10.5 | -61.25 |
| PURF1138 | <i>Phragmidiella</i> | <i>holwayi</i> | 1922 | Bignoniaceae | <i>Arrabidaea</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURF11670 | <i>Phragmidiella</i> | <i>bignoniacearum</i> | 1945 | Bignoniaceae | <i>Bignonia</i> | <i>bitbata</i> | Trinidad | 10.5 | -61.25 |
| PURF11671 | <i>Phragmidiella</i> | <i>bignoniacearum</i> | 1945 | Bignoniaceae | <i>Bignonia</i> | <i>aequinoctialis</i> | Trinidad | 10.5 | -61.25 |
| PURF11672 | <i>Phragmidiella</i> | <i>bignoniacearum</i> | 1947 | Bignoniaceae | <i>Bignonia</i> | <i>aequinoctialis</i> | Trinidad | 10.5 | -61.25 |
| PURF11673 | <i>Phragmidiella</i> | <i>bignoniacearum</i> | 1947 | Bignoniaceae | <i>Bignonia</i> | <i>aequinoctialis</i> | Trinidad | 10.5 | -61.25 |
| PURF11674 | <i>Phragmidiella</i> | <i>minuta</i> | 1945 | Bignoniaceae | <i>Fridericia</i> | <i>pubescens</i> | Trinidad | 10.5 | -61.25 |
| PURF15180 | <i>Phragmidiella</i> | <i>cocinna</i> | 1841 | Rubiaceae | <i>Antirhea</i> | <i>hexasperma</i> | Philippines | 17.70672 | 121.8192 |
| PURF15890 | <i>Phragmidiella</i> | <i>vitis</i> | 1943 | Vitaceae | <i>Cayratia</i> | <i>trifolia</i> | India | 31.09469 | 77.16385 |
| PURF1716/PUR68616 | <i>Phragmidiella</i> | <i>harrisoniae</i> | 1924 | Rutaceae | <i>Harrisonia</i> | <i>perforata</i> | Philippines | 15.48017 | 120.59794 |
| PURF2001 | <i>Phragmidiella</i> | <i>bignoniacearum</i> | 1921 | Bignoniaceae | <i>Bignonia</i> | <i>aequinoctialis</i> | Trinidad | 10.5 | -61.25 |
| PURF9014 | <i>Phragmidiella</i> | <i>minuta</i> | 1921 | Bignoniaceae | <i>Bignoniaceae</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF9015 | <i>Phragmidiella</i> | <i>minuta</i> | 1921 | Bignoniaceae | <i>Bignoniaceae</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF9016 | <i>Phragmidiella</i> | <i>minuta</i> | 1913 | Bignoniaceae | <i>Fridericia</i> | <i>pubescens</i> | Trinidad | 10.694144 | -61.518829 |
| PURF9017 | <i>Phragmidiella</i> | <i>minuta</i> | 1919 | Bignoniaceae | <i>Pyrostegia</i> | <i>venusta</i> | Paraguay | -25.27742 | -57.576111 |
| PURF9618 | <i>Phragmidiella</i> | <i>proximella</i> | 1938 | Anacardiaceae | <i>Lanea</i> | <i>afzelii</i> | Sierra Leone | 8.576598 | -11.6552 |
| PURN2855 | <i>Phragmidiella</i> | <i>paulista</i> | 1983 | Bignoniaceae | <i>Fridericia</i> | <i>chica</i> | Brazil | -21.9667 | -47.8167 |
| PURN4644 | <i>Phragmidiella</i> | <i>praelonga</i> | 1988 | Malvaceae | <i>Pavonia</i> | <i>spinifex</i> | Brazil | -18.9757 | -44.484 |
| PUR49212 | <i>Phragmidium</i> | <i>andersonii</i> | 1939 | Rosaceae | <i>Potentilla</i> | <i>fruticosa</i> | USA | 43.364124 | -109.274859 |
| PUR54302 | <i>Phragmidium</i> | <i>biloculare</i> | 1931 | Rosaceae | <i>Potentilla</i> | <i>labellifolia</i> | USA | 37.710234 | -119.161604 |
| PUR55496 | <i>Phragmidium</i> | <i>montivagum</i> | 1956 | Rosaceae | <i>Rosa</i> | <i>acicularis</i> | USA | 37.624179 | -104.780264 |
| PUR62725 | <i>Phragmidium</i> | <i>rosae-pimpinellifoliae</i> | 1953 | Rosaceae | <i>Rosa</i> | <i>foetida</i> | USA | 41.526695 | -105.499804 |
| PUR66447 | <i>Phragmidium</i> | <i>rosae-acicularis</i> | 1970 | Rosaceae | <i>Rosa</i> | <i>sp.</i> | USA | 47.197458 | -95.201964 |
| PUR7741 | <i>Phragmidium</i> | <i>fusiforme</i> | 1899 | Rosaceae | <i>Rosa</i> | <i>acicularis</i> | USA | 57.39611 | -153.48333 |
| PUR7759 | <i>Phragmidium</i> | <i>fusiforme</i> | 1919 | Rosaceae | <i>Rosa</i> | <i>gymnocarpa</i> | USA | 48.68318 | -113.800171 |
| PUR7784 or PURN7784? | <i>Phragmidium</i> | <i>fusiforme</i> | 1914 | Rosaceae | <i>Rosa</i> | <i>nutkana</i> | USA | 57.053168 | -135.351074 |
| PUR7796 | <i>Phragmidium</i> | <i>fusiforme</i> | 1889 | Rosaceae | <i>Rosa</i> | <i>acicularis</i> | USA | 48.00044 | -88.833412 |
| PUR7850 | <i>Phragmidium</i> | <i>montivagum</i> | 1917 | Rosaceae | <i>Rosa</i> | <i>fendleri</i> | USA | 35.184599 | -111.615566 |
| PUR8125 | <i>Phragmidium</i> | <i>rosae-arkansanae</i> | 1894 | Rosaceae | <i>Rosa</i> | <i>arkansana</i> | USA | 39.331803 | -99.302185 |
| PUR8158 | <i>Phragmidium</i> | <i>mucronatum</i> | 1910 | Rosaceae | <i>Rosa</i> | <i>alba</i> | USA | 39.011343 | -76.87085 |
| PUR8233 | <i>Phragmidium</i> | <i>rosae-pimpinellifoliae</i> | 1924 | Rosaceae | <i>Rosa</i> | <i>pimpinellifolia</i> | USA | 44.811349 | -91.498494 |
| PUR8248 | <i>Phragmidium</i> | <i>andersonii</i> | 1893 | Rosaceae | <i>Potentilla</i> | <i>fruticosa</i> | USA | 42.98943 | -91.154018 |
| PUR8278 | <i>Phragmidium</i> | <i>jonesii</i> | 1898 | Rosaceae | <i>Ivesia</i> | <i>baileyi</i> | USA | 42.739601 | -118.651855 |
| PUR8475 | <i>Phragmidium</i> | <i>guatemalense</i> | 1916 | Rosaceae | <i>Potentilla</i> | <i>heterosepala</i> | Guatemala | 15.454542 | -90.438965 |
| PUR8581 | <i>Phragmidium</i> | <i>speciosum</i> | 1911 | Rosaceae | <i>Rosa</i> | <i>virginiana</i> | USA | 41.826488 | -72.730094 |
| PUR8631 | <i>Phragmidium</i> | <i>rosicola</i> | 1924 | Rosaceae | <i>Rosa</i> | <i>engelmanni</i> | USA | 45.662435 | -110.56104 |
| PUR88405 | <i>Phragmidium</i> | <i>boreale</i> | 1984 | Rosaceae | <i>Potentilla</i> | <i>diversifolia</i> | USA | 44.9954 | -109.91753 |
| PURF11997 | <i>Phragmidium</i> | <i>miyabeaenum</i> | 1927 | Rosaceae | <i>Sieversia</i> | <i>pentapetala</i> | Russia | 51 | 143 |
| PURF1399 | <i>Phragmidium</i> | <i>fragariastris</i> | 1889 | Rosaceae | <i>Potentilla</i> | <i>alba</i> | Germany | 52.450856 | 13.44077 |
| PURF14183 | <i>Phragmidium</i> | <i>rosae-dahuricae</i> | 1932 | Rosaceae | <i>Rosa</i> | <i>sp.</i> | China | 32 | 117 |
| PURF1450 | <i>Phragmidium</i> | <i>rubi</i> | 1908 | Rosaceae | <i>Rubus</i> | <i>baenitziani</i> | Germany | 50.899534 | 16.744641 |
| PURF1470 | <i>Phragmidium</i> | <i>perforans</i> | 1906 | Rosaceae | <i>Rubus</i> | <i>saxatilis</i> | Sweden | 63.824106 | 20.27301 |
| PURF1511 | <i>Phragmidium</i> | <i>mucronatum</i> | 1895 | Rosaceae | <i>Rosa</i> | <i>mollissima</i> | Germany | 51.550515 | 14.712403 |
| PURF1533 | <i>Phragmidium</i> | <i>rosae-pimpinellifoliae</i> | 1899 | Rosaceae | <i>Rosa</i> | <i>spinosissima</i> | Sweden | 59.033333 | 14.633333 |
| PURF1579 | <i>Phragmidium</i> | <i>rosae-multiflorae</i> | 1929 | Rosaceae | <i>Rosa</i> | <i>multiflora</i> | Japan | 35.561572 | 138.585253 |
| PURF17597 | <i>Phragmidium</i> | <i>sanguisorbae</i> | 1967 | Rosaceae | <i>Poterium</i> | <i>laxiocarpum</i> | Iraq | 33.597064 | 43.000977 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|-------------------------------|------|---------------|-----------------------|------------------------|-------------|------------|-------------|
| PURF17868 | <i>Phragmidium</i> | <i>brevipedicellatum</i> | 1968 | Rosaceae | <i>Fragaria</i> | <i>sikkimensis</i> | India | 26.176076 | 91.762932 |
| PURF17980 | <i>Phragmidium</i> | <i>laceianum</i> | 1960 | Rosaceae | <i>Potentilla</i> | <i>argyrophylla</i> | India | 30.731402 | 75.603945 |
| PURF18144 | <i>Phragmidium</i> | <i>rosae-moschatae</i> | 1967 | Rosaceae | <i>Rosa</i> | <i>bruconii</i> | India | 27.035373 | 88.2603 |
| PURF19872 | <i>Phragmidium</i> | <i>pauciloculare</i> | 1980 | Rosaceae | <i>Rubus</i> | <i>crataegifolius</i> | China | 43 | 126 |
| PURN10831 | <i>Phragmidium</i> | <i>potentillae-canadensis</i> | 2012 | Rosaceae | <i>Potentilla</i> | <i>sp.</i> | Canada | 40.22171 | -91.2406465 |
| PURN11007 | <i>Phragmidium</i> | <i>peckianum</i> | 1996 | Rosaceae | <i>Rubus</i> | <i>deliciosus</i> | USA | 40.954707 | -105.349152 |
| PURN11215 | <i>Phragmidium</i> | <i>speciosum</i> | 1922 | Rosaceae | <i>Rosa</i> | <i>heliophila</i> | USA | 46.30191 | -98.94816 |
| PURN179 | <i>Phragmidium</i> | <i>acuminatum</i> | 1916 | Rosaceae | <i>Rubus</i> | <i>saxatilis</i> | Finland | 60.175556 | 24.934167 |
| PURN1848 | <i>Phragmidium</i> | <i>mucronatum</i> | 1992 | Rosaceae | <i>Rosa</i> | <i>blanda</i> | USA | 45.776342 | -92.682704 |
| PURN8039 | <i>Phragmidium</i> | <i>andersonii</i> | 1986 | Rosaceae | <i>Potentilla</i> | <i>fruticosa</i> | USA | 63.391667 | -148.950833 |
| PUR49334 | <i>Phragmopyxis</i> | <i>deglubens</i> | 1938 | Fabaceae | <i>Coursetia</i> | <i>caribaea</i> | Guatemala | 14.640002 | -90.918604 |
| PUR60259 | <i>Phragmopyxis</i> | <i>noelii</i> | 1965 | Fabaceae | <i>Coursetia</i> | <i>glandulosa</i> | USA | 32.322298 | -110.809812 |
| PUR63722 | <i>Phragmopyxis</i> | <i>noelii</i> | 1970 | Fabaceae | <i>Coursetia</i> | <i>glandulosa</i> | Mexico | 20.206401 | -104.822132 |
| PUR88627 | <i>Phragmopyxis</i> | <i>deglubens</i> | 1936 | Fabaceae | <i>Coursetia</i> | <i>caribaea</i> | USA | 31.954378 | -110.774315 |
| PUR62886 | <i>Pileolaria</i> | <i>standleyi</i> | 1969 | Anacardiaceae | <i>Pistacia</i> | <i>mexicana</i> | Mexico | 19.62522 | -104.501 |
| PUR63689 | <i>Pileolaria</i> | <i>mexicana</i> | 1971 | Anacardiaceae | <i>Rhus</i> | <i>choriophylla</i> | USA | 31.3325 | -109.089 |
| PUR88005 | <i>Pileolaria</i> | <i>brevipes</i> | 1983 | Anacardiaceae | <i>Toxicodendron</i> | <i>radicans</i> | USA | 37.54838 | -89.4442 |
| PURF19877 | <i>Pileolaria</i> | <i>klugkistiana</i> | 1980 | Anacardiaceae | <i>Rhus</i> | <i>chinensis</i> | China | 25.76074 | -117.737 |
| PUR37063 | <i>Porotenus</i> | <i>elatipes</i> | 1917 | Verbenaceae | <i>Lippia</i> | <i>myriocephala</i> | Guatemala | 14.77044 | -91.2794 |
| PURF10840 | <i>Porotenus</i> | <i>depallens</i> | 1938 | Bignoniaceae | <i>Amphilophium</i> | <i>paniculatum</i> | Venezuela | 9.713974 | -68.552213 |
| PURF18818 | <i>Porotenus</i> | <i>memorae</i> | 1976 | Bignoniaceae | <i>Memora</i> | <i>peregrina</i> | Brazil | -22.5123 | -48.9162 |
| PURF6388 | <i>Porotenus</i> | <i>depallens</i> | 1891 | Bignoniaceae | <i>Amphilophium</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURN6633 | <i>Porotenus</i> | <i>depallens</i> | 1918 | Bignoniaceae | <i>Amphilophium</i> | <i>paniculatum</i> | Ecuador | -3.721448 | -79.621873 |
| PURN6634 | <i>Porotenus</i> | <i>depallens</i> | 1932 | Bignoniaceae | <i>Amphilophium</i> | <i>paniculatum</i> | Colombia | 4.876608 | -74.437683 |
| PURN7059 | <i>Porotenus</i> | <i>biporus</i> | 1990 | Bignoniaceae | <i>Memora</i> | <i>flavida</i> | Brazil | 0.214677 | -51.0667 |
| PURN7086 | <i>Porotenus</i> | <i>memorae</i> | 1980 | Bignoniaceae | <i>Memora</i> | <i>peregrina</i> | Brazil | -21.9667 | -47.8167 |
| PUR42529 | <i>Prospodium</i> | <i>aequinoctialis</i> | 1916 | Bignoniaceae | <i>Bignonia</i> | <i>aequinoctialis</i> | Puerto Rico | 18.42623 | -66.0553 |
| PUR48415 | <i>Prospodium</i> | <i>cauraliae</i> | 1931 | Bignoniaceae | <i>Tabebuia</i> | <i>heterophylla</i> | Belize | 18.26667 | -88.45 |
| PUR51172 | <i>Prospodium</i> | <i>abortivum</i> | 1945 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | USA | 25.91439 | -97.486694 |
| PUR52579 | <i>Prospodium</i> | <i>plagiopus</i> | 1944 | Bignoniaceae | <i>Tabebuia</i> | <i>heterophylla</i> | Puerto Rico | 18.08646 | -67.8916 |
| PUR53041 | <i>Prospodium</i> | <i>tecomicola</i> | 1951 | Bignoniaceae | <i>Handroanthus</i> | <i>cahraceus</i> | Honduras | 14.05 | -87.2167 |
| PUR6361 | <i>Prospodium</i> | <i>tuberculatum</i> | 1915 | Verbenaceae | <i>Lantana</i> | <i>camara</i> | Costa Rica | 9.833333 | -83.75 |
| PUR64129 | <i>Prospodium</i> | <i>perornatum</i> | 1971 | Bignoniaceae | <i>Handroanthus</i> | <i>chrysanthus</i> | Mexico | 24.66209 | -107.397 |
| PUR7389 | <i>Prospodium</i> | <i>pithecoctenii</i> | 1916 | Fabaceae | <i>Pithecoctenium</i> | <i>crucigerum</i> | Cuba | 23.13194 | -82.3642 |
| PUR7416 | <i>Prospodium</i> | <i>abortivum</i> | 1920 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Barbados | 13.176642 | -59.539917 |
| PUR89518 | <i>Prospodium</i> | <i>lippiiae</i> | 1976 | Verbenaceae | <i>Aloysia</i> | <i>sp.</i> | Argentina | -27.480678 | -58.812073 |
| PUR89519 | <i>Prospodium</i> | <i>vongeenii</i> | 1977 | Verbenaceae | <i>Aloysia</i> | <i>sp.</i> | Argentina | -33.294663 | -66.630743 |
| PURF10907 | <i>Prospodium</i> | <i>singeri</i> | 1942 | Bignoniaceae | <i>Bignonia</i> | <i>callistegioides</i> | Argentina | -34.921454 | -57.954533 |
| PURF10909 | <i>Prospodium</i> | <i>peroratum</i> | 1941 | Bignoniaceae | <i>Handroanthus</i> | <i>sp.</i> | Argentina | -27.46056 | -58.983886 |
| PURF11235 | <i>Prospodium</i> | <i>irregulare</i> | 1945 | Bignoniaceae | <i>Pleonotoma</i> | <i>clematis</i> | Trinidad | 10.71345 | -61.35669 |
| PURF11237 | <i>Prospodium</i> | <i>abortivum</i> | 1945 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Trinidad | 10.5 | -61.25 |
| PURF11238 | <i>Prospodium</i> | <i>bicolor</i> | 1945 | Bignoniaceae | <i>Handroanthus</i> | <i>serratifolius</i> | Trinidad | 10.5 | -61.25 |
| PURF11627 | <i>Prospodium</i> | <i>bicolor</i> | 1944 | Bignoniaceae | <i>Handroanthus</i> | <i>serratifolius</i> | Trinidad | 10.5 | -61.25 |
| PURF13081 | <i>Prospodium</i> | <i>elegans</i> | 1923 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Ecuador | -2.754284 | -79.39918 |
| PURF14666 | <i>Prospodium</i> | <i>laevissimum</i> | 1945 | Bignoniaceae | <i>Anemopaegma</i> | <i>paraense</i> | Trinidad | 10.5 | -61.25 |
| PURF14667 | <i>Prospodium</i> | <i>trinidadense</i> | 1947 | Bignoniaceae | <i>Mansoa</i> | <i>verrucifera</i> | Trinidad | 10.5 | -61.25 |
| PURF14668 | <i>Prospodium</i> | <i>trinidadense</i> | 1947 | Bignoniaceae | <i>Mansoa</i> | <i>verrucifera</i> | Trinidad | 10.5 | -61.25 |
| PURF15281 | <i>Prospodium</i> | <i>lippiiae</i> | 1952 | Verbenaceae | <i>Aloysia</i> | <i>polystachia</i> | Argentina | -31.420639 | -64.194641 |
| PURF17670 | <i>Prospodium</i> | <i>lippiiae</i> | 1963 | Verbenaceae | <i>Lippia</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURF18802 | <i>Prospodium</i> | <i>bicolor</i> | 1979 | Bignoniaceae | <i>Handroanthus</i> | <i>serratifolius</i> | Brazil | -20.756822 | -42.876638 |
| PURF19401 | <i>Prospodium</i> | <i>paraguayense</i> | 1975 | Verbenaceae | <i>Lippia</i> | <i>urticoides</i> | Brazil | -22 | -49 |
| PURF1962 | <i>Prospodium</i> | <i>tuberculatum</i> | 1920 | Verbenaceae | <i>Lantana</i> | <i>camara</i> | Bolivia | -16.139956 | -67.724731 |
| PURF1963 | <i>Prospodium</i> | <i>tuberculatum</i> | 1985 | Verbenaceae | <i>Lantana</i> | <i>camara</i> | Argentina | -34.583333 | -58.4 |
| PURF1964 | <i>Prospodium</i> | <i>tuberculatum</i> | 1880 | Verbenaceae | <i>Lantana</i> | <i>camara</i> | Argentina | -34.583333 | -58.45 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|---------------------|-------------------|---------------------------|------|---------------|-----------------------|------------------------|-------------|--------------------|---------------------|
| PURF1966 | <i>Prospodium</i> | <i>tuberculatum</i> | 1920 | Verbenaceae | <i>Lantana</i> | <i>velutina</i> | Bolivia | -16.49667 | -68.13 |
| PURF1967 | <i>Prospodium</i> | <i>lippiae</i> | 1920 | Verbenaceae | <i>Lippia</i> | <i>americana</i> | Ecuador | -2.20584 | -79.90795 |
| PURF1968 | <i>Prospodium</i> | <i>lippiae</i> | 1923 | Verbenaceae | <i>Lippia</i> | <i>americana</i> | Ecuador | -2.754284 | -79.739918 |
| PURF1969 | <i>Prospodium</i> | <i>lippiae</i> | 1920 | Verbenaceae | <i>Junellia</i> | <i>ligustrina</i> | Bolivia | -17.118938 | -65.950439 |
| PURF1970 | <i>Prospodium</i> | <i>lippiae</i> | 1920 | Verbenaceae | <i>Junellia</i> | <i>ligustrina</i> | Bolivia | -17.118938 | -65.950439 |
| PURF1980 | <i>Prospodium</i> | <i>appendiculatum</i> | 1920 | Bignoniaceae | <i>Tecoma</i> | <i>castanifolia</i> | Ecuador | -2.20584 | -79.90795 |
| PURF1981 | <i>Prospodium</i> | <i>appendiculatum</i> | 1890 | Bignoniaceae | <i>Tecoma</i> | <i>castanifolia</i> | Ecuador | -2.20584 | -79.90795 |
| PURF1982 | <i>Prospodium</i> | <i>appendiculatum</i> | 1920 | Bignoniaceae | <i>Tecoma</i> | <i>sp.</i> | Peru | -13.305696 | -72.116109 |
| PURF1996 | <i>Prospodium</i> | <i>elegans</i> | 1906 | Bignoniaceae | <i>Tecoma</i> | <i>fulva</i> | Argentina | -24.189163 | -65.294006 |
| PURF1997 | <i>Prospodium</i> | <i>elegans</i> | 1906 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Argentina | -24.189163 | -65.294006 |
| PURF1999 | <i>Prospodium</i> | <i>elegans</i> | 1906 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Argentina | -24.189163 | -65.294006 |
| PURF2010 | <i>Prospodium</i> | <i>holwayi</i> | 1922 | Fabaceae | <i>Pithecoctenium</i> | <i>crucigerum</i> | Brazil | -22.398698 | -48.8644 |
| PURF2022 | <i>Prospodium</i> | <i>impolitum</i> | 1934 | Bignoniaceae | <i>Pyrostegia</i> | <i>venusta</i> | Brazil | -20.7568 | -42.8766 |
| PURF2034 | <i>Prospodium</i> | <i>trinidense</i> | 1921 | Bignoniaceae | <i>Mansoa</i> | <i>verrucifera</i> | Trinidad | 10.5 | -61.25 |
| PURF2035 | <i>Prospodium</i> | <i>trinidense</i> | 1921 | Bignoniaceae | <i>Mansoa</i> | <i>verrucifera</i> | Trinidad | 10.5 | -61.25 |
| PURF2037 | <i>Prospodium</i> | <i>trinidense</i> | 1921 | Bignoniaceae | <i>Mansoa</i> | <i>verrucifera</i> | Trinidad | 10.5 | -61.25 |
| PURF2046 | <i>Prospodium</i> | <i>singeri</i> | 1878 | Bignoniaceae | <i>Bignonia</i> | <i>callistegioides</i> | Argentina | -32.482493 | -58.237217 |
| PURF2047 | <i>Prospodium</i> | <i>singeri</i> | 1933 | Bignoniaceae | <i>Bignonia</i> | <i>callistegioides</i> | Uruguay | -33.063174 | -56.337402 |
| PURF2049 | <i>Prospodium</i> | <i>appendiculatum</i> | 1906 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Argentina | -24.785299 | -65.424469 |
| PURF3811 | <i>Prospodium</i> | <i>pithecoctenii</i> | 1888 | Fabaceae | <i>Pithecoctenium</i> | <i>crucigerum</i> | Paraguay | -25.383333 | -57.266667 |
| PURF8958 | <i>Prospodium</i> | <i>quitense</i> | 1890 | Verbenaceae | <i>Citharexylum</i> | <i>ilicifolium</i> | Ecuador | -0.167606 | -78.45071 |
| PURF89878 | <i>Prospodium</i> | <i>cyathiforme</i> | 1993 | Bignoniaceae | <i>Lundia</i> | <i>sp.</i> | Brazil | - | - |
| PURF9840 | <i>Prospodium</i> | <i>peroratum</i> | 1941 | Bignoniaceae | <i>Handroanthus</i> | <i>sp.</i> | Argentina | -27.46056 | -58.983886 |
| PURN11094 | <i>Prospodium</i> | <i>appendiculatum</i> | 2003 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Argentina | -23.71835 | -64.60190278 |
| PURN11095 | <i>Prospodium</i> | <i>appendiculatum</i> | 2004 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Argentina | -26.824144 | -65.2226 |
| PURN11109 | <i>Prospodium</i> | <i>appendiculatum</i> | 2003 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Argentina | -25.3355 | -64.93772222 |
| PURN15221 | <i>Prospodium</i> | <i>pithecoctenii</i> | 1976 | Bignoniaceae | <i>Bignoniaceae</i> | <i>sp.</i> | Peru | -10 | -76 |
| PURN6631 | <i>Prospodium</i> | <i>irregulare</i> | 1946 | Bignoniaceae | <i>Pleonotoma</i> | <i>clematis</i> | Trinidad | 10.5 | -61.25 |
| PURN6632 | <i>Prospodium</i> | <i>irregulare</i> | 1947 | Bignoniaceae | <i>Pleonotoma</i> | <i>clematis</i> | Trinidad | 10.5 | -61.25 |
| PURN6790 | <i>Prospodium</i> | <i>mansoae</i> | 1988 | Bignoniaceae | <i>Mansoa</i> | <i>sp.</i> | Brazil | -22.3826 | -48.2852 |
| PURN6855 | <i>Prospodium</i> | <i>appendiculatum</i> | 1998 | Bignoniaceae | <i>Tecoma</i> | <i>stans</i> | Brazil | -24.16 | -48.27 |
| PURN9742 | <i>Prospodium</i> | <i>tabebuicola</i> | 1997 | Bignoniaceae | <i>Tabebuia</i> | <i>sp.</i> | Brazil | -4.01681 | -53.415 |
| PURN9756 | <i>Prospodium</i> | <i>anemopaegnatis</i> | 1913 | Bignoniaceae | <i>Anemopaegna</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN9757 | <i>Prospodium</i> | <i>arrabidaee</i> | 1983 | Bignoniaceae | <i>Arrabidaea</i> | <i>pulchella</i> | Brazil | -21.9667 | -47.8167 |
| MCA4170 | <i>Puccinia</i> | <i>obliquoseptata</i> | 2010 | Poaceae | <i>Olyra</i> | <i>sp.</i> | Guyana | 4.707723278696973 | -59.214444329983245 |
| MCA4228 | <i>Puccinia</i> | <i>modiolae</i> | 2011 | Malvaceae | <i>non-data</i> | <i>non-data</i> | USA | 30.4508706 | -91.11074453 |
| ML143/U1466 | <i>Puccinia</i> | <i>kuehni</i> | 2011 | Poaceae | <i>Saccharum</i> | <i>officinarum</i> | Ecuador | -2.31365122 | -79.44741935 |
| p.malva.jorge.peru1 | <i>Puccinia</i> | <i>pelargonii-zonalis</i> | 2019 | Geraniaceae | <i>Pelargonium</i> | <i>zonale</i> | Peru | -7.166177224180808 | -78.50131719003765 |
| PUR088211 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1977 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | USA | 29.68243 | -82.3603 |
| PUR088245 | <i>Puccinia</i> | <i>sorgi</i> | 1977 | Poaceae | <i>Zea</i> | <i>mays</i> | El Salvador | 13.69552 | -89.2993 |
| PUR088286 | <i>Puccinia</i> | <i>soledadensis</i> | 1975 | Lamiaceae | <i>Salvia</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PUR088287 | <i>Puccinia</i> | <i>albicera</i> | 1924 | Lamiaceae | <i>Salvia</i> | <i>tortuosa</i> | Ecuador | -0.2001 | -78.4753 |
| PUR10354 | <i>Puccinia</i> | <i>recondita</i> | 1941 | Poaceae | <i>Bromus</i> | <i>catharticus</i> | Argentina | -31.621051 | -60.697601 |
| PUR10981 | <i>Puccinia</i> | <i>arachidis</i> | 1939 | Fabaceae | <i>Zornia</i> | <i>diphylla</i> | Venezuela | 7.766944 | -72.225 |
| PUR11450 | <i>Puccinia</i> | <i>purpurea</i> | 1946 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | Trinidad | 10.5 | -61.25 |
| PUR11596 | <i>Puccinia</i> | <i>polysora</i> | 1948 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PUR13721 | <i>Puccinia</i> | <i>hypoxidis</i> | 1923 | Hypoxidaceae | <i>Hypoxis</i> | <i>decumbens</i> | Costa Rica | 9.967311 | -83.6118 |
| PUR15265 | <i>Puccinia</i> | <i>ventanensis</i> | 1952 | Amaranthaceae | <i>Pfaffia</i> | <i>gnaphaloides</i> | Argentina | -32.83006 | -66.0319 |
| PUR17353 | <i>Puccinia</i> | <i>sorgi</i> | 1925 | Oxalidaceae | <i>Oxalis</i> | <i>dillenii</i> | USA | 32.60404 | -83.7927 |
| PUR17478 | <i>Puccinia</i> | <i>sorgi</i> | 1918 | Poaceae | <i>Zea</i> | <i>mays</i> | USA | 34.60593 | -86.9833 |
| PUR17529 | <i>Puccinia</i> | <i>tripsaci</i> | 1909 | Poaceae | <i>Andropogon</i> | <i>gerardii</i> | USA | 44.43939 | -96.9676 |
| PUR17648 | <i>Puccinia</i> | <i>ellisiana</i> | 1912 | Violaceae | <i>Viola</i> | <i>cucullata</i> | USA | 40.42583 | -86.9081 |
| PUR17687 | <i>Puccinia</i> | <i>ellisiana</i> | 1909 | Poaceae | <i>Andropogon</i> | <i>glomeratus</i> | USA | 35.60095 | -82.554 |
| PUR18259 | <i>Puccinia</i> | <i>purpureae</i> | 1918 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | USA | 32.64005 | -117.084 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------|------|------------------|--------------------------|---------------------|-------------|-----------|------------|
| PUR18279 | <i>Puccinia</i> | <i>dolosa</i> | 1916 | Poaceae | <i>Urochloa</i> | <i>fusca</i> | Cuba | 23.131944 | -82.364167 |
| PUR18492 | <i>Puccinia</i> | <i>inclita</i> | 1924 | Poaceae | <i>Ichnanthus</i> | <i>pallens</i> | Puerto Rico | 18.30515 | -67.2034 |
| PUR18808 | <i>Puccinia</i> | <i>abnormis</i> | 1915 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | USA | 40.0914 | -98.64951 |
| PUR18892 | <i>Puccinia</i> | <i>graminis</i> | 1923 | Berberidaceae | <i>Berberis</i> | <i>canadensis</i> | USA | 40.74534 | -86.7588 |
| PUR18997 | <i>Puccinia</i> | <i>graminis</i> | 1918 | Poaceae | <i>Lamarckia</i> | <i>aurea</i> | USA | 32.71533 | -117.15726 |
| PUR19055 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Elymus</i> | <i>repens</i> | USA | 41.52583 | -85.3667 |
| PUR19088 | <i>Puccinia</i> | <i>graminis</i> | 1911 | Poaceae | <i>Elymus</i> | <i>trachycaulus</i> | USA | 40.01499 | -105.271 |
| PUR19121 | <i>Puccinia</i> | <i>graminis</i> | 1907 | Poaceae | <i>Agropyron</i> | <i>sp.</i> | USA | 42.25863 | -87.8406 |
| PUR19208 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Agrostis</i> | <i>gigantea</i> | USA | 41.52583 | -85.3667 |
| PUR19237 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Alopecurus</i> | <i>aegunlis</i> | USA | 34.24941 | -116.954 |
| PUR19243 | <i>Puccinia</i> | <i>graminis</i> | 1916 | Poaceae | <i>Anthoxanthum</i> | <i>odoratum</i> | USA | 44.07258 | -68.6125 |
| PUR19244 | <i>Puccinia</i> | <i>graminis</i> | 1908 | Poaceae | <i>Anthoxanthum</i> | <i>odoratum</i> | USA | 39.68372 | -75.7497 |
| PUR19338 | <i>Puccinia</i> | <i>graminis</i> | 1917 | Poaceae | <i>Briza</i> | <i>maxima</i> | USA | 44.95474 | -93.0812 |
| PUR19349 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Bromus</i> | <i>secalinus</i> | USA | 38.58752 | -87.6491 |
| PUR19373 | <i>Puccinia</i> | <i>graminis</i> | 1893 | Poaceae | <i>Cinna</i> | <i>arundinacea</i> | USA | 42.53639 | -99.7007 |
| PUR19400 | <i>Puccinia</i> | <i>graminis</i> | 1923 | Poaceae | <i>Deschampsia</i> | <i>caespitosa</i> | Canada | 49.61667 | -105.983 |
| PUR19445 | <i>Puccinia</i> | <i>graminis</i> | 1902 | Poaceae | <i>Elymus</i> | <i>canadensis</i> | USA | 43.33454 | -95.1452 |
| PUR19458 | <i>Puccinia</i> | <i>graminis</i> | 1916 | Poaceae | <i>Leymus</i> | <i>condensatus</i> | USA | 33.76696 | -118.18924 |
| PUR19487 | <i>Puccinia</i> | <i>graminis</i> | 1915 | Poaceae | <i>Festuca</i> | <i>arizonica</i> | USA | 39.70322 | -105.294 |
| PUR19517 | <i>Puccinia</i> | <i>graminis</i> | 1916 | Poaceae | <i>Hordeum</i> | <i>marinum</i> | USA | 33.76696 | -118.18924 |
| PUR19534 | <i>Puccinia</i> | <i>graminis</i> | 1912 | Poaceae | <i>Calamagrostis</i> | <i>canadenses</i> | USA | 40.0889 | -98.5195 |
| PUR19579 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Hordeum</i> | <i>jubatum</i> | USA | 37.22556 | -107.59811 |
| PUR19605 | <i>Puccinia</i> | <i>graminis</i> | 1914 | Poaceae | <i>Hordeum</i> | <i>vulgare</i> | USA | 37.98869 | -84.4777 |
| PUR19613 | <i>Puccinia</i> | <i>graminis</i> | 1916 | Poaceae | <i>Koeleria</i> | <i>macrantha</i> | USA | 39.18361 | -96.57167 |
| PUR19637 | <i>Puccinia</i> | <i>graminis</i> | 1911 | Poaceae | <i>Glyceria</i> | <i>grandis</i> | Canada | 50.999998 | -89.977013 |
| PUR19641 | <i>Puccinia</i> | <i>graminis</i> | 1916 | Poaceae | <i>Torreyochloa</i> | <i>pallida</i> | USA | 48.41108 | -114.338 |
| PUR19696 | <i>Puccinia</i> | <i>graminis</i> | 1910 | Poaceae | <i>Phleum</i> | <i>pratense</i> | USA | 45.6815 | -62.7304 |
| PUR19789 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Puccinellia</i> | <i>nuttalliana</i> | USA | 33.76696 | -118.189 |
| PUR19807 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Sphenopholis</i> | <i>obtusata</i> | USA | 33.2843 | -116.631 |
| PUR19827 | <i>Puccinia</i> | <i>graminis</i> | 1890 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | USA | 40.41667 | -86.8753 |
| PUR19950 | <i>Puccinia</i> | <i>sessilis</i> | 1912 | Asparagaceae | <i>Maianthemum</i> | <i>canadense</i> | USA | 47.3794 | -94.6042 |
| PUR19981 | <i>Puccinia</i> | <i>sessilis</i> | 1915 | <i>Iridaceae</i> | <i>Iris</i> | <i>versicolor</i> | USA | 41.195 | -87.1986 |
| PUR20003 | <i>Puccinia</i> | <i>sessilis</i> | 1907 | Poaceae | <i>Phalaris</i> | <i>arundinaceae</i> | USA | 51 | -89.977 |
| PUR20035 | <i>Puccinia</i> | <i>sessilis</i> | 1920 | Poaceae | <i>Phalaris</i> | <i>arundinaceae</i> | USA | 41.18503 | -87.3342 |
| PUR20053 | <i>Puccinia</i> | <i>burnettii</i> | 1923 | Amaranthaceae | <i>Krascheninnikovia</i> | <i>lanata</i> | USA | 40.07072 | -106.1 |
| PUR20245 | <i>Puccinia</i> | <i>subterilis</i> | 1910 | Poaceae | <i>Achnatherum</i> | <i>arida</i> | USA | 36.05443 | -112.139 |
| PUR20309 | <i>Puccinia</i> | <i>stipae</i> | 1922 | Poaceae | <i>Achnatherum</i> | <i>nelsonii</i> | USA | 37.82437 | -120.004 |
| PUR20487 | <i>Puccinia</i> | <i>microcantha</i> | 1921 | Grossulariaceae | <i>Ribes</i> | <i>eureum</i> | USA | 43.8547 | -104.205 |
| PUR20511 | <i>Puccinia</i> | <i>sporoboli</i> | 1917 | Amaryllidaceae | <i>Allium</i> | <i>cernuum</i> | USA | 40.41667 | -86.8753 |
| PUR20625 | <i>Puccinia</i> | <i>cryptandri</i> | 1914 | Poaceae | <i>Sporobolus</i> | <i>contractus</i> | Mexico | 32.27593 | -106.767 |
| PUR20679 | <i>Puccinia</i> | <i>cryptandri</i> | 1914 | Sarcobataceae | <i>Sarcobatus</i> | <i>vermiculatus</i> | USA | 38.25445 | -104.609 |
| PUR21116 | <i>Puccinia</i> | <i>subnitens</i> | 1918 | Poaceae | <i>Distichlis</i> | <i>stricta</i> | USA | 34.73919 | -112.01 |
| PUR21224 | <i>Puccinia</i> | <i>schedonnardi</i> | 1898 | Malvaceae | <i>Callirhoe</i> | <i>alcaeoides</i> | USA | 40.8 | -96.667 |
| PUR21238 | <i>Puccinia</i> | <i>schedonnardi</i> | 1909 | Malvaceae | <i>Callirhoe</i> | <i>involuta</i> | USA | 40.41667 | -86.8753 |
| PUR21556 | <i>Puccinia</i> | <i>vilfae</i> | 1923 | Poaceae | <i>Sporobolus</i> | <i>buckleyi</i> | USA | 25.96545 | -97.4446 |
| PUR21587 | <i>Puccinia</i> | <i>sporoboli</i> | 1916 | Asparagaceae | <i>Leucocrinum</i> | <i>montanum</i> | USA | 39.73915 | -104.985 |
| PUR21605 | <i>Puccinia</i> | <i>sporoboli</i> | 1959 | Poaceae | <i>Calamovilfa</i> | <i>gigantea</i> | USA | 39.1361 | -103.47 |
| PUR21616 | <i>Puccinia</i> | <i>amphigena</i> | 1883 | Poaceae | <i>Calamovilfa</i> | <i>longifolia</i> | USA | 41.965588 | -87.666723 |
| PUR21680 | <i>Puccinia</i> | <i>brachypodii</i> | 1903 | Poaceae | <i>Milium</i> | <i>effusum</i> | USA | 42.72613 | -87.7829 |
| PUR21705 | <i>Puccinia</i> | <i>monoica</i> | 1920 | Brassicaceae | <i>Arabis</i> | <i>bolanderi</i> | USA | 39.32796 | -120.183 |
| PUR21876 | <i>Puccinia</i> | <i>coronata</i> | 1921 | Rhamnaceae | <i>Rhamnus</i> | <i>cathartica</i> | USA | 41.74427 | -71.9092 |
| PUR21994 | <i>Puccinia</i> | <i>coronata</i> | 1918 | Poaceae | <i>Avena</i> | <i>fatua</i> | USA | 33.76696 | -118.189 |
| PUR22105 | <i>Puccinia</i> | <i>coronata</i> | 1917 | Poaceae | <i>Avena</i> | <i>sativa</i> | Cuba | 23.13194 | -82.3642 |
| PUR22279 | <i>Puccinia</i> | <i>coronata</i> | 1901 | Poaceae | <i>Holcus</i> | <i>lanatus</i> | USA | 47.25288 | -122.444 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------|----------|-----------------|---------------------|---------------------|------------|-----------|-------------|
| PUR22325 | <i>Puccinia</i> | <i>coronata</i> | 1920 | Poaceae | <i>Poa</i> | <i>arachnifera</i> | USA | 32.60986 | -85.4808 |
| PUR22580 | <i>Puccinia</i> | <i>distichlidis</i> | 1888 | Primulaceae | <i>Glax</i> | <i>maritima</i> | USA | 46.59271 | -112.036 |
| PUR22867 | <i>Puccinia</i> | <i>chloridis</i> | 1883 | Apocynaceae | <i>Asclepias</i> | <i>hirtella</i> | USA | 43.80049 | -91.23 |
| PUR22876 | <i>Puccinia</i> | <i>chloridis</i> | 1913 | Apocynaceae | <i>Asclepias</i> | <i>arenaria</i> | USA | 40.0889 | -98.5195 |
| PUR22938 | <i>Puccinia</i> | <i>chloridis</i> | 1919 | Poaceae | <i>Bouteloua</i> | <i>curtipendula</i> | USA | 31.81066 | -110.79 |
| PUR23054 | <i>Puccinia</i> | <i>magnusiana</i> | 1908 | Ranunculaceae | <i>Anemone</i> | <i>canadensis</i> | USA | 43.42218 | -95.10222 |
| PUR23058 | <i>Puccinia</i> | <i>magnusiana</i> | 1886 | Ranunculaceae | <i>Anemone</i> | <i>canadensis</i> | USA | 39.18361 | -96.57167 |
| PUR23102 | <i>Puccinia</i> | <i>trabutii</i> | 1916 | Rutaceae | <i>Ptelea</i> | <i>trifoliata</i> | USA | 40.42583 | -86.9081 |
| PUR23260 | <i>Puccinia</i> | <i>eatoniae</i> | 1922 | Boraginaceae | <i>Myosotis</i> | <i>virginica</i> | USA | 40.41667 | -86.87528 |
| PUR23264 | <i>Puccinia</i> | <i>eatoniae</i> | 1900 | Poaceae | <i>Sphenopholis</i> | <i>nitida</i> | USA | 34.69522 | -82.8797 |
| PUR23305 | <i>Puccinia</i> | <i>eatoniae</i> | non-data | Poaceae | <i>Sphenopholis</i> | <i>intermedia</i> | USA | 43.12896 | -74.9743 |
| PUR23411 | <i>Puccinia</i> | <i>brachypodii</i> | 1911 | Poaceae | <i>Alopecurus</i> | <i>aequalis</i> | USA | 37.87138 | -109.343 |
| PUR23415 | <i>Puccinia</i> | <i>brachypodii</i> | 1916 | Poaceae | <i>Anthoxanthum</i> | <i>odoratum</i> | USA | 43.84468 | -69.7089 |
| PUR23433 | <i>Puccinia</i> | <i>brachypodii</i> | 1918 | Poaceae | <i>Deschampsia</i> | <i>caespitosa</i> | USA | 39.76163 | -107.699 |
| PUR23572 | <i>Puccinia</i> | <i>brachypodii</i> | 1913 | Poaceae | <i>Poa</i> | <i>pratensis</i> | USA | 39.56278 | -85.0897 |
| PUR23796 | <i>Puccinia</i> | <i>cockerelliana</i> | 1911 | Poaceae | <i>Festuca</i> | <i>thurberi</i> | USA | 39.93909 | -105.567 |
| PUR23901 | <i>Puccinia</i> | <i>elymi</i> | 1924 | Poaceae | <i>Agropyron</i> | <i>non-data</i> | Canada | 51.67048 | -112.245 |
| PUR23925 | <i>Puccinia</i> | <i>montanensis</i> | 1896 | Poaceae | <i>Elymus</i> | <i>canadensis</i> | USA | 40.41667 | -86.87528 |
| PUR23948 | <i>Puccinia</i> | <i>elymi</i> | 1911 | Poaceae | <i>Elyhordeum</i> | <i>macounii</i> | USA | 39.86082 | -105.247 |
| PUR24225 | <i>Puccinia</i> | <i>recondita</i> | 1923 | Ranunculaceae | <i>Actaea</i> | <i>eburnea</i> | USA | 59.41667 | -135.933 |
| PUR24293 | <i>Puccinia</i> | <i>recondita</i> | 1908 | Ranunculaceae | <i>Aquilegia</i> | <i>canadensis</i> | Canada | 40.41667 | -86.8753 |
| PUR24909 | <i>Puccinia</i> | <i>recondita</i> | 1911 | Poaceae | <i>Alopecurus</i> | <i>pratensis</i> | USA | 45.68316 | -62.7103 |
| PUR24912 | <i>Puccinia</i> | <i>recondita</i> | 1916 | Poaceae | <i>Avena</i> | <i>barbata</i> | USA | 37.9577 | -121.291 |
| PUR25009 | <i>Puccinia</i> | <i>recondita</i> | 1910 | Poaceae | <i>Bromus</i> | <i>inernis</i> | USA | 39.93909 | -105.567 |
| PUR25081 | <i>Puccinia</i> | <i>recondita</i> | 1916 | Poaceae | <i>Bromus</i> | <i>scoparius</i> | USA | 33.96168 | -118.353131 |
| PUR25103 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Bromus</i> | <i>diandrus</i> | USA | 37.26383 | -122.023 |
| PUR25166 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Leymus</i> | <i>condensatus</i> | USA | 34.14806 | -117.99896 |
| PUR25256 | <i>Puccinia</i> | <i>recondita</i> | 1912 | Poaceae | <i>Leymus</i> | <i>triticoides</i> | USA | 40.01499 | -105.27055 |
| PUR25352 | <i>Puccinia</i> | <i>recondita</i> | 1899 | Poaceae | <i>Glyceria</i> | <i>grandis</i> | USA | 43.42218 | -95.1022 |
| PUR25834 | <i>Puccinia</i> | <i>striiformis</i> | 1921 | Poaceae | <i>Aegilops</i> | <i>cylindrica</i> | USA | 46.73127 | -117.18 |
| PUR25990 | <i>Puccinia</i> | <i>obtecta</i> | 1895 | Asteraceae | <i>Bidens</i> | <i>frondosa</i> | USA | 42.53639 | -99.70068 |
| PUR26770 | <i>Puccinia</i> | <i>eleocharidis</i> | 1914 | Cyperaceae | <i>Eleocharis</i> | <i>intermedia</i> | USA | 40.797855 | -77.584961 |
| PUR26778 | <i>Puccinia</i> | <i>eleocharidis</i> | 1916 | Cyperaceae | <i>Eleocharis</i> | <i>obtusa</i> | USA | 38.40776 | -86.03599 |
| PUR26871 | <i>Puccinia</i> | <i>fuirenicola</i> | 1904 | Cyperaceae | <i>Fuirena</i> | <i>umbellata</i> | Cuba | 23.090246 | -82.378743 |
| PUR26879 | <i>Puccinia</i> | <i>scleriae</i> | 1923 | Passifloraceae | <i>Passiflora</i> | <i>biflora</i> | Costa Rica | 9.967311 | -83.6118 |
| PUR26992 | <i>Puccinia</i> | <i>polytaschiae</i> | 1899 | Cyperaceae | <i>Carex</i> | <i>madrensis</i> | Mexico | 18.93373 | -99.2285 |
| PUR27059 | <i>Puccinia</i> | <i>caricina</i> | 1910 | Primulaceae | <i>Lysimachia</i> | <i>quadrifolia</i> | USA | 42.46676 | -70.9495 |
| PUR27100 | <i>Puccinia</i> | <i>caricis</i> | 1916 | Cyperaceae | <i>Carex</i> | <i>saximontana</i> | USA | 40.01499 | -105.271 |
| PUR27324 | <i>Puccinia</i> | <i>caricina</i> | 1902 | Grossulariaceae | <i>Ribes</i> | <i>lacustre</i> | Canada | 45.54111 | -62.33 |
| PUR27362 | <i>Puccinia</i> | <i>caricis</i> | 1920 | Cyperaceae | <i>Carex</i> | <i>ablata</i> | USA | 45.26407 | -115.677 |
| PUR27761 | <i>Puccinia</i> | <i>caricis</i> | 1917 | Cyperaceae | <i>Carex</i> | <i>etygia</i> | USA | 58.30194 | -134.42 |
| PUR27986 | <i>Puccinia</i> | <i>caricis</i> | 1908 | Cyperaceae | <i>Carex</i> | <i>emorpi</i> | USA | 46.30191 | -98.9482 |
| PUR28276 | <i>Puccinia</i> | <i>microspora</i> | 1913 | Cyperaceae | <i>Carex</i> | <i>exsiccata</i> | USA | 46.17403 | -123.787 |
| PUR28325 | <i>Puccinia</i> | <i>minutissima</i> | 1893 | Cyperaceae | <i>Carex</i> | <i>lasiocarpa</i> | USA | 41.01861 | -86.4133 |
| PUR28607 | <i>Puccinia</i> | <i>dioicae</i> | 1909 | Asteraceae | <i>Aster</i> | <i>acuminatus</i> | Canada | 45 | -62.9992 |
| PUR28683 | <i>Puccinia</i> | <i>dioicae</i> | 1917 | Asteraceae | <i>Aster</i> | <i>nebraskensis</i> | USA | 41.78167 | -99.1332 |
| PUR28934 | <i>Puccinia</i> | <i>cyperi</i> | 1899 | Asteraceae | <i>Conyza</i> | <i>canadensis</i> | USA | 42.25778 | -98.3465 |
| PUR29001 | <i>Puccinia</i> | <i>extensicola</i> | 1914 | Cyperaceae | <i>Dulichium</i> | <i>arundinaceum</i> | USA | 40.41667 | -86.8753 |
| PUR29170 | <i>Puccinia</i> | <i>dioicae</i> | 1901 | Cyperaceae | <i>Carex</i> | <i>cephalantha</i> | USA | 44.07258 | -68.6125 |
| PUR29250 | <i>Puccinia</i> | <i>dioicae</i> | 1938 | Cyperaceae | <i>Carex</i> | <i>harfordii</i> | USA | 40.79484 | -124.172 |
| PUR29422 | <i>Puccinia</i> | <i>dioicae</i> | 1920 | Cyperaceae | <i>Carex</i> | <i>stipata</i> | USA | 46.85913 | -116.394 |
| PUR29466 | <i>Puccinia</i> | <i>dioicae</i> | 1915 | Cyperaceae | <i>Carex</i> | <i>tenera</i> | USA | 41.13899 | -72.30342 |
| PUR29638 | <i>Puccinia</i> | <i>dioicae</i> | 1917 | Cyperaceae | <i>Carex</i> | <i>sp.</i> | USA | 40.72143 | -89.2729 |
| PUR29997 | <i>Puccinia</i> | <i>dioicae</i> | 1902 | Asteraceae | <i>Adopogon</i> | <i>virginianus</i> | USA | 43.30331 | -91.7857 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|------------------------|------|------------------|-----------------------|--------------------------|--------------------|-----------|-------------|
| PUR30117 | <i>Puccinia</i> | <i>dioicae</i> | 1886 | Cyperaceae | <i>Carex</i> | <i>adjusta</i> | USA | 47.17166 | -93.86594 |
| PUR30485 | <i>Puccinia</i> | <i>obscura</i> | 1913 | Juncaceae | <i>Luzula</i> | <i>intermedia</i> | USA | 39.94167 | -87.09167 |
| PUR30627 | <i>Puccinia</i> | <i>allii</i> | 1914 | Amaryllidaceae | <i>Allium</i> | <i>cepa</i> | USA | 41.80843 | -72.2495 |
| PUR30864 | <i>Puccinia</i> | <i>aletridis</i> | 1972 | Nartheciaceae | <i>Aletris</i> | <i>aurea</i> | USA | 30.09601 | -96.0722 |
| PUR30876 | <i>Puccinia</i> | <i>cooperiae</i> | 1901 | Amaryllidaceae | <i>Zephyranthes</i> | <i>chlorosolen</i> | USA | 30.26715 | -97.7431 |
| PUR30886 | <i>Puccinia</i> | <i>pallor</i> | 1915 | Alstroemeriaceae | <i>Bomarea</i> | <i>acutifolia</i> | Guatemala | 14.56111 | -90.7344 |
| PUR31487 | <i>Puccinia</i> | <i>polygoni-alpini</i> | 1910 | Polygonaceae | <i>Polygonum</i> | <i>phytolaccaefolium</i> | USA | 44.98098 | -114.587 |
| PUR31492 | <i>Puccinia</i> | <i>acetosae</i> | 1912 | Polygonaceae | <i>Rumex</i> | <i>acetosella</i> | USA | 41.52544 | -70.6701 |
| PUR31535 | <i>Puccinia</i> | <i>macropoda</i> | 1913 | Amaranthaceae | <i>Iresine</i> | <i>angustifolia</i> | Puerto Rico | 18.384536 | -67.480371 |
| PUR32017 | <i>Puccinia</i> | <i>oenotherae</i> | 1903 | Onagraceae | <i>Boisduvalia</i> | <i>densiflora</i> | Canada | 32.98599 | -116.577 |
| PUR32022 | <i>Puccinia</i> | <i>glabella</i> | 1912 | Onagraceae | <i>Boisduvalia</i> | <i>glabella</i> | Canada | 41.94768 | -116.099 |
| PUR32274 | <i>Puccinia</i> | <i>proserpinacae</i> | 1901 | Haloragaceae | <i>Proserpinaca</i> | <i>palustris</i> | USA | 42.72613 | -87.78285 |
| PUR32453 | <i>Puccinia</i> | <i>cicutae</i> | 1918 | Apiaceae | <i>Cicuta</i> | <i>maculata</i> | USA | 45.45691 | -91.2732 |
| PUR32490 | <i>Puccinia</i> | <i>marylandica</i> | 1907 | Apiaceae | <i>Sanicula</i> | <i>canadensis</i> | USA | 39.38539 | -75.5219 |
| PUR32576 | <i>Puccinia</i> | <i>convulvuli</i> | 1915 | Convolvulaceae | <i>Calystegia</i> | <i>malocophyllus</i> | USA | 39.00934 | -120.771 |
| PUR32711 | <i>Puccinia</i> | <i>tuyutensis</i> | 1902 | Convolvulaceae | <i>Cressa</i> | <i>traxillensis</i> | USA | 36.64877 | -114.008 |
| PUR32783 | <i>Puccinia</i> | <i>cryptanthes</i> | 1922 | Boraginaceae | <i>Cryptantha</i> | <i>ambigua</i> | USA | 34.14806 | -117.999 |
| PUR33252 | <i>Puccinia</i> | <i>leonotidicola</i> | 1909 | Lamiaceae | <i>Leonotis</i> | <i>nepetifolia</i> | Bahamas | 24.67821 | -77.7667 |
| PUR33313 | <i>Puccinia</i> | <i>hyptidis</i> | 1942 | Lamiaceae | <i>Hyptis</i> | <i>capitata</i> | Costa Rica | 10.08802 | -84.4702 |
| PUR33886 | <i>Puccinia</i> | <i>oaxacana</i> | 1916 | Asteraceae | <i>Archibaccharis</i> | <i>torquis</i> | Costa Rica | 9.933333 | -84.083333 |
| PUR33897 | <i>Puccinia</i> | <i>ocillifera</i> | 1906 | Asteraceae | <i>Pluchea</i> | <i>odorata</i> | Guatemala | 14.472031 | -90.63143 |
| PUR33901 | <i>Puccinia</i> | <i>ocillifera</i> | 1913 | Asteraceae | <i>Pluchea</i> | <i>purpurascens</i> | USA | 25.687973 | -80.68427 |
| PUR34462 | <i>Puccinia</i> | <i>helianthi</i> | 1914 | Asteraceae | <i>Helianthus</i> | <i>ciliaris</i> | USA | 32.27593 | -106.76667 |
| PUR34607 | <i>Puccinia</i> | <i>abrupta</i> | 1916 | Asteraceae | <i>Viguiera</i> | <i>helianthoides</i> | Cuba | 23.131944 | -82.364167 |
| PUR34723 | <i>Puccinia</i> | <i>hieracii</i> | 1921 | Asteraceae | <i>Malacothrix</i> | <i>saxatilis</i> | USA | 33.383333 | -118.416667 |
| PUR34816 | <i>Puccinia</i> | <i>minusensis</i> | 1919 | Asteraceae | <i>Lactuca</i> | <i>canadensis</i> | USA | 40.867073 | -73.45593 |
| PUR34851 | <i>Puccinia</i> | <i>minusensis</i> | 1911 | Asteraceae | <i>Lactuca</i> | <i>pulchella</i> | USA | 43.07305 | -89.40123 |
| PUR35497 | <i>Puccinia</i> | <i>interveniens</i> | 1910 | Malvaceae | <i>Callirrhoe</i> | <i>alceoides</i> | USA | 41.4664 | -98.7031 |
| PUR35871 | <i>Puccinia</i> | <i>jussiaeae</i> | 1915 | Onagraceae | <i>Ludwigia</i> | <i>palustris</i> | USA | 31.96378 | -95.2705 |
| PUR35882 | <i>Puccinia</i> | <i>jussiaeae</i> | 1923 | Onagraceae | <i>Ludwigia</i> | <i>polycarpa</i> | USA | 43.18832 | -90.5668 |
| PUR36013 | <i>Puccinia</i> | <i>cymopteri</i> | 1892 | Apiaceae | <i>Pteryxia</i> | <i>terebinthina</i> | USA | 37.80327 | -121.946 |
| PUR36260 | <i>Puccinia</i> | <i>yosimitana</i> | 1919 | Polemoniaceae | <i>Leptodactylon</i> | <i>hookeri</i> | USA | 37.92633 | -119.601 |
| PUR36450 | <i>Puccinia</i> | <i>investita</i> | 1931 | Asteraceae | <i>Gnaphalium</i> | <i>chilense</i> | USA | 34.14806 | -117.99896 |
| PUR36782 | <i>Puccinia</i> | <i>arachidis</i> | 1915 | Fabaceae | <i>Arachis</i> | <i>hypogaea</i> | Cuba | 23.13194 | -82.3642 |
| PUR36796 | <i>Puccinia</i> | <i>insueta</i> | 1903 | Malpighiaceae | <i>Echinopterys</i> | <i>eglandulosa</i> | Mexico | 19.91284 | -97.7681 |
| PUR36858 | <i>Puccinia</i> | <i>gouaniae</i> | 1915 | Rhamnaceae | <i>Gouania</i> | <i>lupuloides</i> | Cuba | 23.13194 | -82.3642 |
| PUR37011 | <i>Puccinia</i> | <i>angelicae</i> | 1910 | Apiaceae | <i>Angelica</i> | <i>arguta</i> | USA | 45.53095 | -122.09 |
| PUR37140 | <i>Puccinia</i> | <i>paradoxa</i> | 1910 | Solanaceae | <i>Lycium</i> | <i>carolinianum</i> | Cuba | 23.13194 | -82.3642 |
| PUR37218 | <i>Puccinia</i> | <i>fuscella</i> | 1916 | Asteraceae | <i>Vernonia</i> | <i>menthaefolia</i> | Cuba | 23.13194 | -82.3642 |
| PUR37250 | <i>Puccinia</i> | <i>longipes</i> | 1884 | Asteraceae | <i>Vernonia</i> | <i>fasciculata</i> | USA | 43.30369 | -91.78734 |
| PUR37642 | <i>Puccinia</i> | <i>tanacetii</i> | 1905 | Asteraceae | <i>Chrysanthemum</i> | <i>morifolium</i> | USA | 40.4167 | -86.87529 |
| PUR37790 | <i>Puccinia</i> | <i>ludoviciana</i> | 1920 | Asteraceae | <i>Artemisia</i> | <i>ludoviciana</i> | USA | 44.75135 | -91.67461 |
| PUR38029 | <i>Puccinia</i> | <i>altissimorum</i> | 1919 | Asteraceae | <i>Cirsium</i> | <i>altissimum</i> | USA | 35.43093 | -83.44738 |
| PUR38816 | <i>Puccinia</i> | <i>ornata</i> | 1900 | Polygonaceae | <i>Rumex</i> | <i>britannica</i> | USA | 44.93725 | -68.6366 |
| PUR38986 | <i>Puccinia</i> | <i>gibberulosa</i> | 1906 | Ranunculaceae | <i>Ranunculus</i> | <i>adoneus</i> | USA | 40.57828 | -111.796 |
| PUR39011 | <i>Puccinia</i> | <i>utahensis</i> | 1906 | Brassicaceae | <i>Thlaspi</i> | <i>glaucum</i> | USA | 40.61112 | -111.789 |
| PUR39239 | <i>Puccinia</i> | <i>heucherae</i> | 1889 | Saxifragaceae | <i>Heuchera</i> | <i>americana</i> | USA | 43.07305 | -89.4012 |
| PUR39241 | <i>Puccinia</i> | <i>heucherae</i> | 1921 | Saxifragaceae | <i>Heuchera</i> | <i>americana</i> | USA | 43.70026 | -103.438 |
| PUR39351 | <i>Puccinia</i> | <i>waldsteiniae</i> | 1924 | Rosaceae | <i>Waldsteinia</i> | <i>fragarioides</i> | USA | 42.57591 | -73.964 |
| PUR39831 | <i>Puccinia</i> | <i>heterospora</i> | 1902 | Malvaceae | <i>Abutilon</i> | <i>non-data</i> | Jamaica | 18.01668 | -76.7483 |
| PUR39887 | <i>Puccinia</i> | <i>heterospora</i> | 1926 | Malvaceae | <i>Bastardia</i> | <i>ziscosa</i> | Dominican Republic | 19.46947 | -70.7004 |
| PUR40201 | <i>Puccinia</i> | <i>cryptotaeniae</i> | 1903 | Apiaceae | <i>Cryptotaenia</i> | <i>canadensis</i> | USA | 43.30335 | -91.7896 |
| PUR40290 | <i>Puccinia</i> | <i>porphyrogenita</i> | 1906 | Cornaceae | <i>Cornus</i> | <i>canadensis</i> | Canada | 51.26667 | -117.517 |
| PUR40708 | <i>Puccinia</i> | <i>claviformis</i> | 1924 | Solanaceae | <i>Solanum</i> | <i>diversifolium</i> | Panama | 8.266667 | -82.2833 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|------------------------------|------|----------------|----------------------|-----------------------|--------------------|-----------|-------------|
| PUR40715 | <i>Puccinia</i> | <i>incondita</i> | 1919 | Solanaceae | <i>Solanum</i> | <i>triquetrum</i> | USA | 30.26715 | -97.74306 |
| PUR41403 | <i>Puccinia</i> | <i>spgazzinii</i> | 1916 | Asteraceae | <i>Mikania</i> | <i>scandens</i> | USA | 25.32345 | -80.477557 |
| PUR41406 | <i>Puccinia</i> | <i>spgazzinii</i> | 1917 | Asteraceae | <i>Mikania</i> | <i>cordifolia</i> | Guatemala | 14.62111 | -90.52694 |
| PUR41735 | <i>Puccinia</i> | <i>grindeliae</i> | 1911 | Asteraceae | <i>Aster</i> | <i>glaucoodes</i> | USA | 39.9486 | -105.56389 |
| PUR41914 | <i>Puccinia</i> | <i>grindeliae</i> | 1886 | Asteraceae | <i>Solidago</i> | <i>nemoralis</i> | USA | 41.943814 | -87.659081 |
| PUR41975 | <i>Puccinia</i> | <i>grindeliae</i> | 1903 | Asteraceae | <i>Lygodesmia</i> | <i>juncea</i> | USA | 39.439005 | -99.260986 |
| PUR42018 | <i>Puccinia</i> | <i>silphii</i> | 1884 | Asteraceae | <i>Silphium</i> | <i>integrifolia</i> | USA | 40.313856 | -89.169357 |
| PUR42239 | <i>Puccinia</i> | <i>schistocarphae</i> | 1916 | Asteraceae | <i>Schistocarpha</i> | <i>platyphylla</i> | Guatemala | 14.56111 | -90.73444 |
| PUR42320 | <i>Puccinia</i> | <i>recedens</i> | 1917 | Asteraceae | <i>Senecio</i> | <i>aureus</i> | USA | 42.270872 | 42.270872 |
| PUR42324 | <i>Puccinia</i> | <i>recedens</i> | 1923 | Asteraceae | <i>Senecio</i> | <i>aureus</i> | USA | 41.994866 | -73.440369 |
| PUR42475 | <i>Puccinia</i> | <i>antirrhini</i> | 1922 | Plantaginaceae | <i>Antirrhinum</i> | <i>majus</i> | Bermuda | 32.26583 | -64.8072 |
| PUR42537 | <i>Puccinia</i> | <i>fallax</i> | 1913 | Rubiaceae | <i>Psychotria</i> | <i>patens</i> | Puerto Rico | 18.00701 | -66.6151 |
| PUR42577 | <i>Puccinia</i> | <i>nuda</i> | 1894 | Asteraceae | <i>Hemizonia</i> | <i>clevelandi</i> | USA | 38.440468 | -122.714431 |
| PUR42591 | <i>Puccinia</i> | <i>invelata</i> | 1920 | Asteraceae | <i>Parthenice</i> | <i>mollis</i> | USA | 31.7712 | -111.59567 |
| PUR42620 | <i>Puccinia</i> | <i>electrae</i> | 1915 | Cordiaceae | <i>Coreopsis</i> | <i>mutica</i> | Guatemala | 14.621111 | -90.526944 |
| PUR42627 | <i>Puccinia</i> | <i>ioisthephares</i> | 1903 | Asteraceae | <i>Iostephane</i> | <i>heterophylla</i> | Mexico | 18.93373 | -99.22849 |
| PUR42677 | <i>Puccinia</i> | <i>trixitis</i> | 1915 | Asteraceae | <i>Trixis</i> | <i>radialis</i> | Guatemala | 14.770436 | -91.279419 |
| PUR43231 | <i>Puccinia</i> | <i>kansensis</i> | 1901 | Solanaceae | <i>Physalis</i> | <i>heterophylla</i> | USA | 40.41261 | -86.8935 |
| PUR4491 | <i>Puccinia</i> | <i>lygodii</i> | 1922 | Lygodiaceae | <i>Lygodium</i> | <i>venustum</i> | El Salvador | 13.70861 | -89.2031 |
| PUR45459 | <i>Puccinia</i> | <i>dolosa</i> | 1914 | Poaceae | <i>Paspalum</i> | <i>candidum</i> | Costa Rica | 9.858758 | -84.0923 |
| PUR45481 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Pascopyrum</i> | <i>smithii</i> | USA | 39.74167 | -104.957 |
| PUR45521 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Muhlenbergia</i> | <i>mexicana</i> | USA | 38.95171 | -92.3341 |
| PUR45584 | <i>Puccinia</i> | <i>subnitens</i> | 1925 | Poaceae | <i>Distichlis</i> | <i>stricta</i> | Canada | 55.62445 | -114.94 |
| PUR45603 | <i>Puccinia</i> | <i>hordei</i> | 1933 | Poaceae | <i>Holcus</i> | <i>lanatus</i> | USA | 40.78538 | -123.881 |
| PUR45722 | <i>Puccinia</i> | <i>brachypodii</i> | 1921 | Berberidaceae | <i>Berberis</i> | <i>fendleri</i> | USA | 40.40442 | -86.8677 |
| PUR45749 | <i>Puccinia</i> | <i>paradoxa</i> | 1949 | Poaceae | <i>Melica</i> | <i>smithii</i> | USA | 46.34772 | -86.929 |
| PUR45920 | <i>Puccinia</i> | <i>striiformis</i> | 1931 | Poaceae | <i>Elymus</i> | <i>albicans</i> | Canada | 53.55 | -113.5 |
| PUR45947 | <i>Puccinia</i> | <i>hordei</i> | 1934 | Poaceae | <i>Hordeum</i> | <i>brachyantherum</i> | USA | 40.86652 | -124.083 |
| PUR45950 | <i>Puccinia</i> | <i>hordei</i> | 1918 | Poaceae | <i>Hordeum</i> | <i>vulgare</i> | USA | 40.04512 | -86.9 |
| PUR46070 | <i>Puccinia</i> | <i>atrofusca</i> | 1935 | Cyperaceae | <i>Carex</i> | <i>rossii</i> | USA | 41.90872 | -124.16 |
| PUR46199 | <i>Puccinia</i> | <i>sheperdiae</i> | 1925 | Elacagnaceae | <i>Elaeagnus</i> | <i>angustifolia</i> | Canada | 49.61667 | -105.983 |
| PUR46377 | <i>Puccinia</i> | <i>caricina</i> | 1930 | Primulaceae | <i>Trientalis</i> | <i>americana</i> | USA | 43.29667 | -87.9876 |
| PUR46490 | <i>Puccinia</i> | <i>lapathicola</i> | 1929 | Polygonaceae | <i>Rumex</i> | <i>altissimus</i> | USA | 38.87918 | -99.3268 |
| PUR46621 | <i>Puccinia</i> | <i>jalapensis</i> | 1932 | Convolvulaceae | <i>Ipomoea</i> | <i>mutabilis</i> | Mexico | 21.34565 | -97.8385 |
| PUR46662 | <i>Puccinia</i> | <i>ruelliae</i> | 1931 | Acanthaceae | <i>Ruellia</i> | <i>domingensis</i> | Dominican Republic | 18.87595 | -70.1802 |
| PUR46812 | <i>Puccinia</i> | <i>effusa</i> | 1934 | Violaceae | <i>Viola</i> | <i>cuneata</i> | USA | 40.78538 | -123.881 |
| PUR46907 | <i>Puccinia</i> | <i>tanacetii</i> | 1933 | Asteraceae | <i>Chrysanthemum</i> | <i>morifolium</i> | USA | 35.099146 | 35.099146 |
| PUR46915 | <i>Puccinia</i> | <i>artemisiae-keiskeanae</i> | 1930 | Asteraceae | <i>Artemisia</i> | <i>frigida</i> | Canada | 49.616667 | -105.983333 |
| PUR47081 | <i>Puccinia</i> | <i>heterospora</i> | 1930 | Malvaceae | <i>Abutilon</i> | <i>albutiloides</i> | Dominican Republic | 19.47055 | -70.6939 |
| PUR47127 | <i>Puccinia</i> | <i>porphyrogenitis</i> | 1921 | Cornaceae | <i>Cornus</i> | <i>canadensis</i> | USA | 44.36606 | -88.933 |
| PUR47151 | <i>Puccinia</i> | <i>pittieriana</i> | 1930 | Solanaceae | <i>Solanum</i> | <i>demissum</i> | Mexico | 20.21944 | -99.7667 |
| PUR47227 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1931 | Asteraceae | <i>Krigia</i> | <i>biflora</i> | USA | 30.30583 | -89.31 |
| PUR47242 | <i>Puccinia</i> | <i>gnaphaliicola</i> | 1935 | Asteraceae | <i>Facelis</i> | <i>retusa</i> | USA | 32.429414 | -85.695618 |
| PUR47319 | <i>Puccinia</i> | <i>collinsiae</i> | 1932 | Plantaginaceae | <i>Collinsia</i> | <i>bicolor</i> | USA | 40.06998 | -123.82 |
| PUR47878 | <i>Puccinia</i> | <i>mesomajalis</i> | 1936 | Liliaceae | <i>Clintonia</i> | <i>borealis</i> | USA | 36.09916 | -81.8476 |
| PUR48117 | <i>Puccinia</i> | <i>levis</i> | 1938 | Poaceae | <i>Paspalum</i> | <i>urvillei</i> | USA | 27.521427 | -82.575752 |
| PUR48275 | <i>Puccinia</i> | <i>piperi</i> | 1936 | Poaceae | <i>Vulpia</i> | <i>merostachys</i> | USA | 40.78538 | -123.881 |
| PUR48553 | <i>Puccinia</i> | <i>blasdalei</i> | 1938 | Amaryllidaceae | <i>Allium</i> | <i>acuminatum</i> | USA | 40.45717 | -111.914 |
| PUR48648 | <i>Puccinia</i> | <i>palicoureae</i> | 1936 | Rubiaceae | <i>Palicourea</i> | <i>triphylla</i> | Honduras | 17.15605 | -89.0602 |
| PUR48680 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1936 | Asteraceae | <i>Elephantopus</i> | <i>spicatus</i> | Belize | 17.154677 | -89.059175 |
| PUR48757 | <i>Puccinia</i> | <i>emaculata</i> | 1886 | Poaceae | <i>Panicum</i> | <i>capillare</i> | USA | 40.11027 | -88.1593 |
| PUR48760 | <i>Puccinia</i> | <i>andropogonis</i> | 1887 | Poaceae | <i>Andropogon</i> | <i>acoparius</i> | USA | 40.04444 | -89.0332 |
| PUR48764 | <i>Puccinia</i> | <i>schedonnardi</i> | 1885 | Poaceae | <i>Muhlenbergia</i> | <i>mexicana</i> | USA | 40.11027 | -88.1593 |
| PUR48912 | <i>Puccinia</i> | <i>levellei</i> | 1939 | Geraniaceae | <i>Geranium</i> | <i>fremontii</i> | USA | 44.11978 | -105.754 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-----------------------|------|-----------------|------------------------|-----------------------|------------|-----------|-------------|
| PUR48937 | <i>Puccinia</i> | <i>pygmaea</i> | 1939 | Poaceae | <i>Agrostis</i> | <i>exarata</i> | USA | 39.728494 | -121.837478 |
| PUR48983 | <i>Puccinia</i> | <i>baccharidis</i> | 1939 | Asteraceae | <i>Baccharis</i> | <i>glutinosa</i> | Guatemala | 14.56111 | -90.73444 |
| PUR49002 | <i>Puccinia</i> | <i>aegopogonis</i> | 1939 | Asteraceae | <i>Eupatorium</i> | <i>ligustrinum</i> | Guatemala | 15.59356 | -90.217 |
| PUR49018 | <i>Puccinia</i> | <i>seorsa</i> | 1939 | Asteraceae | <i>Piptocarpha</i> | <i>chontalensis</i> | Guatemala | 15.466667 | -88.833333 |
| PUR49026 | <i>Puccinia</i> | <i>idonea</i> | 1939 | Asteraceae | <i>Vernonia</i> | <i>heydeana</i> | Guatemala | 14.596667 | -90.754722 |
| PUR49065 | <i>Puccinia</i> | <i>gilva</i> | 1939 | Heliotropiaceae | <i>Heliotropium</i> | <i>physocalycinum</i> | Guatemala | 14.56111 | -90.7344 |
| PUR49259 | <i>Puccinia</i> | <i>vertisepta</i> | 1939 | Lamiaceae | <i>Salvia</i> | <i>pinguifolia</i> | USA | 33.26856 | -109.296 |
| PUR49300 | <i>Puccinia</i> | <i>recondita</i> | 1936 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Guatemala | 14.85852 | -91.96312 |
| PUR49924 | <i>Puccinia</i> | <i>atrofusca</i> | 1923 | Cyperaceae | <i>Carex</i> | <i>non-data</i> | USA | 41.25571 | -122.139 |
| PUR49940 | <i>Puccinia</i> | <i>andropogonis</i> | 1941 | Poaceae | <i>Andropogon</i> | <i>gerardi</i> | USA | 42.49143 | -85.3845 |
| PUR49942 | <i>Puccinia</i> | <i>exasperans</i> | 1941 | Poaceae | <i>Bouteloua</i> | <i>curtipendula</i> | USA | 40.8 | -96.667 |
| PUR49994 | <i>Puccinia</i> | <i>spiegazziniana</i> | 1940 | Asteraceae | <i>Eleutheranthera</i> | <i>rudelaris</i> | Guatemala | 14.074167 | -90.416667 |
| PUR50023 | <i>Puccinia</i> | <i>senecionicola</i> | 1940 | Asteraceae | <i>Senecio</i> | <i>acutangulus</i> | Guatemala | 15.666667 | -91.583333 |
| PUR50062 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1939 | Asteraceae | <i>Calea</i> | <i>integrifolia</i> | Guatemala | 14.640002 | -90.918604 |
| PUR50117 | <i>Puccinia</i> | <i>calcitrapae</i> | 1940 | Asteraceae | <i>Cirsium</i> | <i>subcoriaceum</i> | Guatemala | 14.640002 | 14.640002 |
| PUR50118 | <i>Puccinia</i> | <i>hieracii</i> | 1941 | Asteraceae | <i>Hieracium</i> | <i>abscissum</i> | Guatemala | 14.74122 | -91.66394 |
| PUR50130 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1941 | Asteraceae | <i>Aster</i> | <i>bullatus</i> | Guatemala | 15.593558 | -90.217024 |
| PUR50185 | <i>Puccinia</i> | <i>delicatula</i> | 1940 | Lamiaceae | <i>Salvia</i> | <i>cinnabarina</i> | Guatemala | 14.64 | -90.9186 |
| PUR50227 | <i>Puccinia</i> | <i>lithospermi</i> | 1940 | Convolvulaceae | <i>Evolvulus</i> | <i>alsinoides</i> | Guatemala | 14.74122 | -91.6639 |
| PUR50280 | <i>Puccinia</i> | <i>levata</i> | 1940 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Guatemala | 14.61643 | -89.843 |
| PUR50449 | <i>Puccinia</i> | <i>flavo-virens</i> | 1940 | Cyperaceae | <i>Cyperus</i> | <i>odoratus</i> | Guatemala | 14.83333 | -91.9667 |
| PUR50485 | <i>Puccinia</i> | <i>polysora</i> | 1940 | Poaceae | <i>Tripsacum</i> | <i>dactyloides</i> | Guatemala | 14.64 | -90.9186 |
| PUR50521 | <i>Puccinia</i> | <i>coronata</i> | 1941 | Poaceae | <i>Agrostis</i> | <i>castellana</i> | USA | 37.86835 | -122.285 |
| PUR50723 | <i>Puccinia</i> | <i>purpureae</i> | 1942 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | USA | 39.92201 | -85.3756 |
| PUR50729 | <i>Puccinia</i> | <i>parkeriae</i> | 1935 | Grossulariaceae | <i>Grossularia</i> | <i>divaricatum</i> | USA | 46.99852 | -121.528 |
| PUR50753 | <i>Puccinia</i> | <i>virgaureae</i> | 1942 | Asteraceae | <i>Solidago</i> | <i>graminifolia</i> | USA | 44.348968 | -68.344184 |
| PUR50848 | <i>Puccinia</i> | <i>hieracii</i> | 1932 | Asteraceae | <i>Lactuca</i> | <i>scoleri</i> | USA | 11.502437 | -117.541327 |
| PUR50994 | <i>Puccinia</i> | <i>cladii</i> | 1944 | Cyperaceae | <i>Cladium</i> | <i>jamaicense</i> | USA | 29.025819 | -80.972 |
| PUR51118 | <i>Puccinia</i> | <i>abrupta</i> | 1923 | Asteraceae | <i>Verbesina</i> | <i>costaricensis</i> | Panama | 9.116667 | -79.766667 |
| PUR51193 | <i>Puccinia</i> | <i>adoxae</i> | 1944 | Adoxaceae | <i>Adoxa</i> | <i>moschatellina</i> | USA | 61.59898 | -149.117 |
| PUR51244 | <i>Puccinia</i> | <i>investita</i> | 1947 | Asteraceae | <i>Achyrocline</i> | <i>deflexa</i> | Honduras | 14.054836 | -86.85 |
| PUR51367 | <i>Puccinia</i> | <i>irregularis</i> | 1947 | Asteraceae | <i>Verbesina</i> | <i>agricolanum</i> | Honduras | 14.016667 | -87.033333 |
| PUR51437 | <i>Puccinia</i> | <i>chaetochloae</i> | 1947 | Poaceae | <i>Ixophorus</i> | <i>unisetus</i> | Honduras | 15.43333 | -87.9167 |
| PUR51556 | <i>Puccinia</i> | <i>eatoniae</i> | 1935 | Boraginaceae | <i>Myosotis</i> | <i>virginica</i> | USA | 35.99403 | -78.89862 |
| PUR51576 | <i>Puccinia</i> | <i>dioicae</i> | 1936 | Cyperaceae | <i>Dulichium</i> | <i>arundinaceum</i> | USA | 43.75702 | -71.6881 |
| PUR51738 | <i>Puccinia</i> | <i>hyptidis</i> | 1942 | Lamiaceae | <i>Hyptis</i> | <i>radiata</i> | USA | 29.682428 | -82.360265 |
| PUR51740 | <i>Puccinia</i> | <i>raunkaerii</i> | 1946 | Petiveriaceae | <i>Rivinia</i> | <i>humilia</i> | USA | 26.81685 | -80.3436 |
| PUR51772 | <i>Puccinia</i> | <i>scandica</i> | 1941 | Onagraceae | <i>Epilobium</i> | <i>alpinum</i> | Canada | 51.65402 | -116.272 |
| PUR51869 | <i>Puccinia</i> | <i>windsoriae</i> | 1948 | Rutaceae | <i>Ptelea</i> | <i>trifoliata</i> | USA | 36.52977 | -87.3595 |
| PUR51915 | <i>Puccinia</i> | <i>vertisepta</i> | 1878 | Lamiaceae | <i>Salvia</i> | <i>ugla</i> | Mexico | 22.70848 | -100.347 |
| PUR51997 | <i>Puccinia</i> | <i>dioicae</i> | 1949 | Cyperaceae | <i>Carex</i> | <i>deflexa</i> | Canada | 63.66104 | -128.65 |
| PUR52098 | <i>Puccinia</i> | <i>menthae</i> | 1948 | Lamiaceae | <i>Calamintha</i> | <i>macrostema</i> | Mexico | 19.30105 | -99.2997 |
| PUR52168 | <i>Puccinia</i> | <i>helianthellae</i> | 1942 | Asteraceae | <i>Helianthella</i> | <i>californica</i> | USA | 39.677908 | -120.656234 |
| PUR52228 | <i>Puccinia</i> | <i>oblecta</i> | 1945 | Cyperaceae | <i>Bolboschoenus</i> | <i>fluvialis</i> | USA | 38.910455 | -122.610261 |
| PUR52252 | <i>Puccinia</i> | <i>obliqua</i> | 1951 | Apocynaceae | <i>Cynanchum</i> | <i>parviflorum</i> | Trinidad | 10.5 | -61.25 |
| PUR52253 | <i>Puccinia</i> | <i>arthurella</i> | 1951 | Asteraceae | <i>Lactuca</i> | <i>intybacea</i> | Trinidad | 10.688447 | -61.754619 |
| PUR52254 | <i>Puccinia</i> | <i>substriata</i> | 1957 | Poaceae | <i>Paspalum</i> | <i>coryphaeum</i> | Trinidad | 10.5 | -61.25 |
| PUR52255 | <i>Puccinia</i> | <i>subcoronata</i> | 1951 | Cyperaceae | <i>Cyperus</i> | <i>diffusus</i> | Trinidad | 10.5 | -61.25 |
| PUR52256 | <i>Puccinia</i> | <i>levis</i> | 1951 | Poaceae | <i>Thrasya</i> | <i>paspaloides</i> | Trinidad | 10.5 | -61.25 |
| PUR52257 | <i>Puccinia</i> | <i>lithospermi</i> | 1951 | Convolvulaceae | <i>Evolvulus</i> | <i>tenuis</i> | Trinidad | 10.688447 | -61.754619 |
| PUR52417 | <i>Puccinia</i> | <i>hieracii</i> | 1950 | Asteraceae | <i>Lygodesmia</i> | <i>juncea</i> | USA | 43.34526 | -109.630434 |
| PUR52502 | <i>Puccinia</i> | <i>heliconiae</i> | 1950 | Strelitziaceae | <i>Strelitzia</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PUR52516 | <i>Puccinia</i> | <i>oxidalis</i> | 1939 | Berberidaceae | <i>Berberis</i> | <i>opalicis</i> | Mexico | 25.66349 | -99.4925 |
| PUR52667 | <i>Puccinia</i> | <i>huberi</i> | 1949 | Poaceae | <i>Panicum</i> | <i>trichoides</i> | Costa Rica | 9.904645 | -83.8028 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--------------------------|------|-----------------|----------------------|-----------------------|----------|------------|-------------|
| PUR52706 | <i>Puccinia</i> | <i>subcoronata</i> | 1951 | Cyperaceae | <i>Cyperus</i> | <i>diffusus</i> | Trinidad | 10.5 | -61.25 |
| PUR52875 | <i>Puccinia</i> | <i>ellisii</i> | 1950 | Apiaceae | <i>Angelica</i> | <i>hendersoni</i> | USA | 39.33655 | -123.301 |
| PUR52879 | <i>Puccinia</i> | <i>intermixta</i> | 1950 | Asteraceae | <i>Iva</i> | <i>axillaris</i> | USA | 37.916576 | -122.381628 |
| PUR53091 | <i>Puccinia</i> | <i>caleae</i> | 1958 | Asteraceae | <i>Calea</i> | <i>acuminata</i> | Honduras | 14.040954 | -86.92328 |
| PUR53155 | <i>Puccinia</i> | <i>volkartiana</i> | 1949 | Primulaceae | <i>Androsace</i> | <i>chamaejasme</i> | Canada | 64.05223 | -139.45 |
| PUR53175 | <i>Puccinia</i> | <i>dioicae</i> | 1950 | Cyperaceae | <i>Carex</i> | <i>abdica</i> | Canada | 53.33333 | -60.4167 |
| PUR53178 | <i>Puccinia</i> | <i>cruciferarum</i> | 1951 | Brassicaceae | <i>Cardamine</i> | <i>bellidifolia</i> | USA | 64.29268 | -151.721 |
| PUR53217 | <i>Puccinia</i> | <i>obscura</i> | 1953 | Juncaceae | <i>Luzula</i> | <i>acuminata</i> | USA | 36.53022 | -82.3839 |
| PUR53221 | <i>Puccinia</i> | <i>tessariae</i> | 1923 | Asteraceae | <i>Tessaria</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PUR53337 | <i>Puccinia</i> | <i>deformata</i> | 1903 | Poaceae | <i>Olyra</i> | <i>latifolia</i> | Cuba | 23.09025 | -82.3787 |
| PUR53406 | <i>Puccinia</i> | <i>chelonis</i> | 1948 | Plantaginaceae | <i>Chelone</i> | <i>nemorosa</i> | USA | 41.37727 | -123.009 |
| PUR53566 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1935 | Polygonaceae | <i>Polygonum</i> | <i>acre</i> | USA | 40.94319 | -123.633 |
| PUR53606 | <i>Puccinia</i> | <i>ornatula</i> | 1932 | Violaceae | <i>Viola</i> | <i>glabella</i> | USA | 40.86436 | -124.167 |
| PUR53638 | <i>Puccinia</i> | <i>oenotherae</i> | 1940 | Onagraceae | <i>Boisduvalia</i> | <i>brevipes</i> | USA | 40.78538 | -123.881 |
| PUR53908 | <i>Puccinia</i> | <i>punctiformis</i> | 1924 | Asteraceae | <i>Cirsium</i> | <i>arvense</i> | USA | 40.866517 | -124.08284 |
| PUR54369 | <i>Puccinia</i> | <i>graminis</i> | 1934 | Poaceae | <i>Avena</i> | <i>barbata</i> | USA | 40.473 | -123.96 |
| PUR54576 | <i>Puccinia</i> | <i>canadensis</i> | 1954 | Violaceae | <i>Viola</i> | <i>orbiculata</i> | Canada | 49.74328 | -124.275 |
| PUR54608 | <i>Puccinia</i> | <i>graminis</i> | 1954 | Poaceae | <i>Elymus</i> | <i>repens</i> | USA | 40.3936 | -105.495 |
| PUR54609 | <i>Puccinia</i> | <i>graminis</i> | 1954 | Poaceae | <i>Elymus</i> | <i>elymoides</i> | USA | 40.3936 | -105.495 |
| PUR54701 | <i>Puccinia</i> | <i>epilobii</i> | 1951 | Onagraceae | <i>Epilobium</i> | <i>palustre</i> | Canada | 51.37092 | -55.5908 |
| PUR54787 | <i>Puccinia</i> | <i>areolata</i> | 1933 | Ranunculaceae | <i>Caltha</i> | <i>biflora</i> | USA | 41.22717 | -123.244 |
| PUR54812 | <i>Puccinia</i> | <i>recondita</i> | 1925 | Poaceae | <i>Hordeum</i> | <i>brachyantherum</i> | USA | 37.52744 | -122.513 |
| PUR54820 | <i>Puccinia</i> | <i>ammophilae</i> | 1925 | Poaceae | <i>Ammophila</i> | <i>arenaria</i> | USA | 41.755948 | -124.201747 |
| PUR54833 | <i>Puccinia</i> | <i>procera</i> | 1918 | Hydrophyllaceae | <i>Phacelia</i> | <i>non-data</i> | USA | 39.92788 | -120.819 |
| PUR54839 | <i>Puccinia</i> | <i>melanconioides</i> | 1923 | Primulaceae | <i>Dodecatheon</i> | <i>jeffreyi</i> | USA | 40.73125 | -123.506 |
| PUR55445 | <i>Puccinia</i> | <i>hieracii</i> | 1956 | Asteraceae | <i>Agoseris</i> | <i>glauca</i> | USA | 40.484457 | -106.829193 |
| PUR55501 | <i>Puccinia</i> | <i>grindeliae</i> | 1956 | Asteraceae | <i>Chrysopsis</i> | <i>bakeri</i> | USA | 38.95527 | -105.32388 |
| PUR55871 | <i>Puccinia</i> | <i>eatoniae</i> | 1958 | Poaceae | <i>Sphenopholis</i> | <i>intermedia</i> | USA | 40.756257 | -86.876648 |
| PUR55912 | <i>Puccinia</i> | <i>subnitens</i> | 1955 | Poaceae | <i>Distichlis</i> | <i>stricta</i> | USA | 47.830814 | -114.350708 |
| PUR55971 | <i>Puccinia</i> | <i>biporula</i> | 1957 | Lamiaceae | <i>Salvia</i> | <i>lemmonii</i> | USA | 31.82933 | -109.305 |
| PUR56015 | <i>Puccinia</i> | <i>cacabata</i> | 1954 | Poaceae | <i>Bouteloua</i> | <i>aristidoides</i> | Mexico | 28.08277 | -105.433 |
| PUR56066 | <i>Puccinia</i> | <i>dioicae</i> | 1957 | Asteraceae | <i>Artemisia</i> | <i>canuthii</i> | USA | 34.90835 | -111.463 |
| PUR56106 | <i>Puccinia</i> | <i>abnormis</i> | 1954 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | USA | 42.39142 | -94.0824 |
| PUR56111 | <i>Puccinia</i> | <i>gigantea</i> | 1954 | Onagraceae | <i>Epilobium</i> | <i>angustifolium</i> | Canada | 49.74328 | -124.275 |
| PUR56138 | <i>Puccinia</i> | <i>infuscans</i> | 1955 | Poaceae | <i>Andropogon</i> | <i>sp.</i> | Mexico | 24.05731 | -104.644 |
| PUR56139 | <i>Puccinia</i> | <i>kuhniae</i> | 1959 | Asteraceae | <i>Kuhnia</i> | <i>eupatorioides</i> | USA | 41.673324 | -87.007797 |
| PUR56162 | <i>Puccinia</i> | <i>marylandica</i> | 1959 | Apiaceae | <i>Sanicula</i> | <i>canadensis</i> | USA | 39.144601 | -86.232574 |
| PUR56188 | <i>Puccinia</i> | <i>neocoronata</i> | 1957 | Poaceae | <i>Piptochaetium</i> | <i>fimbriatum</i> | USA | 31.85929 | -109.29 |
| PUR56214 | <i>Puccinia</i> | <i>purpureae</i> | 1957 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | USA | 40.47107 | -86.9917 |
| PUR56253 | <i>Puccinia</i> | <i>recondita</i> | 1958 | Poaceae | <i>Agrostis</i> | <i>perennans</i> | USA | 39.381709 | -86.736572 |
| PUR56259 | <i>Puccinia</i> | <i>recondita</i> | 1957 | Poaceae | <i>Bromus</i> | <i>pacificus</i> | USA | 61.7025 | -157.17 |
| PUR56293 | <i>Puccinia</i> | <i>recondita</i> | 1956 | Poaceae | <i>Leymus</i> | <i>cinerus</i> | USA | 40.58526 | -105.084 |
| PUR56328 | <i>Puccinia</i> | <i>redfieldiae</i> | 1957 | Onagraceae | <i>Oenothera</i> | <i>latifolia</i> | USA | 40.62545 | -103.207 |
| PUR56329 | <i>Puccinia</i> | <i>redfieldiae</i> | 1958 | Poaceae | <i>Redfieldia</i> | <i>flexuosa</i> | USA | 40.16744 | -104.27734 |
| PUR56336 | <i>Puccinia</i> | <i>stipae</i> | 1957 | Poaceae | <i>Hesperostipa</i> | <i>comata</i> | USA | 36.094222 | -112.12323 |
| PUR56890 | <i>Puccinia</i> | <i>graminis</i> | 1958 | Poaceae | <i>Phleum</i> | <i>pratense</i> | USA | 41.79503 | -88.9415 |
| PUR56918 | <i>Puccinia</i> | <i>sorghii</i> | 1958 | Poaceae | <i>Zea</i> | <i>mays</i> | USA | 41.79503 | -88.9415 |
| PUR56975 | <i>Puccinia</i> | <i>graminis</i> | 1941 | Poaceae | <i>Melica</i> | <i>aristata</i> | USA | 38.54491 | -121.741 |
| PUR56993 | <i>Puccinia</i> | <i>graminis</i> | 1958 | Poaceae | <i>Tuctoria</i> | <i>greenei</i> | USA | 37.22229 | -120.66 |
| PUR57282 | <i>Puccinia</i> | <i>coronata</i> | 1960 | Poaceae | <i>Bromus</i> | <i>anomalus</i> | USA | 43.54494 | -110.524 |
| PUR57385 | <i>Puccinia</i> | <i>boutelouae</i> | 1903 | Poaceae | <i>Bouteloua</i> | <i>curtipendula</i> | Mexico | 17.850049 | -100.362588 |
| PUR57394 | <i>Puccinia</i> | <i>invelata</i> | 1899 | Asteraceae | <i>Verbesina</i> | <i>diversifolia</i> | Mexico | 16.97274 | -96.54785 |
| PUR57747 | <i>Puccinia</i> | <i>coronata</i> | 1961 | Poaceae | <i>Elymus</i> | <i>canadensis</i> | USA | 43.05349 | -89.4035 |
| PUR57803 | <i>Puccinia</i> | <i>ribis</i> | 1959 | Grossulariaceae | <i>Ribes</i> | <i>glandulosum</i> | Canada | 43.99346 | -80.6392 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-----------------------|------|----------------|----------------------|----------------------|-----------|------------|-------------|
| PUR57811 | <i>Puccinia</i> | <i>sporoboli</i> | 1960 | Poaceae | <i>Calamovilfa</i> | <i>longifolia</i> | USA | 42.42209 | -87.875 |
| PUR57982 | <i>Puccinia</i> | <i>mexicensis</i> | 1938 | Poaceae | <i>Stipa</i> | <i>constricta</i> | Mexico | 19.38333 | -99.1833 |
| PUR58182 | <i>Puccinia</i> | <i>dietelii</i> | 1961 | Euphorbiaceae | <i>Acalypha</i> | <i>neomexicana</i> | USA | 25.90173 | -97.4984 |
| PUR58263 | <i>Puccinia</i> | <i>paradoxapoda</i> | 1962 | Solanaceae | <i>Lycium</i> | <i>carolinianum</i> | USA | 25.97058 | -97.245 |
| PUR58543 | <i>Puccinia</i> | <i>esclavensis</i> | 1961 | Poaceae | <i>Digitaria</i> | <i>californica</i> | USA | 31.78731 | -109.416 |
| PUR58549 | <i>Puccinia</i> | <i>stenotaphri</i> | 1957 | Poaceae | <i>Stenotaphrum</i> | <i>secundatum</i> | USA | 26.862136 | -80.623197 |
| PUR58615 | <i>Puccinia</i> | <i>tanacetii</i> | 1962 | Asteraceae | <i>Chrysanthemum</i> | <i>morifolium</i> | Argentina | -35.834903 | -64.357422 |
| PUR58648 | <i>Puccinia</i> | <i>recondita</i> | 1963 | Poaceae | <i>Bromus</i> | <i>ciliatus</i> | USA | 42.69117 | -89.6589 |
| PUR58685 | <i>Puccinia</i> | <i>esclavensis</i> | 1963 | Poaceae | <i>Digitaria</i> | <i>californica</i> | Mexico | 28.27397 | -105.47 |
| PUR58706 | <i>Puccinia</i> | <i>arthuri</i> | 1948 | Poaceae | <i>Pennisetum</i> | <i>crinitum</i> | Mexico | 24.05731 | -104.644 |
| PUR58718 | <i>Puccinia</i> | <i>setariae</i> | 1898 | Poaceae | <i>Setaria</i> | <i>parviflora</i> | Mexico | 19.4425 | -99.253333 |
| PUR58772 | <i>Puccinia</i> | <i>scleropogonis</i> | 1963 | Solanaceae | <i>Chamaesaracha</i> | <i>sordida</i> | USA | 29.61509 | -103.138 |
| PUR58822 | <i>Puccinia</i> | <i>esclavensis</i> | 1961 | Poaceae | <i>Zuloagaea</i> | <i>bulbosa</i> | USA | 31.6962 | -110.848 |
| PUR58861 | <i>Puccinia</i> | <i>cynodontis</i> | 1961 | Poaceae | <i>Cynodon</i> | <i>dactylon</i> | USA | 32.9814 | -114.475 |
| PUR58989 | <i>Puccinia</i> | <i>schedonnardi</i> | 1961 | Poaceae | <i>Muhlenbergia</i> | <i>arenicola</i> | USA | 31.83537 | -109.031 |
| PUR59039 | <i>Puccinia</i> | <i>gallula</i> | 1961 | Asteraceae | <i>Dyssodia</i> | <i>pentachaeta</i> | USA | 31.923786 | -109.177521 |
| PUR59042 | <i>Puccinia</i> | <i>lithospermi</i> | 1961 | Convolvulaceae | <i>Evolvulus</i> | <i>alsinoides</i> | USA | 31.67854 | -110.656 |
| PUR59043 | <i>Puccinia</i> | <i>mutabilis</i> | 1961 | Amoryllidaceae | <i>Allium</i> | <i>acuminatum</i> | USA | 32.70024 | -109.866 |
| PUR59061 | <i>Puccinia</i> | <i>baccharidis</i> | 1961 | Asteraceae | <i>Baccharis</i> | <i>glutinosa</i> | USA | 33.01402 | -110.74745 |
| PUR59371 | <i>Puccinia</i> | <i>unica</i> | 1963 | Poaceae | <i>Aristida</i> | <i>divaricata</i> | Mexico | 28.410332 | -106.249246 |
| PUR59432 | <i>Puccinia</i> | <i>substriata</i> | 1963 | Solanaceae | <i>Nicotiana</i> | <i>tabacum</i> | Honduras | 14.712 | -86.808 |
| PUR59510 | <i>Puccinia</i> | <i>graminis</i> | 1952 | Poaceae | <i>Vulpia</i> | <i>bromoides</i> | Venezuela | 8.533018 | -71.24585 |
| PUR59511 | <i>Puccinia</i> | <i>graminis</i> | 1945 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Ecuador | -2.714601 | -78.888847 |
| PUR59512 | <i>Puccinia</i> | <i>graminis</i> | 1952 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Ecuador | -2.714601 | -78.888847 |
| PUR59524 | <i>Puccinia</i> | <i>chloridis</i> | 1923 | Poaceae | <i>Trichloris</i> | <i>pluriflora</i> | Bolivia | -15.731265 | -64.529297 |
| PUR59525 | <i>Puccinia</i> | <i>chloridis</i> | 1943 | Poaceae | <i>Trichloris</i> | <i>pluriflora</i> | Argentina | -28.048269 | -63.990666 |
| PUR59526 | <i>Puccinia</i> | <i>chloridis</i> | 1929 | Poaceae | <i>Trichloris</i> | <i>pluriflora</i> | Argentina | -24.785299 | -65.424469 |
| PUR59587 | <i>Puccinia</i> | <i>anthephorae</i> | 1904 | Poaceae | <i>Anthephora</i> | <i>hermaphrodita</i> | Guatemala | 14.472031 | -90.63143 |
| PUR59697 | <i>Puccinia</i> | <i>graminis</i> | 1956 | Poaceae | <i>Poa</i> | <i>arachnifera</i> | USA | 37.42411 | -122.166 |
| PUR59720 | <i>Puccinia</i> | <i>aristidae</i> | 1963 | Poaceae | <i>Aristida</i> | <i>adscensionis</i> | Mexico | 25.41933 | -101.162 |
| PUR59791 | <i>Puccinia</i> | <i>coelopleuri</i> | 1956 | Apiaceae | <i>Angelica</i> | <i>lucida</i> | Canada | 49.74328 | -124.275 |
| PUR59829 | <i>Puccinia</i> | <i>zoysiae</i> | 1965 | Poaceae | <i>Zoysia</i> | <i>japonica</i> | USA | 29.65139 | -82.325 |
| PUR59861 | <i>Puccinia</i> | <i>enceliae</i> | 1963 | Asteraceae | <i>Simsia</i> | <i>calva</i> | USA | 29.974046 | -104.019072 |
| PUR59901 | <i>Puccinia</i> | <i>schedonnardi</i> | 1961 | Poaceae | <i>Lycurus</i> | <i>phleoides</i> | USA | 32.11591 | -110.824 |
| PUR60026 | <i>Puccinia</i> | <i>turgidipes</i> | 1938 | Asteraceae | <i>Viguiera</i> | <i>deltoides</i> | Mexico | 30.506255 | -115.114258 |
| PUR60268 | <i>Puccinia</i> | <i>pygmaea</i> | 1963 | Poaceae | <i>Calamagrostis</i> | <i>sp.</i> | Mexico | 23.96135 | -104.93496 |
| PUR60278 | <i>Puccinia</i> | <i>villfae</i> | 1963 | Poaceae | <i>Sporobolus</i> | <i>buckleyi</i> | Mexico | 24.80421 | -99.7551 |
| PUR60362 | <i>Puccinia</i> | <i>subtilipes</i> | 1950 | Poaceae | <i>Leptochloa</i> | <i>scabra</i> | Honduras | 14.05 | -87.216667 |
| PUR60415 | <i>Puccinia</i> | <i>chloridis</i> | 1963 | Poaceae | <i>Bouteloua</i> | <i>curtipendula</i> | Mexico | 28.62286 | -106.066 |
| PUR60438 | <i>Puccinia</i> | <i>interjecta</i> | 1963 | Asteraceae | <i>Baccharis</i> | <i>conferta</i> | Mexico | 19.716667 | -101.183333 |
| PUR60468 | <i>Puccinia</i> | <i>splendens</i> | 1963 | Asteraceae | <i>Hymenoclea</i> | <i>monogyra</i> | Mexico | 28.622859 | -106.065885 |
| PUR60480 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1963 | Asteraceae | <i>Artemisia</i> | <i>ludoviciana</i> | Mexico | 28.705937 | -106.083333 |
| PUR60495 | <i>Puccinia</i> | <i>excursionis</i> | 1956 | Asteraceae | <i>Erigeron</i> | <i>peregrinus</i> | USA | 38.87246 | -106.99139 |
| PUR60497 | <i>Puccinia</i> | <i>dovrensis</i> | 1963 | Asteraceae | <i>Erigeron</i> | <i>simplex</i> | USA | 38.82777 | -106.40919 |
| PUR60556 | <i>Puccinia</i> | <i>oxidalis</i> | 1963 | Oxalidaceae | <i>Oxalis</i> | <i>amplifolia</i> | Mexico | 22.11678 | -100.798 |
| PUR60577 | <i>Puccinia</i> | <i>anisacanthi</i> | 1963 | Acanthaceae | <i>Anisacanthus</i> | <i>thurberi</i> | Mexico | 28.79672 | -111.943 |
| PUR60621 | <i>Puccinia</i> | <i>impedita</i> | 1963 | Lamiaceae | <i>Salvia</i> | <i>hyptoides</i> | Mexico | 28.79672 | -111.943 |
| PUR60673 | <i>Puccinia</i> | <i>canaliculata</i> | 1963 | Cyperaceae | <i>Cyperus</i> | <i>esculentus</i> | Mexico | 28.52793 | -106.368 |
| PUR60691 | <i>Puccinia</i> | <i>convulvuli</i> | 1964 | Convolvulaceae | <i>Calystegia</i> | <i>sepium</i> | Mexico | 31.87575 | -116.593 |
| PUR60747 | <i>Puccinia</i> | <i>versicolor</i> | 1963 | Poaceae | <i>Andropogon</i> | <i>sp.</i> | Mexico | 22.708479 | -100.346918 |
| PUR60768 | <i>Puccinia</i> | <i>recondita</i> | 1962 | Poaceae | <i>Agropogon</i> | <i>non-data</i> | Mexico | 27.147941 | -102.172363 |
| PUR60811 | <i>Puccinia</i> | <i>senecionicola</i> | 1962 | Asteraceae | <i>Acacia</i> | <i>amplifolia</i> | Mexico | 17.550528 | -99.673543 |
| PUR60828 | <i>Puccinia</i> | <i>conoclinii</i> | 1965 | Asteraceae | <i>Ageratum</i> | <i>corymbosum</i> | Mexico | 23.658535 | -105.682143 |
| PUR60836 | <i>Puccinia</i> | <i>mirifica</i> | 1965 | Asteraceae | <i>Borrchia</i> | <i>frutescens</i> | Mexico | 26.810628 | -101.988006 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-------------------------|------|----------------|-----------------------|-----------------------|-------------|------------|-------------|
| PUR60840 | <i>Puccinia</i> | <i>xanthii</i> | 1965 | Asteraceae | <i>Ambrosia</i> | <i>sp.</i> | Mexico | 28.796717 | -111.942675 |
| PUR60849 | <i>Puccinia</i> | <i>ghiesbreghtii</i> | 1965 | Asteraceae | <i>Zexmenia</i> | <i>ghiesbreghtii</i> | Mexico | 24.662086 | -107.397337 |
| PUR60884 | <i>Puccinia</i> | <i>smilacis</i> | 1965 | Smilacaceae | <i>Smilax</i> | <i>lona-nov</i> | Mexico | 22.70848 | -100.347 |
| PUR60944 | <i>Puccinia</i> | <i>atrofusca</i> | 1961 | Cyperaceae | <i>Carex</i> | <i>hoodii</i> | USA | 41.18917 | -107.047 |
| PUR60979 | <i>Puccinia</i> | <i>mellifera</i> | 1966 | Lamiaceae | <i>Salvia</i> | <i>apiana</i> | USA | 33.1061 | -116.67 |
| PUR60992 | <i>Puccinia</i> | <i>thaliae</i> | 1962 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Paraguay | -26.176526 | -56.436737 |
| PUR61080 | <i>Puccinia</i> | <i>ligustici</i> | 1964 | Apiaceae | <i>Angelica</i> | <i>non-data</i> | USA | 37.75508 | -107.774 |
| PUR61527 | <i>Puccinia</i> | <i>espinosarum</i> | 1943 | Asteraceae | <i>Eupatorium</i> | <i>espinosarum</i> | Mexico | 24.057313 | -104.644287 |
| PUR61552 | <i>Puccinia</i> | <i>archibaccharidis</i> | 1963 | Asteraceae | <i>Archibaccharis</i> | <i>hieracioides</i> | Mexico | 17.550528 | -99.673543 |
| PUR61562 | <i>Puccinia</i> | <i>affinis</i> | 1962 | Asteraceae | <i>Verbesina</i> | <i>olivacea</i> | Mexico | 17.550528 | -99.673543 |
| PUR61578 | <i>Puccinia</i> | <i>erigeniae</i> | 1965 | Apiaceae | <i>Erigenia</i> | <i>bulbosa</i> | USA | 39.12516 | -83.4118 |
| PUR61646 | <i>Puccinia</i> | <i>tomipara</i> | 1964 | Poaceae | <i>Bromus</i> | <i>ciliatus</i> | USA | 43.91249 | -88.0357 |
| PUR61748 | <i>Puccinia</i> | <i>canaliculata</i> | 1966 | Cyperaceae | <i>Cyperus</i> | <i>dipsaceus</i> | USA | 31.96397 | -111.6 |
| PUR61858 | <i>Puccinia</i> | <i>conoclinii</i> | 1967 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Mexico | 22.708479 | -100.346918 |
| PUR61988 | <i>Puccinia</i> | <i>sonorae</i> | 1965 | Asteraceae | <i>Ambrosia</i> | <i>cordifolia</i> | Mexico | 24.662086 | -107.397337 |
| PUR62075 | <i>Puccinia</i> | <i>striiformis</i> | 1956 | Poaceae | <i>Poa</i> | <i>pratensis</i> | USA | 40.42086 | -86.9144 |
| PUR62238 | <i>Puccinia</i> | <i>melampodii</i> | 1923 | Asteraceae | <i>Emilia</i> | <i>sagittata</i> | Trinidad | 10.5 | -61.25 |
| PUR62418 | <i>Puccinia</i> | <i>albulensis</i> | 1953 | Asteraceae | <i>Veronica</i> | <i>alpina</i> | USA | 41.31137 | -105.592 |
| PUR62475 | <i>Puccinia</i> | <i>grindeliae</i> | 1962 | Asteraceae | <i>Haplopappus</i> | <i>bloomeri</i> | USA | 40.605454 | -120.46578 |
| PUR62485 | <i>Puccinia</i> | <i>hypoxidis</i> | 1932 | Hypoxidaceae | <i>Hypoxis</i> | <i>decumbens</i> | Ecuador | -1.83333 | -79.8167 |
| PUR62574 | <i>Puccinia</i> | <i>chloracae</i> | 1964 | Asteraceae | <i>Viguiera</i> | <i>lacinata</i> | Mexico | 32.09264 | -116.568573 |
| PUR62623 | <i>Puccinia</i> | <i>sporoboli</i> | 1969 | Asparagaceae | <i>Dasylirion</i> | <i>wheeleri</i> | USA | 44.41873 | -89.6699 |
| PUR62626 | <i>Puccinia</i> | <i>pattersoniana</i> | 1965 | Poaceae | <i>Leymus</i> | <i>cinereus</i> | USA | 41.85916 | -111.582 |
| PUR62637 | <i>Puccinia</i> | <i>recondita</i> | 1951 | Poaceae | <i>Bromus</i> | <i>ciliatus</i> | USA | 32.42851 | -110.771 |
| PUR62708 | <i>Puccinia</i> | <i>dioicae</i> | 1963 | Cyperaceae | <i>Carex</i> | <i>vallicola</i> | USA | 43.81816 | -110.705 |
| PUR62744 | <i>Puccinia</i> | <i>chloracae</i> | 1969 | Asteraceae | <i>Verbesina</i> | <i>areophila</i> | USA | 35.984707 | -111.967941 |
| PUR62876 | <i>Puccinia</i> | <i>praemorsa</i> | 1969 | Asteraceae | <i>Brickellia</i> | <i>veronicae</i> | Mexico | 27.021988 | -101.349205 |
| PUR62882 | <i>Puccinia</i> | <i>unica</i> | 1969 | Poaceae | <i>Aristida</i> | <i>arizonica</i> | USA | 30.712589 | -104.069311 |
| PUR62883 | <i>Puccinia</i> | <i>unica</i> | 1968 | Poaceae | <i>Aristida</i> | <i>adscensionis</i> | Spain | 36.75034 | -3.87486 |
| PUR62890 | <i>Puccinia</i> | <i>coronata</i> | 1967 | Poaceae | <i>Agropyron</i> | <i>trachycaulon</i> | Mexico | 25.13261 | -99.414014 |
| PUR62929 | <i>Puccinia</i> | <i>inanipes</i> | 1969 | Asteraceae | <i>Eupatorium</i> | <i>brevipes</i> | Mexico | 24.583542 | -104.800382 |
| PUR63006 | <i>Puccinia</i> | <i>porophylli</i> | 1959 | Asteraceae | <i>Porophyllum</i> | <i>gracile</i> | Mexico | 24.114724 | -110.429468 |
| PUR63270 | <i>Puccinia</i> | <i>sherardiana</i> | 1968 | Malvaceae | <i>Sphaeralcea</i> | <i>coulteri</i> | USA | 31.9902 | -111.56 |
| PUR63328 | <i>Puccinia</i> | <i>evadens</i> | 1967 | Asteraceae | <i>Baccharis</i> | <i>halimifolia</i> | Cuba | 22.4175 | -83.698056 |
| PUR63329 | <i>Puccinia</i> | <i>arthurella</i> | 1967 | Asteraceae | <i>Lactuca</i> | <i>intybacea</i> | Cuba | 23.090246 | -82.378743 |
| PUR63363 | <i>Puccinia</i> | <i>zexmeniae</i> | 1963 | Asteraceae | <i>Zexmenia</i> | <i>podocephala</i> | USA | 31.53952 | -110.688076 |
| PUR63409 | <i>Puccinia</i> | <i>aniscanthi</i> | 1970 | Acanthaceae | <i>Anisacanthus</i> | <i>insignis</i> | USA | 29.27054 | -103.337 |
| PUR63428 | <i>Puccinia</i> | <i>electrae</i> | 1970 | Asteraceae | <i>Zexmenia</i> | <i>brevifolia</i> | USA | 29.26394 | -103.33466 |
| PUR63432 | <i>Puccinia</i> | <i>vaga</i> | 1970 | Asteraceae | <i>Verbesina</i> | <i>oreophila</i> | USA | 29.230789 | -103.293811 |
| PUR63450 | <i>Puccinia</i> | <i>caulicola</i> | 1967 | Lamiaceae | <i>Salvia</i> | <i>reflexa</i> | Mexico | 26.81063 | -101.988 |
| PUR63516 | <i>Puccinia</i> | <i>cryptandri</i> | 1970 | Poaceae | <i>Sporobolus</i> | <i>airoides</i> | Mexico | 28.79672 | -111.943 |
| PUR63694 | <i>Puccinia</i> | <i>vaga</i> | 1970 | Asteraceae | <i>Verbesina</i> | <i>sphaerocephala</i> | Mexico | 20.206401 | -104.822132 |
| PUR64007 | <i>Puccinia</i> | <i>megalospora</i> | 1971 | Convolvulaceae | <i>Ipomoea</i> | <i>arborescens</i> | Mexico | 27.03333 | -108.95 |
| PUR64077 | <i>Puccinia</i> | <i>azteca</i> | 1971 | Poaceae | <i>Trisetum</i> | <i>vinletii</i> | Mexico | 24.057313 | -104.644287 |
| PUR64220 | <i>Puccinia</i> | <i>invelata</i> | 1971 | Asteraceae | <i>Verbesina</i> | <i>crocata</i> | Mexico | 20.763161 | -103.339639 |
| PUR64371 | <i>Puccinia</i> | <i>proba</i> | 1971 | Asteraceae | <i>Zexmenia</i> | <i>ceanthifolia</i> | Mexico | 21.544434 | -104.9227 |
| PUR64476 | <i>Puccinia</i> | <i>poarum</i> | 1971 | Poaceae | <i>Trisetum</i> | <i>spicatum</i> | Mexico | 23.94378 | -104.849816 |
| PUR64548 | <i>Puccinia</i> | <i>dochmia</i> | 1971 | Poaceae | <i>Muhlenbergia</i> | <i>brevifolia</i> | Mexico | 23.93499 | -104.339 |
| PUR64691 | <i>Puccinia</i> | <i>cordiae</i> | 1947 | Cordiaceae | <i>Cordia</i> | <i>alliodora</i> | El Salvador | 13.68333 | -88.75 |
| PUR64758 | <i>Puccinia</i> | <i>kuhniae</i> | 1972 | Asteraceae | <i>Brickellia</i> | <i>coulteri</i> | USA | 32.221743 | -110.926479 |
| PUR64861 | <i>Puccinia</i> | <i>erratica</i> | 1971 | Asteraceae | <i>Vernonia</i> | <i>schiedeana</i> | Mexico | 19.91284 | -97.7681 |
| PUR64994 | <i>Puccinia</i> | <i>tomipara</i> | 1914 | Poaceae | <i>Bromus</i> | <i>carinatus</i> | USA | 44.53974 | -123.377 |
| PUR65163 | <i>Puccinia</i> | <i>ximenesiae</i> | 1969 | Asteraceae | <i>Verbesina</i> | <i>rothrockii</i> | Mexico | 24.057313 | -104.644287 |
| PUR65329 | <i>Puccinia</i> | <i>obtecta</i> | 1890 | Cyperaceae | <i>Schoenoplectus</i> | <i>pungens</i> | USA | 39.745947 | -75.546589 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-----------------------------|-----------------|-----------------|----------------------|-------------------------|-------------|------------|-------------|
| PUR65439 | <i>Puccinia</i> | <i>hieracii</i> | 1958 | Asteraceae | <i>Agoseris</i> | <i>alpestris</i> | USA | 38.90108 | -120.06163 |
| PUR65462 | <i>Puccinia</i> | <i>inanipes</i> | 1974 | Asteraceae | <i>Eupatorium</i> | <i>solidaginifolium</i> | USA | 31.779529 | -109.308923 |
| PUR65465 | <i>Puccinia</i> | <i>durangensis</i> | 1974 | Poaceae | <i>Piptochaetium</i> | <i>fimbriatum</i> | USA | 31.78731 | -109.416 |
| PUR65470 | <i>Puccinia</i> | <i>violae</i> | 1961 | Violaceae | <i>Viola</i> | <i>canadensis</i> | USA | 37.85055 | -109.547 |
| PUR65525 | <i>Puccinia</i> | <i>turgidipes</i> | 1976 | Asteraceae | <i>Viguiera</i> | <i>deltoida</i> | USA | 32.018121 | -112.712097 |
| PUR65531 | <i>Puccinia</i> | <i>eupatorii</i> | 1976 | Asteraceae | <i>Eupatorium</i> | <i>agittatum</i> | Mexico | 24.662086 | -107.397337 |
| PUR65599 | <i>Puccinia</i> | <i>physostegiae</i> | 1937 | Lamiaceae | <i>Physostegia</i> | <i>correllii</i> | USA | 32.42067 | -104.229 |
| PUR65740 | <i>Puccinia</i> | <i>conglomerata</i> | 1956 | Asteraceae | <i>Petasites</i> | <i>frigidus</i> | Canada | 49.743284 | -124.274722 |
| PUR65826 | <i>Puccinia</i> | <i>lantanae</i> | 1977 | Verbenaceae | <i>Lippia</i> | <i>berlandieri</i> | El Salvador | 13.69552 | -89.2993 |
| PUR65885 | <i>Puccinia</i> | <i>praegracilis</i> | 1962 | Orchidaceae | <i>Dactylorhiza</i> | <i>aristata</i> | USA | 51.54222 | -178.98333 |
| PUR65916 | <i>Puccinia</i> | <i>tanacetii</i> | 1974 | Asteraceae | <i>Chrysanthemum</i> | <i>sp.</i> | Mexico | 17.051561 | -96.726083 |
| PUR66095 | <i>Puccinia</i> | <i>tillandsiae</i> | 1980 | Bromeliaceae | <i>Tillandsia</i> | <i>fasciculata</i> | USA | 26.70562 | -80.0364 |
| PUR66096 | <i>Puccinia</i> | <i>duthiae</i> | 1974 | Poaceae | <i>Bothriochloa</i> | <i>wrightii</i> | Mexico | 23.999997 | -98.778629 |
| PUR66097 | <i>Puccinia</i> | <i>arundinariae</i> | 1961 | Poaceae | <i>Arundinaria</i> | <i>gigantea</i> | USA | 37.580121 | -89.120605 |
| PUR66301 | <i>Puccinia</i> | <i>enceliae</i> | 1968 | Asteraceae | <i>Tithonia</i> | <i>diversifolia</i> | Cuba | 23.131944 | -82.364167 |
| PUR66315 | <i>Puccinia</i> | <i>dasantherae</i> | 1963 | Plantaginaceae | <i>Penstemon</i> | <i>newberryi</i> | USA | 41.40932 | -122.195 |
| PUR66378 | <i>Puccinia</i> | <i>malvacearum</i> | 1974 | Malvaceae | <i>Anoda</i> | <i>cristata</i> | Mexico | 21.34565 | -97.8385 |
| PUR66415 | <i>Puccinia</i> | <i>obliqua</i> | 1981 | Apocynaceae | <i>Asclepias</i> | <i>erosa</i> | USA | 32.22174 | -110.926 |
| PUR66424 | <i>Puccinia</i> | <i>exasperans</i> | 1974 | Poaceae | <i>Bouteloua</i> | <i>curtipendula</i> | Mexico | 16.75456 | -93.3427 |
| PUR66463 | <i>Puccinia</i> | <i>coronata</i> | 1975 | Elaeagnaceae | <i>Shepherdia</i> | <i>canadensis</i> | USA | 63.14164 | -150.981 |
| PUR66510 | <i>Puccinia</i> | <i>ortonii</i> | 1951 | Primulaceae | <i>Dodecatheon</i> | <i>pulchellum</i> | Canada | 59.89283 | -149.466 |
| PUR66892 | <i>Puccinia</i> | <i>galopinae</i> | 1981 | Rubiaceae | <i>Virectaria</i> | <i>sp.</i> | Nigeria | 6.66737 | 9.17157 |
| PUR6721 | <i>Puccinia</i> | <i>haloragidis</i> | 1930 | Haloragaceae | <i>Haloragis</i> | <i>micrantha</i> | Japan | 39.68251 | -75.7454 |
| PUR7167 | <i>Puccinia</i> | <i>agrimoniae</i> | 1907 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | USA | 39.65252 | -93.2447 |
| PUR7995 | <i>Puccinia</i> | <i>vanillosmopsidis</i> | 1921 | Asteraceae | <i>Eremanthus</i> | <i>erythropappus</i> | Brazil | 41.36883 | -112.042 |
| PUR8157 | <i>Puccinia</i> | <i>baccharidis-sparteae</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sparta</i> | Bolivia | -16.5 | -68.15 |
| PUR87182 | <i>Puccinia</i> | <i>fameae</i> | 1983 | Rubiaceae | <i>Alibertia</i> | <i>edulis</i> | Brazil | -22.5123 | -48.9162 |
| PUR87283 | <i>Puccinia</i> | <i>seorsa</i> | 1983 | Asteraceae | <i>Piptocarpha</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR87530 | <i>Puccinia</i> | <i>esclavensis</i> | 1983 | Poaceae | <i>Poaceae</i> | <i>non-data</i> | Brazil | -22.5123 | -48.9162 |
| PUR87966 | <i>Puccinia</i> | <i>oahuensis</i> | 1984 | Poaceae | <i>Digitaria</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR88169 | <i>Puccinia</i> | <i>paraensis</i> | 1979 | Rhamnaceae | <i>Gouania</i> | <i>non-data</i> | Brazil | -16.2461 | -50.1985 |
| PUR88221 | <i>Puccinia</i> | <i>recondita</i> | 1975 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Brazil | -5.529961 | -51.878569 |
| PUR88231 | <i>Puccinia</i> | <i>oahuensis</i> | 1976 | Poaceae | <i>Digitaria</i> | <i>decumbens</i> | Brazil | -22.512305 | -48.916169 |
| PUR88275 | <i>Puccinia</i> | <i>festata</i> | 1975 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PUR88276 | <i>Puccinia</i> | <i>festata</i> | 1975 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PUR88295 | <i>Puccinia</i> | <i>festata</i> | 1975 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PUR88383 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1985 | Berberidaceae | <i>Berberis</i> | <i>buxifolia</i> | Argentina | -54.009172 | -67.256882 |
| PUR88387 | <i>Puccinia</i> | <i>bistortae</i> | 1975 | Polygonaceae | <i>Polygonum</i> | <i>bistortoides</i> | USA | 63.085219 | -151.193359 |
| PUR88417 | <i>Puccinia</i> | <i>thaliae</i> | 1984 | Cannaceae | <i>Canna</i> | <i>indica</i> | Nigeria | 6.0176 | 7.0908 |
| PUR88458 | <i>Puccinia</i> | <i>arundinariae</i> | 1907 | Smilacaceae | <i>Smilax</i> | <i>psuedo-china</i> | USA | 34.67444 | -82.83588 |
| PUR88463 | <i>Puccinia</i> | <i>phragmites</i> | <i>non-data</i> | Polygonaceae | <i>Rheum</i> | <i>rhoponticum</i> | USA | 43.0389 | -87.9065 |
| PUR88666 | <i>Puccinia</i> | <i>grindeliae</i> | 1939 | Asteraceae | <i>Hazardia</i> | <i>squarrosa</i> | USA | 34.145562 | -118.04979 |
| PUR88723 | <i>Puccinia</i> | <i>helianthi</i> | 1960 | Asteraceae | <i>Helianthus</i> | <i>couplandii</i> | Canada | 49.914481 | -97.237927 |
| PUR88749 | <i>Puccinia</i> | <i>helianthi</i> | 1985 | Asteraceae | <i>Helianthus</i> | <i>hirsutus</i> | USA | 38.842544 | -86.428955 |
| PUR88889 | <i>Puccinia</i> | <i>leptochloae</i> | <i>non-data</i> | Talinaceae | <i>Talinum</i> | <i>paniculatum</i> | USA | 31.53893 | -110.759 |
| PUR88934 | <i>Puccinia</i> | <i>menthae</i> | 1984 | Lamiaceae | <i>Mentha</i> | <i>rotundifolia</i> | Australia | -37.8374 | 145.0205 |
| PUR89031 | <i>Puccinia</i> | <i>heterospora</i> | 1984 | Malvaceae | <i>Malvaceae</i> | <i>non-data</i> | Brazil | -12.2188 | -41.4717 |
| PUR89233 | <i>Puccinia</i> | <i>punctiformis</i> | 1985 | Asteraceae | <i>Cirsium</i> | <i>arvense</i> | USA | 40.756257 | -86.876648 |
| PUR89246 | <i>Puccinia</i> | <i>vilfae</i> | 1939 | Verbenaceae | <i>Verbena</i> | <i>illicita</i> | USA | 40.41261 | -86.8935 |
| PUR89275 | <i>Puccinia</i> | <i>longipes</i> | 1985 | Asteraceae | <i>Vernonia</i> | <i>gigantea</i> | USA | 41.234086 | -85.8508 |
| PUR89324 | <i>Puccinia</i> | <i>sp.</i> | 1980 | Poaceae | <i>Eriochloa</i> | <i>non-data</i> | Peru | -13.683333 | -74.05 |
| PUR89377 | <i>Puccinia</i> | <i>eatoniae</i> | 1944 | Poaceae | <i>Sphenopholis</i> | <i>intermedia</i> | USA | 39.769124 | -87.233704 |
| PUR89391 | <i>Puccinia</i> | <i>xanthii</i> | 1986 | Asteraceae | <i>Xanthium</i> | <i>strumarium</i> | USA | 48.23251 | -101.296273 |
| PUR89471 | <i>Puccinia</i> | <i>graminis</i> | 1985 | Poaceae | <i>Dactylis</i> | <i>glomerata</i> | USA | 36.16925 | -94.3588 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|----------|----------------|---------------------|----------------------------|------------|--------------------|------------------|
| PUR89480 | <i>Puccinia</i> | <i>orbicula</i> | 1985 | Asteraceae | <i>Prenanthes</i> | <i>alba</i> | USA | 36.155353 | -93.73297 |
| PUR89488 | <i>Puccinia</i> | <i>silphii</i> | 1978 | Asteraceae | <i>Silphium</i> | <i>perfoliatum</i> | USA | 34.790372 | -91.445685 |
| PUR89804 | <i>Puccinia</i> | <i>obscura</i> | 1934 | Juncaceae | <i>Luzula</i> | <i>bulbosa</i> | USA | 38.84254 | -86.429 |
| PUR89815 | <i>Puccinia</i> | <i>oxidalis</i> | 1987 | Oxalidaceae | <i>Oxalis</i> | <i>non-data</i> | Costa Rica | 9.816877 | -84.1129 |
| PURF10104 | <i>Puccinia</i> | <i>aegroides</i> | 1939 | Violaceae | <i>Viola</i> | <i>non-data</i> | New Guinea | -6.31494 | 147.2427 |
| PURF10166 | <i>Puccinia</i> | <i>abrupta</i> | 1938 | Asteraceae | <i>Viguiera</i> | <i>weberbaueri</i> | Peru | -16.977904 | -72.014722 |
| PURF10189 | <i>Puccinia</i> | <i>indotata</i> | 1940 | Cyperaceae | <i>Carex</i> | <i>indica</i> | New Guinea | -6.13064 | 146.4658 |
| PURF10339 | <i>Puccinia</i> | <i>cyperi-tagetiformis</i> | 1940 | Cyperaceae | <i>Cyperus</i> | <i>surinamensis</i> | Peru | -6.353246 | -75.744184 |
| PURF10341 | <i>Puccinia</i> | <i>subtilipes</i> | 1941 | Poaceae | <i>Leptochloa</i> | <i>virgata</i> | Argentina | -26.154635 | -60.830811 |
| PURF10350 | <i>Puccinia</i> | <i>purpurea</i> | 1941 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | Argentina | -31.621051 | -60.697601 |
| PURF10351 | <i>Puccinia</i> | <i>graminis</i> | 1941 | Poaceae | <i>Phalaris</i> | <i>minor</i> | Argentina | -31.621051 | -60.697601 |
| PURF10352 | <i>Puccinia</i> | <i>coronata</i> | 1941 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Argentina | -31.621051 | -60.697601 |
| PURF10353 | <i>Puccinia</i> | <i>graminis</i> | 1941 | Poaceae | <i>Dactylis</i> | <i>glomerata</i> | Argentina | -31.621051 | -60.697601 |
| PURF10363 | <i>Puccinia</i> | <i>striiformis</i> var. <i>striiformis</i> | 1929 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Argentina | -38.373939 | -60.279781 |
| PURF10366 | <i>Puccinia</i> | <i>roseana</i> | 1895 | Amaryllidaceae | <i>Eucharis</i> | <i>grandiflora</i> | Venezuela | 10.488011 | -66.879193 |
| PURF10380 | <i>Puccinia</i> | <i>dietelii</i> | 1940 | Poaceae | <i>Chloris</i> | <i>gayana</i> | Uganda | 0.83333 | 31.91667 |
| PURF10395 | <i>Puccinia</i> | <i>anthraxonis-ciliaris</i> | 1937 | Poaceae | <i>Arthraxon</i> | <i>hispidus</i> | Uganda | 0.266667 | 31.61667 |
| PURF10571 | <i>Puccinia</i> | <i>graminis</i> | 1937 | Berberidaceae | <i>Berberis</i> | <i>asiatica</i> | India | 30.457166902721138 | 78.1019557398793 |
| PURF10608 | <i>Puccinia</i> | <i>prenanthis-purpurea</i> | 1940 | Asteraceae | <i>Lactuca</i> | <i>decipiens</i> | India | 35.02758 | 74.881836 |
| PURF10649 | <i>Puccinia</i> | <i>coronata</i> | 1941 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Colombia | 3.5 | -73 |
| PURF10651 | <i>Puccinia</i> | <i>brachypoi</i> var. <i>poaememoralis</i> | 1941 | Poaceae | <i>Poa</i> | <i>annua</i> | Colombia | 4.649178 | -74.062827 |
| PURF10652 | <i>Puccinia</i> | <i>malvacearum</i> | 1941 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Colombia | 5.416667 | -73.333333 |
| PURF10656 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1943 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Colombia | 6.25184 | -75.563591 |
| PURF10657 | <i>Puccinia</i> | <i>spilanthicola</i> | 1941 | Asteraceae | <i>Spilanthes</i> | <i>americana</i> | Colombia | 6.25184 | -75.563591 |
| PURF10661 | <i>Puccinia</i> | <i>oxalidis</i> | 1941 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Colombia | 3.5 | -73 |
| PURF10663 | <i>Puccinia</i> | <i>thaliae</i> | 1941 | Cannaceae | <i>Canna</i> | <i>coccinea</i> | Colombia | 10 | -74.5 |
| PURF10665 | <i>Puccinia</i> | <i>heterospora</i> | 1941 | Malvaceae | <i>Sida</i> | <i>acuta</i> | Colombia | 6.25184 | -75.563591 |
| PURF10666 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1943 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURF10668 | <i>Puccinia</i> | <i>graminis</i> | 1941 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Colombia | 6.25184 | -75.563591 |
| PURF10669 | <i>Puccinia</i> | <i>pseudoatra</i> | 1919 | Poaceae | <i>Paspalum</i> | <i>penicillatum</i> | Peru | -13.239075 | -71.905029 |
| PURF10691 | <i>Puccinia</i> | <i>infuscans</i> | 1939 | Poaceae | <i>Bothriochloa</i> | <i>saccharoides</i> | Venezuela | 8.533018 | -71.24585 |
| PURF10692 | <i>Puccinia</i> | <i>infuscans</i> | 1939 | Poaceae | <i>Bothriochloa</i> | <i>saccharoides</i> | Venezuela | 10.225939 | -67.32750 |
| PURF10711 | <i>Puccinia</i> | <i>aspillae</i> | 1931 | Asteraceae | <i>Aspilia</i> | <i>latifolia</i> | Uganda | 1.209301 | 32.476074 |
| PURF10719 | <i>Puccinia</i> | <i>minussensis</i> | 1937 | Asteraceae | <i>Lactuca</i> | <i>sp.</i> | Uganda | -0.483333 | 31.766667 |
| PURF10724 | <i>Puccinia</i> | <i>dummeri</i> | 1937 | Asteraceae | <i>Echinops</i> | <i>amplexicaulis</i> | Uganda | 1.209301 | 32.476074 |
| PURF10726 | <i>Puccinia</i> | <i>pentadica</i> | 1937 | Rubiaceae | <i>Pentas</i> | <i>non-data</i> | Uganda | -1.28364 | 29.68825 |
| PURF10729 | <i>Puccinia</i> | <i>coreopsidis</i> | 1937 | Asteraceae | <i>Coreopsis</i> | <i>sp.</i> | Uganda | -0.53832 | 29.77844 |
| PURF10732 | <i>Puccinia</i> | <i>wattiana</i> | 1933 | Ranunculaceae | <i>Clematis</i> | <i>gouriana</i> | India | 30.4571 | 78.05498 |
| PURF10865 | <i>Puccinia</i> | <i>recondita</i> | 1943 | Poaceae | <i>Agrostis</i> | <i>aemula</i> | Australia | -28.183942 | 153.284041 |
| PURF10906 | <i>Puccinia</i> | <i>substriata</i> | 1943 | Poaceae | <i>Panicum</i> | <i>antidotale</i> | Uganda | 0.315556 | 32.56556 |
| PURF10908 | <i>Puccinia</i> | <i>recondita</i> | 1942 | Poaceae | <i>Briza</i> | <i>subaristata</i> | Argentina | -34.921454 | -57.954533 |
| PURF10914 | <i>Puccinia</i> | <i>graminis</i> | 1943 | Poaceae | <i>Dactylis</i> | <i>glomerata</i> | Uruguay | -33.25 | -55.383333 |
| PURF10915 | <i>Puccinia</i> | <i>coronata</i> | 1943 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Argentina | -34.6 | -58.45 |
| PURF10916 | <i>Puccinia</i> | <i>purpurea</i> | non-data | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | Argentina | -26.308078 | -59.372914 |
| PURF10917 | <i>Puccinia</i> | <i>graminis</i> | 1943 | Poaceae | <i>Agrotis</i> | <i>montevicensis</i> | Uruguay | -33.25 | -55.383333 |
| PURF10918 | <i>Puccinia</i> | <i>cynodontis</i> | 1941 | Poaceae | <i>Cynodon</i> | <i>dactylon</i> | Argentina | -27.578102 | -60.731934 |
| PURF10919 | <i>Puccinia</i> | <i>graminis</i> | 1943 | Poaceae | <i>Hordeum</i> | <i>itaburense</i> | Uruguay | -33.25 | -55.383333 |
| PURF10920 | <i>Puccinia</i> | <i>brachypoi</i> var. <i>poaememoralis</i> | non-data | Poaceae | <i>Poa</i> | <i>iridifolia</i> | Argentina | -21.944671 | -66.052194 |
| PURF10921 | <i>Puccinia</i> | <i>graminis</i> | 1943 | Poaceae | <i>Hordeum</i> | <i>compressum</i> | Uruguay | -33.25 | -55.383333 |
| PURF10922 | <i>Puccinia</i> | <i>abnormis</i> | 1942 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | Argentina | -27.001472 | -59.842427 |
| PURF10923 | <i>Puccinia</i> | <i>interveniens</i> | 1924 | Malvaceae | <i>Sphaeralcea</i> | <i>sp.</i> | Argentina | -31.65293 | -64.42826 |
| PURF10925 | <i>Puccinia</i> | <i>poanim</i> | 1941 | Poaceae | <i>Poa</i> | <i>stuckerti</i> | Argentina | -21.944671 | -66.052194 |
| PURF10926 | <i>Puccinia</i> | <i>heterospora</i> | 1943 | Malvaceae | <i>Malvaceae</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PURF10927 | <i>Puccinia</i> | <i>hieracii</i> | 1943 | Asteraceae | <i>Hypochaeris</i> | <i>glabra</i> | Uruguay | -33.25 | -55.383333 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|----------|-----------------|----------------------|------------------------|-----------|------------|------------|
| PURF10928 | <i>Puccinia</i> | <i>schileana</i> | 1941 | Asteraceae | <i>Verbesina</i> | <i>encelioides</i> | Argentina | -44.236687 | -68.697021 |
| PURF10929 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1942 | Polygonaceae | <i>Polygonum</i> | <i>sp.</i> | Argentina | -26.108569 | -60.862549 |
| PURF10930 | <i>Puccinia</i> | <i>platyspora</i> | non-data | Malvaceae | <i>Sida</i> | <i>sp.</i> | Argentina | -26.272912 | -60.86377 |
| PURF10936 | <i>Puccinia</i> | <i>sherardiana</i> | 1941 | Malvaceae | <i>Pseudabutilon</i> | <i>sp.</i> | Argentina | -26.272912 | -60.86377 |
| PURF10938 | <i>Puccinia</i> | <i>grindeliae</i> | 1944 | Asteraceae | <i>Grindelia</i> | <i>chiloensis</i> | Argentina | -35.078313 | -69.587273 |
| PURF10939 | <i>Puccinia</i> | <i>gnaphalicola</i> | 1944 | Asteraceae | <i>Gamochaeta</i> | <i>americana</i> | Argentina | -35.078313 | -69.587273 |
| PURF10940 | <i>Puccinia</i> | <i>obliqua</i> | 1899 | Apocynaceae | <i>Metastelma</i> | <i>diffusa</i> | Argentina | -28.469574 | -65.785239 |
| PURF10941 | <i>Puccinia</i> | <i>abrupta</i> | 1925 | Asteraceae | <i>Parthenium</i> | <i>hysterophorus</i> | Argentina | -31.65293 | -64.42826 |
| PURF10942 | <i>Puccinia</i> | <i>thaliae</i> | 1941 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Argentina | -27.46056 | -58.983886 |
| PURF10943 | <i>Puccinia</i> | <i>araujae</i> | 1941 | Apocynaceae | <i>Araujia</i> | <i>sericifera</i> | Argentina | -26.394311 | -60.521973 |
| PURF10951 | <i>Puccinia</i> | <i>levis</i> | 1940 | Poaceae | <i>Reimarochloa</i> | <i>brasiliensis</i> | Venezuela | 8.939206 | -64.134949 |
| PURF10952 | <i>Puccinia</i> | <i>lepturi</i> | 1940 | Poaceae | <i>Lepturus</i> | <i>repens</i> | Japan | 26.335833 | 127.801389 |
| PURF10989 | <i>Puccinia</i> | <i>seaveriana</i> | 1939 | Asteraceae | <i>Oliganthes</i> | <i>hypochlora</i> | Venezuela | 10.488011 | -66.879193 |
| PURF10991 | <i>Puccinia</i> | <i>triumfettae</i> | 1939 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Venezuela | 10.349255 | -67.684516 |
| PURF10998 | <i>Puccinia</i> | <i>leptochloae</i> | 1942 | Montiaceae | <i>Calandrinia</i> | <i>sp.</i> | Peru | -11.8493 | -75.8038 |
| PURF11011 | <i>Puccinia</i> | <i>ludwigii</i> | 1942 | Polygonaceae | <i>Rumex</i> | <i>brownii</i> | Australia | -27.4869 | 153.0108 |
| PURF11021 | <i>Puccinia</i> | <i>conclusa</i> | 1943 | Cyperaceae | <i>Cyperus</i> | <i>bourmanii</i> | Australia | -23.2607 | 145.877 |
| PURF11080 | <i>Puccinia</i> | <i>crassicutis</i> | 1943 | Asteraceae | <i>Mutisia</i> | <i>peduncularis</i> | Peru | -4.288056 | -70.0375 |
| PURF11136 | <i>Puccinia</i> | <i>heterospora</i> | 1944 | Malvaceae | <i>Abutilon</i> | <i>oxycarpum</i> | Australia | -27.6381 | 152.4102 |
| PURF11139 | <i>Puccinia</i> | <i>malvacearum</i> | 1901 | Malvaceae | <i>Althaea</i> | <i>rosea</i> | England | 51 | -4.4 |
| PURF11188 | <i>Puccinia</i> | <i>conturbata</i> | 1922 | Lamiaceae | <i>Salvia</i> | <i>punctata glabra</i> | Peru | -11.93787 | -75.338627 |
| PURF11189 | <i>Puccinia</i> | <i>conturbata</i> | 1922 | Lamiaceae | <i>Salvia</i> | <i>punctata glabra</i> | Peru | -11.93787 | -75.338627 |
| PURF11190 | <i>Puccinia</i> | <i>enceliae</i> | 1922 | Asteraceae | <i>Viguiera</i> | <i>pflanzii</i> | Peru | -11.93787 | -75.338627 |
| PURF11191 | <i>Puccinia</i> | <i>enceliae</i> | 1922 | Asteraceae | <i>Viguiera</i> | <i>pusilla</i> | Peru | -11.846081 | -76.386809 |
| PURF11192 | <i>Puccinia</i> | <i>bomareae</i> | 1922 | Alstroemeriacae | <i>Bomarea</i> | <i>ovata</i> | Peru | -11.846081 | -76.386809 |
| PURF11193 | <i>Puccinia</i> | <i>punctata</i> | 1922 | Rubiaceae | <i>Relbunium</i> | <i>hypocarpium</i> | Peru | -9.686517 | -75.519531 |
| PURF11194 | <i>Puccinia</i> | <i>aristideae</i> var. <i>chaetariae</i> | 1922 | Poaceae | <i>Aristida</i> | <i>adscensions</i> | Peru | -11.846081 | -76.386809 |
| PURF11195 | <i>Puccinia</i> | <i>festata</i> | 1922 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Peru | -11.846081 | -76.386809 |
| PURF11196 | <i>Puccinia</i> | <i>minuscula</i> | 1922 | Asteraceae | <i>Pappobolus</i> | <i>jelski</i> | Peru | -10.516667 | -76.498611 |
| PURF11200 | <i>Puccinia</i> | <i>crassicutis</i> | 1922 | Asteraceae | <i>Mutisia</i> | <i>vicaefolia</i> | Peru | -11.417007 | -75.686686 |
| PURF11201 | <i>Puccinia</i> | <i>hieracii</i> | 1922 | Asteraceae | <i>Hypochaeris</i> | <i>sessiliflora</i> | Peru | -15.412768 | -72.670927 |
| PURF11202 | <i>Puccinia</i> | <i>bimbergi</i> | 1922 | Asteraceae | <i>Heliopsis</i> | <i>canescens</i> | Peru | -11.846081 | -76.386809 |
| PURF11203 | <i>Puccinia</i> | <i>spilanthicola</i> | 1923 | Asteraceae | <i>Spilanthes</i> | <i>ciliata</i> | Peru | -9.930617 | -76.242228 |
| PURF11204 | <i>Puccinia</i> | <i>mogiphanis</i> | 1923 | Amaranthaceae | <i>Alternanthera</i> | <i>porrigens</i> | Peru | -9.930617 | -76.242228 |
| PURF11205 | <i>Puccinia</i> | <i>mogiphanis</i> | 1922 | Amaranthaceae | <i>Alternanthera</i> | <i>porrigens</i> | Peru | -10.127778 | -76.204713 |
| PURF11206 | <i>Puccinia</i> | <i>mogiphanis</i> | 1922 | Amaranthaceae | <i>Alternanthera</i> | <i>calicicola</i> | Peru | -11.520224 | -75.899886 |
| PURF11209 | <i>Puccinia</i> | <i>conoclinii</i> | 1922 | Asteraceae | <i>Ageratum</i> | <i>conyzoides</i> | Peru | -9.54999 | -76.81613 |
| PURF11211 | <i>Puccinia</i> | <i>roseana</i> | 1923 | Asparagaceae | <i>Furcraea</i> | <i>andina</i> | Peru | -11.846081 | -76.386809 |
| PURF11212 | <i>Puccinia</i> | <i>dichondrae</i> | 1923 | Convolvulaceae | <i>Dichondra</i> | <i>repens</i> | Peru | -10.28797 | -76.160577 |
| PURF11213 | <i>Puccinia</i> | <i>sherardiana</i> | 1923 | Malvaceae | <i>Abutilon</i> | <i>sylvaticum</i> | Peru | -11.749837 | -74.72488 |
| PURF11214 | <i>Puccinia</i> | <i>bomareae</i> | 1923 | Alstroemeriacae | <i>Bomarea</i> | <i>tarmensis</i> | Peru | -10.068998 | -75.550283 |
| PURF11215 | <i>Puccinia</i> | <i>recondita</i> | 1928 | Ranunculaceae | <i>Thalictrum</i> | <i>podocarpum</i> | Peru | -6.983333 | -76.466667 |
| PURF11216 | <i>Puccinia</i> | <i>sp.</i> | 1923 | Rosaceae | <i>Geum</i> | <i>sp.</i> | Peru | -9.654994 | -75.803496 |
| PURF11220 | <i>Puccinia</i> | <i>perforans</i> | 1925 | Alstroemeriacae | <i>Luzuriaga</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF11243 | <i>Puccinia</i> | <i>ocellifera</i> | 1943 | Asteraceae | <i>Pluchea</i> | <i>suaveolens</i> | Argentina | -27.46056 | -58.983886 |
| PURF11244 | <i>Puccinia</i> | <i>baccharidis</i> | 1944 | Asteraceae | <i>Baccharis</i> | <i>salicifolia</i> | Argentina | -27.46056 | -58.983886 |
| PURF11270 | <i>Puccinia</i> | <i>pusilla</i> | 1921 | Poaceae | <i>Capillipedium</i> | <i>assimile</i> | China | 23 | 113 |
| PURF11372 | <i>Puccinia</i> | <i>polysora</i> | 1945 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF11373 | <i>Puccinia</i> | <i>polysora</i> | 1944 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF11374 | <i>Puccinia</i> | <i>polysora</i> | 1948 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF11376 | <i>Puccinia</i> | <i>polysora</i> | 1948 | Poaceae | <i>Tripsacum</i> | <i>laxum</i> | Trinidad | 10.5 | -61.25 |
| PURF11386 | <i>Puccinia</i> | <i>interveniens</i> | 1945 | Malvaceae | <i>Sphaeralcea</i> | <i>bonariensis</i> | Argentina | -31.40054 | -64.23157 |
| PURF11387 | <i>Puccinia</i> | <i>schileana</i> | 1945 | Asteraceae | <i>Verbesina</i> | <i>encelioides</i> | Argentina | -31.230729 | -64.316152 |
| PURF11389 | <i>Puccinia</i> | <i>hieracii</i> | 1943 | Asteraceae | <i>Hypochaeris</i> | <i>glabra</i> | Uruguay | -32.833056 | -56.030647 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------------------|------|----------------|----------------------|-------------------------|------------------------------|------------|------------|
| PURF11390 | <i>Puccinia</i> | <i>obliqua</i> | 1943 | Apocynaceae | <i>Funastrum</i> | <i>bonariense</i> | Argentina | -27.46056 | -58.983886 |
| PURF11393 | <i>Puccinia</i> | <i>leptochloae</i> | 1945 | Talinaceae | <i>Talinum</i> | <i>sp.</i> | Argentina | -31.421455 | -64.182327 |
| PURF11396 | <i>Puccinia</i> | <i>abrupta</i> | 1943 | Asteraceae | <i>Parthenium</i> | <i>hysterophorus</i> | Argentina | -32.85273 | -68.828373 |
| PURF11433 | <i>Puccinia</i> | <i>gilliesii</i> | 1909 | Lamiaceae | <i>Salvia</i> | <i>gilliesii</i> | Argentina | -33.062061 | -69.11168 |
| PURF11434 | <i>Puccinia</i> | <i>gilliesii</i> | 1941 | Lamiaceae | <i>Salvia</i> | <i>gilliesii</i> | Argentina | -32.85273 | -68.828373 |
| PURF11435 | <i>Puccinia</i> | <i>gilliesii</i> | 1944 | Lamiaceae | <i>Salvia</i> | <i>gilliesii</i> | Argentina | -32.85273 | -68.828373 |
| PURF11436 | <i>Puccinia</i> | <i>gilliesii</i> | 1940 | Lamiaceae | <i>Salvia</i> | <i>gilliesii</i> | Argentina | -34.617717 | -68.330066 |
| PURF11440 | <i>Puccinia</i> | <i>obscura</i> | 1940 | Juncaceae | <i>Luzula</i> | <i>alopecurus</i> | Falkland Islands | -51.6959 | -57.7713 |
| PURF11442 | <i>Puccinia</i> | <i>tuyutensis</i> | 1937 | Convolvulaceae | <i>Cressa</i> | <i>australis</i> | Argentina | -33.811049 | -59.508067 |
| PURF11443 | <i>Puccinia</i> | <i>posadensis</i> | 1946 | Poaceae | <i>Schizachyrium</i> | <i>brevifolium</i> | Grenada | 12.114055 | -61.672638 |
| PURF11444 | <i>Puccinia</i> | <i>posadensis</i> | 1945 | Poaceae | <i>Andropogon</i> | <i>bicornis</i> | Trinidad | 10.5 | -61.25 |
| PURF11445 | <i>Puccinia</i> | <i>polysora</i> | 1946 | Poaceae | <i>Tripsacum</i> | <i>laxum</i> | St. Vincent & the Grenadines | 13.128501 | -61.231812 |
| PURF11446 | <i>Puccinia</i> | <i>polysora</i> | 1944 | Poaceae | <i>Tripsacum</i> | <i>laxum</i> | Trinidad | 10.5 | -61.25 |
| PURF11448 | <i>Puccinia</i> | <i>purpurea</i> | 1946 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | St. Vincent & the Grenadines | 13.128501 | -61.231812 |
| PURF11451 | <i>Puccinia</i> | <i>purpurea</i> | 1945 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | Trinidad | 10.5 | -61.25 |
| PURF11454 | <i>Puccinia</i> | <i>purpurea</i> | 1946 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | St. Vincent & the Grenadines | 13.128501 | -61.231812 |
| PURF11457 | <i>Puccinia</i> | <i>polysora</i> | 1946 | Poaceae | <i>Tripsacum</i> | <i>laxum</i> | Grenada | 12.114055 | -61.672638 |
| PURF11458 | <i>Puccinia</i> | <i>polysora</i> | 1948 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURF11479 | <i>Puccinia</i> | <i>berberidis-darwinii</i> | 1946 | Berberidaceae | <i>Berberis</i> | <i>darwinii</i> | Argentina | -42.683244 | -71.834188 |
| PURF11492 | <i>Puccinia</i> | <i>oahuensis</i> | 1946 | Poaceae | <i>Digitaria</i> | <i>sanguinalis</i> | Argentina | -34.921454 | -57.954533 |
| PURF11500 | <i>Puccinia</i> | <i>longipedicellata</i> | 1948 | Euphorbiaceae | <i>Euphorbia</i> | <i>cotinifolia</i> | Venezuela | 9.166667 | -64.616667 |
| PURF11501 | <i>Puccinia</i> | <i>thaliae</i> | 1948 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Venezuela | 10.46354 | -64.177501 |
| PURF11502 | <i>Puccinia</i> | <i>purpurea</i> | 1947 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | Venezuela | 10.258324 | -67.611727 |
| PURF11592 | <i>Puccinia</i> | <i>roseana</i> | 1963 | Amaryllidaceae | <i>Stenomesson</i> | <i>aurantiacum</i> | Peru | -9.773143 | -74.992188 |
| PURF11594 | <i>Puccinia</i> | <i>baccharidis</i> | 1947 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Peru | -12.25 | -75.416667 |
| PURF11595 | <i>Puccinia</i> | <i>polysora</i> | 1948 | Poaceae | <i>Tripsacum</i> | <i>laxum</i> | Trinidad | 10.5 | -61.25 |
| PURF11662 | <i>Puccinia</i> | <i>cephalotes</i> | 1945 | Cyperaceae | <i>Rhynchospora</i> | <i>cephalotes</i> | Trinidad | 10.5 | -61.25 |
| PURF11679 | <i>Puccinia</i> | <i>sp.</i> | 1946 | Cyperaceae | <i>Kyllinga</i> | <i>sp.</i> | Grenada | 12.114055 | -61.672638 |
| PURF11681 | <i>Puccinia</i> | <i>obliqua</i> | 1947 | Apocynaceae | <i>Cynanchum</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF11691 | <i>Puccinia</i> | <i>subnitens</i> | 1944 | Amaranthaceae | <i>Suaeda</i> | <i>sp.</i> | Argentina | -33.460909 | -67.549559 |
| PURF11692 | <i>Puccinia</i> | <i>levis</i> | 1949 | Poaceae | <i>Paspalum</i> | <i>urvillei</i> | Argentina | -27.577644 | -56.747903 |
| PURF11693 | <i>Puccinia</i> | <i>arechavaletae</i> | 1949 | Sapindaceae | <i>Cardiospermum</i> | <i>grandiflorum</i> | Argentina | -34.921454 | -57.954533 |
| PURF11695 | <i>Puccinia</i> | <i>abnormis</i> | 1949 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | Argentina | -27.566675 | -56.914669 |
| PURF11696 | <i>Puccinia</i> | <i>solidaginis-microglossae</i> | 1949 | Asteraceae | <i>Solidago</i> | <i>chilensis</i> | Argentina | -27.566675 | -56.914669 |
| PURF11698 | <i>Puccinia</i> | <i>graminis</i> | 1948 | Poaceae | <i>Bromus</i> | <i>rubens</i> | Argentina | -34.921454 | -57.954533 |
| PURF11699 | <i>Puccinia</i> | <i>graminis</i> | 1949 | Poaceae | <i>Agropyron</i> | <i>cristatum</i> | Argentina | -34.921454 | -57.954533 |
| PURF11700 | <i>Puccinia</i> | <i>graminis</i> | 1949 | Poaceae | <i>Hordeum</i> | <i>stenostachys</i> | Argentina | -34.921454 | -57.954533 |
| PURF11701 | <i>Puccinia</i> | <i>graminis</i> | 1947 | Poaceae | <i>Poa</i> | <i>lanigera</i> | Argentina | -34.921454 | -57.954533 |
| PURF11702 | <i>Puccinia</i> | <i>graminis</i> | 1948 | Poaceae | <i>Lamarckia</i> | <i>aurea</i> | Argentina | -34.92145 | -57.95453 |
| PURF11703 | <i>Puccinia</i> | <i>schileana</i> | 1925 | Asteraceae | <i>Verbesina</i> | <i>australis</i> | Argentina | -31.20221 | -64.35312 |
| PURF11704 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1949 | Polygonaceae | <i>Polygonum</i> | <i>persicariodes</i> | Argentina | -27.566675 | -56.914669 |
| PURF11797 | <i>Puccinia</i> | <i>cacao</i> | 1927 | Poaceae | <i>Hackelochloa</i> | <i>porrifolia</i> | Indonesia | -9 | 120 |
| PURF11847 | <i>Puccinia</i> | <i>chloridis</i> | 1949 | Poaceae | <i>Chloris</i> | <i>distichophylla</i> | Argentina | -31.844338 | -63.747206 |
| PURF11849 | <i>Puccinia</i> | <i>obliqua</i> | 1949 | Apocynaceae | <i>Cynanchum</i> | <i>trinitense</i> | Trinidad | 10.5 | -61.25 |
| PURF11851 | <i>Puccinia</i> | <i>gouaniae</i> | 1948 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF11852 | <i>Puccinia</i> | <i>invaginata</i> | 1948 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF11853 | <i>Puccinia</i> | <i>invaginata</i> | 1948 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF11864 | <i>Puccinia</i> | <i>oahuensis</i> | 1947 | Poaceae | <i>Digitaria</i> | <i>horizontalis</i> | Trinidad | 10.5 | -61.25 |
| PURF11866 | <i>Puccinia</i> | <i>oahuensis</i> | 1947 | Poaceae | <i>Digitaria</i> | <i>horizontalis</i> | Trinidad | 10.5 | -61.25 |
| PURF11868 | <i>Puccinia</i> | <i>cyperi</i> | 1947 | Cyperaceae | <i>Cyperus</i> | <i>dissitiflorus</i> | Trinidad | 10.5 | -61.25 |
| PURF11869 | <i>Puccinia</i> | <i>insueta</i> | 1945 | Malpighiaceae | <i>Stigmaphyllon</i> | <i>grenadense</i> | Trinidad | 10.5 | -61.25 |
| PURF11870 | <i>Puccinia</i> | <i>insueta</i> | 1947 | Malpighiaceae | <i>Stigmaphyllon</i> | <i>convolvulifolium</i> | Trinidad | 10.5 | -61.25 |
| PURF11873 | <i>Puccinia</i> | <i>triumfettae</i> | 1948 | Malvaceae | <i>Heliocarpus</i> | <i>papayanensis</i> | Trinidad | 10.5 | -61.25 |
| PURF11875 | <i>Puccinia</i> | <i>polysora</i> | 1948 | Poaceae | <i>Zea</i> | <i>mays</i> | Colombia | 3.442371 | -73.310196 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-----------------------|-----------------|---------------------------------|----------|------------------|----------------------|----------------------------|-------------|------------|------------|
| PURF11883 | <i>Puccinia</i> | <i>subcoronata</i> | 1947 | Cyperaceae | <i>Cyperus</i> | <i>diffusus</i> | Trinidad | 10.5 | -61.25 |
| PURF11894 | <i>Puccinia</i> | <i>abnormis</i> | non-data | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | Chile | -33.44903 | -71.388672 |
| PURF11895 (PURF16658) | <i>Puccinia</i> | <i>subtilipes</i> | 1947 | Poaceae | <i>Leptochloa</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF11907 | <i>Puccinia</i> | <i>cyperi-tagetiformi</i> | 1945 | Cyperaceae | <i>Cyperus</i> | <i>compressus</i> | Philippines | 14.59354 | 121.05 |
| PURF11909 | <i>Puccinia</i> | <i>holoserica</i> | 1945 | Convolvulaceae | <i>Ipomoea</i> | <i>non-data</i> | Philippines | 15.89573 | 120.3157 |
| PURF12577 | <i>Puccinia</i> | <i>ferruginosa</i> | 1929 | Asteraceae | <i>Artemisia</i> | <i>capillaris</i> | Japan | 35.616667 | 134.45 |
| PURF12581 | <i>Puccinia</i> | <i>festucae</i> | 1941 | Caprifoliaceae | <i>Lonicera</i> | <i>maackii</i> | Korea | 37.54458 | 127.1448 |
| PURF12605 | <i>Puccinia</i> | <i>lactucae-repentis</i> | 1934 | Asteraceae | <i>Ixeris</i> | <i>repens</i> | North Korea | 15.156512 | 145.742371 |
| PURF12627 | <i>Puccinia</i> | <i>congesta</i> | 1936 | Polygonaceae | <i>Ampelgonum</i> | <i>umbellatum</i> | Japan | 31.05628 | 130.763 |
| PURF12637 | <i>Puccinia</i> | <i>diarrhenae</i> | 1941 | Poaceae | <i>Diarrhena</i> | <i>japonica</i> | Korea | 37.6 | 127.25 |
| PURF12641 | <i>Puccinia</i> | <i>diplachnicola</i> | 1941 | Poaceae | <i>Cleistogenes</i> | <i>hackeli</i> | Korea | 37.58333 | 127 |
| PURF12656 | <i>Puccinia</i> | <i>schizocodonia</i> | 1926 | Diapensiaceae | <i>Shortia</i> | <i>soldanelloides</i> | Japan | 40.65569 | 140.8917 |
| PURF12737 | <i>Puccinia</i> | <i>togashiana</i> | 1934 | Ranunculaceae | <i>Thalictrum</i> | <i>tuberiferum</i> | Japan | 39.59601 | 141.3597 |
| PURF12997 | <i>Puccinia</i> | <i>agropyri-ciliaris</i> | 1935 | Poaceae | <i>Elymus</i> | <i>tsuhuskiensis</i> | Japan | 31.56019 | 130.5581 |
| PURF13014 | <i>Puccinia</i> | <i>levis</i> | 1940 | Poaceae | <i>Digitaria</i> | <i>henryi</i> | Japan | 26.229856 | 127.759057 |
| PURF13019 | <i>Puccinia</i> | <i>taiwaniana</i> | 1940 | Poaceae | <i>Cyrtococcum</i> | <i>patens</i> | Brazil | 26.66137 | 128.0896 |
| PURF13039 | <i>Puccinia</i> | <i>hordei</i> | 1949 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Argentina | -32.83427 | -62.294303 |
| PURF13040 | <i>Puccinia</i> | <i>gnaphalicola</i> | 1949 | Asteraceae | <i>Gamochaeta</i> | <i>sp.</i> | Argentina | -34.921454 | -57.954533 |
| PURF13041 | <i>Puccinia</i> | <i>platyspora</i> | 1949 | Malvaceae | <i>Malvastrum</i> | <i>garckeanum</i> | Argentina | -34.826174 | -57.964608 |
| PURF13042 | <i>Puccinia</i> | <i>calcitrapae</i> | 1949 | Asteraceae | <i>Carduus</i> | <i>pynocephalus</i> | Argentina | -32.83427 | -62.294303 |
| PURF13043 | <i>Puccinia</i> | <i>graminis</i> | 1950 | Poaceae | <i>Agropyron</i> | <i>sp.</i> | Argentina | -35.08648 | -57.513014 |
| PURF13044 | <i>Puccinia</i> | <i>polypogonis</i> | 1949 | Poaceae | <i>Polypogon</i> | <i>sp.</i> | Argentina | -34.921454 | -57.954533 |
| PURF13045 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1949 | Polygonaceae | <i>Polygonum</i> | <i>persicaria</i> | Argentina | -34.921454 | -57.954533 |
| PURF13046 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1950 | Polygonaceae | <i>Polygonum</i> | <i>convolvulus</i> | Argentina | -32.575614 | -60.852356 |
| PURF13048 | <i>Puccinia</i> | <i>chloridis</i> | 1949 | Poaceae | <i>Chloris</i> | <i>distichophylla</i> | Argentina | -31.844338 | -63.747206 |
| PURF13050 | <i>Puccinia</i> | <i>heteropteridis</i> | 1937 | Malpighiaceae | <i>Heteropterys</i> | <i>glabra</i> | Argentina | -34.921454 | -57.954533 |
| PURF13061 | <i>Puccinia</i> | <i>solidaginis-microglossae</i> | 1946 | Asteraceae | <i>Solidago</i> | <i>chilensis</i> | Argentina | -34.921454 | -57.954533 |
| PURF13089 | <i>Puccinia</i> | <i>dichondrae</i> | 1946 | Convolvulaceae | <i>Dichondra</i> | <i>repens</i> | Kenya | -1.28333 | 36.82491 |
| PURF14326 | <i>Puccinia</i> | <i>adjuncta</i> | 1932 | Asteraceae | <i>Artemisia</i> | <i>sp.</i> | China | 30.43333 | 117.83333 |
| PURF14365 | <i>Puccinia</i> | <i>conclusa</i> | 1932 | Cyperaceae | <i>Cyperus</i> | <i>difformis</i> | China | 30.43333 | 117.8333 |
| PURF14379 | <i>Puccinia</i> | <i>subhyalina</i> | 1932 | Cyperaceae | <i>Carex</i> | <i>sp.</i> | China | 30.43333 | 117.8333 |
| PURF14396 | <i>Puccinia</i> | <i>coronata</i> | 1933 | Poaceae | <i>Bromus</i> | <i>sp.</i> | China | 24 | 108.6484 |
| PURF14461 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1948 | Araliaceae | <i>Hydrocotyle</i> | <i>hazeri</i> | Trinidad | 10.5 | -61.25 |
| PURF14463 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1949 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | Trinidad | 10.5 | -61.25 |
| PURF14464 | <i>Puccinia</i> | <i>gouaniae</i> | 1949 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF14525 | <i>Puccinia</i> | <i>fuegiana</i> | 1946 | Alstroemeriaceae | <i>Luzuriaga</i> | <i>marginata</i> | Chile | -41.870699 | -73.81622 |
| PURF14598 | <i>Puccinia</i> | <i>festata</i> | 1942 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Colombia | 2.5 | -76.583333 |
| PURF14603 | <i>Puccinia</i> | <i>liberta</i> | 1949 | Cyperaceae | <i>Eleocharis</i> | <i>elegans</i> | Ecuador | 0.416311 | -78.346451 |
| PURF14605 | <i>Puccinia</i> | <i>sorghii</i> | 1950 | Poaceae | <i>Zea</i> | <i>mays</i> | Ethiopia | 8.896515 | 38.619837 |
| PURF14606 | <i>Puccinia</i> | <i>schweinfurthii</i> | 1951 | Rhamnaceae | <i>Rhamnus</i> | <i>staddo</i> | Ethiopia | 8.896515 | 38.61984 |
| PURF14635 | <i>Puccinia</i> | <i>nakanishikii</i> | 1945 | Poaceae | <i>Cymbopogon</i> | <i>crelius</i> | India | 12.97706 | 77.58711 |
| PURF14686 | <i>Puccinia</i> | <i>insueta</i> | 1952 | Malpighiaceae | <i>Stigmaphyllon</i> | <i>convolvulifolium</i> | Trinidad | 10.5 | -61.25 |
| PURF14687 | <i>Puccinia</i> | <i>substriata</i> | 1952 | Poaceae | <i>Paspalum</i> | <i>fasciculatum</i> | Trinidad | 10.5 | -61.25 |
| PURF14692 | <i>Puccinia</i> | <i>farinacea</i> | 1939 | Lamiaceae | <i>Salvia</i> | <i>rhinosima</i> | Argentina | -23.577568 | -65.350902 |
| PURF14693 | <i>Puccinia</i> | <i>farinacea</i> | 1933 | Lamiaceae | <i>Salvia</i> | <i>stachyfolia</i> | Bolivia | -15.731265 | -64.529297 |
| PURF14694 | <i>Puccinia</i> | <i>farinacea</i> | 1937 | Lamiaceae | <i>Salvia</i> | <i>sp.</i> | Argentina | -23.13398 | -64.324645 |
| PURF14695 | <i>Puccinia</i> | <i>conspersa</i> | 1931 | Lamiaceae | <i>Salvia</i> | <i>killipiana</i> | Venezuela | 9.303891 | -70.175799 |
| PURF14696 | <i>Puccinia</i> | <i>gilliesii</i> | 1925 | Lamiaceae | <i>Salvia</i> | <i>gilliesii</i> | Argentina | -24.462249 | -55.744484 |
| PURF14697 | <i>Puccinia</i> | <i>gilliesii</i> | 1925 | Lamiaceae | <i>Salvia</i> | <i>gilliesii</i> | Argentina | -24.785299 | -65.424469 |
| PURF14698 | <i>Puccinia</i> | <i>gilliesii</i> | 1939 | Lamiaceae | <i>Salvia</i> | <i>humboldtiana</i> | Ecuador | -1.252369 | -78.622781 |
| PURF14700 | <i>Puccinia</i> | <i>roesteliiformis</i> | 1942 | Lamiaceae | <i>Salvia</i> | <i>corrugata</i> | Ecuador | -1.592628 | -79.000978 |
| PURF14701 | <i>Puccinia</i> | <i>roesteliiformis</i> | 1919 | Lamiaceae | <i>Salvia</i> | <i>corrugata</i> | Ecuador | -1.252369 | -78.622781 |
| PURF14702 | <i>Puccinia</i> | <i>soledadensis</i> | 1928 | Lamiaceae | <i>Salvia</i> | <i>angulata</i> | Venezuela | 8.533018 | -71.24585 |
| PURF14703 | <i>Puccinia</i> | <i>soledadensis</i> | 1938 | Lamiaceae | <i>Salvia</i> | <i>bogotensis</i> | Colombia | 5.416667 | -73.333333 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------------|------|----------------|----------------------|---------------------|--------------|------------|------------|
| PURF14704 | <i>Puccinia</i> | <i>soledadensis</i> | 1922 | Lamiaceae | <i>Salvia</i> | <i>calocalicina</i> | Colombia | 5.299718 | -75.360229 |
| PURF14707 | <i>Puccinia</i> | <i>salviae-runcinatae</i> | 1940 | Lamiaceae | <i>Salvia</i> | <i>runcinata</i> | South Africa | -24.5138 | 30.41634 |
| PURF14715 | <i>Puccinia</i> | <i>sorghii</i> | 1951 | Poaceae | <i>Zea</i> | <i>mays</i> | Colombia | 3.442371 | -73.310196 |
| PURF14716 | <i>Puccinia</i> | <i>sorghii</i> | 1951 | Poaceae | <i>Zea</i> | <i>mays</i> | Ecuador | -0.19457 | -78.49301 |
| PURF14721 | <i>Puccinia</i> | <i>opuntiae</i> | 1947 | Poaceae | <i>Bouteloua</i> | <i>simplex</i> | Bolivia | -17.118938 | -65.950439 |
| PURF14788 | <i>Puccinia</i> | <i>panici-montani</i> | 1940 | Poaceae | <i>Setaria</i> | <i>palmifolia</i> | Japan | 26.75886 | 128.163 |
| PURF14814 | <i>Puccinia</i> | <i>phragmitis</i> | 1969 | Poaceae | <i>Phragmites</i> | <i>sp.</i> | Chile | -33.45 | -70.666667 |
| PURF14826 | <i>Puccinia</i> | <i>coronata</i> | 1912 | Poaceae | <i>Calamagrostis</i> | <i>langsдорffii</i> | Japan | 35.53333 | 136.9167 |
| PURF14840 | <i>Puccinia</i> | <i>polypogonis</i> | 1949 | Poaceae | <i>Polypogon</i> | <i>monspeiensis</i> | Argentina | -34.921454 | -57.954533 |
| PURF14860 | <i>Puccinia</i> | <i>phyllostachydis</i> | 1920 | Poaceae | <i>Phyllostachys</i> | <i>aurea</i> | Japan | 36.41432 | 139.1311 |
| PURF14865 | <i>Puccinia</i> | <i>poarum</i> | 1925 | Poaceae | <i>Poa</i> | <i>compressa</i> | Germany | 50.20104 | 8.853036 |
| PURF14932 | <i>Puccinia</i> | <i>liberta</i> | 1953 | Cyperaceae | <i>Eleocharis</i> | <i>elegans</i> | Trinidad | 10.5 | -61.25 |
| PURF14933 | <i>Puccinia</i> | <i>eleocharidis</i> | 1953 | Cyperaceae | <i>Eleocharis</i> | <i>geniculata</i> | Trinidad | 10.5 | -61.25 |
| PURF14935 | <i>Puccinia</i> | <i>justiciae</i> | 1953 | Acanthaceae | <i>Justicia</i> | <i>pectoralis</i> | Trinidad | 10.5 | -61.25 |
| PURF14936 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1953 | Araliaceae | <i>Hydrocotyle</i> | <i>hazeri</i> | Trinidad | 10.5 | -61.25 |
| PURF14937 | <i>Puccinia</i> | <i>insueta</i> | 1953 | Malpighiaceae | <i>Stigmaphyllon</i> | <i>grenadense</i> | Trinidad | 10.71345 | -61.35669 |
| PURF14938 | <i>Puccinia</i> | <i>lithospermi</i> | 1953 | Convolvulaceae | <i>Evolvulus</i> | <i>tenuis</i> | Trinidad | 10.688447 | -61.754619 |
| PURF14940 | <i>Puccinia</i> | <i>substriata</i> | 1953 | Poaceae | <i>Paspalum</i> | <i>maritimum</i> | Trinidad | 10.5 | -61.25 |
| PURF14950 | <i>Puccinia</i> | <i>trabutii</i> | 1944 | Poaceae | <i>Arundo</i> | <i>donax</i> | Pakistan | 30.199 | 67.00971 |
| PURF14966 | <i>Puccinia</i> | <i>eritreensis</i> | 1951 | Poaceae | <i>Hyparrhenia</i> | <i>filapendula</i> | Sudan | 9.811257 | 29.0082 |
| PURF15023 | <i>Puccinia</i> | <i>torosa</i> | 1912 | Poaceae | <i>Arundo</i> | <i>donax</i> | South Africa | -30.6986 | 26.70825 |
| PURF15031 | <i>Puccinia</i> | <i>myrsiphylli</i> | 1911 | Asparagaceae | <i>Asparagus</i> | <i>asparagoides</i> | South Africa | -29.265 | 30.62049 |
| PURF15048 | <i>Puccinia</i> | <i>tragiae</i> | 1913 | Euphorbiaceae | <i>Tragia</i> | <i>non-data</i> | South Africa | -29.9833 | 30.91667 |
| PURF15068 | <i>Puccinia</i> | <i>hypoxidis</i> | 1911 | Hypoxidaceae | <i>Hypoxis</i> | <i>latifolia</i> | South Africa | -28.1945 | 30.41648 |
| PURF15115 | <i>Puccinia</i> | <i>cenchri</i> | 1950 | Poaceae | <i>Cenchrus</i> | <i>myosuroides</i> | Argentina | -28.549806 | -67.647764 |
| PURF15144 | <i>Puccinia</i> | <i>neoporteri</i> | 1926 | Poaceae | <i>Bambusa</i> | <i>sp.</i> | China | 32.06167 | 118.7778 |
| PURF15145 | <i>Puccinia</i> | <i>lophatheri</i> | 1920 | Poaceae | <i>Centotheca</i> | <i>lappacea</i> | China | 23.11667 | 113.25 |
| PURF15149 | <i>Puccinia</i> | <i>obliqua</i> | 1949 | Apocynaceae | <i>Cynanchum</i> | <i>trinitense</i> | Trinidad | 10.5 | -61.25 |
| PURF15155 | <i>Puccinia</i> | <i>insueta</i> | 1921 | Malpighiaceae | <i>Stigmaphyllon</i> | <i>acuminatum</i> | Brazil | -22.3809 | -42.8572 |
| PURF15168 | <i>Puccinia</i> | <i>smilacis-siebolaii</i> | 1907 | Smilacaceae | <i>Smilax</i> | <i>china</i> | Japan | 33.49713 | 133.4376 |
| PURF15171 | <i>Puccinia</i> | <i>oxalidis</i> | 1953 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Colombia | 6.25184 | -75.569084 |
| PURF15195 | <i>Puccinia</i> | <i>dioicae</i> | 1920 | Cyperaceae | <i>Carex</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF15196 | <i>Puccinia</i> | <i>dioicae</i> | 1920 | Cyperaceae | <i>Carex</i> | <i>andina</i> | Bolivia | -16.5 | -68.15 |
| PURF15197 | <i>Puccinia</i> | <i>dioicae</i> | 1919 | Cyperaceae | <i>Carex</i> | <i>bracteosa</i> | Chile | -38.736248 | -72.616394 |
| PURF15255 | <i>Puccinia</i> | <i>investita</i> | 1952 | Asteraceae | <i>Achyrocline</i> | <i>mathiofolia</i> | Argentina | -41.631302 | -65.380799 |
| PURF15257 | <i>Puccinia</i> | <i>spiegazziniana</i> | 1952 | Asteraceae | <i>Aspilota</i> | <i>silphoides</i> | Argentina | -34.623432 | -58.386353 |
| PURF15259 | <i>Puccinia</i> | <i>menthae</i> | 1949 | Lamiaceae | <i>Satureja</i> | <i>odora</i> | Argentina | -31.417939 | -64.191254 |
| PURF15260 | <i>Puccinia</i> | <i>singerii</i> | 1950 | Asteraceae | <i>Verbesina</i> | <i>sp.</i> | Argentina | -27.295335 | -65.846069 |
| PURF15263 | <i>Puccinia</i> | <i>grindeliae</i> | 1940 | Asteraceae | <i>Haplopappus</i> | <i>pectinatus</i> | Argentina | -38.899164 | -70.054423 |
| PURF15265 | <i>Puccinia</i> | <i>ventanensis</i> | 1952 | Amaranthaceae | <i>Pfaffia</i> | <i>graphaloides</i> | Argentina | -32.8301 | -66.0319 |
| PURF15266 | <i>Puccinia</i> | <i>boopidis</i> | 1950 | Calyceraceae | <i>Acicarpa</i> | <i>australis</i> | Argentina | -51.622613 | -69.218127 |
| PURF15267 | <i>Puccinia</i> | <i>menthae</i> | 1951 | Lamiaceae | <i>Satureja</i> | <i>parvifolia</i> | Argentina | -31.417939 | -31.417939 |
| PURF15268 | <i>Puccinia</i> | <i>ensenadensis</i> | 1951 | Asteraceae | <i>Viguiera</i> | <i>anchuaefolia</i> | Argentina | -34.168742 | -58.95914 |
| PURF15273 | <i>Puccinia</i> | <i>bougainvilleae</i> | 1951 | Nyctaginaceae | <i>Bougainvillea</i> | <i>stipitata</i> | Argentina | -36.842582 | -60.226112 |
| PURF15382 | <i>Puccinia</i> | <i>blasdalei</i> | 1927 | Amaryllidaceae | <i>Allium</i> | <i>fistulosum</i> | Taiwan | 23.5 | 121 |
| PURF15391 | <i>Puccinia</i> | <i>chloridis</i> | 1953 | Poaceae | <i>Chloris</i> | <i>retusa</i> | Argentina | -36.842582 | -60.226112 |
| PURF15395 | <i>Puccinia</i> | <i>opuntiae</i> | 1946 | Poaceae | <i>Bouteloua</i> | <i>simplex</i> | Peru | -12.05 | -77.05 |
| PURF15396 | <i>Puccinia</i> | <i>vexans</i> | 1952 | Poaceae | <i>Bouteloua</i> | <i>curtipendula</i> | Peru | -13.305696 | -72.116109 |
| PURF15435 | <i>Puccinia</i> | <i>levis</i> | 1940 | Poaceae | <i>Melinis</i> | <i>repens</i> | Colombia | 5.416667 | -73.33333 |
| PURF15436 | <i>Puccinia</i> | <i>levis</i> | 1938 | Poaceae | <i>Melinis</i> | <i>repens</i> | Venezuela | 10.5 | -66.85 |
| PURF15441 | <i>Puccinia</i> | <i>obliquo-septata</i> | 1913 | Poaceae | <i>Olyra</i> | <i>micrantha</i> | Paraguay | -23.30108 | -58.523682 |
| PURF15448 | <i>Puccinia</i> | <i>opipara</i> | 1929 | Poaceae | <i>Ichnanthus</i> | <i>minarum</i> | Peru | -14.837747 | -74.052856 |
| PURF1551 | <i>Puccinia</i> | <i>recondita</i> | 1936 | Rosaceae | <i>Rosa</i> | <i>cinnamommea</i> | Sweden | 61.15 | 15.116667 |
| PURF15512 | <i>Puccinia</i> | <i>recondita</i> | 1928 | Poaceae | <i>Vulpia</i> | <i>bromoides</i> | Uruguay | -34.742222 | -56.098333 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|----------|----------------|----------------------|------------------------|-------------|------------|------------|
| PURF15513 | <i>Puccinia</i> | <i>mellea</i> | 1927 | Poaceae | <i>Vulpia</i> | <i>eriolepis</i> | Chile | -29.904529 | -71.248935 |
| PURF15514 | <i>Puccinia</i> | <i>hordei</i> | 1929 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Argentina | -24.785299 | -65.424469 |
| PURF15518 | <i>Puccinia</i> | <i>saetensis</i> | 1923 | Poaceae | <i>Nassella</i> | <i>pubflora</i> | Peru | -7.255558 | -76.475553 |
| PURF15519 | <i>Puccinia</i> | <i>digna</i> | non-data | Poaceae | <i>Nassella</i> | <i>neesiana</i> | Chile | -33.45 | -70.666667 |
| PURF15520 | <i>Puccinia</i> | <i>saetensis</i> | 1940 | Poaceae | <i>Stipa</i> | <i>clarazil</i> | Argentina | -34.661846 | -58.515442 |
| PURF15521 | <i>Puccinia</i> | <i>nasellae</i> var. <i>nasellae</i> | 1933 | Poaceae | <i>Stipa</i> | sp. | Argentina | -26.815306 | -65.219849 |
| PURF15522 | <i>Puccinia</i> | <i>graminis</i> | 1923 | Poaceae | <i>Stipa</i> | <i>inconspicua</i> | Ecuador | -4.009957 | -79.204071 |
| PURF15523 | <i>Puccinia</i> | <i>piptochaetii</i> | 1936 | Poaceae | <i>Piptochaetium</i> | <i>stipoides</i> | Uruguay | -32.851152 | -55.963867 |
| PURF15524 | <i>Puccinia</i> | <i>piptochaetii</i> | non-data | Poaceae | <i>Piptochaetium</i> | <i>stipoides</i> | Uruguay | -34.454878 | -56.395767 |
| PURF15525 | <i>Puccinia</i> | <i>piptochaetii</i> | 1936 | Poaceae | <i>Piptochaetium</i> | <i>stipoides</i> | Uruguay | -34.933333 | -55.883333 |
| PURF15529 | <i>Puccinia</i> | <i>substriata</i> | 1950 | Solanaceae | <i>Solanum</i> | <i>melongerita</i> | India | 11.00555 | 76.96612 |
| PURF15543 | <i>Puccinia</i> | <i>stenandri</i> | 1953 | Acanthaceae | <i>Stenandrium</i> | <i>brevifolium</i> | Argentina | -23.331 | -65.5669 |
| PURF15544 | <i>Puccinia</i> | <i>tuyutensis</i> | 1949 | Convolvulaceae | <i>Cressa</i> | <i>truxillensis</i> | Argentina | -26.070411 | -65.979296 |
| PURF15546 | <i>Puccinia</i> | <i>investita</i> | 1952 | Asteraceae | <i>Achyrocline</i> | <i>mathiofolia</i> | Argentina | -41.631302 | -65.380799 |
| PURF15547 | <i>Puccinia</i> | <i>farinacea</i> | 1951 | Lamiaceae | <i>Salvia</i> | <i>uliginosa</i> | Argentina | -34.623432 | -58.386353 |
| PURF15548 | <i>Puccinia</i> | <i>menthae</i> | 1950 | Lamiaceae | <i>Satureja</i> | <i>odora</i> | Argentina | -31.417939 | -64.191254 |
| PURF15557 | <i>Puccinia</i> | <i>conspersa</i> | 1947 | Lamiaceae | <i>Salvia</i> | <i>procurrens</i> | Argentina | -34.921454 | -57.954533 |
| PURF15558 | <i>Puccinia</i> | <i>conspersa</i> | 1947 | Lamiaceae | <i>Salvia</i> | <i>uliginosa</i> | Argentina | -34.921454 | -57.954533 |
| PURF15574 | <i>Puccinia</i> | <i>levis</i> | 1932 | Poaceae | <i>Digitaria</i> | <i>horizontalis</i> | Venezuela | 9.935932 | -71.109969 |
| PURF15576 | <i>Puccinia</i> | sp. | 1950 | Cyperaceae | <i>Carex</i> | <i>bonplandii</i> | Ecuador | 0.416311 | -78.346451 |
| PURF15577 | <i>Puccinia</i> | <i>conspersa</i> | 1951 | Lamiaceae | <i>Salvia</i> | <i>pallida</i> | Argentina | -31.710816 | -60.567541 |
| PURF15665 | <i>Puccinia</i> | <i>levis</i> | 1940 | Poaceae | <i>Melinis</i> | <i>repens</i> | Colombia | 5.416667 | -73.333333 |
| PURF15668 | <i>Puccinia</i> | <i>polypogonis</i> | 1934 | Poaceae | <i>Digitaria</i> | <i>velutina</i> | non-data | 7.755424 | -5.800293 |
| PURF15669 | <i>Puccinia</i> | <i>polypogonis</i> | 1932 | Poaceae | <i>Polypogon</i> | <i>monspeliensis</i> | Argentina | -26.737053 | -65.032916 |
| PURF15670 | <i>Puccinia</i> | <i>polypogonis</i> | 1918 | Poaceae | <i>Polypogon</i> | <i>monspeliensis</i> | Argentina | -34.661846 | -58.515442 |
| PURF15671 | <i>Puccinia</i> | <i>polypogonis</i> | 1934 | Poaceae | <i>Polypogon</i> | <i>monspeliensis</i> | Uruguay | -32.833056 | -56.030647 |
| PURF15674 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>major</i> | 1925 | Poaceae | <i>Poa</i> | <i>candamoana</i> | Peru | -16.398889 | -71.535 |
| PURF15733 | <i>Puccinia</i> | <i>aurata</i> | 1952 | Asteraceae | <i>Conyza</i> | <i>pyrrhopappa</i> | Kenya | -1.283333 | -1.283333 |
| PURF15760 | <i>Puccinia</i> | <i>chloridis</i> | 1927 | Poaceae | <i>Trichloris</i> | <i>pluriflora</i> | Argentina | -26.480724 | -65.345815 |
| PURF15761 | <i>Puccinia</i> | <i>chloridis</i> | 1920 | Poaceae | <i>Trichloris</i> | <i>pluriflora</i> | Argentina | -33.25 | -66.366667 |
| PURF15762 | <i>Puccinia</i> | <i>chloridis</i> | 1926 | Poaceae | <i>Trichloris</i> | <i>pluriflora</i> | Argentina | -33.25 | -66.366667 |
| PURF15799 | <i>Puccinia</i> | <i>spongiosa</i> | 1915 | Rubiaceae | <i>Webera</i> | <i>corymbosa</i> | India | 11.00555 | 76.96612 |
| PURF15801 | <i>Puccinia</i> | <i>paradoxapoda</i> | 1901 | Solanaceae | <i>Lycium</i> | non-data | Argentina | -24.1855 | -65.2936 |
| PURF15905 | <i>Puccinia</i> | <i>substriata</i> | 1955 | Poaceae | <i>Digitaria</i> | <i>californica</i> | Argentina | -31.417939 | -64.191254 |
| PURF15906 | <i>Puccinia</i> | <i>mellea</i> | 1900 | Poaceae | <i>Vulpia</i> | <i>australis</i> | Argentina | -44 | -69 |
| PURF15907 | <i>Puccinia</i> | <i>substriata</i> | 1955 | Poaceae | <i>Digitaria</i> | <i>insularis</i> | Argentina | -26.815306 | -65.219849 |
| PURF15908 | <i>Puccinia</i> | <i>schedonnardi</i> | 1945 | Poaceae | <i>Melica</i> | <i>andina</i> | Argentina | -32.85273 | -68.828373 |
| PURF15909 | <i>Puccinia</i> | <i>polysora</i> | 1944 | Poaceae | <i>Zea</i> | <i>mays</i> | Venezuela | 10.23535 | -67.591128 |
| PURF15910 | <i>Puccinia</i> | <i>morrisorii</i> | 1956 | Geraniaceae | <i>Pelargonium</i> | <i>hortorum</i> | Hawaii | 21.31667 | -157.817 |
| PURF15911 | <i>Puccinia</i> | <i>digna</i> | 1947 | Poaceae | <i>Zea</i> | <i>mays</i> | Philippines | 14.17339 | 121.239006 |
| PURF15912 | <i>Puccinia</i> | <i>dolosa</i> | 1945 | Poaceae | <i>Paspalum</i> | <i>nicorae</i> | Argentina | -34.92145 | -57.95453 |
| PURF15914 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1902 | Poaceae | <i>Agrostis</i> | <i>pyrogea</i> | Argentina | -53.8 | -67.683333 |
| PURF15915 | <i>Puccinia</i> | <i>pseudoatra</i> | 1954 | Poaceae | <i>Paspalum</i> | sp. | Peru | -13.305696 | -72.116109 |
| PURF15916 | <i>Puccinia</i> | <i>pseudoatra</i> | 1954 | Poaceae | <i>Paspalum</i> | sp. | Peru | -12.5 | -76.233333 |
| PURF15917 | <i>Puccinia</i> | <i>pseudoatra</i> | 1954 | Poaceae | <i>Paspalum</i> | sp. | Peru | -12.5 | -76.233333 |
| PURF15918 | <i>Puccinia</i> | <i>minussensis</i> | 1948 | Asteraceae | <i>Ixeris</i> | <i>versicolor</i> | China | 39.88972 | 115.275 |
| PURF15921 | <i>Puccinia</i> | <i>impedita</i> | 1953 | Lamiaceae | <i>Salvia</i> | <i>hyptoides</i> | Colombia | 4.206944 | -75.9581 |
| PURF15923 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1953 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Colombia | 3.5 | -73 |
| PURF15925 | <i>Puccinia</i> | <i>boopidis</i> | 1942 | Calyceraceae | <i>Calycera</i> | <i>spinulosa</i> | Argentina | -34.617717 | -68.330066 |
| PURF15928 | <i>Puccinia</i> | <i>melanosora</i> | 1951 | Calyceraceae | <i>Acicarpa</i> | <i>tribuloides</i> | Argentina | -34.921454 | -57.954533 |
| PURF15932 | <i>Puccinia</i> | <i>malvacearum</i> | 1953 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Colombia | 3.519751 | -76.302246 |
| PURF15936 | <i>Puccinia</i> | <i>vexans</i> | 1952 | Rubiaceae | <i>Psychdrax</i> | <i>subcordata</i> | Peru | 6.729722 | -3.496389 |
| PURF15952 | <i>Puccinia</i> | <i>levis</i> | 1955 | Poaceae | <i>Axonopus</i> | <i>chrysoblepharis</i> | Venezuela | 10.149239 | -69.210194 |
| PURF15959 | <i>Puccinia</i> | <i>eragrostidis</i> | 1954 | Poaceae | <i>Eragrostis</i> | <i>macilenta</i> | Sudan | 9.811257 | 29.008203 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|----------|----------------|---------------------|------------------------|----------------|------------|------------|
| PURF15977 | <i>Puccinia</i> | <i>berberidis</i> | 1926 | Berberidaceae | <i>Berberis</i> | <i>laurina</i> | Uruguay | -32.833056 | -56.030647 |
| PURF16037 | <i>Puccinia</i> | <i>oncidii</i> | 1958 | Orchidaceae | <i>Oncidium</i> | <i>sp.</i> | Ecuador | -1.808802 | -78.458374 |
| PURF16073 | <i>Puccinia</i> | <i>eremuri</i> | 1941 | Asphodelaceae | <i>Eremurus</i> | <i>himalaicus</i> | India | 32.18908 | 77.08289 |
| PURF16110 | <i>Puccinia</i> | <i>miscanthi</i> | 1959 | Plantaginaceae | <i>Plantago</i> | <i>major</i> | Japan | 34.78348 | 138.2597 |
| PURF16114 | <i>Puccinia</i> | <i>moriokaensis</i> | 1957 | Poaceae | <i>Phalaris</i> | <i>arundinacea</i> | Japan | 34.43672 | 132.4444 |
| PURF16121 | <i>Puccinia</i> | <i>phaenospermae</i> | 1959 | Poaceae | <i>Phaenosperma</i> | <i>globosa</i> | Japan | 34.436717 | 132.444446 |
| PURF16155 | <i>Puccinia</i> | <i>tweediana</i> | 1955 | Acanthaceae | <i>Dicliptera</i> | <i>cuneata</i> | India | 30.45918 | 78.06287 |
| PURF16180 | <i>Puccinia</i> | <i>phragmitis</i> | 1958 | Polygonaceae | <i>Poligonum</i> | <i>sachalinense</i> | Japan | 43.38749 | 142.5605 |
| PURF16222 | <i>Puccinia</i> | <i>mutabilis</i> | 1937 | Lamiaceae | <i>Hyptis</i> | <i>pectinata</i> | Ghana | 5.333333 | -0.75 |
| PURF16226 | <i>Puccinia</i> | <i>coronata</i> | 1943 | Poaceae | <i>Phalaris</i> | <i>minor</i> | Argentina | -31.621051 | -60.697601 |
| PURF16345 | <i>Puccinia</i> | <i>pratensis</i> | 1925 | Poaceae | <i>Avena</i> | <i>pratensis</i> | Sweden | 63.49997 | 16.32617 |
| PURF16438 | <i>Puccinia</i> | <i>oncidii</i> | 1959 | Orchidaceae | <i>Oncidium</i> | <i>sp.</i> | Ecuador | -1.808802 | -78.458374 |
| PURF16463 | <i>Puccinia</i> | <i>brachypodii</i> | 1946 | Poaceae | <i>Phalaris</i> | <i>minor</i> | Argentina | -38.37544 | -60.27855 |
| PURF16468 | <i>Puccinia</i> | <i>oncidii</i> | 1961 | Orchidaceae | <i>Oncidium</i> | <i>sp.</i> | Peru | -3.749125 | -73.253828 |
| PURF16533 | <i>Puccinia</i> | <i>hordei</i> | 1949 | Poaceae | <i>Vulpia</i> | <i>bromoides</i> | Colombia | 4.876608 | -74.437683 |
| PURF16545 | <i>Puccinia</i> | <i>tanacetii</i> | 1960 | Asteraceae | <i>Tanacetum</i> | <i>myriophyllum</i> | Turkey | 40.820347 | 41.544305 |
| PURF16556 | <i>Puccinia</i> | <i>bullocastani</i> | 1960 | Apiaceae | <i>Bunium</i> | <i>bourgaei</i> | Turkey | 40.52806 | 40.23194 |
| PURF16561 | <i>Puccinia</i> | <i>calcitrapae</i> | 1960 | Asteraceae | <i>Carduus</i> | <i>pycnocephalus</i> | Turkey | 38.7 | 38.7 |
| PURF16575 | <i>Puccinia</i> | <i>convulvuli</i> | 1960 | Convolvulaceae | <i>Convolvulus</i> | <i>arvensis</i> | Turkey | 41.40597 | 41.43787 |
| PURF16583 | <i>Puccinia</i> | <i>gundeliae</i> | 1960 | Asteraceae | <i>Gundelia</i> | <i>tournefortii</i> | Turkey | 38.430999 | 38.430999 |
| PURF16615 | <i>Puccinia</i> | <i>nigrescens</i> | 1960 | Lamiaceae | <i>Salvia</i> | <i>amasiaca</i> | Turkey | 40.77913 | 40.55888 |
| PURF16730 | <i>Puccinia</i> | <i>carlinae</i> | 1961 | Asteraceae | <i>Carlina</i> | <i>acanthifolia</i> | Bulgaria | 42.933333 | 24.9 |
| PURF16819 | <i>Puccinia</i> | <i>echinopsis</i> | 1959 | Asteraceae | <i>Echinops</i> | <i>sphaerocephalus</i> | Bulgaria | 41.533333 | 26.133333 |
| PURF16821 | <i>Puccinia</i> | <i>fuckelii</i> | 1959 | Asteraceae | <i>Jurinea</i> | <i>albicaulis</i> | Bulgaria | 42.333333 | 27.766667 |
| PURF16932 | <i>Puccinia</i> | <i>cleomis</i> | 1961 | Cleomaceae | <i>Cleome</i> | <i>monophylla</i> | Malawi | -13.5 | 34 |
| PURF16951 | <i>Puccinia</i> | <i>flaccida</i> | non-data | Poaceae | <i>Oplismenus</i> | <i>burmannii</i> | Indonesia | -9 | 120 |
| PURF17025 | <i>Puccinia</i> | <i>calcitrapae</i> | 1960 | Asteraceae | <i>Carlina</i> | <i>vulgaris</i> | Switzerland | 46.006182 | 8.951142 |
| PURF17112 | <i>Puccinia</i> | <i>striiformis</i> | 1960 | Poaceae | <i>Aegilops</i> | <i>speltoidea</i> | Turkey | 38.81796 | 37.93117 |
| PURF17131 | <i>Puccinia</i> | <i>cynodontis</i> | 1960 | Ranunculaceae | <i>Adonis</i> | <i>aestivalis</i> | Turkey | 40.12978 | 39.43607 |
| PURF17163 | <i>Puccinia</i> | <i>ruelliae</i> | 1963 | Acanthaceae | <i>Asystasia</i> | <i>non-data</i> | India | 25.31813 | 82.97803 |
| PURF17198 | <i>Puccinia</i> | <i>crassipes</i> | 1957 | Convolvulaceae | <i>Ipomoea</i> | <i>grandifolia</i> | Argentina | -24.94298 | -58.751306 |
| PURF17223 | <i>Puccinia</i> | <i>enceliae</i> | 1923 | Asteraceae | <i>Encelia</i> | <i>canescens</i> | Chile | -28.759464 | -70.48651 |
| PURF17225 | <i>Puccinia</i> | <i>recondita</i> | 1914 | Poaceae | <i>Festuca</i> | <i>antucensis</i> | Argentina | -32.731959 | -61.91599 |
| PURF17226 | <i>Puccinia</i> | <i>recondita</i> | 1927 | Poaceae | <i>Festuca</i> | <i>erialepis</i> | Chile | -29.904529 | -71.248935 |
| PURF17227 | <i>Puccinia</i> | <i>recondita</i> | 1929 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Argentina | -25.52031 | -65.5037 |
| PURF17228 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1922 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Peru | -6.696177 | -78.376198 |
| PURF17229 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>major</i> | 1952 | Poaceae | <i>Poa</i> | <i>candamoana</i> | Peru | -12.516667 | -75 |
| PURF17230 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>major</i> | 1957 | Poaceae | <i>Poa</i> | <i>candamoana</i> | Peru | -14.338681 | -71.766731 |
| PURF17231 | <i>Puccinia</i> | <i>brachypodii</i> | 1924 | Poaceae | <i>Poa</i> | <i>dolichophylla</i> | Argentina | -27.434919 | -65.163295 |
| PURF17268 | <i>Puccinia</i> | <i>brachypodii</i> | 1917 | Poaceae | <i>Trisetum</i> | <i>laxum</i> | Chile | -41.870699 | -73.81622 |
| PURF17278 | <i>Puccinia</i> | <i>recondita</i> | 1897 | Poaceae | <i>Elymus</i> | <i>sp.</i> | Chile | -41.870699 | 73.81622 |
| PURF17310 | <i>Puccinia</i> | <i>caricis-japonica</i> | 1939 | Cyperaceae | <i>Carex</i> | <i>sp.</i> | Japan | 33.483333 | 130.9 |
| PURF17349 | <i>Puccinia</i> | <i>brachypodii</i> | 1897 | Poaceae | <i>Elymus</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF17362 | <i>Puccinia</i> | <i>hieracii</i> | 1917 | Asteraceae | <i>Cichorium</i> | <i>endiva</i> | Chile | -33.45 | -70.666667 |
| PURF17375 | <i>Puccinia</i> | <i>brachypodii</i> | 1961 | Berberidaceae | <i>Berberis</i> | <i>aristata</i> | India | 31.105609 | 77.137919 |
| PURF17384 | <i>Puccinia</i> | <i>boutelouae</i> | 1919 | Poaceae | <i>Gymnopogon</i> | <i>foliosus</i> | Guyana | 6.01065 | -58.310358 |
| PURF17386 | <i>Puccinia</i> | <i>subtilipes</i> | 1912 | Poaceae | <i>Leptochloa</i> | <i>virgata</i> | Trinidad | 10.5 | -61.25 |
| PURF17393 | <i>Puccinia</i> | <i>poanim</i> | 1919 | Poaceae | <i>Poa</i> | <i>chilensis</i> | Chile | -39.88418 | -73.43045 |
| PURF17431 | <i>Puccinia</i> | <i>sesleriae</i> | 1945 | Poaceae | <i>Sesleria</i> | <i>calcaria</i> | Czech Republic | 50.03333 | 14.4 |
| PURF17442 | <i>Puccinia</i> | <i>recondita</i> | 1961 | Poaceae | <i>Elymus</i> | <i>caninus</i> | Slovakia | 49.05 | 20.3 |
| PURF17466 | <i>Puccinia</i> | <i>longissima</i> | 1961 | Poaceae | <i>Koeleria</i> | <i>glauca</i> | Slovakia | 47.79495 | 18.7175 |
| PURF17487 | <i>Puccinia</i> | <i>conglomerata</i> | 1946 | Asteraceae | <i>Homogyne</i> | <i>alpina</i> | Slovakia | 49.136368 | 20.243862 |
| PURF17491 | <i>Puccinia</i> | <i>cesatii</i> | 1945 | Poaceae | <i>Bothriochloa</i> | <i>ischaemum</i> | Czech Republic | 50.03333 | 14.4 |
| PURF17504 | <i>Puccinia</i> | <i>alpina</i> | 1952 | Violaceae | <i>Viola</i> | <i>biflora</i> | Slovakia | 49.16612 | 20.13126 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|----------|------------------|-----------------------|---------------------|-------------|------------|------------|
| PURF17507 | <i>Puccinia</i> | <i>arnicae-scorpiodis</i> | 1946 | Asteraceae | <i>Aronicum</i> | <i>clusii</i> | Slovakia | 49.136368 | 20.243862 |
| PURF17509 | <i>Puccinia</i> | <i>australis</i> | 1961 | Poaceae | <i>Cleistogenes</i> | <i>serotina</i> | Slovakia | 49.19306 | 20.96034 |
| PURF17542 | <i>Puccinia</i> | <i>acarnae</i> | 1958 | Asteraceae | <i>Cirsium</i> | <i>acarna</i> | Iraq | 33.597064 | 43.000977 |
| PURF17562 | <i>Puccinia</i> | <i>graminis</i> | 1954 | Poaceae | <i>Heteranthelium</i> | <i>piliferum</i> | Iraq | 33.597064 | 43.000977 |
| PURF17637 | <i>Puccinia</i> | <i>neorotundata</i> | 1927 | Asteraceae | <i>Vernonia</i> | <i>brasiliانا</i> | Venezuela | 10.218333 | -64.632158 |
| PURF17643 | <i>Puccinia</i> | <i>striiformis</i> var. <i>striiformis</i> | 1929 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Argentina | -38.37544 | -60.27855 |
| PURF17655 | <i>Puccinia</i> | <i>brachypodii</i> | 1963 | Poaceae | <i>Phalaris</i> | <i>caroliniana</i> | Argentina | -34.652403 | -58.637467 |
| PURF17656 | <i>Puccinia</i> | <i>brachypodii</i> | 1958 | Poaceae | <i>Hierochloe</i> | <i>sp.</i> | Venezuela | 8.533018 | -71.24585 |
| PURF17658 | <i>Puccinia</i> | <i>brachypodii</i> | 1942 | Poaceae | <i>Agrostis</i> | <i>magellanica</i> | non-data | -51.289225 | -59.622356 |
| PURF17659 | <i>Puccinia</i> | <i>brachypodii</i> | 1953 | Poaceae | <i>Poa</i> | <i>bonariensis</i> | Argentina | -54.245448 | -66.922729 |
| PURF17660 | <i>Puccinia</i> | <i>emaculata</i> | 1946 | Poaceae | <i>Panicum</i> | <i>urvilleanum</i> | Argentina | -37.271885 | -65.340698 |
| PURF17669 | <i>Puccinia</i> | <i>brachypodii</i> | 1936 | Poaceae | <i>Bromus</i> | <i>patagonicus</i> | Argentina | -54.046 | -67.1589 |
| PURF17680 | <i>Puccinia</i> | <i>hordei</i> | 1877 | Poaceae | <i>Vulpia</i> | <i>australis</i> | Argentina | -32.482493 | -58.237217 |
| PURF17718 | <i>Puccinia</i> | <i>hordei</i> | 1964 | Poaceae | <i>Vulpia</i> | <i>bromoides</i> | Brazil | -28.758462 | -51.43333 |
| PURF17721 | <i>Puccinia</i> | <i>chaetochloae</i> | 1966 | Poaceae | <i>Paspalum</i> | <i>densum</i> | Brazil | -28.758462 | -51.433333 |
| PURF17723 | <i>Puccinia</i> | <i>dolosa</i> | 1966 | Poaceae | <i>Paspalum</i> | <i>consersum</i> | Brazil | -28.758462 | -51.433333 |
| PURF17756 | <i>Puccinia</i> | <i>stenotaphri</i> | 1967 | Poaceae | <i>Pennisetum</i> | <i>glaveum</i> | India | 18.51327 | 73.84985 |
| PURF17758 | <i>Puccinia</i> | <i>sasaecola</i> | 1952 | Hamamelidaceae | <i>Corylopsis</i> | <i>glabrescens</i> | Japan | 35.53333 | 136.9167 |
| PURF17778 | <i>Puccinia</i> | <i>bruchiana</i> | 1957 | Asteraceae | <i>Eupatorium</i> | <i>viscidum</i> | Argentina | -32.226252 | -58.14375 |
| PURF17814 | <i>Puccinia</i> | <i>polypogonis</i> | 1966 | Poaceae | <i>Polypogon</i> | <i>chilensis</i> | Brazil | -28.758462 | -51.433333 |
| PURF17879 | <i>Puccinia</i> | <i>neorotundata</i> | 1949 | Asteraceae | <i>Vernonia</i> | <i>brasiliانا</i> | Colombia | 4.215358 | -74.981893 |
| PURF17880 | <i>Puccinia</i> | <i>neorotundata</i> | 1926 | Asteraceae | <i>Vernonia</i> | <i>brasiliانا</i> | Colombia | 2.324853 | -75.644694 |
| PURF17881 | <i>Puccinia</i> | <i>neorotundata</i> | 1950 | Asteraceae | <i>Vernonia</i> | <i>brasiliانا</i> | Colombia | 3.442371 | -73.310196 |
| PURF17882 | <i>Puccinia</i> | <i>neorotundata</i> | 1947 | Asteraceae | <i>Vernonia</i> | <i>brasiliانا</i> | Venezuela | 10.083333 | -72.8 |
| PURF17883 | <i>Puccinia</i> | <i>neorotundata</i> | non-data | Asteraceae | <i>Vernonia</i> | <i>brasiliانا</i> | Venezuela | 10.020815 | -68.149815 |
| PURF17884 | <i>Puccinia</i> | <i>neorotundata</i> | 1951 | Asteraceae | <i>Vernonia</i> | <i>brasiliانا</i> | Venezuela | 10.516667 | -67.1 |
| PURF17886 | <i>Puccinia</i> | <i>neorotundata</i> | 1906 | Asteraceae | <i>Vernonia</i> | <i>scabra</i> | Colombia | 2.5 | -76.583333 |
| PURF17888 | <i>Puccinia</i> | <i>neorotundata</i> | 1905 | Asteraceae | <i>Vernonia</i> | <i>tweediana</i> | Paraguay | -26.176526 | -56.436737 |
| PURF17895 | <i>Puccinia</i> | <i>arthuriana</i> | 1915 | Asteraceae | <i>Vernonia</i> | <i>boringuensis</i> | Puerto Rico | 18.24064 | -66.5767 |
| PURF17943 | <i>Puccinia</i> | <i>duthiae</i> | 1954 | Poaceae | <i>Andropogon</i> | <i>gerardii</i> | India | 29.597261 | 79.660877 |
| PURF17952 | <i>Puccinia</i> | <i>kuhnii</i> | 1963 | Poaceae | <i>Saccharum</i> | <i>arundinaceum</i> | India | 26.44842 | 80.34627 |
| PURF17962 | <i>Puccinia</i> | <i>pulvinata</i> | 1950 | Asteraceae | <i>Echinops</i> | <i>niveus</i> | India | 26.547061 | 80.487806 |
| PURF17995 | <i>Puccinia</i> | <i>horrida</i> | 1918 | Asteraceae | <i>Eupatorium</i> | <i>cacalioides</i> | Ecuador | -2.900545 | -79.004527 |
| PURF18021 | <i>Puccinia</i> | <i>polysora</i> | 1955 | Poaceae | <i>Zea</i> | <i>mays</i> | Colombia | 6.25184 | -75.569084 |
| PURF18024 | <i>Puccinia</i> | <i>tuyutensis</i> | 1950 | Convolvulaceae | <i>Cressa</i> | <i>cretica</i> | Iraq | 33.2982 | 44.07971 |
| PURF18025 | <i>Puccinia</i> | <i>eryngii</i> | 1967 | Apiaceae | <i>Ammi</i> | <i>majus</i> | Iraq | 35.95395 | 44.95314 |
| PURF18072 | <i>Puccinia</i> | <i>hordei</i> | 1967 | Poaceae | <i>Deyeuxia</i> | <i>sp.</i> | Argentina | -32.85272 | -68.828373 |
| PURF18087 | <i>Puccinia</i> | <i>eupatorii</i> | 1968 | Asteraceae | <i>Eupatorium</i> | <i>burchellii</i> | Paraguay | -23.30108 | -58.523682 |
| PURF18088 | <i>Puccinia</i> | <i>eupatorii-columbiani</i> | 1918 | Asteraceae | <i>Eupatorium</i> | <i>inulaefolium</i> | Trinidad | 10.5 | -61.25 |
| PURF18090 | <i>Puccinia</i> | <i>neorotundata</i> | 1965 | Asteraceae | <i>Vernonia</i> | <i>baccharoides</i> | Colombia | 6.25184 | -75.563591 |
| PURF18091 | <i>Puccinia</i> | <i>erratuca</i> | 1891 | Asteraceae | <i>Vernonia</i> | <i>arborescens</i> | Bolivia | -17.118938 | -65.950439 |
| PURF18134 | <i>Puccinia</i> | <i>sorghii</i> | 1956 | Poaceae | <i>Zea</i> | <i>mays</i> | Peru | -9.92149 | -76.047898 |
| PURF18136 | <i>Puccinia</i> | <i>sorghii</i> | 1956 | Poaceae | <i>Zea</i> | <i>mays</i> | Paraguay | -25.386111 | -57.140278 |
| PURF18139 | <i>Puccinia</i> | <i>polysora</i> | 1957 | Poaceae | <i>Zea</i> | <i>mays</i> | Colombia | 6.25184 | -75.569084 |
| PURF18140 | <i>Puccinia</i> | <i>sorghii</i> | 1957 | Poaceae | <i>Zea</i> | <i>mays</i> | Chile | -33.45 | -70.666667 |
| PURF18208 | <i>Puccinia</i> | <i>melampodii</i> | 1971 | Asteraceae | <i>Spilanthes</i> | <i>sp.</i> | Colombia | -1.38997 | -71.525677 |
| PURF18218 | <i>Puccinia</i> | <i>haematites</i> | 1971 | Malpighiaceae | <i>Triaspis</i> | <i>erlangeri</i> | Kenya | -4.12148 | 39.32418 |
| PURF18227 | <i>Puccinia</i> | <i>evadens</i> | 1940 | Asteraceae | <i>Baccharis</i> | <i>articulata</i> | Uruguay | -34.523359 | -56.795395 |
| PURF18242 | <i>Puccinia</i> | <i>pelargonii-zonalis</i> | 1970 | Geraniaceae | <i>Pelargonium</i> | <i>zonale</i> | Argentina | -34.507469 | -58.487025 |
| PURF18243 | <i>Puccinia</i> | <i>lobata</i> | 1971 | Malvaceae | <i>Althaea</i> | <i>officinalis</i> | Argentina | -43.250075 | -65.313295 |
| PURF18245 | <i>Puccinia</i> | <i>horiana</i> | 1970 | Asteraceae | <i>Chrysanthemum</i> | <i>sp.</i> | Argentina | -34.921454 | -57.954533 |
| PURF18246 | <i>Puccinia</i> | <i>hieracii</i> | 1968 | Asteraceae | <i>Cichorium</i> | <i>intybus</i> | Uruguay | -34.87 | -56.22 |
| PURF18247 | <i>Puccinia</i> | <i>caricina</i> | 1965 | Grossulariaceae | <i>Ribes</i> | <i>magellanicum</i> | Argentina | -40.155234 | -71.351015 |
| PURF18248 | <i>Puccinia</i> | <i>bomareae</i> | 1954 | Alstroemeriaceae | <i>Bomarea</i> | <i>ovata</i> | Peru | -12.5 | -76.233333 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--------------------------------------|----------|----------------|------------------------|----------------------------|-----------|--------------|--------------|
| PURF18265 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1971 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Colombia | 3.442371 | -73.310196 |
| PURF18331 | <i>Puccinia</i> | <i>imitans</i> | 1924 | Solanaceae | <i>Solanum</i> | <i>nigrum</i> | Ecuador | -0.20046 | -78.4767 |
| PURF18375 | <i>Puccinia</i> | <i>hieracii</i> | 1972 | Asteraceae | <i>Doronicum</i> | <i>carpathicum</i> | Romania | 45.166667 | 25.383333 |
| PURF18379 | <i>Puccinia</i> | <i>graminis</i> | 1971 | Poaceae | <i>Agrostis</i> | <i>capillaris</i> | Romania | 44.45 | 24.6833 |
| PURF18382 | <i>Puccinia</i> | <i>hieracii</i> | 1953 | Asteraceae | <i>Taraxacum</i> | <i>bessarabicum</i> | Romania | 47.533333 | 22.383333 |
| PURF18407 | <i>Puccinia</i> | <i>hieracii</i> | 1969 | Asteraceae | <i>Hieracium</i> | <i>bauchini</i> | Romania | 46.783333 | 27.066667 |
| PURF18414 | <i>Puccinia</i> | <i>hieracii</i> | 1953 | Asteraceae | <i>Leontodon</i> | <i>asper</i> | Romania | 43.783333 | 28.466667 |
| PURF18419 | <i>Puccinia</i> | <i>recondita</i> | 1971 | Boraginaceae | <i>Anchusa</i> | <i>banelieri</i> | Romania | 43.78333 | 28.46667 |
| PURF18422 | <i>Puccinia</i> | <i>dioicae</i> | 1971 | Cyperaceae | <i>Carex</i> | <i>colchica</i> | Romania | 45.3 | 29.51667 |
| PURF18425 | <i>Puccinia</i> | <i>sileris</i> | 1971 | Apiaceae | <i>Laser</i> | <i>trilobum</i> | Romania | 44.86667 | 25.33333 |
| PURF18457 | <i>Puccinia</i> | <i>sessilis</i> | 1969 | Asparagaceae | <i>Muscari</i> | <i>comosum</i> | Romania | 47.51667 | 22.15 |
| PURF18458 | <i>Puccinia</i> | <i>stipae</i> | 1969 | Lamiaceae | <i>Salvia</i> | <i>nemorosa</i> | Romania | 47.51667 | 22.15 |
| PURF18480 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>major</i> | 1968 | Poaceae | <i>Hierochloa</i> | <i>redolens</i> | Chile | -41.870699 | -73.81622 |
| PURF18481 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>major</i> | 1962 | Poaceae | <i>Hierochloa</i> | <i>gunckelii</i> | Chile | -41.870699 | -73.81622 |
| PURF18482 | <i>Puccinia</i> | <i>brachypodii</i> | 1975 | Poaceae | <i>Elymus</i> | <i>gayanus</i> | Chile | -41.870699 | -73.81622 |
| PURF18496 | <i>Puccinia</i> | <i>recondita</i> | 1925 | Ranunculaceae | <i>Clematis</i> | <i>angustifolia</i> | China | 47.34088 | 123.9604 |
| PURF18528 | <i>Puccinia</i> | <i>magnusiana</i> | 1965 | Poaceae | <i>Phragmites</i> | <i>australis</i> | Australia | -33.466 | 150.883 |
| PURF18529 | <i>Puccinia</i> | <i>malvacearum</i> | 1966 | Malvaceae | <i>Alcea</i> | <i>rosea</i> | Australia | -33.4402 | 150.6346 |
| PURF18670 | <i>Puccinia</i> | <i>allii</i> | 1973 | Amaryllidaceae | <i>Allium</i> | <i>porrum-limaue</i> | Ireland | 53.00833 | -6.11139 |
| PURF18674 | <i>Puccinia</i> | <i>bakogana</i> | 1976 | Rubiaceae | <i>Borreria</i> | <i>verticillata</i> | Nigeria | 6.867349 | 7.408836 |
| PURF18677 | <i>Puccinia</i> | <i>bulbostylides</i> | 1976 | Cyperaceae | <i>Bulbostylis</i> | <i>aphyllanthoides</i> | Nigeria | 6.8561 | 7.3927 |
| PURF18702 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1964 | Berberidaceae | <i>Berberis</i> | <i>ruscifolia</i> | Argentina | -38.71937 | -62.50321 |
| PURF18703 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1950 | Berberidaceae | <i>Berberis</i> | <i>ruscifolia</i> | Argentina | -31.332219 | -64.52073 |
| PURF18704 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1968 | Berberidaceae | <i>Berberis</i> | <i>ruscifolia</i> | Argentina | -31.488229 | -65.011795 |
| PURF18862 | <i>Puccinia</i> | <i>cnici-oleracei</i> | non-data | Asteraceae | <i>Eleutheranthera</i> | <i>ruderalis</i> | Brazil | -6.748202 | -52.634766 |
| PURF18892 | <i>Puccinia</i> | <i>schileana</i> | 1976 | Asteraceae | <i>Parthenium</i> | <i>hysterophorus</i> | Brazil | -24.630612 | -53.114858 |
| PURF18928 | <i>Puccinia</i> | <i>seorsa</i> | 1977 | Asteraceae | <i>Piptocarpha</i> | <i>axillaris</i> | Brazil | -18.975688 | -44.483961 |
| PURF19143 | <i>Puccinia</i> | <i>heterospora</i> | 1979 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Brazil | -19.4667 | -44.1725 |
| PURF19209 | <i>Puccinia</i> | <i>jussiaeae</i> | 1977 | Onagraceae | <i>Ludwigia</i> | <i>non-data</i> | Brazil | -20.7568 | -42.8766 |
| PURF19310 | <i>Puccinia</i> | <i>palicoureae</i> | 1976 | Rubiaceae | <i>Palicourea</i> | <i>coriacea</i> | Brazil | -15.8333 | -48.0255 |
| PURF19329 | <i>Puccinia</i> | <i>arechavaletae</i> | 1976 | Sapindaceae | <i>Cardiospermum</i> | <i>non-data</i> | Brazil | -21.9667 | -47.8167 |
| PURF19362 | <i>Puccinia</i> | <i>arechavaletae</i> | 1977 | Sapindaceae | <i>Sapindaceae</i> | <i>non-data</i> | Brazil | -4.01681 | -53.415 |
| PURF19468 | <i>Puccinia</i> | <i>brachypodii</i> | 1969 | Poaceae | <i>Bromus</i> | <i>catharticus</i> | Argentina | -54.530141 | -67.199401 |
| PURF19469 | <i>Puccinia</i> | <i>brachypodii</i> | 1970 | Poaceae | <i>Hordeum</i> | <i>comosum</i> | Argentina | -54.8 | -68.3 |
| PURF19470 | <i>Puccinia</i> | <i>caricina</i> | 1970 | Cyperaceae | <i>Carex</i> | <i>macrorrhiza</i> | Argentina | -46.549717 | -71.630862 |
| PURF19471 | <i>Puccinia</i> | <i>caricina</i> | 1970 | Cyperaceae | <i>Carex</i> | <i>gayana</i> | Argentina | -46.589945 | -70.929747 |
| PURF19472 | <i>Puccinia</i> | <i>caricina</i> | 1970 | Cyperaceae | <i>Carex</i> | <i>gayana</i> | Argentina | -46.589945 | -70.929747 |
| PURF19473 | <i>Puccinia</i> | <i>caricina</i> | 1969 | Cyperaceae | <i>Carex</i> | <i>fuscula</i> | Argentina | -54.8 | -68.3 |
| PURF19474 | <i>Puccinia</i> | <i>caricina</i> | 1969 | Cyperaceae | <i>Carex</i> | <i>hieronymi</i> | Argentina | -38.129508 | -61.80389 |
| PURF19475 | <i>Puccinia</i> | <i>caricina</i> | 1970 | Cyperaceae | <i>Carex</i> | <i>subantarctica</i> | Argentina | -46.589945 | -70.929747 |
| PURF19476 | <i>Puccinia</i> | <i>chilensis</i> | 1970 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF19477 | <i>Puccinia</i> | <i>coronata</i> | 1970 | Poaceae | <i>Bromus</i> | <i>hordeaceus</i> | Argentina | -46.549717 | -71.630862 |
| PURF19478 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1970 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Chile | -41.870699 | -73.81622 |
| PURF19479 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1970 | Poaceae | <i>Holcus</i> | <i>lanatus</i> | Argentina | -46.549717 | -71.630862 |
| PURF19481 | <i>Puccinia</i> | <i>hieracii</i> | 1970 | Asteraceae | <i>Hieracium</i> | <i>antarticum</i> | Argentina | -54.833333 | -68.566667 |
| PURF19482 | <i>Puccinia</i> | <i>hieracii</i> | 1969 | Asteraceae | <i>Hypochaeris</i> | <i>radicata</i> | Argentina | -54.8 | -68.3 |
| PURF19483 | <i>Puccinia</i> | <i>hordei</i> | 1970 | Poaceae | <i>Hordeum</i> | <i>secalinum chilense</i> | Argentina | -46.589945 | -70.929747 |
| PURF19484 | <i>Puccinia</i> | <i>hordei</i> | 1970 | Poaceae | <i>Lolium</i> | <i>perenne</i> | Argentina | -46.549717 | -71.630862 |
| PURF19485 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1970 | Araliaceae | <i>Hydrocotyle</i> | <i>chamaemorus</i> | Argentina | -46.589945 | -70.929747 |
| PURF19487 | <i>Puccinia</i> | <i>malvacearum</i> | 1970 | Malvaceae | <i>Malva</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF19488 | <i>Puccinia</i> | <i>malvacearum</i> | 1970 | Malvaceae | <i>Malva</i> | <i>nicaeensis</i> | Chile | -41.870699 | -73.81622 |
| PURF19489 | <i>Puccinia</i> | <i>menthae</i> | 1970 | Lamiaceae | <i>Mentha</i> | <i>piperita</i> | Argentina | -27.795966 | -64.258592 |
| PURF19490 | <i>Puccinia</i> | <i>menthae</i> | 1917 | Lamiaceae | <i>Mentha</i> | <i>aquatica</i> | Argentina | -46.58333333 | -71.43333333 |
| PURF19491 | <i>Puccinia</i> | <i>nuda</i> | 1970 | Asteraceae | <i>Madia</i> | <i>viscosa</i> | Argentina | -46.549717 | -71.630862 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|----------|------------------|----------------------|------------------------|-----------|------------|------------|
| PURF19492 | <i>Puccinia</i> | <i>levis</i> | 1970 | Poaceae | <i>Paspalum</i> | <i>urvillei</i> | Argentina | -34.5 | -58.483333 |
| PURF19493 | <i>Puccinia</i> | <i>perforans</i> | 1970 | Alstroemeriaceae | <i>Luzuriaga</i> | <i>radicans</i> | Chile | -38.719107 | -72.619141 |
| PURF19494 | <i>Puccinia</i> | <i>brachypoi</i> var. <i>poaememoralis</i> | 1970 | Poaceae | <i>Poa</i> | <i>irrigata</i> | Argentina | -46.549717 | -71.630862 |
| PURF19495 | <i>Puccinia</i> | <i>brachypoi</i> var. <i>poaememoralis</i> | 1970 | Poaceae | <i>Trisetum</i> | <i>sp.</i> | Argentina | -54.8 | -68.3 |
| PURF19496 | <i>Puccinia</i> | <i>philippi</i> | 1970 | Apiaceae | <i>Osmorhiza</i> | <i>chilensis</i> | Argentina | -54.8 | -68.3 |
| PURF19497 | <i>Puccinia</i> | <i>praeamdina</i> | 1970 | Asteraceae | <i>Baccharis</i> | <i>darwinii</i> | Argentina | -47.750336 | -65.893817 |
| PURF19498 | <i>Puccinia</i> | <i>praeamdina</i> | 1970 | Asteraceae | <i>Baccharis</i> | <i>darwinii</i> | Argentina | -46.549717 | -71.630862 |
| PURF19499 | <i>Puccinia</i> | <i>praeamdina</i> | 1970 | Asteraceae | <i>Baccharis</i> | <i>darwinii</i> | Argentina | -46.589945 | -70.929747 |
| PURF19515 | <i>Puccinia</i> | <i>striiformis</i> var. <i>striiformis</i> | 1970 | Poaceae | <i>Hordeum</i> | <i>sp.</i> | Argentina | -46.589945 | -70.929747 |
| PURF19516 | <i>Puccinia</i> | <i>striiformis</i> var. <i>striiformis</i> | 1970 | Poaceae | <i>Hordeum</i> | <i>comosum</i> | Argentina | -46.589945 | -70.929747 |
| PURF19517 | <i>Puccinia</i> | <i>subnitens</i> | 1970 | Poaceae | <i>Distichilis</i> | <i>spicata</i> | Argentina | -45.823465 | -67.526295 |
| PURF19518 | <i>Puccinia</i> | <i>subnitens</i> | 1970 | Poaceae | <i>Distichilis</i> | <i>spicata</i> | Argentina | -38.899164 | -70.054423 |
| PURF19519 | <i>Puccinia</i> | <i>subnitens</i> | 1970 | Poaceae | <i>Distichilis</i> | <i>spicata</i> | Chile | -52.73044 | -73.263771 |
| PURF19520 | <i>Puccinia</i> | <i>subnitens</i> | 1970 | Poaceae | <i>Distichilis</i> | <i>scoparia</i> | Argentina | -45.867043 | -67.488452 |
| PURF19521 | <i>Puccinia</i> | <i>subnitens</i> | 1970 | Poaceae | <i>Distichilis</i> | <i>scoparia</i> | Argentina | -46.589945 | -70.929747 |
| PURF19560 | <i>Puccinia</i> | <i>hyptidis</i> | 1963 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | Uruguay | -34.50306 | -56.82676 |
| PURF19561 | <i>Puccinia</i> | <i>oxalidis</i> | 1963 | Oxalidaceae | <i>Oxalis</i> | <i>martiana</i> | Uruguay | -34.87 | -56.22 |
| PURF19567 | <i>Puccinia</i> | <i>substriata</i> | 1963 | Poaceae | <i>Paspalum</i> | <i>quadrifarium</i> | Uruguay | -34.87 | -56.22 |
| PURF19571 | <i>Puccinia</i> | <i>perforans</i> | 1925 | Alstroemeriaceae | <i>Luzuriaga</i> | <i>radicans</i> | Chile | -41.870699 | -73.81622 |
| PURF19572 | <i>Puccinia</i> | <i>heterospora</i> | 1925 | Malvaceae | <i>Sida</i> | <i>purpurea</i> | Peru | -11.468178 | -76.623737 |
| PURF19601 | <i>Puccinia</i> | <i>congesta</i> | 1971 | Polygonaceae | <i>Polygonum</i> | <i>chilense</i> | Burma | 22.02826 | 96.47066 |
| PURF19606 | <i>Puccinia</i> | <i>helianthi</i> | 1971 | Asteraceae | <i>Helianthus</i> | <i>annuus</i> | Myanmar | 21.202288 | 96.014172 |
| PURF19607 | <i>Puccinia</i> | <i>hieracii</i> | 1973 | Asteraceae | <i>Cichorium</i> | <i>intybus</i> | Burma | 21.202288 | 96.014172 |
| PURF19609 | <i>Puccinia</i> | <i>canaliculata</i> | 1972 | Cyperaceae | <i>Cyperus</i> | <i>esculentus</i> | Burma | 21.20229 | 96.01417 |
| PURF19612 | <i>Puccinia</i> | <i>arachidis</i> | 1971 | Fabaceae | <i>Arachis</i> | <i>hypogaea</i> | Burma | 21.20229 | 96.01417 |
| PURF19703 | <i>Puccinia</i> | <i>cenchri</i> | 1977 | Poaceae | <i>Cenchrus</i> | <i>brownii</i> | Nigeria | 6.8561 | 7.3927 |
| PURF19726 | <i>Puccinia</i> | <i>cyathulicola</i> | 1981 | Amaranthaceae | <i>Achyranthes</i> | <i>non-data</i> | Kenya | -1.28333 | 36.82491 |
| PURF19799 | <i>Puccinia</i> | <i>minuscula</i> | 1924 | Asteraceae | <i>Pappobolus</i> | <i>sp.</i> | Peru | -11.233333 | -75.483333 |
| PURF19800 | <i>Puccinia</i> | <i>minuscula</i> | 1924 | Asteraceae | <i>Pappobolus</i> | <i>sp.</i> | Peru | -11.345465 | -75.577608 |
| PURF19813 | <i>Puccinia</i> | <i>mutisiae</i> | non-data | Asteraceae | <i>Jungia</i> | <i>sp.</i> | Ecuador | -1.808802 | -78.458374 |
| PURF19816 | <i>Puccinia</i> | <i>pulchella</i> | 1981 | Violaceae | <i>Viola</i> | <i>hondoensis</i> | Japan | 36.88182 | 139.5841 |
| PURF19881 | <i>Puccinia</i> | <i>ainsliae</i> | 1980 | Asteraceae | <i>Ainsliaea</i> | <i>macroclidioides</i> | China | 25.760743 | -117.7373 |
| PURF19885 | <i>Puccinia</i> | <i>arundinellae</i> | 1980 | Poaceae | <i>Arundinella</i> | <i>barbidonis</i> | China | 25.76074 | -117.737 |
| PURF19890 | <i>Puccinia</i> | <i>tanacetii</i> | 1980 | Asteraceae | <i>Chrysanthemum</i> | <i>indicum</i> | China | 25.760743 | -117.7373 |
| PURF19894 | <i>Puccinia</i> | <i>congesta</i> | 1980 | Polygonaceae | <i>Polygonum</i> | <i>suffutulum</i> | China | 25.76074 | -117.737 |
| PURF19901 | <i>Puccinia</i> | <i>elymi</i> | 1980 | Poaceae | <i>Clinelymus</i> | <i>sibiricus</i> | China | 43 | 126 |
| PURF19904 | <i>Puccinia</i> | <i>erythropus</i> | 1980 | Poaceae | <i>Miscanthus</i> | <i>floridulus</i> | China | 25.760743 | -117.7373 |
| PURF19915 | <i>Puccinia</i> | <i>infra-aequatorialis</i> | 1980 | Asteraceae | <i>Cirsium</i> | <i>japonicum</i> | China | 25.760743 | -117.7373 |
| PURF19917 | <i>Puccinia</i> | <i>lactucaae-denticulata</i> | 1980 | Asteraceae | <i>Ixeris</i> | <i>denticulata</i> | China | 25.760743 | -117.7373 |
| PURF19927 | <i>Puccinia</i> | <i>paspalina</i> | 1980 | Poaceae | <i>Paspalum</i> | <i>longifolium</i> | China | 25.760743 | -117.7373 |
| PURF19929 | <i>Puccinia</i> | <i>pogonatheri</i> | 1980 | Poaceae | <i>Pogonatherum</i> | <i>crinitum</i> | China | 25.760743 | -117.7373 |
| PURF19939 | <i>Puccinia</i> | <i>yaramesuge</i> | 1980 | Cyperaceae | <i>Carex</i> | <i>sp.</i> | China | 43 | 126 |
| PURF2365 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>bromoides</i> | Chile | -33.733211 | -70.782281 |
| PURF2371 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -41.870699 | -73.81622 |
| PURF2372 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -41.870699 | -73.81622 |
| PURF2373 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -33.733211 | -70.782281 |
| PURF2374 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -41.319461 | -72.985378 |
| PURF2382 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>sp.</i> | Chile | -38.719107 | -72.619141 |
| PURF2413 | <i>Puccinia</i> | <i>nasellae</i> var. <i>nasellae</i> | 1920 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Bolivia | -17.055929 | -65.565918 |
| PURF2488 | <i>Puccinia</i> | <i>infusans</i> | 1920 | Poaceae | <i>Bothriochloa</i> | <i>barbinodis</i> | Bolivia | -17.055929 | -65.565918 |
| PURF2489 | <i>Puccinia</i> | <i>infusans</i> | 1920 | Poaceae | <i>Bothriochloa</i> | <i>barbinodis</i> | Peru | -9.049722 | -77.774444 |
| PURF2490 | <i>Puccinia</i> | <i>infusans</i> | 1920 | Poaceae | <i>Bothriochloa</i> | <i>saccharoides</i> | Ecuador | -0.19457 | -78.49301 |
| PURF2491 | <i>Puccinia</i> | <i>infusans</i> | 1920 | Poaceae | <i>Bothriochloa</i> | <i>saccharoides</i> | Bolivia | -17.055929 | -65.565918 |
| PURF2492 | <i>Puccinia</i> | <i>infusans</i> | 1919 | Poaceae | <i>Bothriochloa</i> | <i>laguroides</i> | Chile | -35.758046 | -71.407898 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|------|---------------|----------------------|----------------------|-----------|------------|------------|
| PURF2493 | <i>Puccinia</i> | <i>infusans</i> | 1919 | Poaceae | <i>Bothriochloa</i> | <i>laguroides</i> | Chile | -35.758046 | -71.407898 |
| PURF3733 | <i>Puccinia</i> | <i>kusanoi</i> | 1929 | Hydrangeaceae | <i>Deutzia</i> | <i>scabra</i> | Japan | 35.29893 | 138.879 |
| PURF3743 | <i>Puccinia</i> | <i>mitriformis</i> | 1912 | Poaceae | <i>Sasa</i> | <i>purpurescens</i> | Japan | 35.53333 | 136.9167 |
| PURF3764 | <i>Puccinia</i> | <i>mellea</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>eriolepis</i> | Chile | -34.430805 | -71.924236 |
| PURF3765 | <i>Puccinia</i> | <i>mellea</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>eriolepis</i> | Chile | -33.73211 | -70.782281 |
| PURF3766 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -34.430805 | -71.924236 |
| PURF3767 | <i>Puccinia</i> | <i>mellea</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -41.870699 | -73.81622 |
| PURF3768 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -39.827598 | -73.224246 |
| PURF3769 | <i>Puccinia</i> | <i>mellea</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -41.81622 | -73.81622 |
| PURF3770 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Asteraceae | <i>Blainvillea</i> | <i>dichotoma</i> | Brazil | -22.865557 | -43.42723 |
| PURF3772 | <i>Puccinia</i> | <i>mellea</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>myuros</i> | Chile | -41.870699 | -73.81622 |
| PURF3778 | <i>Puccinia</i> | <i>pygmaea</i> var. <i>pygmaea</i> | 1922 | Poaceae | <i>Agrostis</i> | <i>magellancia</i> | Chile | -53.130267 | -70.853963 |
| PURF3779 | <i>Puccinia</i> | <i>pygmaea</i> var. <i>pygmaea</i> | 1922 | Poaceae | <i>Agrostis</i> | <i>magellancia</i> | Chile | -53.130267 | -70.853963 |
| PURF3782 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Calamagrostis</i> | <i>cajatambensis</i> | Bolivia | -16.49667 | -68.13 |
| PURF3793 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1922 | Poaceae | <i>Poa</i> | <i>annua</i> | Argentina | -34.921454 | -57.954533 |
| PURF3794 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>annua</i> | Chile | -33.45 | -70.666667 |
| PURF3795 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>annua</i> | Chile | -41.870699 | -73.81622 |
| PURF3796 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1929 | Poaceae | <i>Poa</i> | <i>annua</i> | Bolivia | -16.49667 | -68.13 |
| PURF3797 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1924 | Poaceae | <i>Poa</i> | <i>annua</i> | Ecuador | -0.19457 | -78.49301 |
| PURF3798 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>annua</i> | Chile | -39.88418 | -73.43045 |
| PURF3799 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1920 | Poaceae | <i>Poa</i> | <i>annua</i> | Ecuador | -1.252369 | -78.622781 |
| PURF3800 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1924 | Poaceae | <i>Poa</i> | <i>annua</i> | Bolivia | -15.731265 | -64.529297 |
| PURF3801 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1922 | Poaceae | <i>Poa</i> | <i>annua</i> | Argentina | -30.773857 | -64.109199 |
| PURF3803 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>bonariensis</i> | Chile | -36.81297 | -73.04846 |
| PURF3804 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Poa</i> | <i>bonariensis</i> | Argentina | -41.870699 | -73.81622 |
| PURF3805 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1922 | Poaceae | <i>Poa</i> | <i>annua</i> | Argentina | -34.6 | -58.45 |
| PURF3806 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>bonariensis</i> | Chile | -38.736248 | -72.616394 |
| PURF3810 | <i>Puccinia</i> | <i>brachypodii</i> | 1922 | Poaceae | <i>Poa</i> | <i>fuigiana</i> | Chile | -53.130267 | -70.853963 |
| PURF3819 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>pratensis</i> | Chile | -41.319461 | -72.985378 |
| PURF3820 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>pratensis</i> | Chile | -38.719107 | -72.619141 |
| PURF3821 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>pratensis</i> | Chile | -41.870699 | -73.81622 |
| PURF3823 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Poa</i> | <i>secunda</i> | Chile | -41.870699 | -73.81622 |
| PURF3824 | <i>Puccinia</i> | <i>brachypodii</i> | 1924 | Poaceae | <i>Relchela</i> | <i>panicoides</i> | Chile | -38.719107 | -72.619141 |
| PURF3825 | <i>Puccinia</i> | <i>brachypodii</i> | 1924 | Poaceae | <i>Relchela</i> | <i>panicoides</i> | Chile | -41.870699 | -73.81622 |
| PURF3828 | <i>Puccinia</i> | <i>poanim</i> | 1920 | Asteraceae | <i>Ophryosporus</i> | <i>venosissimus</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3829 | <i>Puccinia</i> | <i>poanim</i> | 1920 | Asteraceae | <i>Ophryosporus</i> | <i>venosissimus</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3848 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Deschampsia</i> | <i>danthorioides</i> | Chile | -34.4308 | -71.9242 |
| PURF3854 | <i>Puccinia</i> | <i>poarum</i> | 1922 | Poaceae | <i>Calamagrostis</i> | <i>montevidensis</i> | Brazil | -22.512305 | -48.916169 |
| PURF3855 | <i>Puccinia</i> | <i>brachypodii</i> | 1921 | Poaceae | <i>Calamagrostis</i> | <i>montevidensis</i> | Brazil | -22.8656 | -43.4272 |
| PURF3857 | <i>Puccinia</i> | <i>poanim</i> | 1920 | Poaceae | <i>Calamagrostis</i> | <i>leiophylla</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3859 | <i>Puccinia</i> | <i>graminis</i> | 1902 | Poaceae | <i>Poa</i> | <i>chorizantha</i> | Argentina | -33.960844 | -64.972656 |
| PURF3861 | <i>Puccinia</i> | <i>schedonnardi</i> | 1920 | Poaceae | <i>Melica</i> | <i>scabra</i> | Bolivia | -15.731265 | -64.529297 |
| PURF3862 | <i>Puccinia</i> | <i>schedonnardi</i> | 1920 | Poaceae | <i>Melica</i> | <i>scabra</i> | Bolivia | -17.118938 | -65.950439 |
| PURF3863 | <i>Puccinia</i> | <i>schedonnardi</i> | 1920 | Poaceae | <i>Melica</i> | <i>scabra</i> | Peru | -13.20699 | -71.99292 |
| PURF3864 | <i>Puccinia</i> | <i>coronata</i> var. <i>himalensis</i> | 1920 | Poaceae | <i>Brachypodium</i> | <i>mexicanum</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3865 | <i>Puccinia</i> | <i>coronata</i> var. <i>himalensis</i> | 1920 | Poaceae | <i>Brachypodium</i> | <i>mexicanum</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3866 | <i>Puccinia</i> | <i>coronata</i> var. <i>himalensis</i> | 1920 | Poaceae | <i>Brachypodium</i> | <i>mexicanum</i> | Bolivia | -15.76667 | -68.63333 |
| PURF3874 | <i>Puccinia</i> | <i>brachypodii</i> | 1895 | Poaceae | <i>Brachypodium</i> | <i>pinnatum</i> | Germany | 52.455515 | 13.308119 |
| PURF3879 | <i>Puccinia</i> | <i>molinae</i> | 1920 | Poaceae | <i>Molinia</i> | <i>caerulea</i> | Germany | 48.25838 | 11.449149 |
| PURF3887 | <i>Puccinia</i> | <i>brachypodii</i> var. <i>poaememoralis</i> | 1919 | Poaceae | <i>Molinia</i> | <i>caerulea</i> | Finland | 61.166667 | 25.05 |
| PURF3894 | <i>Puccinia</i> | <i>aristideae</i> var. <i>chaetariae</i> | 1920 | Poaceae | <i>Aristida</i> | <i>adscensions</i> | Peru | -16.398889 | -71.535 |
| PURF3895 | <i>Puccinia</i> | <i>aristideae</i> var. <i>chaetariae</i> | 1920 | Poaceae | <i>Aristida</i> | <i>adscensions</i> | Peru | -16.398889 | -71.535 |
| PURF3897 | <i>Puccinia</i> | <i>aristidae</i> | 1920 | Poaceae | <i>Aristida</i> | <i>enodis</i> | Bolivia | -16.49667 | -68.13 |
| PURF3903 | <i>Puccinia</i> | <i>subnitens</i> | 1920 | Poaceae | <i>Distichilis</i> | <i>scoparia</i> | Argentina | -30.795668 | -57.912568 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--------------------------------------|------|---------------|----------------------|-----------------------|-------------|------------|------------|
| PURF3904 | <i>Puccinia</i> | <i>subnitens</i> | 1919 | Poaceae | <i>Distichlis</i> | <i>spicata</i> | Chile | -40.708707 | -73.015402 |
| PURF3905 | <i>Puccinia</i> | <i>subnitens</i> | 1920 | Poaceae | <i>Distichilis</i> | <i>spicata</i> | Bolivia | -17.118938 | -65.950439 |
| PURF3906 | <i>Puccinia</i> | <i>subnitens</i> | 1910 | Poaceae | <i>Distichilis</i> | <i>thalassica</i> | Chile | -41.870699 | -73.81622 |
| PURF3908 | <i>Puccinia</i> | <i>subnitens</i> | 1914 | Poaceae | <i>Distichilis</i> | <i>scoparia</i> | Argentina | -32.731959 | -61.91599 |
| PURF3909 | <i>Puccinia</i> | <i>subnitens</i> | 1902 | Poaceae | <i>Distichilis</i> | <i>scoparia</i> | Argentina | -30.795668 | -57.912568 |
| PURF3910 | <i>Puccinia</i> | <i>subnitens</i> | 1906 | Poaceae | <i>Distichilis</i> | <i>spicata</i> | Argentina | -24.185405 | -65.29332 |
| PURF3911 | <i>Puccinia</i> | <i>subnitens</i> | 1914 | Poaceae | <i>Distichilis</i> | <i>thalassica</i> | Chile | -41.870699 | -73.81622 |
| PURF3912 | <i>Puccinia</i> | <i>subnitens</i> | 1890 | Poaceae | <i>Distichilis</i> | <i>thalassica</i> | Chile | -41.870699 | -73.81622 |
| PURF3913 | <i>Puccinia</i> | <i>subnitens</i> | 1888 | Poaceae | <i>Distichilis</i> | <i>viridis</i> | Chile | -41.870699 | -73.81622 |
| PURF3925 | <i>Puccinia</i> | <i>phragmitis</i> | 1882 | Polygonaceae | <i>Rumex</i> | <i>hydrolapathum</i> | Hungary | 47.86789 | 17.26994 |
| PURF3940 | <i>Puccinia</i> | <i>phragmitis</i> | 1920 | Poaceae | <i>Phragmites</i> | <i>australis</i> | Chile | -33.45 | -70.666667 |
| PURF3972 | <i>Puccinia</i> | <i>isiacae</i> | 1925 | Brassicaceae | <i>Lepidium</i> | <i>latifolium</i> | USA | 39.774722 | 64.428611 |
| PURF4001 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Ranunculaceae | <i>Clematis</i> | <i>dioica</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4008 | <i>Puccinia</i> | <i>recondita</i> | 1899 | Ranunculaceae | <i>Clematis</i> | <i>sericea</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4060 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Agropyron</i> | <i>attenuatum</i> | Bolivia | -16.49667 | -68.13 |
| PURF4088 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Briza</i> | <i>subaristata</i> | Bolivia | -17.055929 | -65.565918 |
| PURF4089 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Briza</i> | <i>subaristata</i> | Chile | -41.870699 | -73.81622 |
| PURF4090 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Briza</i> | <i>subaristata</i> | Chile | -35.758046 | -71.407898 |
| PURF4091 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Briza</i> | <i>subaristata</i> | Chile | -40.708707 | -73.015402 |
| PURF4092 | <i>Puccinia</i> | <i>recondita</i> | 1925 | non-data | non-data | non-data | non-data | - | - |
| PURF4093 | <i>Puccinia</i> | <i>recondita</i> | 1925 | Poaceae | <i>Briza</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4095 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>buchtienii</i> | Bolivia | -17.055929 | -65.565918 |
| PURF4096 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1919 | Poaceae | <i>Elymus</i> | <i>repens</i> | Sweden | 59.3283 | 18.072 |
| PURF4097 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Ecuador | -0.194568 | -78.493005 |
| PURF4098 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4099 | <i>Puccinia</i> | <i>bromicola</i> | 1924 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Chile | -38.719107 | -72.619141 |
| PURF4100 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Bolivia | -16.49667 | -68.13 |
| PURF4101 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Bolivia | -15.731265 | -64.529297 |
| PURF4102 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Chile | -41.319461 | -72.985378 |
| PURF4103 | <i>Puccinia</i> | <i>brachypodii</i> | 1919 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Chile | -39.884176 | -73.43045 |
| PURF4104 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Bromus</i> | <i>racemosus</i> | Chile | -40.708707 | -73.015402 |
| PURF4106 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Festuca</i> | <i>lassiorrhachis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4107 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Bromus</i> | <i>lithobius</i> | Chile | -35.758046 | -71.407898 |
| PURF4108 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>pitensis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4109 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>stamineus</i> | Chile | -32.55538 | -71.45748 |
| PURF4110 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Bromus</i> | <i>catharticus</i> | Chile | -41.870699 | -73.81622 |
| PURF4111 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>catharticus</i> | Bolivia | -16.49667 | -68.13 |
| PURF4112 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>catharticus</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4113 | <i>Puccinia</i> | <i>recondita</i> | 1922 | Poaceae | <i>Bromus</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4114 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Bromus</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4115 | <i>Puccinia</i> | <i>recondita</i> | 1922 | Poaceae | <i>Bromus</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4116 | <i>Puccinia</i> | <i>recondita</i> | 1922 | Poaceae | <i>Bromus</i> | <i>sp.</i> | Argentina | -31.40054 | -64.23157 |
| PURF4117 | <i>Puccinia</i> | <i>poanim</i> | 1920 | Poaceae | <i>Calamagrostis</i> | <i>heterophylla</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4125 | <i>Puccinia</i> | <i>recondita</i> | 1911 | Poaceae | <i>Hordelymus</i> | <i>europaeus</i> | Switzerland | 46.895535 | 6.828491 |
| PURF4126 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Vulpia</i> | <i>octoflora</i> | Chile | -35.758046 | -71.407898 |
| PURF4129 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1919 | Poaceae | <i>Hordeum</i> | <i>chilensis</i> | Chile | -35.758046 | -71.407898 |
| PURF4130 | <i>Puccinia</i> | <i>recondita</i> | 1909 | Poaceae | <i>Hordeum</i> | <i>compressum</i> | Argentina | -31.258094 | -64.166113 |
| PURF4131 | <i>Puccinia</i> | <i>brachypodii</i> | 1919 | Poaceae | <i>Hordeum</i> | <i>murinum</i> | Chile | -41.870699 | -73.81622 |
| PURF4132 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Poa</i> | <i>androgyna</i> | Bolivia | -16.49667 | -68.13 |
| PURF4133 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Poa</i> | <i>androgyna</i> | Bolivia | -16.49667 | -68.13 |
| PURF4134 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Poa</i> | <i>bonariensis</i> | Chile | -38.736248 | -72.616394 |
| PURF4135 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Poa</i> | <i>bonariensis</i> | Chile | -41.870699 | -73.81622 |
| PURF4136 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Poa</i> | <i>bonariensis</i> | Chile | -38.736248 | -72.616394 |
| PURF4137 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Poa</i> | <i>bonariensis</i> | Chile | -41.870699 | -73.81622 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|----------|-------------|----------------------|----------------------------|-----------|------------|------------|
| PURF4138 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Poa</i> | <i>pallens</i> | Chile | -41.870699 | -73.81622 |
| PURF4139 | <i>Puccinia</i> | <i>recondita</i> | 1920 | Poaceae | <i>Trisetum</i> | <i>spicatum</i> | Bolivia | -16.49667 | -68.13 |
| PURF4146 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Chile | -35.758046 | -71.407898 |
| PURF4147 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Chile | -41.319461 | -72.985378 |
| PURF4171 | <i>Puccinia</i> | <i>recondita</i> | 1891 | Poaceae | <i>Bromus</i> | <i>bromoides</i> | Sweden | 59.3283 | 18.072 |
| PURF4185 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1919 | Poaceae | <i>Bromus</i> | <i>trinii</i> | Chile | -41.870699 | -73.81622 |
| PURF4186 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1919 | Poaceae | <i>Bromus</i> | <i>trinii</i> | Chile | -41.870699 | -73.81622 |
| PURF4187 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1919 | Poaceae | <i>Bromus</i> | <i>trinii</i> | Chile | -41.870699 | -73.81622 |
| PURF4188 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1924 | Poaceae | <i>Bromus</i> | <i>trinii</i> | Chile | -38.736248 | -72.616394 |
| PURF4190 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1919 | Poaceae | <i>Bromus</i> | <i>trinii</i> | Chile | -38.736248 | -72.616394 |
| PURF4191 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1919 | Poaceae | <i>Bromus</i> | <i>trinii</i> | Chile | -41.870699 | -73.81622 |
| PURF4192 | <i>Puccinia</i> | <i>striiformis</i> var. <i>striiformis</i> | non-data | Poaceae | <i>Hordeum</i> | <i>compressum</i> | Argentina | -34.6 | -58.45 |
| PURF4193 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Chile | -41.870699 | -73.81622 |
| PURF4194 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Chile | -41.870699 | -73.81622 |
| PURF4195 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Chile | -35.758046 | -71.407898 |
| PURF4196 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Chile | -41.870699 | -73.81622 |
| PURF4197 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Lolium</i> | <i>sp.</i> | Chile | -38.736248 | -72.616394 |
| PURF4198 | <i>Puccinia</i> | <i>hordei</i> | 1919 | Poaceae | <i>Lolium</i> | <i>sp.</i> | Chile | -38.719107 | -72.619141 |
| PURF4199 | <i>Puccinia</i> | <i>hordei</i> | 1920 | Poaceae | <i>Lolium</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF4205 | <i>Puccinia</i> | <i>brachypodii</i> | 1929 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Chile | -41.870699 | -73.81622 |
| PURF4206 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Bromus</i> | <i>unioloides</i> | Chile | -41.870699 | -73.81622 |
| PURF4207 | <i>Puccinia</i> | <i>brachypodii</i> | 1919 | Poaceae | <i>Bromus</i> | <i>valdivianus</i> | Chile | -41.870699 | -73.81622 |
| PURF4208 | <i>Puccinia</i> | <i>recondita</i> | 1919 | Poaceae | <i>Bromus</i> | <i>sp.</i> | Chile | -38.736248 | -72.616394 |
| PURF4209 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Elymus</i> | <i>agropyroides</i> | Chile | -41.870699 | -73.81622 |
| PURF4210 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Elymus</i> | <i>andinus</i> | Chile | -41.870699 | -73.81622 |
| PURF4211 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Elymus</i> | <i>andinus</i> | Chile | -41.870699 | -73.81622 |
| PURF4212 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Elymus</i> | <i>andinus</i> | Chile | -41.870699 | -73.81622 |
| PURF4213 | <i>Puccinia</i> | <i>brachypodii</i> | 1924 | Poaceae | <i>Elymus</i> | <i>andinus</i> | Chile | -36.81297 | -73.04846 |
| PURF4214 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Elymus</i> | <i>andinus</i> | Chile | -41.870699 | -73.81622 |
| PURF4215 | <i>Puccinia</i> | <i>brachypodii</i> | 1919 | Poaceae | <i>Elymus</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF4232 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Poaceae | <i>Hordeum</i> | <i>andinum</i> | Bolivia | -16.49667 | -68.13 |
| PURF4233 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Poaceae | <i>Hordeum</i> | <i>andinum</i> | Bolivia | -16.49667 | -68.13 |
| PURF4235 | <i>Puccinia</i> | <i>tornata</i> | 1920 | Poaceae | <i>Hordeum</i> | <i>andinum</i> | Bolivia | -16.49667 | -68.13 |
| PURF4236 | <i>Puccinia</i> | <i>tornata</i> | 1920 | Poaceae | <i>Hordeum</i> | <i>andinum</i> | Bolivia | -16.49667 | -68.13 |
| PURF4237 | <i>Puccinia</i> | <i>striiformis</i> | 1920 | Poaceae | <i>Agropyron</i> | <i>attenuatum</i> | Ecuador | -1.51504 | -78.2441 |
| PURF4240 | <i>Puccinia</i> | <i>coronata</i> | 1924 | Poaceae | <i>Hordeum</i> | <i>chilense</i> | Chile | -41.870699 | -73.81622 |
| PURF4252 | <i>Puccinia</i> | <i>striiformis</i> var. <i>striiformis</i> | 1929 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Peru | -11.777101 | -75.497017 |
| PURF4288 | <i>Puccinia</i> | <i>graminis</i> | 1892 | Poaceae | <i>Elymus</i> | <i>caninus</i> | Germany | 52.45413 | 13.30564 |
| PURF4300 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Agrotis</i> | <i>gigantea</i> | Ecuador | -1.252369 | -78.622781 |
| PURF4305 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Polypogon</i> | <i>viridis</i> | Peru | -7.255558 | -76.475553 |
| PURF4316 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Bromus</i> | <i>coloratus</i> | Chile | -41.870699 | -73.81622 |
| PURF4317 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Calamagrostis</i> | <i>sp.</i> | Chile | -38.719107 | -72.619141 |
| PURF4325 | <i>Puccinia</i> | <i>graminis</i> | 1924 | Poaceae | <i>Elymus</i> | <i>andinus</i> | Chile | -41.870699 | -73.81622 |
| PURF4326 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Elymus</i> | <i>andinus</i> | Chile | -41.870699 | -73.81622 |
| PURF4333 | <i>Puccinia</i> | <i>graminis</i> | 1882 | Poaceae | <i>Leersia</i> | <i>oryzoides</i> | Germany | 52.45413 | 13.30564 |
| PURF4334 | <i>Puccinia</i> | <i>cryptica</i> var. <i>cryptica</i> | 1919 | Poaceae | <i>Hordeum</i> | <i>gussoneanum</i> | Chile | -35.758046 | -71.407898 |
| PURF4337 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Hordeum</i> | <i>murinum</i> | Chile | -35.758046 | -71.407898 |
| PURF4338 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Hordeum</i> | <i>vulgare</i> | Ecuador | -1.515042 | -78.244141 |
| PURF4339 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Hordeum</i> | <i>vulgare</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4340 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Lolium</i> | <i>perenne multiflorum</i> | Chile | -41.870699 | -73.81622 |
| PURF4342 | <i>Puccinia</i> | <i>graminis</i> | 1892 | Poaceae | <i>Phleum</i> | <i>pratense</i> | Germany | 52.516667 | 13.4 |
| PURF4345 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Poa</i> | <i>chilensis</i> | Chile | -39.88418 | -73.43045 |
| PURF4352 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Polypogon</i> | <i>elongatus</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4353 | <i>Puccinia</i> | <i>graminis</i> | 1920 | Poaceae | <i>Polypogon</i> | <i>elongatus</i> | Ecuador | -0.19457 | -78.49301 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|------|---------------|--------------------|---------------------|-----------|------------|------------|
| PURF4360 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Trisetum</i> | <i>spicatum</i> | Chile | -35.758046 | -71.407898 |
| PURF4363 | <i>Puccinia</i> | <i>graminis</i> | 1894 | Poaceae | <i>Triticum</i> | <i>pubiflorum</i> | Argentina | -34.861863 | -57.911257 |
| PURF4371 | <i>Puccinia</i> | <i>graminis</i> | 1919 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Chile | -41.319461 | -72.985378 |
| PURF4417 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>barbata</i> | Chile | -35.758046 | -71.407898 |
| PURF4418 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>barbata</i> | Chile | -41.319461 | -72.985378 |
| PURF4419 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>barbata</i> | Chile | -38.719107 | -72.619141 |
| PURF4420 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>barbata</i> | Chile | -41.870699 | -73.81622 |
| PURF4421 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>barbata</i> | Chile | -33.45 | -70.666667 |
| PURF4422 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>barbata</i> | Chile | -41.870699 | -73.81622 |
| PURF4423 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>barbata</i> | Chile | -41.870699 | -73.81622 |
| PURF4426 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1920 | Poaceae | <i>Avena</i> | <i>fatua</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4442 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1922 | Poaceae | <i>Avena</i> | <i>sativa</i> | Brazil | -22.865557 | -43.42723 |
| PURF4443 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1920 | Poaceae | <i>Avena</i> | <i>sativa</i> | Bolivia | -16.49667 | -68.13 |
| PURF4444 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>sativa</i> | Chile | -41.870699 | -73.81622 |
| PURF4445 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>sativa</i> | Chile | -41.319461 | -72.985378 |
| PURF4446 | <i>Puccinia</i> | <i>coronata</i> var. <i>avenae</i> | 1919 | Poaceae | <i>Avena</i> | <i>sativa</i> | Chile | -38.719107 | -72.619141 |
| PURF4469 | <i>Puccinia</i> | <i>coronata</i> | 1919 | Poaceae | <i>Hordeum</i> | <i>murinum</i> | Chile | -41.870699 | -73.81622 |
| PURF4471 | <i>Puccinia</i> | <i>coronata</i> | 1892 | Poaceae | <i>Lolium</i> | <i>italicum</i> | Poland | 53.66667 | 15 |
| PURF4472 | <i>Puccinia</i> | <i>coronata</i> | 1919 | Poaceae | <i>Lolium</i> | <i>perenne</i> | Chile | -38.736248 | -72.616394 |
| PURF4473 | <i>Puccinia</i> | <i>coronata</i> | 1922 | Poaceae | <i>Lolium</i> | <i>perenne</i> | Argentina | -31.420827 | -64.182366 |
| PURF4474 | <i>Puccinia</i> | <i>coronata</i> | 1919 | Poaceae | <i>Lolium</i> | <i>perenne</i> | Chile | -39.827598 | -73.224246 |
| PURF4475 | <i>Puccinia</i> | <i>coronata</i> | 1919 | Poaceae | <i>Lolium</i> | <i>perenne</i> | Chile | -41.086958 | -72.023132 |
| PURF4479 | <i>Puccinia</i> | <i>coronata</i> | 1919 | Poaceae | <i>Lolium</i> | <i>temulentum</i> | Chile | -41.870699 | -73.81622 |
| PURF4480 | <i>Puccinia</i> | <i>coronata</i> | 1919 | Poaceae | <i>Lolium</i> | <i>sp.</i> | Chile | -34.430805 | -71.924236 |
| PURF4557 | <i>Puccinia</i> | <i>brachypodii</i> | 1922 | Poaceae | <i>Agropyron</i> | <i>magellanicum</i> | Chile | -53.130267 | -70.853963 |
| PURF4560 | <i>Puccinia</i> | <i>interveniens</i> | 1920 | Malvaceae | <i>Malvastrum</i> | <i>capitatum</i> | Bolivia | -17.055929 | -65.565918 |
| PURF4562 | <i>Puccinia</i> | <i>interveniens</i> | 1915 | Malvaceae | <i>Malvastrum</i> | <i>sp.</i> | Peru | -8.175278 | -77.412222 |
| PURF4563 | <i>Puccinia</i> | <i>interveniens</i> | 1922 | Malvaceae | <i>Malvastrum</i> | <i>sp.</i> | Argentina | -31.088407 | -64.486869 |
| PURF4567 | <i>Puccinia</i> | <i>interveniens</i> | 1919 | Malvaceae | <i>Sphaeralcea</i> | <i>obtusifolia</i> | Chile | -41.870699 | -73.81622 |
| PURF4568 | <i>Puccinia</i> | <i>interveniens</i> | 1919 | Malvaceae | <i>Sphaeralcea</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF4574 | <i>Puccinia</i> | <i>graminella</i> | 1924 | Poaceae | <i>Nassella</i> | <i>chilensis</i> | Chile | -35.7116 | -71.3345 |
| PURF4584 | <i>Puccinia</i> | <i>digna</i> | 1924 | Poaceae | <i>Nassella</i> | <i>chilensis</i> | Chile | -41.870699 | -73.81622 |
| PURF4586 | <i>Puccinia</i> | <i>saetensis</i> | 1924 | Poaceae | <i>Nassella</i> | <i>pubiflora</i> | Bolivia | -16.49667 | -68.13 |
| PURF4588 | <i>Puccinia</i> | <i>digna</i> | 1920 | Poaceae | <i>Stipa</i> | <i>ichu</i> | Bolivia | -17.055929 | -65.565918 |
| PURF4590 | <i>Puccinia</i> | <i>digna</i> | 1920 | Poaceae | <i>Stipa</i> | <i>ichu</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4591 | <i>Puccinia</i> | <i>digna</i> | 1920 | Poaceae | <i>Stipa</i> | <i>ichu</i> | Bolivia | -15.731265 | -64.529297 |
| PURF4595 | <i>Puccinia</i> | <i>digna</i> | 1920 | Poaceae | <i>Stipa</i> | <i>ichu</i> | Bolivia | -17.055929 | -65.565918 |
| PURF4596 | <i>Puccinia</i> | <i>digna</i> | 1920 | Poaceae | <i>Stipa</i> | <i>ichu</i> | Bolivia | -17.055929 | -65.565919 |
| PURF4597 | <i>Puccinia</i> | <i>stipae</i> | 1920 | Poaceae | <i>Stipa</i> | <i>ichu</i> | Bolivia | -17.0559 | -65.5659 |
| PURF4598 | <i>Puccinia</i> | <i>saetensis</i> | 1896 | Poaceae | <i>Nassella</i> | <i>manicata</i> | Uruguay | -34.85806 | -56.17083 |
| PURF4601 | <i>Puccinia</i> | <i>saltensis</i> var. <i>faldensis</i> | 1922 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4604 | <i>Puccinia</i> | <i>saltensis</i> var. <i>faldensis</i> | 1922 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Argentina | -31.088408 | -64.489870 |
| PURF4605 | <i>Puccinia</i> | <i>saltensis</i> var. <i>faldensis</i> | 1922 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4606 | <i>Puccinia</i> | <i>nasellae</i> var. <i>nasellae</i> | 1920 | Poaceae | <i>Nassella</i> | <i>caespitosa</i> | Bolivia | -17.055929 | -65.565918 |
| PURF4607 | <i>Puccinia</i> | <i>nasellae</i> var. <i>nasellae</i> | 1920 | Poaceae | <i>Nassella</i> | <i>caespitosa</i> | Bolivia | -16.49667 | -68.13 |
| PURF4608 | <i>Puccinia</i> | <i>nasellae</i> var. <i>nasellae</i> | 1920 | Poaceae | <i>Nassella</i> | <i>caespitosa</i> | Bolivia | -16.49667 | -68.13 |
| PURF4610 | <i>Puccinia</i> | <i>nasellae</i> var. <i>nasellae</i> | 1919 | Poaceae | <i>Nassella</i> | <i>chilensis</i> | Chile | -41.870699 | -73.81622 |
| PURF4611 | <i>Puccinia</i> | <i>saetensis</i> | 1920 | Poaceae | <i>Nassella</i> | <i>chiensis</i> | Bolivia | -16.49667 | -68.13 |
| PURF4612 | <i>Puccinia</i> | <i>saetensis</i> | 1920 | Poaceae | <i>Nassella</i> | <i>flaccidula</i> | Bolivia | -16.49667 | -68.13 |
| PURF4613 | <i>Puccinia</i> | <i>saetensis</i> | 1920 | Poaceae | <i>Nassella</i> | <i>pubiflora</i> | Peru | -7.255558 | -76.475553 |
| PURF4614 | <i>Puccinia</i> | <i>saltensis</i> var. <i>faldensis</i> | 1922 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4615 | <i>Puccinia</i> | <i>saltensis</i> var. <i>faldensis</i> | 1922 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4616 | <i>Puccinia</i> | <i>saetensis</i> | 1920 | Poaceae | <i>Stipa</i> | <i>brachyphylla</i> | Bolivia | -16.49667 | -68.13 |
| PURF4628 | <i>Puccinia</i> | <i>pygmaea</i> | 1926 | Berberidaceae | <i>Berberis</i> | <i>amurensis</i> | China | 49.6 | 117.433333 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------|----------|-------------|----------------------|------------------------|-------------|------------|------------|
| PURF4644 | <i>Puccinia</i> | <i>ptipochaetii</i> | 1919 | Poaceae | <i>Piptochaetium</i> | <i>stipoides</i> | Chile | -35.758046 | -71.407898 |
| PURF4645 | <i>Puccinia</i> | <i>ptipochaetii</i> | 1920 | Poaceae | <i>Piptochaetium</i> | <i>montevidensis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4646 | <i>Puccinia</i> | <i>ptipochaetii</i> | 1894 | Poaceae | <i>Piptochaetium</i> | <i>montevidensis</i> | Argentina | -34.921454 | -57.954533 |
| PURF4647 | <i>Puccinia</i> | <i>ptipochaetii</i> | non-data | Poaceae | <i>Piptochaetium</i> | <i>montevidensis</i> | Argentina | -34.6 | -58.45 |
| PURF4648 | <i>Puccinia</i> | <i>aegopogonis</i> | 1920 | Poaceae | <i>Aegopogon</i> | <i>cenchrroides</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4649 | <i>Puccinia</i> | <i>aegopogonis</i> | 1920 | Poaceae | <i>Aegopogon</i> | <i>cenchrroides</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4653 | <i>Puccinia</i> | <i>vexans</i> | 1920 | Poaceae | <i>Bouteloua</i> | <i>curtipendula</i> | Bolivia | -17.118938 | -65.950439 |
| PURF4667 | <i>Puccinia</i> | <i>chloridis</i> | 1920 | Poaceae | <i>Chloris</i> | <i>distichophylla</i> | Bolivia | -16.5 | -68.15 |
| PURF4669 | <i>Puccinia</i> | <i>chloridis</i> | 1873 | Poaceae | <i>Chloris</i> | <i>beyhrichiana</i> | Argentina | -27.387131 | -55.923355 |
| PURF4671 | <i>Puccinia</i> | <i>cacabata</i> | 1905 | Poaceae | <i>Chloris</i> | <i>elata</i> | Argentina | -23.833333 | -64.766667 |
| PURF4672 | <i>Puccinia</i> | <i>cacabata</i> | 1914 | Poaceae | <i>Chloris</i> | <i>elata</i> | Brazil | -18.975688 | -44.483961 |
| PURF4768 | <i>Puccinia</i> | <i>levis</i> | 1920 | Poaceae | <i>Axonopus</i> | <i>chrysoblepharis</i> | Bolivia | -16.139956 | -67.724731 |
| PURF4769 | <i>Puccinia</i> | <i>levis</i> | 1920 | Poaceae | <i>Axonopus</i> | <i>scoparius</i> | Bolivia | -16.397025 | -67.651947 |
| PURF4770 | <i>Puccinia</i> | <i>levis</i> | 1920 | Poaceae | <i>Axonopus</i> | <i>scoparius</i> | Bolivia | -16.5 | -68.15 |
| PURF4782 | <i>Puccinia</i> | <i>levis</i> | 1919 | Poaceae | <i>Dichanthelium</i> | <i>latifolium</i> | Paraguay | -25.27742 | -57.576111 |
| PURF4797 | <i>Puccinia</i> | <i>levis</i> | 1913 | Poaceae | <i>Paspalum</i> | <i>pilosum</i> | Venezuela | 10.488011 | -66.879193 |
| PURF4802 | <i>Puccinia</i> | <i>levis</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF4803 | <i>Puccinia</i> | <i>levis</i> | 1920 | Poaceae | <i>Pennisetum</i> | <i>mutilatum</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4816 | <i>Puccinia</i> | <i>pseudoatra</i> | 1890 | Poaceae | <i>Paspalum</i> | <i>penicillatum</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4819 | <i>Puccinia</i> | <i>pseudoatra</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>prostratum</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4826 | <i>Puccinia</i> | <i>macra</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>candidum</i> | Bolivia | -16.397025 | -67.651947 |
| PURF4827 | <i>Puccinia</i> | <i>pseudoatra</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>pallidum</i> | Ecuador | -1.252369 | -78.622781 |
| PURF4828 | <i>Puccinia</i> | <i>pseudoatra</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>pallidum</i> | Ecuador | -1.252369 | -78.622781 |
| PURF4830 | <i>Puccinia</i> | <i>pseudoatra</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>pallidum</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4842 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>humboldtianum</i> | Peru | -9.049722 | -77.774444 |
| PURF4843 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>humboldtianum</i> | Bolivia | -16.5 | -68.15 |
| PURF4844 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>humboldtianum</i> | Bolivia | -16.139956 | -67.724731 |
| PURF4852 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>paniculatum</i> | Bolivia | -16.139956 | -67.724731 |
| PURF4854 | <i>Puccinia</i> | <i>substriata</i> | 1921 | Poaceae | <i>Paspalum</i> | <i>paniculatum</i> | Trinidad | 10.5 | -61.25 |
| PURF4871 | <i>Puccinia</i> | <i>levis</i> | 1921 | Poaceae | <i>Paspalum</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF4874 | <i>Puccinia</i> | <i>substriata</i> | 1921 | Poaceae | <i>Paspalum</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF4885 | <i>Puccinia</i> | <i>levis</i> | 1924 | Poaceae | <i>Digitaria</i> | <i>horizontalis</i> | Brazil | -27.3626 | -49.8715 |
| PURF4891 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Digitaria</i> | <i>californica</i> | Bolivia | -17.118938 | -65.950439 |
| PURF4892 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Digitaria</i> | <i>californica</i> | Bolivia | -17.118938 | -65.950439 |
| PURF4901 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>distichum</i> | Peru | -9.049722 | -77.774444 |
| PURF4902 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>substriata</i> | Peru | -5.533333 | -74.633333 |
| PURF4935 | <i>Puccinia</i> | <i>substriata</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>remotum</i> | Bolivia | -17.118938 | -65.950439 |
| PURF4956 | <i>Puccinia</i> | <i>gymnotrichis</i> | 1920 | Poaceae | <i>Pennisetum</i> | <i>preslii</i> | Bolivia | -15.76667 | -68.63333 |
| PURF4957 | <i>Puccinia</i> | <i>gymnotrichis</i> | 1920 | Poaceae | <i>Pennisetum</i> | <i>setosum</i> | Bolivia | -16.139956 | -67.724731 |
| PURF4958 | <i>Puccinia</i> | <i>gymnotrichis</i> | 1920 | Poaceae | <i>Pennisetum</i> | <i>setosum</i> | Bolivia | -16.397025 | -67.651947 |
| PURF4959 | <i>Puccinia</i> | <i>gymnotrichis</i> | 1891 | Poaceae | <i>Pennisetum</i> | <i>tristachyum</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4960 | <i>Puccinia</i> | <i>gymnotrichis</i> | 1920 | Poaceae | <i>Pennisetum</i> | <i>tristachyum</i> | Ecuador | -0.19457 | -78.49301 |
| PURF4966 | <i>Puccinia</i> | <i>abnormis</i> | 1920 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | Bolivia | -17.118938 | -65.950439 |
| PURF4967 | <i>Puccinia</i> | <i>abnormis</i> | 1920 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | Bolivia | -17.118938 | -65.950439 |
| PURF4968 | <i>Puccinia</i> | <i>abnormis</i> | 1920 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | Peru | -5.533333 | -74.633333 |
| PURF4973 | <i>Puccinia</i> | <i>inclita</i> | 1922 | Poaceae | <i>Ichnanthus</i> | <i>candicans</i> | Brazil | -22.865557 | -43.42723 |
| PURF4976 | <i>Puccinia</i> | <i>deformata</i> | 1921 | Poaceae | <i>Olyra</i> | <i>latifolia</i> | Trinidad | 10.5 | -61.25 |
| PURF4990 | <i>Puccinia</i> | <i>cenchri</i> | 1922 | Poaceae | <i>Cenchrus</i> | <i>echinatus</i> | Brazil | -21.9667 | -47.8167 |
| PURF5005 | <i>Puccinia</i> | <i>pusilla</i> | 1925 | Poaceae | <i>Andropogon</i> | <i>sp.</i> | Philippines | 16.59778 | 120.8991 |
| PURF5022 | <i>Puccinia</i> | <i>posadensis</i> | 1920 | Poaceae | <i>Schizachyrium</i> | <i>brevifolium</i> | Ecuador | -1.670984 | -78.647124 |
| PURF5024 | <i>Puccinia</i> | <i>posadensis</i> | 1920 | Poaceae | <i>Schizachyrium</i> | <i>condensatum</i> | Bolivia | -16.5 | -68.15 |
| PURF5042 | <i>Puccinia</i> | <i>erianthicola</i> | 1921 | Poaceae | <i>Saccharum</i> | <i>asperum</i> | Brazil | -22.865557 | -43.42723 |
| PURF5094 | <i>Puccinia</i> | <i>purpurea</i> | 1920 | Poaceae | <i>Sorghum</i> | <i>halepense</i> | Peru | -12 | -76.833333 |
| PURF5095 | <i>Puccinia</i> | <i>purpurea</i> | 1920 | Poaceae | <i>Sorghum</i> | <i>halepense</i> | Peru | -5.533333 | -74.633333 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-----------------------|------|------------------|----------------------|---------------------|-------------|------------|------------|
| PURF5109 | <i>Puccinia</i> | <i>purpurea</i> | 1916 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | Trinidad | 10.5 | -61.25 |
| PURF5113 | <i>Puccinia</i> | <i>purpureae</i> | 1924 | Poaceae | <i>Andropogon</i> | <i>sp.</i> | Philippines | 16.2 | 120.883333 |
| PURF5118 | <i>Puccinia</i> | <i>polysora</i> | 1938 | Poaceae | <i>Tripsacum</i> | <i>laxum</i> | Trinidad | 10.5 | -61.25 |
| PURF5128 | <i>Puccinia</i> | <i>sorgho</i> | 1918 | Poaceae | <i>Zea</i> | <i>mays</i> | Ecuador | -1.252369 | -78.622781 |
| PURF5130 | <i>Puccinia</i> | <i>sorgho</i> | 1920 | Poaceae | <i>Zea</i> | <i>mays</i> | Bolivia | -17.118938 | -65.950439 |
| PURF5131 | <i>Puccinia</i> | <i>sorgho</i> | 1920 | Poaceae | <i>Zea</i> | <i>mays</i> | Ecuador | -1.670984 | -78.647124 |
| PURF5132 | <i>Puccinia</i> | <i>sorgho</i> | 1922 | Poaceae | <i>Zea</i> | <i>mays</i> | Brazil | -22.8656 | -43.4272 |
| PURF5145 | <i>Puccinia</i> | <i>subcoronata</i> | 1921 | Cyperaceae | <i>Cyperus</i> | <i>diffusus</i> | Trinidad | 10.5 | -61.25 |
| PURF5148 | <i>Puccinia</i> | <i>subcoronata</i> | 1921 | Cyperaceae | <i>Cyperus</i> | <i>diffusus</i> | Trinidad | 10.5 | -61.25 |
| PURF5149 | <i>Puccinia</i> | <i>subcoronata</i> | 1921 | Cyperaceae | <i>Cyperus</i> | <i>diffusus</i> | Trinidad | 10.5 | -61.25 |
| PURF5150 | <i>Puccinia</i> | <i>subcoronata</i> | 1910 | Cyperaceae | <i>Cyperus</i> | <i>diffusus</i> | Colombia | 6.25184 | -75.563591 |
| PURF5152 | <i>Puccinia</i> | <i>subcoronata</i> | 1920 | Cyperaceae | <i>Cyperus</i> | <i>diffusus</i> | Bolivia | -16.397025 | -67.651947 |
| PURF5159 | <i>Puccinia</i> | <i>canaliculata</i> | 1920 | Cyperaceae | <i>Cyperus</i> | <i>esculentus</i> | Bolivia | -17.118938 | -65.950439 |
| PURF5162 | <i>Puccinia</i> | <i>cyperi</i> | 1929 | Asteraceae | <i>Conyza</i> | <i>bonariensis</i> | Colombia | 3.99456 | -76.2278 |
| PURF5163 | <i>Puccinia</i> | <i>cyperi</i> | 1913 | Asteraceae | <i>Conyza</i> | <i>bonariensis</i> | Venezuela | 10.488011 | -66.879193 |
| PURF5164 | <i>Puccinia</i> | <i>cyperi</i> | 1913 | Asteraceae | <i>Conyza</i> | <i>bonariensis</i> | Venezuela | 10.488011 | -66.879193 |
| PURF5166 | <i>Puccinia</i> | <i>cyperi</i> | 1920 | Asteraceae | <i>Erigeron</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF5169 | <i>Puccinia</i> | <i>cyperi</i> | 1920 | Cyperaceae | <i>Cyperus</i> | <i>odoratus</i> | Bolivia | -16.5 | -68.15 |
| PURF5173 | <i>Puccinia</i> | <i>cyperi</i> | 1920 | Cyperaceae | <i>Cyperus</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF5188 | <i>Puccinia</i> | <i>philippinensis</i> | 1925 | Lamiaceae | <i>Clerodendrum</i> | <i>intermedium</i> | Philippines | 15.66792 | 120.5789 |
| PURF5202 | <i>Puccinia</i> | <i>mysorensis</i> | 1927 | Cyperaceae | <i>Kyllinga</i> | <i>brevifolia</i> | Philippines | 15.15523 | 120.3457 |
| PURF5215 | <i>Puccinia</i> | <i>scleriae</i> | 1932 | Passifloraceae | <i>Passiflora</i> | <i>suberosa</i> | Venezuela | 10.30542 | -66.66047 |
| PURF5216 | <i>Puccinia</i> | <i>scleriae</i> | 1921 | Passifloraceae | <i>Passiflora</i> | <i>rubra</i> | Trinidad | 10.5 | -61.25 |
| PURF5217 | <i>Puccinia</i> | <i>scleriae</i> | 1921 | Passifloraceae | <i>Passiflora</i> | <i>tuberosa</i> | Trinidad | 10.5 | -61.25 |
| PURF5218 | <i>Puccinia</i> | <i>scleriae</i> | 1902 | Passifloraceae | <i>Passiflora</i> | <i>tricuspis</i> | Peru | -6.491659 | -76.362943 |
| PURF5249 | <i>Puccinia</i> | <i>dioicae</i> | 1919 | Asteraceae | <i>Aster</i> | <i>asperulus</i> | India | 30.45918 | 78.06287 |
| PURF5268 | <i>Puccinia</i> | <i>opizii</i> | 1899 | Asteraceae | <i>Lactuca</i> | <i>debilis</i> | Japan | 35.72494 | 139.4445 |
| PURF5383 | <i>Puccinia</i> | <i>rupestris</i> | 1910 | Asteraceae | <i>Saussurea</i> | <i>alpina</i> | Sweden | 63.31667 | 12.1 |
| PURF5435 | <i>Puccinia</i> | <i>caricina</i> | 1826 | Grossulariaceae | <i>Ribes</i> | <i>alpinusa</i> | Denmark | 55.0836 | 10.69431 |
| PURF5446 | <i>Puccinia</i> | <i>urticae</i> | 1920 | Urticaceae | <i>Urtica</i> | <i>ballotifolia</i> | Ecuador | -0.19457 | -78.49301 |
| PURF5539 | <i>Puccinia</i> | <i>constata</i> | 1925 | Cyperaceae | <i>Carex</i> | <i>baccans</i> | Philippines | 14.05086 | 121.1793 |
| PURF5561 | <i>Puccinia</i> | <i>paullula</i> | 1925 | Araceae | <i>Rhaphidophora</i> | <i>merrillii</i> | Philippines | 15.6065 | 120.5978 |
| PURF5562 | <i>Puccinia</i> | <i>pitcairniae</i> | 1920 | Bromeliaceae | <i>Pitcairnia</i> | <i>pungens</i> | Ecuador | -0.19457 | -78.49301 |
| PURF5601 | <i>Puccinia</i> | <i>juncophila</i> | 1904 | Juncaceae | <i>Juncus</i> | <i>pallidus</i> | Australia | -37.8374 | 145.0205 |
| PURF5668 | <i>Puccinia</i> | <i>funkiae</i> | 1926 | Verbenaceae | <i>Hosta</i> | <i>coerulea</i> | Japan | 43.49445 | 142.5928 |
| PURF5734 | <i>Puccinia</i> | <i>bomareae</i> | 1920 | Alstroemeriaceae | <i>Bomarea</i> | <i>caldasiana</i> | Ecuador | -0.19457 | -78.49301 |
| PURF5739 | <i>Puccinia</i> | <i>bomareae</i> | 1920 | Alstroemeriaceae | <i>Bomarea</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF5740 | <i>Puccinia</i> | <i>pallor</i> | 1920 | Alstroemeriaceae | <i>Bomarea</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF5741 | <i>Puccinia</i> | <i>roseana</i> | 1916 | Amaryllidaceae | <i>Eucharis</i> | <i>candida</i> | Venezuela | 10.488011 | -66.879193 |
| PURF5744 | <i>Puccinia</i> | <i>roseana</i> | 1923 | Amaryllidaceae | <i>Eucharis</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF5745 | <i>Puccinia</i> | <i>roseana</i> | 1918 | Amaryllidaceae | <i>Hymenocallis</i> | <i>pedalis</i> | Ecuador | -2.205842 | -79.907948 |
| PURF5746 | <i>Puccinia</i> | <i>roseana</i> | 1929 | Amaryllidaceae | <i>Hymenocallis</i> | <i>amancaes</i> | Peru | -12.03404 | -76.935683 |
| PURF5752 | <i>Puccinia</i> | <i>habranthi</i> | 1919 | Amaryllidaceae | <i>Habranthus</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF5753 | <i>Puccinia</i> | <i>habranthi</i> | 1919 | Amaryllidaceae | <i>Hippeastrum</i> | <i>bicolor</i> | Chile | -38.736248 | -72.616394 |
| PURF5755 | <i>Puccinia</i> | <i>habranthi</i> | 1919 | Amaryllidaceae | <i>Hippeastrum</i> | <i>pratense</i> | Chile | -38.719107 | -72.619141 |
| PURF5758 | <i>Puccinia</i> | <i>reichei</i> | 1919 | Amaryllidaceae | <i>Hippeastrum</i> | <i>chilense</i> | Chile | -41.8707 | -73.8162 |
| PURF5762 | <i>Puccinia</i> | <i>steinmanniae</i> | 1919 | Asparagaceae | <i>Milla</i> | <i>poepigiana</i> | Chile | -41.870699 | -73.81622 |
| PURF5765 | <i>Puccinia</i> | <i>alstroemeriae</i> | 1919 | Alstroemeriaceae | <i>Alstroemeria</i> | <i>revoluta</i> | Chile | -41.870699 | -73.81622 |
| PURF5766 | <i>Puccinia</i> | <i>alstroemeriae</i> | 1919 | Alstroemeriaceae | <i>Alstroemeria</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF5767 | <i>Puccinia</i> | <i>alstroemeriae</i> | 1919 | Alstroemeriaceae | <i>Alstroemeria</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF5768 | <i>Puccinia</i> | <i>alstroemeriae</i> | 1919 | Alstroemeriaceae | <i>Alstroemeria</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF5769 | <i>Puccinia</i> | <i>alstroemeriae</i> | 1919 | Alstroemeriaceae | <i>Alstroemeria</i> | <i>sp.</i> | Chile | -33.733211 | -70.782281 |
| PURF5770 | <i>Puccinia</i> | <i>perforans</i> | 1896 | Alstroemeriaceae | <i>Luzuriaga</i> | <i>radicans</i> | Chile | -36.81297 | -73.04846 |
| PURF5771 | <i>Puccinia</i> | <i>perforans</i> | 1905 | Alstroemeriaceae | <i>Luzuriaga</i> | <i>sp.</i> | Chile | -36.81297 | -73.04846 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------------|----------|------------------|----------------------|------------------------|-----------|------------|------------|
| PURF5772 | <i>Puccinia</i> | <i>perforans</i> | 1905 | Alstroemeriaceae | <i>Luzuriaga</i> | <i>sp.</i> | Chile | -36.81297 | -73.04846 |
| PURF5773 | <i>Puccinia</i> | <i>perforans</i> | 1905 | Alstroemeriaceae | <i>Luzuriaga</i> | <i>sp.</i> | Chile | -36.81297 | -73.04846 |
| PURF5809 | <i>Puccinia</i> | <i>heliconiae</i> | 1921 | Heliconiaceae | <i>Heliconia</i> | <i>psittacorum</i> | Trinidad | 10.5 | -61.25 |
| PURF5810 | <i>Puccinia</i> | <i>heliconiae</i> | 1913 | Heliconiaceae | <i>Heliconia</i> | <i>psittacorum</i> | Trinidad | 10.687634 | -61.395569 |
| PURF5811 | <i>Puccinia</i> | <i>heliconiae</i> | 1921 | Heliconiaceae | <i>Heliconia</i> | <i>psittacorum</i> | Trinidad | 10.5 | -61.25 |
| PURF5812 | <i>Puccinia</i> | <i>heliconiae</i> | 1942 | Heliconiaceae | <i>Heliconia</i> | <i>sp.</i> | Ecuador | -2.218369 | -80.228825 |
| PURF5814 | <i>Puccinia</i> | <i>thaliae</i> | 1921 | Marantaceae | <i>Maranta</i> | <i>arundinacea</i> | Trinidad | 10.5 | -61.25 |
| PURF5815 | <i>Puccinia</i> | <i>thaliae</i> | 1921 | Marantaceae | <i>Maranta</i> | <i>arundinacea</i> | Trinidad | 10.5 | -61.25 |
| PURF5816 | <i>Puccinia</i> | <i>thaliae</i> | 1921 | Marantaceae | <i>Maranta</i> | <i>arundinacea</i> | Trinidad | 10.5 | -61.25 |
| PURF5817 | <i>Puccinia</i> | <i>thaliae</i> | 1921 | Marantaceae | <i>Maranta</i> | <i>arundinacea</i> | Trinidad | 10.5 | -61.25 |
| PURF5818 | <i>Puccinia</i> | <i>thaliae</i> | 1921 | Marantaceae | <i>Maranta</i> | <i>arundinacea</i> | Trinidad | 10.5 | -61.25 |
| PURF5821 | <i>Puccinia</i> | <i>thaliae</i> | 1921 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF5822 | <i>Puccinia</i> | <i>thaliae</i> | 1921 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF5824 | <i>Puccinia</i> | <i>thaliae</i> | 1921 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF5827 | <i>Puccinia</i> | <i>urticae</i> | 1920 | Urticaceae | <i>Urtica</i> | <i>urens</i> | Ecuador | -1.252369 | -78.622781 |
| PURF5834 | <i>Puccinia</i> | <i>asarina</i> | 1874 | Aristolochiaceae | <i>Asarum</i> | <i>eupaeum</i> | Italy | 44.75 | 10.21667 |
| PURF5865 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1880 | Polygonaceae | <i>Polygonum</i> | <i>punctatum</i> | Argentina | -34.583333 | -58.4 |
| PURF5867 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1920 | Polygonaceae | <i>Polygonum</i> | <i>sp.</i> | Bolivia | -17.118938 | -65.950439 |
| PURF5878 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1924 | Polygonaceae | <i>Polygonum</i> | <i>hydropiperoides</i> | Peru | -15.555138 | -73.113347 |
| PURF5879 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1924 | Polygonaceae | <i>Polygonum</i> | <i>persicaria</i> | Peru | -13.534876 | -73.694051 |
| PURF5880 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1924 | Polygonaceae | <i>Polygonum</i> | <i>persicaria</i> | Peru | -13.534876 | -73.694051 |
| PURF5889 | <i>Puccinia</i> | <i>bistortae</i> | 1901 | Apiaceae | <i>Angelica</i> | <i>silvestris</i> | Germany | 52.73679 | 15.22878 |
| PURF5921 | <i>Puccinia</i> | <i>monticola</i> | 1922 | Polygonaceae | <i>Polygonum</i> | <i>alpinum</i> | Tibet | 34.42576 | 75.74757 |
| PURF5958 | <i>Puccinia</i> | <i>macropoda</i> | 1880 | Amaranthaceae | <i>Iresine</i> | <i>celosia</i> | Argentina | -27.577541 | -58.739454 |
| PURF5959 | <i>Puccinia</i> | <i>macropoda</i> | 1920 | Amaranthaceae | <i>Iresine</i> | <i>celosia</i> | Bolivia | -17.118938 | -65.950439 |
| PURF5960 | <i>Puccinia</i> | <i>macropoda</i> | non-data | Amaranthaceae | <i>Iresine</i> | <i>celosia</i> | Argentina | -34.661846 | -58.515442 |
| PURF5964 | <i>Puccinia</i> | <i>mogiphanis</i> | 1914 | Amaranthaceae | <i>Achyranthes</i> | <i>sp.</i> | Peru | -11.520224 | -75.899886 |
| PURF5965 | <i>Puccinia</i> | <i>mogiphanis</i> | 1920 | Amaranthaceae | <i>Achyranthes</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURF5967 | <i>Puccinia</i> | <i>mogiphanis</i> | 1920 | Amaranthaceae | <i>Achyranthes</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF5968 | <i>Puccinia</i> | <i>mogiphanis</i> | 1920 | Amaranthaceae | <i>Alternanthera</i> | <i>mexicana</i> | Bolivia | -17.055929 | -65.565918 |
| PURF5970 | <i>Puccinia</i> | <i>mogiphanis</i> | 1920 | Amaranthaceae | <i>Alternanthera</i> | <i>paniculata</i> | Bolivia | -15.76667 | -68.63333 |
| PURF5971 | <i>Puccinia</i> | <i>mogiphanis</i> | 1920 | Amaranthaceae | <i>Alternanthera</i> | <i>paniculata</i> | Ecuador | -1.670984 | -78.647124 |
| PURF5972 | <i>Puccinia</i> | <i>mogiphanis</i> | 1918 | Amaranthaceae | <i>Alternanthera</i> | <i>pubiflora</i> | Ecuador | -1.252369 | -78.622781 |
| PURF5980 | <i>Puccinia</i> | <i>boerhaviae</i> | 1891 | Nyctaginaceae | <i>Boerhavia</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF5981 | <i>Puccinia</i> | <i>colignoniae</i> | 1920 | Nyctaginaceae | <i>Colignonia</i> | <i>glomerata</i> | Bolivia | -15.76667 | -68.63333 |
| PURF5982 | <i>Puccinia</i> | <i>colignoniae</i> | 1920 | Nyctaginaceae | <i>Colignonia</i> | <i>rufopilosa</i> | Bolivia | -16.5 | -68.15 |
| PURF5996 | <i>Puccinia</i> | <i>arenariae</i> | 1919 | Caryophyllaceae | <i>Cerastium</i> | <i>arvense</i> | Chile | -36.81297 | -73.04846 |
| PURF5997 | <i>Puccinia</i> | <i>arenariae</i> | 1919 | Caryophyllaceae | <i>Cerastium</i> | <i>vulgatum</i> | Chile | -41.870699 | -73.81622 |
| PURF5998 | <i>Puccinia</i> | <i>arenariae</i> | 1919 | Caryophyllaceae | <i>Cerastium</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF6107 | <i>Puccinia</i> | <i>gibberulosa</i> | 1891 | Ranunculaceae | <i>Ranunculus</i> | <i>sp.</i> | Ecuador | -1.515042 | -78.244141 |
| PURF6149 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1920 | Berberidaceae | <i>Berberis</i> | <i>actinacantha</i> | Chile | -34.24832 | -70.55543 |
| PURF6151 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1919 | Berberidaceae | <i>Berberis</i> | <i>buxifolia</i> | Chile | -41.870699 | -73.81622 |
| PURF6152 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1919 | Berberidaceae | <i>Berberis</i> | <i>buxifolia</i> | Chile | -41.086958 | -72.023132 |
| PURF6153 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1906 | Berberidaceae | <i>Berberis</i> | <i>buxifolia</i> | Chile | -53.130267 | -70.853963 |
| PURF6154 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1906 | Berberidaceae | <i>Berberis</i> | <i>buxifolia</i> | Chile | -53.130267 | -70.853963 |
| PURF6156 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1919 | Berberidaceae | <i>Berberis</i> | <i>chilensis</i> | Chile | -35.758046 | -71.407898 |
| PURF6157 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1919 | Berberidaceae | <i>Berberis</i> | <i>congestiflora</i> | Chile | -38.719107 | -72.619141 |
| PURF6158 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1919 | Berberidaceae | <i>Berberis</i> | <i>congestiflora</i> | Chile | -38.719107 | -72.619141 |
| PURF6159 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1922 | Berberidaceae | <i>Berberis</i> | <i>ruscifolia</i> | Argentina | -31.088407 | -64.489869 |
| PURF6161 | <i>Puccinia</i> | <i>berberidis-darwinii</i> | 1919 | Berberidaceae | <i>Berberis</i> | <i>darwinii</i> | Chile | -41.086958 | -72.023132 |
| PURF6191 | <i>Puccinia</i> | <i>umbilici</i> | 1913 | Crassulaceae | <i>Cotyledon</i> | <i>umbilicus</i> | France | 41.92723 | 8.734619 |
| PURF6252 | <i>Puccinia</i> | <i>arachidis</i> | 1920 | Fabaceae | <i>Zornia</i> | <i>diphylla</i> | Bolivia | -17.118938 | -65.950439 |
| PURF6267 | <i>Puccinia</i> | <i>arachidis</i> | 1919 | Geraniaceae | <i>Geranium</i> | <i>berterianum</i> | Chile | -41.870699 | -73.81622 |
| PURF6268 | <i>Puccinia</i> | <i>distenta</i> | 1919 | Geraniaceae | <i>Geranium</i> | <i>ochensii</i> | Chile | -41.870699 | -73.81622 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-----------------------|------|---------------|----------------------|-----------------------|-----------|------------|------------|
| PURF6269 | <i>Puccinia</i> | <i>distenta</i> | 1919 | Geraniaceae | <i>Geranium</i> | <i>corecore</i> | Chile | -38.736248 | -72.616394 |
| PURF6270 | <i>Puccinia</i> | <i>distenta</i> | 1920 | Geraniaceae | <i>Geranium</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF6271 | <i>Puccinia</i> | <i>distenta</i> | 1922 | Geraniaceae | <i>Geranium</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF6272 | <i>Puccinia</i> | <i>leveillei</i> | 1929 | Geraniaceae | <i>Geranium</i> | <i>aconitifolium</i> | India | 34.04723 | 74.38154 |
| PURF6273 | <i>Puccinia</i> | <i>leveillei</i> | 1919 | Geraniaceae | <i>Geranium</i> | <i>berterianum</i> | Chile | -41.870699 | -73.81622 |
| PURF6281 | <i>Puccinia</i> | <i>leveillei</i> | 1920 | Geraniaceae | <i>Geranium</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF6282 | <i>Puccinia</i> | <i>leveillei</i> | 1920 | Geraniaceae | <i>Geranium</i> | <i>sp.</i> | Bolivia | -17.055929 | -65.565918 |
| PURF6288 | <i>Puccinia</i> | <i>oxalidis</i> | 1919 | Oxalidaceae | <i>Oxalis</i> | <i>martiana</i> | Argentina | -34.921454 | -57.954533 |
| PURF6290 | <i>Puccinia</i> | <i>oxalidis</i> | 1916 | Oxalidaceae | <i>Oxalis</i> | <i>violacea</i> | Venezuela | 10.488011 | -66.879193 |
| PURF6291 | <i>Puccinia</i> | <i>oxalidis</i> | 1913 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Venezuela | 10.500139 | -66.893838 |
| PURF6292 | <i>Puccinia</i> | <i>oxalidis</i> | 1913 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Venezuela | 10.488011 | -66.879193 |
| PURF6293 | <i>Puccinia</i> | <i>oxalidis</i> | 1920 | Oxalidaceae | <i>Oxalis</i> | <i>crenata</i> | Ecuador | -1.381221 | -78.608121 |
| PURF6294 | <i>Puccinia</i> | <i>oxalidis</i> | 1924 | Oxalidaceae | <i>Oxalis</i> | <i>pubescens</i> | Peru | -11.345465 | -75.577608 |
| PURF6295 | <i>Puccinia</i> | <i>oxalidis</i> | 1920 | Oxalidaceae | <i>Oxalis</i> | <i>scandens</i> | Ecuador | -0.19457 | -78.49301 |
| PURF6296 | <i>Puccinia</i> | <i>oxalidis</i> | 1920 | Oxalidaceae | <i>Oxalis</i> | <i>scandens</i> | Bolivia | -15.76667 | -68.63333 |
| PURF6301 | <i>Puccinia</i> | <i>oxalidis</i> | 1920 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF6303 | <i>Puccinia</i> | <i>oxalidis</i> | 1920 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF6304 | <i>Puccinia</i> | <i>oxalidis</i> | 1920 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF6305 | <i>Puccinia</i> | <i>oxalidis</i> | 1924 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Ecuador | -0.16857 | -78.46429 |
| PURF6309 | <i>Puccinia</i> | <i>insueta</i> | 1920 | Malpighiaceae | <i>Stigmaphyllon</i> | <i>affine</i> | Bolivia | -16.5 | -68.15 |
| PURF6328 | <i>Puccinia</i> | <i>heteropteridis</i> | 1910 | Malpighiaceae | <i>Heteropterys</i> | <i>umbellata</i> | Uruguay | -34.453333 | -56.390556 |
| PURF6350 | <i>Puccinia</i> | <i>arechavaletae</i> | 1920 | Sapindaceae | <i>Cardiospermum</i> | <i>halicacabum</i> | Ecuador | -1.670984 | -78.647124 |
| PURF6351 | <i>Puccinia</i> | <i>arechavaletae</i> | 1918 | Sapindaceae | <i>Cardiospermum</i> | <i>hispidum</i> | Ecuador | -2.289024 | -78.983293 |
| PURF6352 | <i>Puccinia</i> | <i>arechavaletae</i> | 1918 | Sapindaceae | <i>Cardiospermum</i> | <i>loxense</i> | Ecuador | -4.008588 | -79.164246 |
| PURF6353 | <i>Puccinia</i> | <i>arechavaletae</i> | 1890 | Sapindaceae | <i>Cardiospermum</i> | <i>sp.</i> | Ecuador | -1.515042 | -78.244141 |
| PURF6354 | <i>Puccinia</i> | <i>arechavaletae</i> | 1918 | Sapindaceae | <i>Serjania</i> | <i>clematidifolia</i> | Ecuador | -2.289024 | -78.983293 |
| PURF6362 | <i>Puccinia</i> | <i>arechavaletae</i> | 1924 | Sapindaceae | <i>Serjania</i> | <i>glabrata</i> | Peru | -10.046111 | -76.621389 |
| PURF6363 | <i>Puccinia</i> | <i>arechavaletae</i> | 1924 | Sapindaceae | <i>Serjania</i> | <i>glabrata</i> | Peru | -9.99368 | -76.69577 |
| PURF6364 | <i>Puccinia</i> | <i>arechavaletae</i> | 1924 | Sapindaceae | <i>Serjania</i> | <i>glabrata</i> | Peru | -9.99368 | -76.69577 |
| PURF6365 | <i>Puccinia</i> | <i>arechavaletae</i> | 1924 | Sapindaceae | <i>Serjania</i> | <i>reticulata</i> | Peru | -10.24045 | -76.615485 |
| PURF6371 | <i>Puccinia</i> | <i>arechavaletae</i> | 1921 | Sapindaceae | <i>Urvillea</i> | <i>ulmacea</i> | Trinidad | 10.5 | -61.25 |
| PURF6372 | <i>Puccinia</i> | <i>arechavaletae</i> | 1921 | Sapindaceae | <i>Urvillea</i> | <i>ulmacea</i> | Trinidad | 10.5 | -61.25 |
| PURF6373 | <i>Puccinia</i> | <i>arechavaletae</i> | 1921 | Sapindaceae | <i>Urvillea</i> | <i>ulmacea</i> | Trinidad | 10.5 | -61.25 |
| PURF6374 | <i>Puccinia</i> | <i>arechavaletae</i> | 1921 | Sapindaceae | <i>Urvillea</i> | <i>ulmacea</i> | Trinidad | 10.5 | -61.25 |
| PURF6375 | <i>Puccinia</i> | <i>arechavaletae</i> | 1921 | Sapindaceae | <i>Urvillea</i> | <i>ulmacea</i> | Trinidad | 10.5 | -61.25 |
| PURF6376 | <i>Puccinia</i> | <i>arechavaletae</i> | 1913 | Sapindaceae | <i>Urvillea</i> | <i>ulmacea</i> | Trinidad | 10.5 | -61.25 |
| PURF6377 | <i>Puccinia</i> | <i>arechavaletae</i> | 1913 | Sapindaceae | <i>Urvillea</i> | <i>ulmacea</i> | Trinidad | 10.5 | -61.25 |
| PURF6417 | <i>Puccinia</i> | <i>gouaniae</i> | 1922 | Rhamnaceae | <i>Gouania</i> | <i>corylifolia</i> | Brazil | -22.5123 | -48.9162 |
| PURF6423 | <i>Puccinia</i> | <i>gouaniae</i> | 1921 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF6424 | <i>Puccinia</i> | <i>gouaniae</i> | 1921 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF6425 | <i>Puccinia</i> | <i>gouaniae</i> | 1913 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF6426 | <i>Puccinia</i> | <i>gouaniae</i> | 1913 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF6427 | <i>Puccinia</i> | <i>invaginata</i> | 1913 | Rhamnaceae | <i>Gouania</i> | <i>polygama</i> | Trinidad | 10.5 | -61.25 |
| PURF6438 | <i>Puccinia</i> | <i>triumfettae</i> | 1924 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Ecuador | -2.218369 | -80.228825 |
| PURF6439 | <i>Puccinia</i> | <i>triumfettae</i> | 1924 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Ecuador | -2.218369 | -80.228825 |
| PURF6440 | <i>Puccinia</i> | <i>triumfettae</i> | 1924 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Ecuador | -2.218369 | -80.228825 |
| PURF6441 | <i>Puccinia</i> | <i>triumfettae</i> | 1924 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Ecuador | -2.218369 | -80.228825 |
| PURF6442 | <i>Puccinia</i> | <i>triumfettae</i> | 1913 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.687634 | -61.395569 |
| PURF6443 | <i>Puccinia</i> | <i>conglobata</i> | 1890 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Ecuador | -2.754284 | -79.739918 |
| PURF6444 | <i>Puccinia</i> | <i>triumfettae</i> | 1913 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF6445 | <i>Puccinia</i> | <i>conglobata</i> | 1924 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Ecuador | -2.218369 | -80.228825 |
| PURF6446 | <i>Puccinia</i> | <i>conglobata</i> | 1924 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Ecuador | -1.591918 | -78.222168 |
| PURF6447 | <i>Puccinia</i> | <i>heliocarpi</i> | 1928 | Malvaceae | <i>Heliocarpus</i> | <i>americanus</i> | Venezuela | 10.488011 | -66.879193 |
| PURF6461 | <i>Puccinia</i> | <i>malvacearum</i> | 1919 | Malvaceae | <i>Alcea</i> | <i>rosea</i> | Chile | -41.870699 | -73.81622 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------------|------|-----------------|----------------------|------------------------|-----------|------------|------------|
| PURF6470 | <i>Puccinia</i> | <i>malvacearum</i> | 1924 | Malvaceae | <i>Malva</i> | <i>parviflora</i> | Peru | -13.534876 | -73.694051 |
| PURF6471 | <i>Puccinia</i> | <i>malvacearum</i> | 1924 | Malvaceae | <i>Malva</i> | <i>parviflora</i> | Peru | -11.417007 | -75.686686 |
| PURF6473 | <i>Puccinia</i> | <i>malvacearum</i> | 1875 | Malvaceae | <i>Malva</i> | <i>rotundifolia</i> | Argentina | -32.482493 | -58.237217 |
| PURF6480 | <i>Puccinia</i> | <i>malvacearum</i> | 1914 | Malvaceae | <i>Malva</i> | <i>sylvestris</i> | Chile | -41.870699 | -73.81622 |
| PURF6481 | <i>Puccinia</i> | <i>malvacearum</i> | 1914 | Malvaceae | <i>Malva</i> | <i>sylvestris</i> | Chile | -41.870699 | -73.81622 |
| PURF6486 | <i>Puccinia</i> | <i>malvacearum</i> | 1919 | Malvaceae | <i>Malva</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF6487 | <i>Puccinia</i> | <i>malvacearum</i> | 1919 | Malvaceae | <i>Malva</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF6488 | <i>Puccinia</i> | <i>malvacearum</i> | 1900 | Malvaceae | <i>Malva</i> | <i>sp.</i> | Argentina | -31.420283 | -64.18782 |
| PURF6489 | <i>Puccinia</i> | <i>malvacearum</i> | 1914 | Malvaceae | <i>Malvastrum</i> | <i>capitatum</i> | Chile | -41.870699 | -73.81622 |
| PURF6490 | <i>Puccinia</i> | <i>malvacearum</i> | 1924 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Peru | -15.555138 | -73.113347 |
| PURF6491 | <i>Puccinia</i> | <i>malvacearum</i> | 1924 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Peru | -15.555138 | -73.113347 |
| PURF6492 | <i>Puccinia</i> | <i>malvacearum</i> | 1924 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Peru | -13.534876 | -73.694051 |
| PURF6493 | <i>Puccinia</i> | <i>malvacearum</i> | 1913 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Venezuela | 10.488011 | -66.879193 |
| PURF6494 | <i>Puccinia</i> | <i>malvacearum</i> | 1913 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Venezuela | 10.488011 | -66.879193 |
| PURF6495 | <i>Puccinia</i> | <i>malvacearum</i> | 1877 | Malvaceae | <i>Malvastrum</i> | <i>sp.</i> | Argentina | -31.417939 | -64.191254 |
| PURF6498 | <i>Puccinia</i> | <i>sherardiana</i> | 1920 | Malvaceae | <i>Abutilon</i> | <i>sylvaticum</i> | Bolivia | -15.731265 | -64.529297 |
| PURF6499 | <i>Puccinia</i> | <i>sherardiana</i> | 1920 | Malvaceae | <i>Malva</i> | <i>parviflora</i> | Chile | -32.55538 | -71.45748 |
| PURF6500 | <i>Puccinia</i> | <i>sherardiana</i> | 1918 | Malvaceae | <i>Malva</i> | <i>sylvestris</i> | Ecuador | -1.252369 | -78.622781 |
| PURF6501 | <i>Puccinia</i> | <i>sherardiana</i> | 1918 | Malvaceae | <i>Malva</i> | <i>sylvestris</i> | Ecuador | -2.900545 | -79.004527 |
| PURF6505 | <i>Puccinia</i> | <i>sherardiana</i> | 1913 | Malvaceae | <i>Malvastrum</i> | <i>peruvianum</i> | Peru | -14.271052 | -71.22699 |
| PURF6506 | <i>Puccinia</i> | <i>sherardiana</i> | 1918 | Malvaceae | <i>Malvastrum</i> | <i>peruvianum</i> | Ecuador | -1.252369 | -78.622781 |
| PURF6507 | <i>Puccinia</i> | <i>sherardiana</i> | 1920 | Malvaceae | <i>Malvastrum</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF6508 | <i>Puccinia</i> | <i>sherardiana</i> | 1880 | Malvaceae | <i>Modiola</i> | <i>prostrata</i> | Argentina | -35.834903 | -64.357422 |
| PURF6509 | <i>Puccinia</i> | <i>sherardiana</i> | 1920 | Malvaceae | <i>Sida</i> | <i>rhombifolia</i> | Bolivia | -17.055929 | -65.565918 |
| PURF6536 | <i>Puccinia</i> | <i>heterospora</i> | 1918 | Malvaceae | <i>Sida</i> | <i>dombeyana</i> | Ecuador | -3.721448 | -79.621873 |
| PURF6538 | <i>Puccinia</i> | <i>heterospora</i> | 1928 | Malvaceae | <i>Sida</i> | <i>paniculata</i> | Peru | -11.758939 | -76.964233 |
| PURF6540 | <i>Puccinia</i> | <i>heterospora</i> | 1920 | Malvaceae | <i>Sida</i> | <i>spinosa</i> | Bolivia | -16.139956 | -67.724731 |
| PURF6547 | <i>Puccinia</i> | <i>heterospora</i> | 1924 | Malvaceae | <i>Sida</i> | <i>urens</i> | Brazil | -22.512305 | -48.916169 |
| PURF6548 | <i>Puccinia</i> | <i>heterospora</i> | 1924 | Malvaceae | <i>Sida</i> | <i>urens</i> | Brazil | -22.512305 | -48.916169 |
| PURF6553 | <i>Puccinia</i> | <i>heterospora</i> | 1918 | Malvaceae | <i>Wissadula</i> | <i>periplocifolia</i> | Ecuador | -2.205842 | -79.907948 |
| PURF6554 | <i>Puccinia</i> | <i>heterospora</i> | 1898 | Malvaceae | <i>Wissadula</i> | <i>spicata</i> | Colombia | 10 | -74.5 |
| PURF6556 | <i>Puccinia</i> | <i>anodae</i> | 1918 | Malvaceae | <i>Anoda</i> | <i>cristata</i> | Ecuador | -2.289024 | -78.983293 |
| PURF6557 | <i>Puccinia</i> | <i>anodae</i> | 1920 | Malvaceae | <i>Anoda</i> | <i>cristata</i> | Ecuador | -1.396988 | -78.422893 |
| PURF6558 | <i>Puccinia</i> | <i>anodae</i> | 1892 | Malvaceae | <i>Anoda</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURF6569 | <i>Puccinia</i> | <i>sidae-rhombifoliae</i> | 1910 | Malvaceae | <i>Sida</i> | <i>rhombifolia</i> | Colombia | 6.25184 | -75.563591 |
| PURF6573 | <i>Puccinia</i> | <i>platyspora</i> | 1922 | Malvaceae | <i>Sphaeralcea</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF6625 | <i>Puccinia</i> | <i>chaetogastrae</i> | 1890 | Melastomataceae | <i>Chaetogastra</i> | <i>ledifolia</i> | Ecuador | -0.19457 | -78.49301 |
| PURF6626 | <i>Puccinia</i> | <i>chaetogastrae</i> | 1890 | Melastomataceae | <i>Chaetogastra</i> | <i>ledifolia</i> | Ecuador | -0.19457 | -78.49301 |
| PURF6650 | <i>Puccinia</i> | <i>oenotherae</i> | 1920 | Onagraceae | <i>Boisduvalia</i> | <i>concinna</i> | Chile | -34.2483 | -70.5554 |
| PURF6664 | <i>Puccinia</i> | <i>jussiaeae</i> | 1881 | Onagraceae | <i>Jussiaea</i> | <i>longifolia</i> | Argentina | -34.861863 | -57.911257 |
| PURF6706 | <i>Puccinia</i> | <i>circaeae</i> | 1927 | Onagraceae | <i>Circaea</i> | <i>alpina</i> | Japan | 43.69698 | 142.9205 |
| PURF6730 | <i>Puccinia</i> | <i>cicutae</i> | 1904 | Apiaceae | <i>Cicuta</i> | <i>virosa</i> | Denmark | 56.45282 | 9.404291 |
| PURF6787 | <i>Puccinia</i> | <i>retifera</i> | 1944 | Apiaceae | <i>Chaerophyllum</i> | <i>bulbosum</i> | Ukraine | 48.55747 | 24.92856 |
| PURF6852 | <i>Puccinia</i> | <i>smyrnii</i> | 1874 | Apiaceae | <i>Smyrnum</i> | <i>olusatrum</i> | Italy | 41.88333 | 12.46667 |
| PURF6864 | <i>Puccinia</i> | <i>angelicae</i> | 1906 | Apiaceae | <i>Angelica</i> | <i>archangelica</i> | Germany | 53.21031 | 12.10226 |
| PURF6893 | <i>Puccinia</i> | <i>karsteni</i> | 1901 | Apiaceae | <i>Angelica</i> | <i>silvestris</i> | Sweden | 59.3283 | 18.072 |
| PURF6895 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1920 | Araliaceae | <i>Hydrocotyle</i> | <i>aconitifolia</i> | Bolivia | -16.5 | -68.15 |
| PURF6896 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1920 | Araliaceae | <i>Hydrocotyle</i> | <i>bonariensis</i> | Peru | -16.398889 | -71.535 |
| PURF6900 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1914 | Araliaceae | <i>Hydrocotyle</i> | <i>bonariensis</i> | Peru | -12 | -76.833333 |
| PURF6901 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1901 | Araliaceae | <i>Hydrocotyle</i> | <i>bonariensis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF6902 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1924 | Araliaceae | <i>Hydrocotyle</i> | <i>bonplandii</i> | Ecuador | -0.2001 | -78.475341 |
| PURF6903 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1920 | Araliaceae | <i>Hydrocotyle</i> | <i>bonplandii</i> | Ecuador | -0.19457 | -78.49301 |
| PURF6910 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1914 | Araliaceae | <i>Hydrocotyle</i> | <i>ramunculoides</i> | Chile | -41.870699 | -73.81622 |
| PURF6911 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1920 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Ecuador | -1.670984 | -78.647124 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------|----------|-----------------|---------------------|--------------------|-------------|------------|------------|
| PURF6912 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1910 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Colombia | 6.25184 | -75.563591 |
| PURF6913 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1918 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Ecuador | -2.900545 | -79.004527 |
| PURF6914 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1918 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Ecuador | -2.289024 | -78.983293 |
| PURF6915 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1915 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Argentina | -31.245077 | -64.465633 |
| PURF6916 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1918 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Ecuador | -2.900545 | -79.004527 |
| PURF6917 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1924 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Peru | -11.417007 | -75.686686 |
| PURF6918 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1924 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Peru | -9.788353 | -76.201195 |
| PURF6919 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1924 | Araliaceae | <i>Hydrocotyle</i> | <i>umbellata</i> | Peru | -15.555138 | -73.113347 |
| PURF6926 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1919 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Chile | -35.758046 | -71.407898 |
| PURF6927 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1920 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF6929 | <i>Puccinia</i> | <i>hydrocotyles</i> | non-data | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURF6930 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1920 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURF6977 | <i>Puccinia</i> | <i>primulae</i> | 1874 | Primulaceae | <i>Primula</i> | <i>acaulis</i> | Switzerland | 46.69151 | 9.987061 |
| PURF7084 | <i>Puccinia</i> | <i>obliqua</i> | 1916 | Apocynaceae | <i>Cynanchum</i> | <i>sp.</i> | Venezuela | 10.535602 | -66.935513 |
| PURF7085 | <i>Puccinia</i> | <i>obliqua</i> | 1924 | Apocynaceae | <i>Fischeria</i> | <i>peruviana</i> | Peru | -10.24045 | -76.615485 |
| PURF7086 | <i>Puccinia</i> | <i>obliqua</i> | 1921 | Apocynaceae | <i>Cynanchum</i> | <i>parviflorum</i> | Trinidad | 10.681067 | -61.548776 |
| PURF7087 | <i>Puccinia</i> | <i>obliqua</i> | 1921 | Apocynaceae | <i>Cynanchum</i> | <i>parviflorum</i> | Trinidad | 10.5 | -61.25 |
| PURF7088 | <i>Puccinia</i> | <i>obliqua</i> | 1921 | Apocynaceae | <i>Cynanchum</i> | <i>parviflorum</i> | Trinidad | 10.5 | -61.25 |
| PURF7099 | <i>Puccinia</i> | <i>araujae</i> | non-data | non-data | non-data | non-data | Argentina | -34.661846 | -58.515442 |
| PURF7115 | <i>Puccinia</i> | <i>lithospermi</i> | 1920 | Convolvulaceae | <i>Evolvulus</i> | <i>sericeus</i> | Bolivia | -17.055929 | -65.565918 |
| PURF7132 | <i>Puccinia</i> | <i>crassipes</i> | 1906 | Convolvulaceae | <i>Convolvulus</i> | <i>sp.</i> | Argentina | -34.6 | -58.45 |
| PURF7133 | <i>Puccinia</i> | <i>crassipes</i> | 1924 | Convolvulaceae | <i>Ipomoea</i> | <i>batatas</i> | Ecuador | -2.218369 | -80.228825 |
| PURF7136 | <i>Puccinia</i> | <i>crassipes</i> | 1890 | Convolvulaceae | <i>Ipomoea</i> | <i>trifida</i> | Ecuador | -2.75428 | -79.7399 |
| PURF7138 | <i>Puccinia</i> | <i>crassipes</i> | 1971 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Argentina | -34.585032 | -58.420095 |
| PURF7140 | <i>Puccinia</i> | <i>megalospora</i> | 1918 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Paraguay | -22.993333 | -57.996389 |
| PURF7142 | <i>Puccinia</i> | <i>puta</i> | 1933 | Convolvulaceae | <i>Ipomoea</i> | <i>fistulosa</i> | Colombia | 4.206944 | -75.958956 |
| PURF7144 | <i>Puccinia</i> | <i>puta</i> | 1923 | Convolvulaceae | <i>Ipomoea</i> | <i>fistulosa</i> | Ecuador | -2.754284 | -79.739918 |
| PURF7150 | <i>Puccinia</i> | <i>dichondrae</i> | 1924 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF7154 | <i>Puccinia</i> | <i>dichondrae</i> | 1919 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Chile | -38.736248 | -72.616394 |
| PURF7155 | <i>Puccinia</i> | <i>dichondrae</i> | 1905 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Argentina | -34.921454 | -57.954533 |
| PURF7156 | <i>Puccinia</i> | <i>dichondrae</i> | 1919 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Chile | -36.81297 | -73.04846 |
| PURF7157 | <i>Puccinia</i> | <i>dichondrae</i> | 1919 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF7158 | <i>Puccinia</i> | <i>dichondrae</i> | 1920 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF7159 | <i>Puccinia</i> | <i>dichondrae</i> | 1920 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Bolivia | -17.055929 | -65.565918 |
| PURF7160 | <i>Puccinia</i> | <i>dichondrae</i> | 1920 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF7162 | <i>Puccinia</i> | <i>dichondrae</i> | 1889 | Convolvulaceae | <i>Dichondra</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF7163 | <i>Puccinia</i> | <i>plumbaria</i> | 1896 | Polemoniaceae | <i>Collomia</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF7164 | <i>Puccinia</i> | <i>tournefortiae</i> | 1920 | Heliotropiaceae | <i>Tournefortia</i> | <i>fuliginosa</i> | Bolivia | -15.76667 | -68.63333 |
| PURF7166 | <i>Puccinia</i> | <i>cordiae</i> | 1897 | Cordiaceae | <i>Cordia</i> | <i>non-data</i> | Brazil | -22.5123 | -48.9162 |
| PURF7167 | <i>Puccinia</i> | <i>corticola</i> | 1930 | Cordiaceae | <i>Cordia</i> | <i>alliodora</i> | Trinidad | 10.5 | -61.25 |
| PURF7169 | <i>Puccinia</i> | <i>clerodendri</i> | 1912 | Lamiaceae | <i>Clerodendrum</i> | <i>intermedium</i> | Philippines | 14.64406 | 121.1319 |
| PURF7171 | <i>Puccinia</i> | <i>erebia</i> | 1923 | Lamiaceae | <i>Clerodendrum</i> | <i>minahassae</i> | Philippines | 14.60791 | 120.9957 |
| PURF7193 | <i>Puccinia</i> | <i>menthae</i> | 1920 | Lamiaceae | <i>Bystropogon</i> | <i>mollis</i> | Bolivia | -17.118938 | -65.950439 |
| PURF7194 | <i>Puccinia</i> | <i>menthae</i> | 1920 | Lamiaceae | <i>Bystropogon</i> | <i>mollis</i> | Bolivia | -17.118938 | -65.950439 |
| PURF7195 | <i>Puccinia</i> | <i>menthae</i> | 1920 | Lamiaceae | <i>Bystropogon</i> | <i>mollis</i> | Ecuador | -2.898259 | -79.00769 |
| PURF7196 | <i>Puccinia</i> | <i>menthae</i> | 1920 | Lamiaceae | <i>Bystropogon</i> | <i>spicatus</i> | Peru | -7.255558 | -76.475553 |
| PURF7197 | <i>Puccinia</i> | <i>menthae</i> | 1920 | Lamiaceae | <i>Bystropogon</i> | <i>spicatus</i> | Ecuador | -1.489017 | -79.43333 |
| PURF7198 | <i>Puccinia</i> | <i>menthae</i> | 1920 | Lamiaceae | <i>Bystropogon</i> | <i>spicatus</i> | Peru | -7.255558 | -76.475553 |
| PURF7199 | <i>Puccinia</i> | <i>menthae</i> | 1920 | Lamiaceae | <i>Bystropogon</i> | <i>spicatus</i> | Ecuador | -1.489017 | -79.433333 |
| PURF7260 | <i>Puccinia</i> | <i>leonotidicola</i> | 1921 | Lamiaceae | <i>Leonotis</i> | <i>nepetifolia</i> | Trinidad | 10.5 | -61.25 |
| PURF7261 | <i>Puccinia</i> | <i>leonotidicola</i> | 1921 | Lamiaceae | <i>Leonotis</i> | <i>nepetifolia</i> | Trinidad | 10.5 | -61.25 |
| PURF7262 | <i>Puccinia</i> | <i>leonotidicola</i> | 1913 | Lamiaceae | <i>Leonotis</i> | <i>nepetifolia</i> | Trinidad | 10.5 | -61.25 |
| PURF7265 | <i>Puccinia</i> | <i>leonotidicola</i> | 1919 | Lamiaceae | <i>Leonotis</i> | <i>sibirica</i> | Paraguay | -25.27742 | -57.576111 |
| PURF7266 | <i>Puccinia</i> | <i>hyptidis</i> | 1920 | Lamiaceae | <i>Hyptis</i> | <i>canescens</i> | Bolivia | -16.397025 | -67.651947 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------------|----------|-------------|-----------------------|-------------------------|-------------|------------|------------|
| PURF7267 | <i>Puccinia</i> | <i>hyptidis</i> | 1920 | Lamiaceae | <i>Hyptis</i> | <i>canescens</i> | Bolivia | -16.5 | -68.15 |
| PURF7268 | <i>Puccinia</i> | <i>hyptidis</i> | 1921 | Lamiaceae | <i>Hyptis</i> | <i>capitata</i> | Trinidad | 10.5 | -61.25 |
| PURF7270 | <i>Puccinia</i> | <i>hyptidis</i> | 1904 | Lamiaceae | <i>Hyptis</i> | <i>spicigera</i> | Philippines | 7.091863 | 125.5844 |
| PURF7271 | <i>Puccinia</i> | <i>medellinensis</i> | 1918 | Lamiaceae | <i>Hyptis</i> | <i>suaveolens</i> | Ecuador | -2.289024 | -78.983293 |
| PURF7272 | <i>Puccinia</i> | <i>medellinensis</i> | 1918 | Lamiaceae | <i>Hyptis</i> | <i>suaveolens</i> | Ecuador | -2.289024 | -78.983293 |
| PURF7273 | <i>Puccinia</i> | <i>medellinensis</i> | 1910 | Lamiaceae | <i>Hyptis</i> | <i>pectinata</i> | Colombia | 6.25184 | -75.563591 |
| PURF7274 | <i>Puccinia</i> | <i>medellinensis</i> | 1890 | Lamiaceae | <i>Hyptis</i> | <i>pectinata</i> | Ecuador | -2.754284 | -79.739918 |
| PURF7275 | <i>Puccinia</i> | <i>medellinensis</i> | 1915 | Lamiaceae | <i>Hyptis</i> | <i>purdiei</i> | Ecuador | -2.289024 | -78.983293 |
| PURF7281 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1921 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | Trinidad | 10.5 | -61.25 |
| PURF7282 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1921 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | Trinidad | 10.5 | -61.25 |
| PURF7283 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1921 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | Trinidad | 10.5 | -61.25 |
| PURF7284 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1921 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | Trinidad | 10.681067 | -61.548776 |
| PURF7286 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1913 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | Venezuela | 10.488011 | -66.879193 |
| PURF7289 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1920 | Lamiaceae | <i>Hyptis</i> | <i>suaveolens</i> | Ecuador | -3.553987 | -80.066816 |
| PURF7297 | <i>Puccinia</i> | <i>gibertii</i> | 1882 | Lamiaceae | <i>Hyptis</i> | <i>spicata</i> | Paraguay | -23.30108 | -58.523682 |
| PURF7302 | <i>Puccinia</i> | <i>gibertii</i> | 1921 | Lamiaceae | <i>Hyptis</i> | <i>fasciculata</i> | Brazil | -22.8656 | -43.4272 |
| PURF7303 | <i>Puccinia</i> | <i>gibertii</i> | 1920 | Lamiaceae | <i>Hyptis</i> | <i>pectinata</i> | Ecuador | -1.670984 | -78.647124 |
| PURF7306 | <i>Puccinia</i> | <i>perscita</i> | 1920 | Lamiaceae | <i>Hyptis</i> | <i>odorata</i> | Bolivia | -16.397025 | -67.651947 |
| PURF7307 | <i>Puccinia</i> | <i>perscita</i> | 1920 | Lamiaceae | <i>Hyptis</i> | <i>odorata</i> | Bolivia | -16.5 | -68.15 |
| PURF7343 | <i>Puccinia</i> | <i>pallidissima</i> | non-data | Lamiaceae | <i>Stachys</i> | <i>arvensis</i> | Argentina | -31.417939 | -64.191254 |
| PURF7344 | <i>Puccinia</i> | <i>pallidissima</i> | 1920 | Lamiaceae | <i>Stachys</i> | <i>arvensis</i> | Ecuador | -1.252369 | -78.622781 |
| PURF7345 | <i>Puccinia</i> | <i>pallidissima</i> | 1920 | Lamiaceae | <i>Stachys</i> | <i>arvensis</i> | Bolivia | -17.118938 | -65.950439 |
| PURF7346 | <i>Puccinia</i> | <i>pallidissima</i> | 1920 | Lamiaceae | <i>Stachys</i> | <i>debilis</i> | Ecuador | -0.19457 | -78.49301 |
| PURF7347 | <i>Puccinia</i> | <i>pallidissima</i> | 1920 | Lamiaceae | <i>Stachys</i> | <i>macraei</i> | Chile | -32.55538 | -71.45748 |
| PURF7348 | <i>Puccinia</i> | <i>pallidissima</i> | 1919 | Lamiaceae | <i>Stachys</i> | <i>macraei</i> | Chile | -41.870699 | -73.81622 |
| PURF7396 | <i>Puccinia</i> | <i>roesteliiformis</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>corrugata</i> | Ecuador | -2.714601 | -78.888847 |
| PURF7398 | <i>Puccinia</i> | <i>sana</i> | 1891 | Lamiaceae | <i>Salvia</i> | <i>chronantha</i> | Ecuador | -1.670984 | -78.647124 |
| PURF7400 | <i>Puccinia</i> | <i>porphyretica</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>cridgisi</i> | Bolivia | -17.118938 | -65.950439 |
| PURF7401 | <i>Puccinia</i> | <i>porphyretica</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>pseudoavicularis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF7402 | <i>Puccinia</i> | <i>porphyretica</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>sp.</i> | Peru | -13.5 | -72 |
| PURF7403 | <i>Puccinia</i> | <i>gilliesii</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>bangii</i> | Bolivia | -17.703752 | -66.574277 |
| PURF7404 | <i>Puccinia</i> | <i>sana</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>leucocephala</i> | Ecuador | -1.670984 | -78.647124 |
| PURF7405 | <i>Puccinia</i> | <i>sana</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>leucocephala</i> | Ecuador | -1.670984 | -78.647124 |
| PURF7408 | <i>Puccinia</i> | <i>aenigmatica</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>orbignaei</i> | Bolivia | -17.118938 | -65.950439 |
| PURF7409 | <i>Puccinia</i> | <i>conturbata</i> | 1920 | Lamiaceae | <i>Salvia</i> | <i>quitensis</i> | Ecuador | -2.900545 | -79.004527 |
| PURF7444 | <i>Puccinia</i> | <i>pampeana</i> | 1929 | Solanaceae | <i>Capsicum</i> | <i>frutescens</i> | Brazil | -20.7568 | -42.8766 |
| PURF7457 | <i>Puccinia</i> | <i>pittieriana</i> | 1929 | Solanaceae | <i>Solanum</i> | <i>tuberosum</i> | Peru | -11.417 | -75.6867 |
| PURF7483 | <i>Puccinia</i> | <i>pampeana</i> | 1920 | Solanaceae | <i>Solanum</i> | <i>non-data</i> | Ecuador | -1.25237 | -78.6228 |
| PURF7511 | <i>Puccinia</i> | <i>justiciae</i> | 1913 | Acanthaceae | <i>Justicia</i> | <i>pectoralis</i> | Trinidad | 10.5 | -61.25 |
| PURF7512 | <i>Puccinia</i> | <i>justiciae</i> | 1921 | Acanthaceae | <i>Justicia</i> | <i>pectoralis</i> | Trinidad | 10.5 | -61.25 |
| PURF7513 | <i>Puccinia</i> | <i>justiciae</i> | 1921 | Acanthaceae | <i>Justicia</i> | <i>pectoralis</i> | Trinidad | 10.5 | -61.25 |
| PURF7528 | <i>Puccinia</i> | <i>bonariensis</i> | 1880 | Acanthaceae | <i>Poikilacanthus</i> | <i>sp.</i> | Argentina | -27.577541 | -58.739454 |
| PURF7554 | <i>Puccinia</i> | <i>punctata</i> | 1920 | Rubiaceae | <i>Galium</i> | <i>cochabambense</i> | Bolivia | -17.118938 | -65.950439 |
| PURF7688 | <i>Puccinia</i> | <i>melanosora</i> | 1880 | Calyceae | <i>Acicarpha</i> | <i>tribuloides</i> | Argentina | -27.583059 | -58.732228 |
| PURF7703 | <i>Puccinia</i> | <i>hieracii</i> | 1919 | Asteraceae | <i>Cichorium</i> | <i>intybus</i> | Chile | -35.758046 | -71.40789 |
| PURF7704 | <i>Puccinia</i> | <i>hieracii</i> | 1919 | Asteraceae | <i>Cichorium</i> | <i>intybus</i> | Chile | -41.870699 | -73.81622 |
| PURF7705 | <i>Puccinia</i> | <i>hieracii</i> | 1919 | Asteraceae | <i>Cichorium</i> | <i>intybus</i> | Chile | -39.827598 | -73.224246 |
| PURF7711 | <i>Puccinia</i> | <i>hieracii</i> | 1920 | Asteraceae | <i>Hieracium</i> | <i>payense</i> | Bolivia | -16.49667 | -68.13 |
| PURF7717 | <i>Puccinia</i> | <i>hieracii</i> | 1914 | Asteraceae | <i>Hieracium</i> | <i>sp.</i> | Venezuela | 10.488011 | -66.879193 |
| PURF7718 | <i>Puccinia</i> | <i>hieracii</i> | 1920 | Asteraceae | <i>Hieracium</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF7720 | <i>Puccinia</i> | <i>hieracii</i> | 1874 | Asteraceae | <i>Hypochaeris</i> | <i>glabra</i> | Germany | 49.94327 | 11.57684 |
| PURF7722 | <i>Puccinia</i> | <i>hieracii</i> | 1919 | Asteraceae | <i>Hypochaeris</i> | <i>glabra</i> | Chile | -34.430805 | -71.924236 |
| PURF7723 | <i>Puccinia</i> | <i>hieracii</i> | 1919 | Asteraceae | <i>Hypochaeris</i> | <i>glabra</i> | Chile | -41.870699 | -73.81622 |
| PURF7724 | <i>Puccinia</i> | <i>hieracii</i> | 1919 | Asteraceae | <i>Hypochaeris</i> | <i>glabra</i> | Chile | -41.870699 | -73.81622 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-----------------------------|----------|-------------|--------------------|--------------------------------|-------------|------------|------------|
| PURF7725 | <i>Puccinia</i> | <i>hieracii</i> | 1920 | Asteraceae | <i>Hypochaeris</i> | <i>glabra</i> | Chile | -41.870699 | -73.81622 |
| PURF7732 | <i>Puccinia</i> | <i>hieracii</i> | 1919 | Asteraceae | <i>Hypochaeris</i> | <i>radicata</i> | Chile | -35.758046 | -71.407898 |
| PURF7738 | <i>Puccinia</i> | <i>hieracii</i> | 1919 | Asteraceae | <i>Taraxacum</i> | <i>officinale</i> | Chile | -41.870699 | -73.81622 |
| PURF7768 | <i>Puccinia</i> | <i>mulgedii</i> | 1924 | Asteraceae | <i>Cicerbita</i> | <i>alpina</i> | Germany | 51.113347 | 13.509553 |
| PURF7789 | <i>Puccinia</i> | <i>lactucae</i> | 1935 | Asteraceae | <i>Lactuca</i> | <i>chinensis</i> | Philippines | 14.094251 | 121.180111 |
| PURF7813 | <i>Puccinia</i> | <i>intybi</i> | 1897 | Asteraceae | <i>Crepis</i> | <i>praemorsa</i> | Sweden | 57.383333 | 18.216667 |
| PURF7825 | <i>Puccinia</i> | <i>praecox</i> | non-data | Asteraceae | <i>Crepis</i> | <i>kashmirica</i> | India | 34.302733 | 75.298087 |
| PURF7900 | <i>Puccinia</i> | <i>becki</i> | 1920 | Asteraceae | <i>Vernonia</i> | <i>arborescens</i> | Ecuador | -1.670984 | -78.647124 |
| PURF7901 | <i>Puccinia</i> | <i>becki</i> | 1922 | Asteraceae | <i>Vernonia</i> | <i>argyrotrichia</i> | Brazil | -22.865557 | -43.42723 |
| PURF7932 | <i>Puccinia</i> | <i>vernonophila</i> | 1922 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURF7943 | <i>Puccinia</i> | <i>inaequata</i> | 1920 | Asteraceae | <i>Vernonia</i> | <i>patens</i> | Ecuador | -1.670984 | -78.647124 |
| PURF7972 | <i>Puccinia</i> | <i>neorotundata</i> | 1924 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | Peru | -10.046111 | -76.621389 |
| PURF7973 | <i>Puccinia</i> | <i>neorotundata</i> | 1924 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | Peru | -10.046111 | -76.621389 |
| PURF7976 | <i>Puccinia</i> | <i>seaveriana</i> | 1921 | Asteraceae | <i>Oliganthes</i> | <i>condensatus</i> | Trinidad | 10.5 | -61.25 |
| PURF7977 | <i>Puccinia</i> | <i>seaveriana</i> | 1921 | Asteraceae | <i>Oliganthes</i> | <i>condensatus</i> | Trinidad | 10.5 | -61.25 |
| PURF7978 | <i>Puccinia</i> | <i>seaveriana</i> | 1921 | Asteraceae | <i>Oliganthes</i> | <i>condensatus</i> | Trinidad | 10.5 | -61.25 |
| PURF7997 | <i>Puccinia</i> | <i>conoclinii</i> | 1920 | Asteraceae | <i>Ageratum</i> | <i>conyzoides</i> | Bolivia | -16.5 | -68.15 |
| PURF7998 | <i>Puccinia</i> | <i>conoclinii</i> | 1920 | Asteraceae | <i>Ageratum</i> | <i>conyzoides</i> | Bolivia | -16.139956 | -67.724731 |
| PURF7999 | <i>Puccinia</i> | <i>conoclinii</i> | 1920 | Asteraceae | <i>Ageratum</i> | <i>conyzoides</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8000 | <i>Puccinia</i> | <i>conoclinii</i> | 1913 | Asteraceae | <i>Ageratum</i> | <i>conyzoides</i> | Venezuela | 10.488011 | -66.879193 |
| PURF8001 | <i>Puccinia</i> | <i>conoclinii</i> | 1913 | Asteraceae | <i>Ageratum</i> | <i>conyzoides</i> | Venezuela | 10.488011 | -66.879193 |
| PURF8002 | <i>Puccinia</i> | <i>conoclinii</i> | 1913 | Asteraceae | <i>Ageratum</i> | <i>conyzoides</i> | Venezuela | 10.488011 | -66.879193 |
| PURF8003 | <i>Puccinia</i> | <i>conoclinii</i> | 1910 | Asteraceae | <i>Ageratum</i> | <i>conyzoides</i> | Colombia | 6.25184 | -75.563591 |
| PURF8008 | <i>Puccinia</i> | <i>conoclinii</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>bridgesii</i> | Bolivia | -17.118938 | -65.950439 |
| PURF8009 | <i>Puccinia</i> | <i>conoclinii</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>psaeudoriganoides</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8010 | <i>Puccinia</i> | <i>conoclinii</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>solidaginis</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8011 | <i>Puccinia</i> | <i>conoclinii</i> | 1901 | Asteraceae | <i>Eupatorium</i> | <i>soratae</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8012 | <i>Puccinia</i> | <i>conoclinii</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>urubambense</i> | Peru | -14.338681 | -71.766731 |
| PURF8014 | <i>Puccinia</i> | <i>eupatorii</i> | 1910 | Asteraceae | <i>Eupatorium</i> | <i>ballotaefolium</i> | Colombia | 6.25184 | -75.563591 |
| PURF8017 | <i>Puccinia</i> | <i>eupatorii</i> | 1913 | Asteraceae | <i>Eupatorium</i> | <i>iresinoides</i> | Trinidad | 10.5 | -61.25 |
| PURF8026 | <i>Puccinia</i> | <i>eupatorii</i> | 1910 | Asteraceae | <i>Eupatorium</i> | <i>vargasianum</i> | Colombia | 6.25184 | -75.563591 |
| PURF8036 | <i>Puccinia</i> | <i>eupatorii-columbiani</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>inulaefolium suaveolens</i> | Bolivia | -16.139956 | -67.724731 |
| PURF8037 | <i>Puccinia</i> | <i>eupatorii-columbiani</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>inulaefolium suaveolens</i> | Bolivia | -16.5 | -68.15 |
| PURF8038 | <i>Puccinia</i> | <i>eupatorii-columbiani</i> | 1921 | Asteraceae | <i>Eupatorium</i> | <i>inulaefolium</i> | Trinidad | 10.5 | -61.25 |
| PURF8053 | <i>Puccinia</i> | <i>horrida</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>cacalioides</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8062 | <i>Puccinia</i> | <i>mikoniae</i> | 1921 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PURF8067 | <i>Puccinia</i> | <i>spgazzinii</i> | 1920 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8071 | <i>Puccinia</i> | <i>spgazzinii</i> | 1924 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Peru | -15.555138 | -73.113347 |
| PURF8076 | <i>Puccinia</i> | <i>spgazzinii</i> | 1891 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Ecuador | -1.515042 | -78.244141 |
| PURF8078 | <i>Puccinia</i> | <i>spgazzinii</i> | 1921 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8079 | <i>Puccinia</i> | <i>spgazzinii</i> | 1921 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8084 | <i>Puccinia</i> | <i>piqueriae</i> | 1918 | Asteraceae | <i>Piqueria</i> | <i>peruviana</i> | Ecuador | -2.289024 | -78.983293 |
| PURF8092 | <i>Puccinia</i> | <i>conyzae</i> | 1922 | Asteraceae | <i>Conyza</i> | <i>triplinervia</i> | Brazil | -23.4434 | -46.52641 |
| PURF8095 | <i>Puccinia</i> | <i>baccharidis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>fevillei</i> | Peru | -9.049722 | -77.774444 |
| PURF8096 | <i>Puccinia</i> | <i>baccharidis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8097 | <i>Puccinia</i> | <i>baccharidis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>glutinosa</i> | Peru | -7.255558 | -76.475553 |
| PURF8098 | <i>Puccinia</i> | <i>baccharidis</i> | 1985 | Asteraceae | <i>Baccharis</i> | <i>glutinosa</i> | Chile | -36.81297 | -73.04846 |
| PURF8099 | <i>Puccinia</i> | <i>baccharidis</i> | 1919 | Asteraceae | <i>Baccharis</i> | <i>marginalis</i> | Chile | -41.870699 | -73.81622 |
| PURF8100 | <i>Puccinia</i> | <i>baccharidis</i> | 1906 | Asteraceae | <i>Baccharis</i> | <i>montevidensis</i> | Chile | -41.870699 | -73.81622 |
| PURF8101 | <i>Puccinia</i> | <i>baccharidis</i> | 1895 | Asteraceae | <i>Baccharis</i> | <i>rosmarinifolia</i> | Chile | -36.81297 | -73.04846 |
| PURF8102 | <i>Puccinia</i> | <i>baccharidis</i> | 1928 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Peru | -12 | -76.833333 |
| PURF8103 | <i>Puccinia</i> | <i>baccharidis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -1.515042 | -78.244141 |
| PURF8104 | <i>Puccinia</i> | <i>baccharidis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF8105 | <i>Puccinia</i> | <i>baccharidis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------------------|----------|-------------|--------------------|------------------------|-----------|------------|------------|
| PURF8110 | <i>Puccinia</i> | <i>evadens</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Bolivia | -15.731265 | -64.529297 |
| PURF8111 | <i>Puccinia</i> | <i>evadens</i> | 1897 | Asteraceae | <i>Baccharis</i> | <i>intermedia</i> | Chile | -39.827598 | -73.224246 |
| PURF8112 | <i>Puccinia</i> | <i>evadens</i> | non-data | Asteraceae | <i>Baccharis</i> | <i>intermedia</i> | Chile | -36.81297 | -73.04846 |
| PURF8113 | <i>Puccinia</i> | <i>evadens</i> | non-data | Asteraceae | <i>Baccharis</i> | <i>magellanica</i> | Chile | -41.870699 | -73.81622 |
| PURF8136 | <i>Puccinia</i> | <i>cuzcoensis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>fevillei</i> | Peru | -16.398889 | -71.535 |
| PURF8141 | <i>Puccinia</i> | <i>unicolor</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>pulchella</i> | Bolivia | -15.731265 | -64.529297 |
| PURF8142 | <i>Puccinia</i> | <i>unicolor</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>pulchella</i> | Bolivia | -15.731265 | -64.529297 |
| PURF8143 | <i>Puccinia</i> | <i>unicolor</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>pulchella</i> | Peru | -13.20699 | -71.99292 |
| PURF8145 | <i>Puccinia</i> | <i>unicolor</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURF8146 | <i>Puccinia</i> | <i>unicolor</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -17.118938 | -65.950439 |
| PURF8147 | <i>Puccinia</i> | <i>chilensis</i> | 1896 | Asteraceae | <i>Baccharis</i> | <i>eupatorioides</i> | Chile | -37.098196 | -72.560844 |
| PURF8148 | <i>Puccinia</i> | <i>chilensis</i> | 1894 | Asteraceae | <i>Baccharis</i> | <i>eupatorioides</i> | Chile | -37.098196 | -72.560844 |
| PURF8149 | <i>Puccinia</i> | <i>chilensis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>racemosa</i> | Chile | -32.55538 | -71.45748 |
| PURF8152 | <i>Puccinia</i> | <i>improcera</i> | 1922 | Asteraceae | <i>Baccharis</i> | <i>anomola</i> | Brazil | -24.630612 | -53.114858 |
| PURF8153 | <i>Puccinia</i> | <i>salebrata</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF8154 | <i>Puccinia</i> | <i>alia</i> | 1921 | Asteraceae | <i>Baccharis</i> | <i>trinervis</i> | Brazil | -22.865557 | -43.42723 |
| PURF8158 | <i>Puccinia</i> | <i>consueta</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>salienta</i> | Ecuador | -0.19457 | -78.49301 |
| PURF8160 | <i>Puccinia</i> | <i>expectiva</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8163 | <i>Puccinia</i> | <i>inopina</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>dracunculifolia</i> | Bolivia | -17.118938 | -65.950439 |
| PURF8164 | <i>Puccinia</i> | <i>inopina</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>feindalensis</i> | Ecuador | -0.16136 | -78.48289 |
| PURF8165 | <i>Puccinia</i> | <i>perincerta</i> | 1919 | Asteraceae | <i>Baccharis</i> | <i>tridentata</i> | Chile | -41.870699 | -73.81622 |
| PURF8166 | <i>Puccinia</i> | <i>perincerta</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>alternoides</i> | Chile | -41.870699 | -73.81622 |
| PURF8167 | <i>Puccinia</i> | <i>praeculta</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF8187 | <i>Puccinia</i> | <i>praedicta</i> | 1922 | Asteraceae | <i>Baccharis</i> | <i>serrulata</i> | Brazil | -22.398698 | -48.864444 |
| PURF8192 | <i>Puccinia</i> | <i>pervenusta</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF8194 | <i>Puccinia</i> | <i>perspicabilis</i> | 1920 | non-data | non-data | non-data | Ecuador | -0.5 | -78.383333 |
| PURF8197 | <i>Puccinia</i> | <i>caeomariformis</i> | 1918 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -1.233333 | -78.633333 |
| PURF8198 | <i>Puccinia</i> | <i>caeomariformis</i> | 1918 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -1.252369 | -78.622781 |
| PURF8199 | <i>Puccinia</i> | <i>caeomariformis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8200 | <i>Puccinia</i> | <i>caeomariformis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -1.515042 | -78.244141 |
| PURF8201 | <i>Puccinia</i> | <i>colossea</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Bolivia | -16.5 | -68.15 |
| PURF8202 | <i>Puccinia</i> | <i>caeomariformis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -0.19457 | -78.49301 |
| PURF8203 | <i>Puccinia</i> | <i>colossea</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Bolivia | -16.139956 | -67.724731 |
| PURF8204 | <i>Puccinia</i> | <i>caeomariformis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>glutinosa</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8205 | <i>Puccinia</i> | <i>caeomariformis</i> | 1905 | Asteraceae | <i>Baccharis</i> | <i>paniculata</i> | Chile | -41.870699 | -73.81622 |
| PURF8206 | <i>Puccinia</i> | <i>caeomariformis</i> | 1918 | Asteraceae | <i>Baccharis</i> | <i>riparia</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8207 | <i>Puccinia</i> | <i>caeomariformis</i> | 1918 | Asteraceae | <i>Baccharis</i> | <i>riparia</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8208 | <i>Puccinia</i> | <i>caeomariformis</i> | 1918 | Asteraceae | <i>Baccharis</i> | <i>riparia</i> | Ecuador | -2.739694 | -78.848602 |
| PURF8209 | <i>Puccinia</i> | <i>colossea</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>subpenninervis</i> | Bolivia | -16.5 | -68.15 |
| PURF8210 | <i>Puccinia</i> | <i>colossea</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>subpenninervis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8211 | <i>Puccinia</i> | <i>colossea</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Peru | -13.522643 | -71.967344 |
| PURF8212 | <i>Puccinia</i> | <i>caeomariformis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF8213 | <i>Puccinia</i> | <i>caeomariformis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -0.684403 | -78.436631 |
| PURF8214 | <i>Puccinia</i> | <i>caeomariformis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -3.553987 | -80.066816 |
| PURF8215 | <i>Puccinia</i> | <i>caeomariformis</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8226 | <i>Puccinia</i> | <i>solidaginis-microglossae</i> | 1906 | Asteraceae | <i>Solidago</i> | <i>chilensis</i> | Uruguay | -34.858056 | -56.170833 |
| PURF8234 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1919 | Asteraceae | <i>Erigeron</i> | <i>hirtellus</i> | Chile | -41.870699 | -73.81622 |
| PURF8235 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1919 | Asteraceae | <i>Erigeron</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF8236 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1929 | Asteraceae | <i>Erigeron</i> | <i>sp.</i> | Peru | -11.417007 | -75.686686 |
| PURF8237 | <i>Puccinia</i> | <i>cnici-oleracei</i> | non-data | Asteraceae | <i>Erigeron</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF8242 | <i>Puccinia</i> | <i>achyroclines</i> | 1922 | Asteraceae | <i>Achyrocline</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF8244 | <i>Puccinia</i> | <i>gnaphalicola</i> | 1880 | Asteraceae | <i>Gamochaeta</i> | <i>americana</i> | Argentina | -34.583333 | -58.45 |
| PURF8246 | <i>Puccinia</i> | <i>gnaphalicola</i> | 1919 | Asteraceae | <i>Gamochaeta</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF8247 | <i>Puccinia</i> | <i>gnaphalicola</i> | 1920 | Asteraceae | <i>Gamochaeta</i> | <i>coarctata</i> | Ecuador | -0.19457 | -78.49301 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------------|------|-------------|--------------------|----------------------|-----------|------------|------------|
| PURF8248 | <i>Puccinia</i> | <i>gnaphaliicola</i> | 1921 | Asteraceae | <i>Gamochaeta</i> | <i>coarctata</i> | Bolivia | -16.5 | -68.15 |
| PURF8249 | <i>Puccinia</i> | <i>investita</i> | 1920 | Asteraceae | <i>Achyrocline</i> | <i>glandulosa</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8250 | <i>Puccinia</i> | <i>investita</i> | 1920 | Asteraceae | <i>Achyrocline</i> | <i>hyperchlora</i> | Bolivia | -17.118938 | -65.950439 |
| PURF8251 | <i>Puccinia</i> | <i>investita</i> | 1920 | Asteraceae | <i>Achyrocline</i> | <i>polycephala</i> | Bolivia | -16.5 | -68.15 |
| PURF8252 | <i>Puccinia</i> | <i>investita</i> | 1920 | Asteraceae | <i>Achyrocline</i> | <i>ramosissima</i> | Bolivia | -16.49667 | -68.13 |
| PURF8253 | <i>Puccinia</i> | <i>investita</i> | 1920 | Asteraceae | <i>Gnaphalium</i> | <i>paniculatum</i> | Peru | -13.20699 | -71.99292 |
| PURF8254 | <i>Puccinia</i> | <i>investita</i> | 1922 | Asteraceae | <i>Gnaphalium</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF8256 | <i>Puccinia</i> | <i>ocellifera</i> | 1901 | Asteraceae | <i>Pluchea</i> | <i>quitoe</i> | Argentina | -24.188079 | -65.29675 |
| PURF8259 | <i>Puccinia</i> | <i>ocellifera</i> | 1920 | Asteraceae | <i>Pluchea</i> | <i>odorata</i> | Bolivia | -17.118938 | -65.950439 |
| PURF8260 | <i>Puccinia</i> | <i>ocellifera</i> | 1920 | Asteraceae | <i>Pluchea</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8262 | <i>Puccinia</i> | <i>tessariae</i> | 1879 | Asteraceae | <i>Tessaria</i> | <i>absinthioides</i> | Argentina | -29.411048 | -66.850668 |
| PURF8263 | <i>Puccinia</i> | <i>tessariae</i> | 1920 | Asteraceae | <i>Tessaria</i> | <i>absinthioides</i> | Chile | -34.24832 | -70.55543 |
| PURF8268 | <i>Puccinia</i> | <i>caleae</i> | 1922 | Asteraceae | <i>Calea</i> | <i>cuneifolia</i> | Brazil | -22.398698 | -48.864444 |
| PURF8269 | <i>Puccinia</i> | <i>caleae</i> | 1920 | Asteraceae | <i>Calea</i> | <i>huigrensis</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8271 | <i>Puccinia</i> | <i>nuda</i> | 1920 | Asteraceae | <i>Madia</i> | <i>chilensis</i> | Chile | -34.24362 | -70.55393 |
| PURF8272 | <i>Puccinia</i> | <i>nuda</i> | 1920 | Asteraceae | <i>Madia</i> | <i>sativa</i> | Chile | -41.870699 | -73.81622 |
| PURF8273 | <i>Puccinia</i> | <i>nuda</i> | 1920 | Asteraceae | <i>Madia</i> | <i>sativa</i> | Chile | -34.24362 | -70.55393 |
| PURF8274 | <i>Puccinia</i> | <i>nuda</i> | 1919 | Asteraceae | <i>Madia</i> | <i>sp.</i> | Chile | -35.711578 | -71.334456 |
| PURF8275 | <i>Puccinia</i> | <i>nuda</i> | 1920 | Asteraceae | <i>Madia</i> | <i>sp.</i> | Chile | -32.55538 | -71.45748 |
| PURF8287 | <i>Puccinia</i> | <i>minuscule</i> | 1920 | Asteraceae | <i>Helianthus</i> | <i>hypargyreus</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8288 | <i>Puccinia</i> | <i>minuscule</i> | 1920 | Asteraceae | <i>Helianthus</i> | <i>hypargyreus</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8291 | <i>Puccinia</i> | <i>capitulata</i> | 1920 | Asteraceae | <i>Monopholis</i> | <i>hexantha</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8293 | <i>Puccinia</i> | <i>boliviana</i> | 1920 | Asteraceae | <i>Oyedaea</i> | <i>boliviana</i> | Bolivia | -16.397025 | -67.651947 |
| PURF8294 | <i>Puccinia</i> | <i>boliviana</i> | 1920 | Asteraceae | <i>Oyedaea</i> | <i>boliviana</i> | Bolivia | -16.397025 | -67.651947 |
| PURF8296 | <i>Puccinia</i> | <i>boliviana</i> | 1920 | Asteraceae | <i>Oyedaea</i> | <i>boliviana</i> | Bolivia | -16.139956 | -67.724731 |
| PURF8297 | <i>Puccinia</i> | <i>boliviana</i> | 1920 | Asteraceae | <i>Oyedaea</i> | <i>sp.</i> | Bolivia | -16.139956 | -67.724731 |
| PURF8299 | <i>Puccinia</i> | <i>abrupta</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pflanzii</i> | Bolivia | -16.49667 | -68.13 |
| PURF8302 | <i>Puccinia</i> | <i>spilanthicola</i> | 1910 | Asteraceae | <i>Spilanthes</i> | <i>ciliata</i> | Colombia | 6.25184 | -75.563591 |
| PURF8303 | <i>Puccinia</i> | <i>spilanthicola</i> | 1914 | Asteraceae | <i>Spilanthes</i> | <i>ciliata</i> | Peru | -76.242228 | -74.633333 |
| PURF8308 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1903 | Asteraceae | <i>Blainvillea</i> | <i>sp.</i> | Venezuela | 10.488011 | -66.879193 |
| PURF8309 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1913 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Venezuela | 10.488011 | -66.879193 |
| PURF8310 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1921 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Trinidad | 10.5 | -61.25 |
| PURF8311 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1921 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Trinidad | 10.5 | -61.25 |
| PURF8312 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1921 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Trinidad | 10.5 | -61.25 |
| PURF8313 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1921 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Trinidad | 10.5 | -61.25 |
| PURF8314 | <i>Puccinia</i> | <i>irregularis</i> | 1920 | Asteraceae | <i>Verbesina</i> | <i>boliviana</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8316 | <i>Puccinia</i> | <i>irregularis</i> | 1906 | Asteraceae | <i>Verbesina</i> | <i>subcprdata</i> | Argentina | -34.571605 | -58.422155 |
| PURF8317 | <i>Puccinia</i> | <i>irregularis</i> | 1880 | Asteraceae | <i>Verbesina</i> | <i>subcprdata</i> | Argentina | -34.62997 | -58.463293 |
| PURF8318 | <i>Puccinia</i> | <i>irregularis</i> | 1906 | Asteraceae | <i>Verbesina</i> | <i>subcprdata</i> | Argentina | -34.5619 | -58.45582 |
| PURF8322 | <i>Puccinia</i> | <i>verbesinae-dentatae</i> | 1920 | Asteraceae | <i>Verbesina</i> | <i>adenobasis</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8323 | <i>Puccinia</i> | <i>verbesinae-dentatae</i> | 1920 | Asteraceae | <i>Verbesina</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURF8325 | <i>Puccinia</i> | <i>abrupta</i> | 1874 | Asteraceae | <i>Verbesina</i> | <i>australis</i> | Argentina | -31.417939 | -64.191254 |
| PURF8326 | <i>Puccinia</i> | <i>abrupta</i> | 1920 | Asteraceae | <i>Verbesina</i> | <i>semidecurrens</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8327 | <i>Puccinia</i> | <i>abrupta</i> | 1920 | Asteraceae | <i>Verbesina</i> | <i>sp.</i> | Peru | -13.305696 | -72.116109 |
| PURF8328 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>aurea</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8330 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>lanceolata</i> | Bolivia | -16.5 | -68.15 |
| PURF8331 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8332 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -16.397025 | -67.651947 |
| PURF8333 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -16.49667 | -68.13 |
| PURF8334 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8335 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -17.118938 | -65.950439 |
| PURF8336 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -17.118938 | -65.950439 |
| PURF8337 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -16.49667 | -68.13 |
| PURF8338 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -16.49667 | -68.13 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------------|------|----------------|-------------------------|---------------------------------------|-------------|------------|------------|
| PURF8339 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pflanzii</i> | Peru | -7.255558 | -76.475553 |
| PURF8340 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -16.49667 | -68.13 |
| PURF8341 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pazensis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8342 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>pflanzii</i> | Peru | -16.398889 | -71.535 |
| PURF8343 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>quitensis</i> | Ecuador | -0.19457 | -78.49301 |
| PURF8344 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>quitensis</i> | Ecuador | -0.19457 | -78.49301 |
| PURF8345 | <i>Puccinia</i> | <i>enceliae</i> | 1920 | Asteraceae | <i>Viguiera</i> | <i>retroflexa</i> | Bolivia | -16.139956 | -67.724731 |
| PURF8347 | <i>Puccinia</i> | <i>wedellicola</i> | 1922 | Asteraceae | <i>Wedelia</i> | <i>trichostephia</i> | Brazil | -22.865557 | -43.42723 |
| PURF8348 | <i>Puccinia</i> | <i>obrepia</i> | 1920 | Asteraceae | <i>Wedelia</i> | <i>isolepis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8349 | <i>Puccinia</i> | <i>obrepia</i> | 1920 | Asteraceae | <i>Wedelia</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8350 | <i>Puccinia</i> | <i>subaquila</i> | 1920 | Asteraceae | <i>Wedelia</i> | <i>helianthoides</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8351 | <i>Puccinia</i> | <i>subaquila</i> | 1920 | Asteraceae | <i>Wedelia</i> | <i>helianthoides</i> | Peru | -9.049722 | -77.774444 |
| PURF8356 | <i>Puccinia</i> | <i>schileana</i> | 1880 | Asteraceae | <i>Ximenesia</i> | <i>microptera</i> | Argentina | -34.6 | -58.45 |
| PURF8362 | <i>Puccinia</i> | <i>indecorata</i> | 1920 | Asteraceae | <i>Tagetes</i> | <i>graveolens</i> | Bolivia | -15.76667 | -68.63333 |
| PURF8457 | <i>Puccinia</i> | <i>liabi</i> | 1920 | Asteraceae | <i>Liabum</i> | <i>eggersii</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8458 | <i>Puccinia</i> | <i>liabi</i> | 1920 | Asteraceae | <i>Liabum</i> | <i>hastatum</i> | Bolivia | -15.731265 | -64.529297 |
| PURF8459 | <i>Puccinia</i> | <i>liabi</i> | 1920 | Asteraceae | <i>Liabum</i> | <i>hastifolium</i> | Bolivia | -16.5 | -68.15 |
| PURF8460 | <i>Puccinia</i> | <i>liabi</i> | 1920 | Asteraceae | <i>Liabum</i> | <i>hastifolium</i> | Bolivia | -16.5 | -68.15 |
| PURF8461 | <i>Puccinia</i> | <i>liabi</i> | 1920 | Asteraceae | <i>Liabum</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF8467 | <i>Puccinia</i> | <i>culcitii</i> | 1920 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURF8546 | <i>Puccinia</i> | <i>calcitrapae</i> | 1901 | Asteraceae | <i>Carduus</i> | <i>acanthoides</i> | Germany | 50.8919 | 14.23261 |
| PURF8574 | <i>Puccinia</i> | <i>nishidana</i> | 1925 | Asteraceae | <i>Cirsium</i> | <i>luzoniense</i> | Philippines | 16.33513 | 120.56091 |
| PURF8581 | <i>Puccinia</i> | <i>calcitrapae</i> | 1892 | Fabaceae | <i>Acroptilun</i> | <i>picris</i> | Iran | 30.155401 | 56.953613 |
| PURF8637 | <i>Puccinia</i> | <i>crassicutis</i> | 1920 | Asteraceae | <i>Mutisia</i> | <i>vicaefolia</i> | Peru | -7.255558 | -76.475553 |
| PURF8638 | <i>Puccinia</i> | <i>crassicutis</i> | 1920 | Asteraceae | <i>Mutisia</i> | <i>vicaefolia</i> | Bolivia | -16.49667 | -68.13 |
| PURF8639 | <i>Puccinia</i> | <i>crassicutis</i> | 1920 | Asteraceae | <i>Mutisia</i> | <i>vicaefolia</i> | Bolivia | -17.118938 | -65.950439 |
| PURF8640 | <i>Puccinia</i> | <i>crassicutis</i> | 1915 | Asteraceae | <i>Mutisia</i> | <i>vicaefolia</i> | Peru | -13.113056 | -72.226667 |
| PURF8880 | <i>Puccinia</i> | <i>mogiphanis</i> | 1890 | Amaranthaceae | <i>Amaranthaceae</i> | <i>sp.</i> | Ecuador | -2.754284 | -79.739918 |
| PURF8946 | <i>Puccinia</i> | <i>festata</i> | 1920 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8948 | <i>Puccinia</i> | <i>festata</i> | 1920 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Ecuador | -0.194568 | -78.493005 |
| PURF8949 | <i>Puccinia</i> | <i>festata</i> | 1889 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Ecuador | -0.194568 | -78.493005 |
| PURF89845 | <i>Puccinia</i> | <i>dietelii</i> | 1973 | Euphorbiaceae | <i>Acalypha</i> | <i>non-data</i> | Mexico | 19.25673 | -99.4566 |
| PURF8997 | <i>Puccinia</i> | <i>johnstonii</i> | 1921 | Cordiaceae | <i>Cordia</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF9007 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1920 | Lamiaceae | <i>Hyptis</i> | <i>mutabilis</i> | Bolivia | -15.76667 | -68.63333 |
| PURF9009 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1920 | Lamiaceae | <i>Hyptis</i> | <i>spicata</i> | Bolivia | -17.118938 | -65.950439 |
| PURF9034 | <i>Puccinia</i> | <i>palicoureae</i> | 1920 | Rubiaceae | <i>Palicourea</i> | <i>crocea</i> | Ecuador | -3.553987 | -80.066816 |
| PURF9053 | <i>Puccinia</i> | <i>sp.</i> | 1919 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Chile | -40.708707 | -73.015402 |
| PURF9409 | <i>Puccinia</i> | <i>malvacearum</i> | 1938 | Malvaceae | <i>Malvastrum</i> | <i>coromandelianum</i> | Argentina | -28.509176 | -59.040086 |
| PURF9410 | <i>Puccinia</i> | <i>cynodontis</i> | 1937 | Poaceae | <i>Cynodon</i> | <i>dactylon</i> | Argentina | -34.921454 | -57.954533 |
| PURF9411 | <i>Puccinia</i> | <i>gnaphalicola</i> | 1937 | Asteraceae | <i>Pseudognaphalium</i> | <i>luteoalbum</i> | Argentina | -34.921454 | -57.954533 |
| PURF9412 | <i>Puccinia</i> | <i>gymnotrichis</i> | 1947 | Poaceae | <i>Pennisetum</i> | <i>latifolium</i> | Argentina | -34.921454 | -57.954533 |
| PURF9413 | <i>Puccinia</i> | <i>recondita</i> | 1936 | Poaceae | <i>Bromus</i> | <i>hordeaceus</i> | Argentina | -34.921454 | -57.954533 |
| PURF9415 | <i>Puccinia</i> | <i>polypogonis</i> | 1937 | Poaceae | <i>Polypogon</i> | <i>sp.</i> | Argentina | -32.889121 | -68.844994 |
| PURF9416 | <i>Puccinia</i> | <i>tuyutensis</i> | 1937 | Convolvulaceae | <i>Cressa</i> | <i>truxillensis</i> | Argentina | -32.896039 | -68.764543 |
| PURF9417 | <i>Puccinia</i> | <i>tuyutensis</i> | 1935 | Convolvulaceae | <i>Cressa</i> | <i>truxillensis</i> | Argentina | -32.984459 | -68.788388 |
| PURF9421 | <i>Puccinia</i> | <i>abnormis</i> | 1938 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | Argentina | -34.921454 | -57.954533 |
| PURF9423 | <i>Puccinia</i> | <i>graminis</i> | 1937 | Poaceae | <i>Calamagrostis</i> | <i>viridiflavescens montevidensis</i> | Argentina | -34.921454 | -57.954533 |
| PURF9424 | <i>Puccinia</i> | <i>porophylli</i> | 1938 | Asteraceae | <i>Porophyllum</i> | <i>ruderalis</i> | Argentina | -28.509176 | -59.040086 |
| PURF9425 | <i>Puccinia</i> | <i>melanosora</i> | 1937 | Calyceraceae | <i>Acicarpha</i> | <i>tribuloides</i> | Argentina | -34.921454 | -57.954533 |
| PURF9437 | <i>Puccinia</i> | <i>notobasidis</i> | 1935 | Asteraceae | <i>Cirsium</i> | <i>syriacum</i> | Cyprus | 35.341667 | 33.316667 |
| PURF9441 | <i>Puccinia</i> | <i>geranii-pilosi</i> | 1933 | Geraniaceae | <i>Geranium</i> | <i>sp.</i> | Argentina | -32.911893 | -68.825655 |
| PURF9443 | <i>Puccinia</i> | <i>giliae</i> | 1934 | Polemoniaceae | <i>Microsteris</i> | <i>gracilis</i> | Argentina | -33.367256 | -69.143228 |
| PURF9444 | <i>Puccinia</i> | <i>intervenens</i> | 1936 | Malvaceae | <i>Sphaeralcea</i> | <i>sp.</i> | Argentina | -32.85273 | -68.828373 |
| PURF9445 | <i>Puccinia</i> | <i>tessariae</i> | 1936 | Asteraceae | <i>Tessaria</i> | <i>sp.</i> | Argentina | -33.147704 | -68.481586 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--------------------------|------|-----------------|-----------------------|-----------------------|-----------|------------|------------|
| PURF9446 | <i>Puccinia</i> | <i>grindeliae</i> | 1935 | Asteraceae | <i>Grindelia</i> | <i>sp.</i> | Argentina | -33.578963 | -69.017942 |
| PURF9448 | <i>Puccinia</i> | <i>abrupta</i> | 1937 | Asteraceae | <i>Verbesina</i> | <i>australis</i> | Argentina | -34.921454 | -57.954533 |
| PURF9449 | <i>Puccinia</i> | <i>heteropteridis</i> | 1937 | Malpighiaceae | <i>Stigmaphyllon</i> | <i>littorale</i> | Argentina | -34.921454 | -34.921454 |
| PURF9450 | <i>Puccinia</i> | <i>jussiaeae</i> | 1937 | Onagraceae | <i>Jussiaea</i> | <i>longifolia</i> | Argentina | -34.921454 | -57.954533 |
| PURF9451 | <i>Puccinia</i> | <i>hieracii</i> | 1936 | Asteraceae | <i>Hypochaeris</i> | <i>sp.</i> | Argentina | -35.45 | -57.283333 |
| PURF9456 | <i>Puccinia</i> | <i>punctiformis</i> | 1936 | Asteraceae | <i>Cirsium</i> | <i>arvense</i> | Latvia | 56.966551 | 23.959467 |
| PURF9462 | <i>Puccinia</i> | <i>malvacearum</i> | 1927 | Malvaceae | <i>Malva</i> | <i>parviflora</i> | Uruguay | -33.063174 | -56.337402 |
| PURF9508 | <i>Puccinia</i> | <i>gnaphalicola</i> | 1939 | Asteraceae | <i>Gamochaeta</i> | <i>sp.</i> | Argentina | -32.889121 | -68.844994 |
| PURF9509 | <i>Puccinia</i> | <i>lobata</i> | 1933 | Malvaceae | <i>Malvella</i> | <i>leprosa</i> | Argentina | -33.578963 | -69.017942 |
| PURF9510 | <i>Puccinia</i> | <i>platyspora</i> | 1924 | Malvaceae | <i>Sphaeralcea</i> | <i>sp.</i> | Argentina | -34.617717 | -68.33006 |
| PURF9511 | <i>Puccinia</i> | <i>pallidissima</i> | 1877 | Lamiaceae | <i>Stachys</i> | <i>arvensis</i> | Argentina | -36.842582 | -60.226112 |
| PURF9512 | <i>Puccinia</i> | <i>drabae</i> | 1933 | non-data | <i>non-data</i> | <i>sp.</i> | Argentina | -33.578963 | -69.017942 |
| PURF9513 | <i>Puccinia</i> | <i>drabae</i> | 1938 | Brassicaceae | <i>Draba</i> | <i>sp.</i> | Argentina | -32.907281 | -68.831604 |
| PURF9522 | <i>Puccinia</i> | <i>malvacearum</i> | 1932 | Malvaceae | <i>Malvaceae</i> | <i>sp.</i> | Peru | -13.239075 | -71.905029 |
| PURF9541 | <i>Puccinia</i> | <i>heterospora</i> | 1919 | Malvaceae | <i>Wissadula</i> | <i>paraguariensis</i> | Paraguay | -25.27742 | -57.576111 |
| PURF9542 | <i>Puccinia</i> | <i>baccharidis</i> | 1910 | Asteraceae | <i>Baccharis</i> | <i>glutinosa</i> | Argentina | -32.952161 | -69.203277 |
| PURF9544 | <i>Puccinia</i> | <i>spiegazziniana</i> | 1921 | Asteraceae | <i>Aspilula</i> | <i>montevicensis</i> | Argentina | -34.921454 | -57.954533 |
| PURF9545 | <i>Puccinia</i> | <i>obliqua</i> | 1899 | Apocynaceae | <i>Metastelma</i> | <i>diffusa</i> | Argentina | -28.469574 | -65.785239 |
| PURF9547 | <i>Puccinia</i> | <i>heteropteridis</i> | 1886 | Malpighiaceae | <i>Stigmaphyllon</i> | <i>littorale</i> | Argentina | -34.921454 | -57.954533 |
| PURF9548 | <i>Puccinia</i> | <i>bonariensis</i> | 1940 | Acanthaceae | <i>Poikilacanthus</i> | <i>twedeanus</i> | Argentina | -34.826174 | -57.964608 |
| PURF9549 | <i>Puccinia</i> | <i>graminis</i> | 1939 | Poaceae | <i>Agropyron</i> | <i>ostenianus</i> | Argentina | -35.656622 | -63.756815 |
| PURF9550 | <i>Puccinia</i> | <i>gibertii</i> | 1940 | Lamiaceae | <i>Hyptis</i> | <i>sp.</i> | Argentina | -33.834803 | -59.039081 |
| PURF9571 | <i>Puccinia</i> | <i>obliqua</i> | 1940 | Apocynaceae | <i>Matelea</i> | <i>hirsuta</i> | Trinidad | 10.5 | -61.25 |
| PURF9685 | <i>Puccinia</i> | <i>caricis-filicinae</i> | 1934 | Cyperaceae | <i>Carex</i> | <i>filicina</i> | India | 29.37953 | 79.46538 |
| PURF9714 | <i>Puccinia</i> | <i>butleri</i> | 1934 | Asteraceae | <i>Launea</i> | <i>asplenifoliae</i> | India | 25.440079 | 81.842946 |
| PURF9723 | <i>Puccinia</i> | <i>kalchbrennei</i> | 1937 | Asteraceae | <i>Helichrysum</i> | <i>nudiflorum</i> | Uganda | 0.266667 | 31.616667 |
| PURF9793 | <i>Puccinia</i> | <i>dolosa</i> | 1939 | Poaceae | <i>Paspalum</i> | <i>paniculatum</i> | Venezuela | 8.631097 | -71.078426 |
| PURF9794 | <i>Puccinia</i> | <i>dolosa</i> | 1937 | Poaceae | <i>Paspalum</i> | <i>paniculatum</i> | Venezuela | 10.488011 | -66.879193 |
| PURF9795 | <i>Puccinia</i> | <i>dolosa</i> | 1937 | Poaceae | <i>Paspalum</i> | <i>paniculatum</i> | Venezuela | 10.337996 | -65.973698 |
| PURF9796 | <i>Puccinia</i> | <i>levis</i> | 1939 | Poaceae | <i>Paspalum</i> | <i>trachycauleon</i> | Venezuela | 10.205241 | -68.18187 |
| PURF9797 | <i>Puccinia</i> | <i>macra</i> | 1939 | Poaceae | <i>Paspalum</i> | <i>candidum</i> | Venezuela | 8.533018 | -71.24585 |
| PURF9798 | <i>Puccinia</i> | <i>substriata</i> | 1938 | Poaceae | <i>Paspalum</i> | <i>molle</i> | Venezuela | 10.488011 | -66.879193 |
| PURF9799 | <i>Puccinia</i> | <i>substriata</i> | 1939 | Poaceae | <i>Paspalum</i> | <i>trachycauleon</i> | Venezuela | 10.205241 | -68.18187 |
| PURF9800 | <i>Puccinia</i> | <i>substriata</i> | 1939 | Poaceae | <i>Paspalum</i> | <i>trachycauleon</i> | Venezuela | 10.411574 | -66.927222 |
| PURF9801 | <i>Puccinia</i> | <i>substriata</i> | 1940 | Poaceae | <i>Paspalum</i> | <i>trachycauleon</i> | Venezuela | 10.500139 | -66.893838 |
| PURF9803 | <i>Puccinia</i> | <i>substriata</i> | 1932 | Poaceae | <i>Paspalum</i> | <i>paniculatum</i> | Venezuela | 10.333386 | -67.041744 |
| PURF9807 | <i>Puccinia</i> | <i>dolosa</i> | 1932 | Poaceae | <i>Paspalum</i> | <i>paniculatum</i> | Venezuela | 8.59524 | -71.1434 |
| PURF9808 | <i>Puccinia</i> | <i>levis</i> | 1934 | Poaceae | <i>Paspalum</i> | <i>pilosum</i> | Venezuela | 7.766944 | -72.225 |
| PURF9809 | <i>Puccinia</i> | <i>levis</i> | 1941 | Poaceae | <i>Paspalum</i> | <i>humboldtianum</i> | Venezuela | 10.500139 | -66.893838 |
| PURF9810 | <i>Puccinia</i> | <i>substriata</i> | 1927 | Poaceae | <i>Paspalum</i> | <i>langei</i> | Venezuela | 10.46642 | -66.974261 |
| PURF9814 | <i>Puccinia</i> | <i>polysora</i> | 1940 | Poaceae | <i>Zea</i> | <i>mays</i> | Peru | -6.43022 | -77.96032 |
| PURF9815 | <i>Puccinia</i> | <i>polysora</i> | 1940 | Poaceae | <i>Tripsacum</i> | <i>laxum</i> | Peru | -6.43022 | -77.96032 |
| PURF9822 | <i>Puccinia</i> | <i>macra</i> | 1936 | Poaceae | <i>Paspalum</i> | <i>prostratum</i> | Colombia | 3.5 | -73 |
| PURF9823 | <i>Puccinia</i> | <i>substriata</i> | 1929 | Poaceae | <i>Paspalum</i> | <i>macrophyllum</i> | Colombia | 3.53944 | -76.30361 |
| PURF9825 | <i>Puccinia</i> | <i>opipara</i> | 1920 | Poaceae | <i>Ichnanthus</i> | <i>minarum</i> | Bolivia | -16.139956 | -67.724731 |
| PURF9829 | <i>Puccinia</i> | <i>esclavensis</i> | 1920 | Poaceae | <i>Paspalum</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF9832 | <i>Puccinia</i> | <i>plumbaria</i> | 1933 | Caryophyllaceae | <i>Arenaria</i> | <i>serpyllodes</i> | Argentina | -33.578963 | -69.017942 |
| PURF9841 | <i>Puccinia</i> | <i>thaliae</i> | 1941 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Argentina | -27.46056 | -58.983886 |
| PURF9842 | <i>Puccinia</i> | <i>substriata</i> | 1941 | Poaceae | <i>Digitaria</i> | <i>insularis</i> | Argentina | -27.46056 | -58.983886 |
| PURF9843 | <i>Puccinia</i> | <i>huberi</i> | 1927 | Poaceae | <i>Panicum</i> | <i>trichoides</i> | Venezuela | 10.218333 | -64.632158 |
| PURF9846 | <i>Puccinia</i> | <i>sorghi</i> | 1941 | Poaceae | <i>Zea</i> | <i>mexicana</i> | Bolivia | -17.118938 | -65.950439 |
| PURN10169 | <i>Puccinia</i> | <i>sp.</i> | 1942 | Frankeniaceae | <i>Frankenia</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURN10179 | <i>Puccinia</i> | <i>minuta</i> | 1988 | Cyperaceae | <i>Cyperaceae</i> | <i>non-data</i> | Brazil | 0.214677 | -51.066667 |
| PURN10189 | <i>Puccinia</i> | <i>coronata</i> | 1967 | Poaceae | <i>Agropyron</i> | <i>repens</i> | USA | 43.65218 | -94.4611 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--|----------|----------------|------------------------|----------------------|-------------|-------------|-------------|
| PURN10211 | <i>Puccinia</i> | <i>pelargonii-zonalis</i> | 1986 | Geraniaceae | <i>Pelargonium</i> | <i>zonale</i> | Colombia | 6.25184 | -75.563591 |
| PURN10369 | <i>Puccinia</i> | <i>faceta</i> | 1982 | Poaceae | <i>Olyra</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN10389 | <i>Puccinia</i> | <i>sp.</i> | 1929 | Asteraceae | <i>Pollalesta</i> | <i>trujillensis</i> | Venezuela | 9.243457 | -70.715374 |
| PURN10394 | <i>Puccinia</i> | <i>sp.</i> | 1914 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Peru | -17.023056 | -72.014722 |
| PURN10395 | <i>Puccinia</i> | <i>sp.</i> | 1914 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Peru | -17.023056 | -72.014722 |
| PURN10396 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Ecuador | -2.289024 | -78.983293 |
| PURN10397 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURN10399 | <i>Puccinia</i> | <i>amphigena</i> | 1891 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Ecuador | -1.257653 | -78.627093 |
| PURN10400 | <i>Puccinia</i> | <i>aeropetalal</i> | non-data | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURN10411 | <i>Puccinia</i> | <i>spiegazzinii</i> | 1912 | Asteraceae | <i>Mikania</i> | <i>scadens</i> | Brazil | -22.865557 | -43.42723 |
| PURN10423 | <i>Puccinia</i> | <i>longicornis</i> | 1977 | Poaceae | <i>Pseudosasa</i> | <i>japonica</i> | England | 51.06667 | -0.08333 |
| PURN10424 | <i>Puccinia</i> | <i>kusanoi</i> | 1967 | Poaceae | <i>Semiarundinaria</i> | <i>fastusa</i> | England | 51.06667 | -0.08333 |
| PURN1047 | <i>Puccinia</i> | <i>monoica</i> | 1994 | Brassicaceae | <i>Arabis</i> | <i>divaricarpa</i> | USA | 45.07917 | -93.1972 |
| PURN10494 | <i>Puccinia</i> | <i>apii</i> | 1971 | Apiaceae | <i>Apium</i> | <i>graveolens</i> | Burma | 21.20229 | 96.01417 |
| PURN10537 | <i>Puccinia</i> | <i>poarum</i> | 1969 | Asteraceae | <i>Brickellia</i> | <i>spicatum</i> | Mexico | 23.73253 | -103.983 |
| PURN10595 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURN10596 | <i>Puccinia</i> | <i>sp.</i> | 1924 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Ecuador | -2.218369 | -80.228825 |
| PURN10645 | <i>Puccinia</i> | <i>substriata</i> | 1965 | Solanaceae | <i>Solanum</i> | <i>eleagnifolium</i> | USA | 31.85231 | -110.975 |
| PURN10723 | <i>Puccinia</i> | <i>ibrae</i> | 1996 | Convolvulaceae | <i>Ipomoea</i> | <i>non-data</i> | Honduras | 15.04647 | -87.9615 |
| PURN10787 | <i>Puccinia</i> | <i>physostegiae</i> | 1986 | Lamiaceae | <i>Physostegia</i> | <i>paviflora</i> | USA | 40.71321 | -86.8717 |
| PURN10823 | <i>Puccinia</i> | <i>operta</i> | 1950 | Poaceae | <i>Coix</i> | <i>lacrima-jobi</i> | India | 18.31261 | 73.95422 |
| PURN10850 | <i>Puccinia</i> | <i>invenusta</i> | 1981 | Poaceae | <i>Phragmites</i> | <i>karka</i> | Guam | 13.446593 | 144.78656 |
| PURN10885 | <i>Puccinia</i> | <i>polemonii</i> | 1986 | Polemoniaceae | <i>Polemonium</i> | <i>acutiflorum</i> | USA | 61.15583 | -149.75 |
| PURN10906 | <i>Puccinia</i> | <i>chondrillina</i> | 1978 | Asteraceae | <i>Chondrilla</i> | <i>juncea</i> | Australia | -33.695512 | 149.556007 |
| PURN10907 | <i>Puccinia</i> | <i>graminis</i> | 1970 | Poaceae | <i>Dactylis</i> | <i>glomerata</i> | Australia | -35.714819 | 147.621593 |
| PURN10908 | <i>Puccinia</i> | <i>carthami</i> | 1966 | Asteraceae | <i>Carthamus</i> | <i>tinctorius</i> | Australia | -30.3318 | 149.7679 |
| PURN10919 | <i>Puccinia</i> | <i>levata</i> | 1991 | Euphorbiaceae | <i>Chamaesyce</i> | <i>celastroides</i> | Hawaii | 22.08333 | -159.765 |
| PURN11 | <i>Puccinia</i> | <i>melampodii</i> | 1972 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Venezuela | 10.516569 | -63.38897 |
| PURN11047 | <i>Puccinia</i> | <i>coronata</i> | 1986 | Poaceae | <i>Bromus</i> | <i>sp.</i> | USA | 40.91134 | -86.5294 |
| PURN11083 | <i>Puccinia</i> | <i>hemerocallidis</i> | 2010 | Asphodelaceae | <i>Hemerocallis</i> | <i>non-data</i> | USA | 30.07328 | -90.5345 |
| PURN1110 | <i>Puccinia</i> | <i>buxi</i> | 1984 | Buxaceae | <i>Buxus</i> | <i>semperuixens</i> | Portugal | 32.74711 | -16.9576 |
| PURN11116 | <i>Puccinia</i> | <i>sorgi</i> | 2014 | Poaceae | <i>Zea</i> | <i>mays</i> | USA | 40.42809 | -86.92251 |
| PURN1112 | <i>Puccinia</i> | <i>epilobii</i> | 1971 | Onagraceae | <i>Epilobium</i> | <i>alsinifolium</i> | Iceland | 65.88333 | -23.6333 |
| PURN11130 | <i>Puccinia</i> | <i>windsoriae</i> | 1968 | Poaceae | <i>Tridens</i> | <i>flavus</i> | USA | 40.24667 | -82.7046 |
| PURN11183 | <i>Puccinia</i> | <i>impatiens</i> | 1963 | Poaceae | <i>Elymus</i> | <i>hystrix</i> | USA | 39.89 | -87.195 |
| PURN11246 | <i>Puccinia</i> | <i>chondrillina</i> | 1921 | Asteraceae | <i>Chondrilla</i> | <i>juncea</i> | USA | 38.879035 | -77.108944 |
| PURN11247 | <i>Puccinia</i> | <i>cicutae</i> | 1903 | Apiaceae | <i>Cicuta</i> | <i>bolanderi</i> | USA | 36.76579 | -121.758 |
| PURN11308 | <i>Puccinia</i> | <i>phyllostachydis</i> | 1921 | Poaceae | <i>Bambusa</i> | <i>aurea</i> | USA | 28.55527 | -82.3879 |
| PURN11489 | <i>Puccinia</i> | <i>levis</i> | 1921 | Poaceae | <i>Panicum</i> | <i>maximum</i> | Brazil | -22.875113 | -43.277548 |
| PURN11506 | <i>Puccinia</i> | <i>persistens</i> | 1942 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | USA | 40.272015 | -81.859576 |
| PURN11535 | <i>Puccinia</i> | <i>oxalidis</i> | 1927 | Oxalidaceae | <i>Oxalis</i> | <i>latifolia</i> | Venezuela | 10.467466 | -66.910181 |
| PURN11539 | <i>Puccinia</i> | <i>oxalidis</i> | 1999 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Venezuela | 10.391024 | -66.892013 |
| PURN11540 | <i>Puccinia</i> | <i>scirpi</i> | 1999 | Menyanthaceae | <i>Nymphoides</i> | <i>non-data</i> | Netherlands | 52.416667 | 6.5 |
| PURN11575 | <i>Puccinia</i> | <i>orbicula</i> | 2012 | Asteraceae | <i>Prenanthes</i> | <i>acerifolia</i> | Japan | 36.85126667 | 140.6748 |
| PURN116 | <i>Puccinia</i> | <i>caricina</i> | 1938 | Cyperaceae | <i>Carex</i> | <i>pallascens</i> | Finland | 60.98333 | 24.4 |
| PURN11633 | <i>Puccinia</i> | <i>pygmaea</i> | 2014 | Poaceae | <i>Calamagrostis</i> | <i>sp.</i> | USA | 40.425869 | -86.908066 |
| PURN11634 | <i>Puccinia</i> | <i>purpurea</i> | 2015 | Poaceae | <i>Sorghum</i> | <i>bicolor</i> | Puerto Rico | 18.501342 | -67.024439 |
| PURN11661 | <i>Puccinia</i> | <i>philippinensis</i> | 2004 | Cyperaceae | <i>Cyperus</i> | <i>rotundus</i> | Guam | 13.462621 | 144.781067 |
| PURN117 | <i>Puccinia</i> | <i>caricina</i> | 1911 | Cyperaceae | <i>Carex</i> | <i>cespitosa</i> | Finland | 61.33333 | 22 |
| PURN1177 | <i>Puccinia</i> | <i>lagenophorae</i> | 2000 | Asteraceae | <i>Bellis</i> | <i>perennis</i> | USA | 36.677737 | -121.655501 |
| PURN1187 | <i>Puccinia</i> | <i>urbaniana</i> | 2001 | Verbenaceae | <i>Stachytarpheta</i> | <i>cayennensis</i> | Cuba | 23.13194 | -82.3642 |
| PURN1188 | <i>Puccinia</i> | <i>lagenophorae</i> | 2001 | Asteraceae | <i>Senecio</i> | <i>vulgaris</i> | USA | 34.63915 | -120.45794 |
| PURN1247 | <i>Puccinia</i> | <i>striiformis</i> var. <i>striiformis</i> | 1942 | Poaceae | <i>Triticum</i> | <i>aestivum</i> | Ecuador | -0.16136 | -78.48289 |
| PURN128 | <i>Puccinia</i> | <i>aegopodii</i> | 1914 | Apiaceae | <i>Aegopodium</i> | <i>podagraria</i> | Finland | 60.17556 | 24.93417 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------------|------|----------------|------------------------|--------------------|----------------|--------------------|---------------------|
| PURN12883 | <i>Puccinia</i> | <i>acetosae</i> | 2014 | Polygonaceae | <i>Rumex</i> | <i>acetosa</i> | Peru | -6.603699 | -78.05188 |
| PURN12887 | <i>Puccinia</i> | <i>roseana</i> | 2014 | non-data | non-data | non-data | Peru | -14.265721 | -14.265721 |
| PURN12888 | <i>Puccinia</i> | <i>pelargonii-zonalis</i> | 2014 | Geraniaceae | <i>Pelargonium</i> | <i>zonale</i> | Peru | -7.133333 | -78.483333 |
| PURN12889 | <i>Puccinia</i> | <i>acetosae</i> | 2015 | Polygonaceae | <i>Rumex</i> | <i>acetosella</i> | Peru | -6.603699 | -78.05188 |
| PURN129 | <i>Puccinia</i> | <i>acetosae</i> | 1961 | Polygonaceae | <i>Rumex</i> | <i>acetosa</i> | Finland | 64.72764 | 26.25781 |
| PURN1321 | <i>Puccinia</i> | <i>coronata</i> | 1984 | Poaceae | <i>Bromus</i> | <i>anomalus</i> | USA | 38.38283 | -104.937 |
| PURN1341 | <i>Puccinia</i> | <i>canaliculata</i> | 1978 | Cyperaceae | <i>Cyperus</i> | <i>esculentus</i> | USA | 40.483 | -86.9913 |
| PURN1376 | <i>Puccinia</i> | <i>coronata</i> | 1995 | Poaceae | <i>Agrostis</i> | <i>sp.</i> | USA | 45.78962 | -92.774 |
| PURN14801 | <i>Puccinia</i> | <i>purpurea</i> | 1923 | non-data | non-data | non-data | British Guiana | 6.8 | -58.15 |
| PURN1495 | <i>Puccinia</i> | <i>graminis</i> | 1995 | Poaceae | <i>Phleum</i> | <i>pratense</i> | USA | 44.82724 | -93.4572 |
| PURN15 | <i>Puccinia</i> | <i>caeomarifformis</i> | 1975 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN15015 | <i>Puccinia</i> | <i>psidii</i> | 2016 | Myrtaceae | <i>Syzygium</i> | <i>jambos</i> | Venezuela | 8.595241 | -71.143404 |
| PURN15017 | <i>Puccinia</i> | <i>oxalidis</i> | 2016 | Oxalidaceae | <i>Oxalis</i> | <i>latifolia</i> | Venezuela | 8.595241 | -71.143404 |
| PURN15018 | <i>Puccinia</i> | <i>oxalidis</i> | 2016 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Venezuela | 8.595241 | -71.143404 |
| PURN15019 | <i>Puccinia</i> | <i>oxalidis</i> | 2016 | Oxalidaceae | <i>Oxalis</i> | <i>latifolia</i> | Venezuela | 8.595241 | -71.143404 |
| PURN15045 | <i>Puccinia</i> | <i>thaliae</i> | 2015 | non-data | non-data | non-data | Guyana | 6.116667 | -60.383333 |
| PURN15294 | <i>Puccinia</i> | <i>sp.</i> | 1925 | Poaceae | non-data | non-data | Peru | -12.12075363532175 | -76.97836909032603 |
| PURN15333 | <i>Puccinia</i> | <i>melampodii</i> | 2016 | non-data | non-data | non-data | Guyana | 6.508377390875282 | -58.261896617950356 |
| PURN15343 | <i>Puccinia</i> | <i>commelinae</i> | 2013 | non-data | non-data | non-data | Guyana | 6.817010455737869 | -58.16160785386451 |
| PURN15344 | <i>Puccinia</i> | <i>duthiae</i> | 2016 | Poaceae | non-data | non-data | Guyana | 6.799609526187966 | -58.154868016067894 |
| PURN1537 | <i>Puccinia</i> | <i>coronata</i> | 1992 | Poaceae | <i>Hordeum</i> | <i>vulgare</i> | USA | 46.90053 | -97.2112 |
| PURN15494 | <i>Puccinia</i> | <i>thaliae</i> | 2003 | Cannaceae | <i>Canna</i> | <i>indica</i> | Guyana | 6.806051298303948 | -58.14509783057182 |
| PURN15497 | <i>Puccinia</i> | <i>duthiae</i> | 2003 | non-data | non-data | non-data | Guyana | 6.804507502751684 | -58.13933061845833 |
| PURN15501 | <i>Puccinia</i> | <i>obliquo-septata</i> | 2003 | Poaceae | <i>Olyra</i> | <i>micrantha</i> | Guyana | 4.707086618262952 | -59.216680183407355 |
| PURN15507 | <i>Puccinia</i> | <i>subcoronata</i> | 2003 | Cyperaceae | <i>Cyperus</i> | <i>sp.</i> | Guyana | 5.000213602214133 | -60.99914174891604 |
| PURN15511 | <i>Puccinia</i> | <i>obliquo-septata</i> | 2003 | Poaceae | <i>Olyra</i> | <i>micrantha</i> | Guyana | 4.707723278696973 | -59.214444329983245 |
| PURN15524 | <i>Puccinia</i> | <i>scleriae</i> | 2003 | Passifloraceae | non-data | non-data | Guyana | 4.702629978919009 | -59.216360775775335 |
| PURN15529 | <i>Puccinia</i> | <i>commelinae</i> | 2003 | Commelinaceae | <i>Commelina</i> | <i>erecta</i> | Guyana | 6.764346125264552 | -58.18109584391257 |
| PURN1553 | <i>Puccinia</i> | <i>recondita</i> | 1996 | Balsaminaceae | <i>Impatiens</i> | non-data | USA | 42.22169 | -88.9795 |
| PURN15533 | <i>Puccinia</i> | <i>obliquo-septata</i> | 2004 | Poaceae | <i>Olyra</i> | <i>micrantha</i> | Guyana | 4.707723278696973 | -59.214444329983245 |
| PURN16 | <i>Puccinia</i> | <i>caeomarifformis</i> | 1975 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN16376 | <i>Puccinia</i> | <i>oahuensis</i> | 2016 | Poaceae | <i>Digitalaria</i> | <i>sp.</i> | Peru | -6.487904093613493 | -76.37475832957803 |
| PURN16378 | <i>Puccinia</i> | <i>arundinariae</i> | 2016 | Poaceae | <i>Poaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN16380 | <i>Puccinia</i> | <i>purpurea</i> | 2016 | Poaceae | <i>Sorghum</i> | <i>halepense</i> | Ecuador | -2.482995772197618 | -80.2803905486251 |
| PURN16381 | <i>Puccinia</i> | <i>pelargonii-zonalis</i> | 2016 | Geraniaceae | <i>Pelargonium</i> | <i>sp.</i> | Peru | -5.832777821442793 | -77.91675288573325 |
| PURN16385 | <i>Puccinia</i> | <i>melampodii</i> | 2016 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Peru | -6.5853166667 | -76.14405 |
| PURN16386 | <i>Puccinia</i> | <i>melampodii</i> | 2016 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Peru | -7.162407683691438 | -78.51051602375561 |
| PURN16387 | <i>Puccinia</i> | <i>melampodii</i> | 2016 | Asteraceae | <i>Eleutheranthera</i> | <i>sp.</i> | Peru | -5.271735309851678 | -78.7761293309556 |
| PURN16393 | <i>Puccinia</i> | <i>melampodii</i> | 2016 | Asteraceae | <i>Eleutheranthera</i> | <i>sp.</i> | Peru | -9.592803346260096 | -73.69348298669016 |
| PURN16397 | <i>Puccinia</i> | <i>thaliae</i> | 2016 | non-data | non-data | non-data | Peru | -5.269968 | -78.776479 |
| PURN16401 | <i>Puccinia</i> | <i>pelargonii-zonalis</i> | 2016 | Geraniaceae | <i>Pelargonium</i> | non-data | Peru | -6.229681215358835 | -77.86843390649153 |
| PURN16553 | <i>Puccinia</i> | <i>obliquo-septata</i> | 2010 | non-data | non-data | non-data | Guyana | 4.707723278696973 | -59.214444329983245 |
| PURN16563 | <i>Puccinia</i> | <i>thaliae</i> | 2011 | Marantaceae | <i>Ischnosiphon</i> | <i>sp.</i> | Guyana | 6.0454838870240115 | -58.32339055068754 |
| PURN17 | <i>Puccinia</i> | <i>caeomarifformis</i> | 1975 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN1744 | <i>Puccinia</i> | <i>fragosoana</i> | 1993 | Poaceae | <i>Imperata</i> | <i>cylindrica</i> | Iran | 34.5332 | 47.9142 |
| PURN18 | <i>Puccinia</i> | <i>caeomarifformis</i> | 1975 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURN1921 | <i>Puccinia</i> | <i>calcitrapae</i> | 1999 | Asteraceae | <i>Arctium</i> | <i>minus</i> | USA | 40.705265 | -82.423065 |
| PURN2090 | <i>Puccinia</i> | <i>helianthi</i> | 1988 | Asteraceae | <i>Helianthus</i> | <i>maximiliani</i> | USA | 44.991632 | -93.166333 |
| PURN2135 | <i>Puccinia</i> | <i>elymi</i> | 1991 | Berberidaceae | <i>Berberis</i> | <i>fendleri</i> | USA | 37.27528 | -107.88 |
| PURN2142 | <i>Puccinia</i> | <i>phragmitis</i> | 1991 | Poaceae | <i>Phragmites</i> | <i>australis</i> | USA | 46.47376 | -94.6544 |
| PURN2164 | <i>Puccinia</i> | <i>polygoni-amphibii</i> | 1988 | Polygonaceae | <i>Polygonum</i> | <i>convulvus</i> | USA | 45.01774 | -93.1224 |
| PURN22 | <i>Puccinia</i> | <i>obliqua</i> | 1975 | Apocynaceae | <i>Prestonia</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN2211 | <i>Puccinia</i> | <i>recondita</i> | 1994 | Ranunculaceae | <i>Anemone</i> | <i>canadensis</i> | USA | 44.79577 | -93.2937 |
| PURN2270 | <i>Puccinia</i> | <i>elymi</i> | 1991 | Poaceae | <i>Leymus</i> | <i>mollis</i> | Japan | 45.382634 | 141.028393 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|---------------------------|------|-----------------|----------------------|-----------------------------|-------------|-------------|--------------|
| PURN23 | <i>Puccinia</i> | <i>thaliae</i> | 1975 | Capparaceae | <i>Calathea</i> | <i>sp.</i> | Ecuador | -2.965497 | -78.431972 |
| PURN23060 | <i>Puccinia</i> | <i>tubulosa</i> | 2018 | Solanaceae | <i>non-data</i> | <i>non-data</i> | Puerto Rico | 18.30149405 | -65.78420089 |
| PURN23084 | <i>Puccinia</i> | <i>sorghii</i> | 2019 | Poaceae | <i>Zea</i> | <i>mays</i> | Peru | 7.192099 | 78.505365 |
| PURN24 | <i>Puccinia</i> | <i>pelargonii-zonalis</i> | 1975 | Geraniaceae | <i>Pelargonium</i> | <i>zonale</i> | Ecuador | -0.194568 | -78.493005 |
| PURN2612 | <i>Puccinia</i> | <i>liabi</i> | 1975 | Asteraceae | <i>Liabum</i> | <i>sp.</i> | Ecuador | -2.965497 | -78.431972 |
| PURN2613 | <i>Puccinia</i> | <i>liabi</i> | 1975 | Asteraceae | <i>Liabum</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURN2619 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1919 | Berberidaceae | <i>Berberis</i> | <i>chilensis</i> | Chile | -35.758046 | -71.407898 |
| PURN2629 | <i>Puccinia</i> | <i>cordiae</i> | 1902 | Cordiaceae | <i>Cordia</i> | <i>sp.</i> | Peru | -2.183333 | -74.1 |
| PURN2641 | <i>Puccinia</i> | <i>graminis</i> | 1989 | Poaceae | <i>Schedonorus</i> | <i>phoenix</i> | USA | 36.06258 | -94.1574 |
| PURN2761 | <i>Puccinia</i> | <i>crassicutis</i> | 1981 | Asteraceae | <i>Mutisia</i> | <i>hirsuta</i> | Bolivia | -15.731265 | -64.529297 |
| PURN2764 | <i>Puccinia</i> | <i>puyana</i> | 1975 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Ecuador | -1.252369 | -78.622781 |
| PURN2807 | <i>Puccinia</i> | <i>guilleminiae</i> | 1961 | Amaranthaceae | <i>Brayulinea</i> | <i>densa</i> | USA | 31.88259 | -109.204 |
| PURN2808 | <i>Puccinia</i> | <i>sp.</i> | 1975 | Amaranthaceae | <i>Alternanthera</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN2809 | <i>Puccinia</i> | <i>sp.</i> | 1922 | Amaranthaceae | <i>Amaranthaceae</i> | <i>sp.</i> | Guyana | 6.575605 | -58.218483 |
| PURN2810 | <i>Puccinia</i> | <i>sp.</i> | 1975 | Amaranthaceae | <i>Amaranthaceae</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PURN2811 | <i>Puccinia</i> | <i>iniapii</i> | 1975 | Asteraceae | <i>Bidens</i> | <i>rubifolia cuatrecasi</i> | Ecuador | -0.167606 | -78.45071 |
| PURN2813 | <i>Puccinia</i> | <i>caleae</i> | 1963 | Asteraceae | <i>Calea</i> | <i>albida</i> | Mexico | 20.206401 | -104.822132 |
| PURN2822 | <i>Puccinia</i> | <i>colignoniae</i> | 1978 | Nyctaginaceae | <i>Colignonia</i> | <i>parviflora</i> | Ecuador | -0.935206 | -78.615545 |
| PURN2823 | <i>Puccinia</i> | <i>colignoniae</i> | 1975 | Nyctaginaceae | <i>Colignonia</i> | <i>parviflora</i> | Ecuador | -0.935206 | -78.615545 |
| PURN2824 | <i>Puccinia</i> | <i>colignoniae</i> | 1950 | Nyctaginaceae | <i>Colignonia</i> | <i>rufopilosa</i> | Peru | -13.541563 | -72.696544 |
| PURN2825 | <i>Puccinia</i> | <i>oxalidis</i> | 1986 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURN2826 | <i>Puccinia</i> | <i>oxalidis</i> | 1986 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURN2832 | <i>Puccinia</i> | <i>eupatorii</i> | 1912 | Asteraceae | <i>Eupatorium</i> | <i>amygdalinum</i> | Paraguay | -25.933333 | -55.783333 |
| PURN2918 | <i>Puccinia</i> | <i>lygodii</i> | 1990 | Lygodiaceae | <i>Lygodium</i> | <i>venustum</i> | Brazil | -4 | -39 |
| PURN30 | <i>Puccinia</i> | <i>crassipes</i> | 1975 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN3032 | <i>Puccinia</i> | <i>fumosa</i> | 1971 | Polemoniaceae | <i>Loeselia</i> | <i>cardinalis</i> | Mexico | 19.256734 | -99.456624 |
| PURN31 | <i>Puccinia</i> | <i>caeomarifformis</i> | 1975 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURN3167 | <i>Puccinia</i> | <i>thaliae</i> | 1982 | Cannaceae | <i>Canna</i> | <i>indica</i> | Brazil | -21.966667 | -47.816667 |
| PURN3172 | <i>Puccinia</i> | <i>thaliae</i> | 1990 | Cannaceae | <i>Canna</i> | <i>indica</i> | Brazil | 0.214677 | -51.066667 |
| PURN3260 | <i>Puccinia</i> | <i>thaliae</i> | 1976 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN3327 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURN3328 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURN3329 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.139956 | -67.724731 |
| PURN3330 | <i>Puccinia</i> | <i>sp.</i> | 1928 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Peru | -12 | -76.833333 |
| PURN3338 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.139956 | -67.724731 |
| PURN3339 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURN3340 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.139956 | -67.724731 |
| PURN3341 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.139956 | -67.724731 |
| PURN3342 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURN3343 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURN3344 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Bolivia | -16.5 | -68.15 |
| PURN3345 | <i>Puccinia</i> | <i>sp.</i> | 1922 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURN3359 | <i>Puccinia</i> | <i>sp.</i> | 1924 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Peru | -11.417007 | -75.686686 |
| PURN3360 | <i>Puccinia</i> | <i>sp.</i> | 1924 | Asteraceae | <i>Baccharis</i> | <i>trinervis</i> | Ecuador | -1.708836 | -79.043114 |
| PURN3362 | <i>Puccinia</i> | <i>sp.</i> | 1924 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -0.2001 | -78.475341 |
| PURN3363 | <i>Puccinia</i> | <i>sp.</i> | 1975 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN3364 | <i>Puccinia</i> | <i>sp.</i> | 1975 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN3365 | <i>Puccinia</i> | <i>sp.</i> | 1975 | Asteraceae | <i>Baccharis</i> | <i>nitida</i> | Ecuador | -1.483687 | -78.002573 |
| PURN350 | <i>Puccinia</i> | <i>buxi</i> | 1994 | Buxaceae | <i>Buxus</i> | <i>hyrcana</i> | Iran | 34.5332 | 47.9142 |
| PURN361 | <i>Puccinia</i> | <i>hieracii</i> | 1996 | Asteraceae | <i>Chondrilla</i> | <i>junceae</i> | Iran | 34.5332 | 47.9142 |
| PURN3658 | <i>Puccinia</i> | <i>jungiae</i> | 1966 | Asteraceae | <i>Jungia</i> | <i>affinis</i> | Brazil | -16.246089 | -50.198506 |
| PURN3684 | <i>Puccinia</i> | <i>bambusarum</i> | 1988 | Poaceae | <i>Pariana</i> | <i>campestris</i> | Brazil | 0.214677 | -51.066667 |
| PURN4088 | <i>Puccinia</i> | <i>eugeniae</i> | 1901 | Myrtaceae | <i>Eugenia</i> | <i>grandis</i> | Brazil | -21.9667 | -47.8167 |
| PURN4089 | <i>Puccinia</i> | <i>jambosae</i> | 1901 | Myrtaceae | <i>Jambosa</i> | <i>vulgaris</i> | Brazil | -22.3987 | -48.8644 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--------------------------|----------|-----------------|------------------------|-----------------------|------------|------------|------------|
| PURN4244 | <i>Puccinia</i> | <i>achyroclines</i> | 1976 | Asteraceae | <i>Achyrocline</i> | <i>satureioides</i> | Brazil | -24.630612 | -53.114858 |
| PURN4493 | <i>Puccinia</i> | <i>orbicula</i> | 1978 | Asteraceae | <i>Prenanthes</i> | <i>alba</i> | USA | 40.44458 | -86.82862 |
| PURN4541a | <i>Puccinia</i> | <i>coronata</i> | 1966 | Poaceae | <i>Festuca</i> | <i>altissima</i> | Germany | 53.438004 | 13.30145 |
| PURN4572 | <i>Puccinia</i> | <i>wolgensis</i> | 1991 | Poaceae | <i>Stipa</i> | <i>caucasica</i> | Iran | 36.91132 | 54.74167 |
| PURN4649 | <i>Puccinia</i> | <i>hemerocallidis</i> | 2001 | Asphodelaceae | <i>Hemerocallis</i> | <i>non-data</i> | USA | 37.8406 | -88.6092 |
| PURN4674 | <i>Puccinia</i> | <i>veronicarum</i> | 1882 | Plantaginaceae | <i>Paederota</i> | <i>ageria</i> | Yugoslavia | 46.05528 | 14.51444 |
| PURN4718 | <i>Puccinia</i> | <i>major</i> | 1874 | Asteraceae | <i>Crepis</i> | <i>paludosa</i> | Germany | 49.94327 | 11.57684 |
| PURN49 | <i>Puccinia</i> | <i>virgae-aurea</i> | 1913 | Asteraceae | <i>Solidago</i> | <i>virgaurea</i> | Finland | 67.5 | 27.416667 |
| PURN5199 | <i>Puccinia</i> | <i>phragmitis</i> | 1961 | Poaceae | <i>Phragmites</i> | <i>communis</i> | USA | 41.55972 | -95.8973 |
| PURN5210 | <i>Puccinia</i> | <i>windsoriae</i> | 1989 | Poaceae | <i>Tridens</i> | <i>flavus</i> | USA | 38.18152 | -78.4845 |
| PURN5226 | <i>Puccinia</i> | <i>brachypodii</i> | 1920 | Poaceae | <i>Relchela</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURN5279 | <i>Puccinia</i> | <i>graminis</i> | 1956 | Poaceae | <i>Phalaris</i> | <i>arundinacea</i> | USA | 40.42271 | -86.9188 |
| PURN5292 | <i>Puccinia</i> | <i>graminis</i> | 1992 | Poaceae | <i>Lolium</i> | <i>perenne</i> | USA | 34.67781 | -91.1157 |
| PURN5297 | <i>Puccinia</i> | <i>graminis</i> | 1992 | Poaceae | <i>Bromus</i> | <i>sp.</i> | Mexico | 23 | -102 |
| PURN5354 | <i>Puccinia</i> | <i>pseudostriiformis</i> | 1956 | Poaceae | <i>Poa</i> | <i>nemoralis</i> | USA | 40.41667 | -86.8753 |
| PURN5383 | <i>Puccinia</i> | <i>striiformis</i> | 1966 | Poaceae | <i>Dactylis</i> | <i>glomerata</i> | Chile | -39.827598 | -73.224246 |
| PURN5400 | <i>Puccinia</i> | <i>coronata</i> | 1984 | Elacagnaceae | <i>Shepherdia</i> | <i>canadensis</i> | USA | 38.38283 | -104.937 |
| PURN5401 | <i>Puccinia</i> | <i>coronata</i> | 1990 | Rhamnaceae | <i>Frangula</i> | <i>caroliniana</i> | USA | 36.06258 | -94.1574 |
| PURN5408 | <i>Puccinia</i> | <i>coronata</i> | 1989 | Poaceae | <i>Arrhenatherum</i> | <i>elatius</i> | USA | 37.22957 | -80.4139 |
| PURN5412 | <i>Puccinia</i> | <i>coronata</i> | 1958 | Poaceae | <i>Phalaris</i> | <i>bulbosa</i> | Argentina | -27.480596 | -58.834099 |
| PURN5423 | <i>Puccinia</i> | <i>paradoxapoda</i> | 2006 | Solanaceae | <i>Lycium</i> | <i>barbarum</i> | USA | 39.7621 | -86.2177 |
| PURN5478 | <i>Puccinia</i> | <i>polypogonis</i> | 1934 | Poaceae | <i>Polypogon</i> | <i>monspeiliensis</i> | Uruguay | -32.833056 | -56.030647 |
| PURN5488 | <i>Puccinia</i> | <i>cynodontis</i> | 1975 | Poaceae | <i>Cynodon</i> | <i>dactylon</i> | Ecuador | -0.167606 | -78.45071 |
| PURN5496 | <i>Puccinia</i> | <i>cacabata</i> | 1985 | Poaceae | <i>Bouteloua</i> | <i>austroides</i> | USA | 32.13917 | -112.39 |
| PURN5504 | <i>Puccinia</i> | <i>chloridis</i> | 1888 | Poaceae | <i>Trichloris</i> | <i>mendocino</i> | Paraguay | -26.176526 | -56.436737 |
| PURN551 | <i>Puccinia</i> | <i>recondita</i> | 1949 | Ranunculaceae | <i>Actaea</i> | <i>erythrocarpa</i> | Finland | 66 | 29.25 |
| PURN5520 | <i>Puccinia</i> | <i>guaranitica</i> | 1948 | Rhamnaceae | <i>Gouinia</i> | <i>guatemalensis</i> | Honduras | 14.02751 | -87.3311 |
| PURN5526 | <i>Puccinia</i> | <i>kansensis</i> | 1963 | Solanaceae | <i>Physalis</i> | <i>alkekengi</i> | USA | 40.51553 | -101.071 |
| PURN5535 | <i>Puccinia</i> | <i>substriata</i> | 1942 | Solanaceae | <i>Solanum</i> | <i>carolinense</i> | USA | 40.41667 | -86.8753 |
| PURN5550 | <i>Puccinia</i> | <i>abnormis</i> | 1992 | Poaceae | <i>Echinochloa</i> | <i>crus-galli</i> | Uruguay | -34.742222 | -56.098333 |
| PURN5558 | <i>Puccinia</i> | <i>esclavensis</i> | 1981 | Nyctaginaceae | <i>Mirabilis</i> | <i>Jalapa</i> | Mexico | 21.34565 | -97.8385 |
| PURN5574 | <i>Puccinia</i> | <i>stenotaphri</i> | 1975 | Poaceae | <i>Stenotaphrum</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN5638 | <i>Puccinia</i> | <i>polysora</i> | 1940 | Poaceae | <i>Zea</i> | <i>mays</i> | Trinidad | 10.5 | -61.25 |
| PURN5723 | <i>Puccinia</i> | <i>gibberulosa</i> | 1874 | Ranunculaceae | <i>Ranunculus</i> | <i>lancipetalus</i> | Argentina | -28.784505 | -67.935767 |
| PURN5818 | <i>Puccinia</i> | <i>heliconiae</i> | 1975 | Heliconiaceae | <i>Heliconia</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN5821 | <i>Puccinia</i> | <i>thaliae</i> | 1901 | Cannaceae | <i>Canna</i> | <i>patens</i> | Brazil | -22.512305 | -48.916169 |
| PURN5828 | <i>Puccinia</i> | <i>schedonnardi</i> | 1958 | Poaceae | <i>Muhlenbergia</i> | <i>hakonensis</i> | Japan | 35.61602 | 138.608 |
| PURN5849 | <i>Puccinia</i> | <i>mogiphanis</i> | 1991 | Amaranthaceae | <i>Alternanthera</i> | <i>halimifolia</i> | Ecuador | -1.833333 | -79.816667 |
| PURN5850 | <i>Puccinia</i> | <i>mogiphanis</i> | 1981 | Amaranthaceae | <i>Alternanthera</i> | <i>ramosissima</i> | Ecuador | -1.708836 | -79.043114 |
| PURN5851 | <i>Puccinia</i> | <i>mogiphanis</i> | 1924 | Amaranthaceae | <i>Alternanthera</i> | <i>ramosissima</i> | Ecuador | -2.218369 | -80.228825 |
| PURN5852 | <i>Puccinia</i> | <i>mogiphanis</i> | 1975 | Amaranthaceae | <i>Alternanthera</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PURN5867 | <i>Puccinia</i> | <i>arenariae</i> | 1975 | Caryophyllaceae | <i>Caryophyllaceae</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PURN5868 | <i>Puccinia</i> | <i>arenariae</i> | 1975 | Caryophyllaceae | <i>Caryophyllaceae</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN5886 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1901 | Berberidaceae | <i>Berberis</i> | <i>actinacantha</i> | Chile | -33.961469 | -70.051832 |
| PURN5887 | <i>Puccinia</i> | <i>meyeri-alberti</i> | 1935 | Berberidaceae | <i>Berberis</i> | <i>actinacantha</i> | Chile | -33.45 | -70.66667 |
| PURN5907 | <i>Puccinia</i> | <i>bergii</i> | 1930 | Fabaceae | <i>Poiretia</i> | <i>tetraphylla</i> | Uruguay | -34.45 | -57.733333 |
| PURN5917 | <i>Puccinia</i> | <i>arachidis</i> | non-data | Fabaceae | <i>Arachis</i> | <i>burkartii</i> | Brazil | -28.758462 | -51.433333 |
| PURN5918 | <i>Puccinia</i> | <i>arachidis</i> | 1936 | Fabaceae | <i>Arachis</i> | <i>burkartii</i> | Uruguay | -30.987242 | -55.577291 |
| PURN5922 | <i>Puccinia</i> | <i>arachidis</i> | 1933 | Fabaceae | <i>Arachis</i> | <i>hypogaea</i> | Suriname | 5.848812 | -55.200104 |
| PURN5925 | <i>Puccinia</i> | <i>arachidis</i> | 1980 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Argentina | -24.785893 | -65.441477 |
| PURN5926 | <i>Puccinia</i> | <i>arachidis</i> | 1980 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Argentina | -24.785893 | -65.441477 |
| PURN5927 | <i>Puccinia</i> | <i>arachidis</i> | 1980 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Argentina | -24.785299 | -65.424469 |
| PURN5928 | <i>Puccinia</i> | <i>arachidis</i> | 1980 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURN5929 | <i>Puccinia</i> | <i>arachidis</i> | 1977 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Bolivia | -17.564576 | -61.124609 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|------------------------------|------|----------------|-----------------------|-----------------------|-----------|------------|-------------|
| PURN5930 | <i>Puccinia</i> | <i>arachidis</i> | 1980 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Bolivia | -17.564576 | -61.124609 |
| PURN5937 | <i>Puccinia</i> | <i>arachidis</i> | 1959 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -26.176526 | -56.436737 |
| PURN5938 | <i>Puccinia</i> | <i>arachidis</i> | 1959 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -25.366667 | -55.8 |
| PURN5939 | <i>Puccinia</i> | <i>arachidis</i> | 1959 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -25.366667 | -55.8 |
| PURN5940 | <i>Puccinia</i> | <i>arachidis</i> | 1959 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -26.176526 | -56.436737 |
| PURN5969 | <i>Puccinia</i> | <i>pelargonii-zonalis</i> | 1972 | Geraniaceae | <i>Pelargonium</i> | <i>zonale</i> | Venezuela | 10.174444 | -63.498889 |
| PURN5987 | <i>Puccinia</i> | <i>barbatula</i> | 1981 | Malpighiaceae | <i>Heteropterys</i> | <i>birsonimifolia</i> | Brazil | -22.5123 | -48.9162 |
| PURN5992 | <i>Puccinia</i> | <i>inrecta</i> | 1908 | Malpighiaceae | <i>Peixotoa</i> | <i>cordistipula</i> | Paraguay | -26.176526 | -56.436737 |
| PURN6 | <i>Puccinia</i> | <i>substriata</i> | 1995 | Solanaceae | <i>Solanum</i> | <i>anguivi</i> | USA | 31.45046 | -83.5085 |
| PURN6006 | <i>Puccinia</i> | <i>festata</i> | 1890 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Ecuador | -0.194568 | -78.493005 |
| PURN601 | <i>Puccinia</i> | <i>magnusiana</i> | 2000 | Ranunculaceae | <i>Clematis</i> | <i>vitalba</i> | Italy | 45.5 | 10.5 |
| PURN6043 | <i>Puccinia</i> | <i>heterospora</i> | 1988 | Malvaceae | <i>Abutilon</i> | <i>grandifolium</i> | Hawaii | 21.43739 | -157.968 |
| PURN6055 | <i>Puccinia</i> | <i>malvacearum</i> | 1975 | Malvaceae | <i>Anoda</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURN6078 | <i>Puccinia</i> | <i>exilis</i> | 1975 | Malvaceae | <i>Pavonia</i> | <i>paniculata</i> | Ecuador | -1.670984 | -78.647124 |
| PURN6079 | <i>Puccinia</i> | <i>exilis</i> | 1975 | Malvaceae | <i>Pavonia</i> | <i>paniculata</i> | Ecuador | -1.670984 | -78.647124 |
| PURN6084 | <i>Puccinia</i> | <i>violae</i> | 1992 | Violaceae | <i>Viola</i> | <i>glabella</i> | USA | 45.52345 | -122.676 |
| PURN6098 | <i>Puccinia</i> | <i>cambucae</i> | 1906 | Myrtaceae | <i>Marlierea</i> | <i>edulis</i> | Brazil | -21.9667 | -47.8167 |
| PURN6106 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1984 | Araliaceae | <i>Hydrocotyle</i> | <i>bonariensis</i> | Argentina | -38.822245 | -68.062929 |
| PURN6108 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1986 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURN6109 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1975 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURN6110 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1975 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN6111 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1975 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURN6130 | <i>Puccinia</i> | <i>caricina</i> | 1971 | Celastraceae | <i>Parnassia</i> | <i>palustris</i> | USA | 61.68662 | -165.954 |
| PURN6132 | <i>Puccinia</i> | <i>dichondrae</i> | 1992 | Convolvulaceae | <i>Dichondra</i> | <i>carolinensis</i> | USA | 33.13569 | -92.6502 |
| PURN6134 | <i>Puccinia</i> | <i>crassipes</i> | 1959 | Convolvulaceae | <i>Ipomoea</i> | <i>sp.</i> | Peru | -13.239075 | -71.905029 |
| PURN6142 | <i>Puccinia</i> | <i>verbeniphila</i> | 1941 | Verbenaceae | <i>Verbena</i> | <i>bonariensis</i> | Brazil | -18.9757 | -44.484 |
| PURN6149 | <i>Puccinia</i> | <i>leonotidicola</i> | 1918 | Lamiaceae | <i>Leonotis</i> | <i>nepetifolia</i> | Suriname | 4.018592 | -55.875977 |
| PURN6156 | <i>Puccinia</i> | <i>mitrata</i> | 1899 | Lamiaceae | <i>Salvia</i> | <i>amarissima</i> | Mexico | 19.716667 | -101.183333 |
| PURN6171 | <i>Puccinia</i> | <i>hyptidis-mutabilis</i> | 1924 | Lamiaceae | <i>Hyptis</i> | <i>sp.</i> | Peru | -10.046111 | -76.621389 |
| PURN6187 | <i>Puccinia</i> | <i>antirrhini</i> | 1991 | Plantaginaceae | <i>Antirrhinum</i> | <i>majus</i> | Portugal | 38.69105 | -9.31085 |
| PURN6188 | <i>Puccinia</i> | <i>veronicarum</i> | 1949 | Plantaginaceae | <i>Veronicastrum</i> | <i>virginicum</i> | USA | 4086778 | -86.87889 |
| PURN6211 | <i>Puccinia</i> | <i>porophylli</i> | 1924 | Asteraceae | <i>Porophyllum</i> | <i>sp.</i> | Ecuador | -1.591918 | -78.222168 |
| PURN6215 | <i>Puccinia</i> | <i>illatabilis</i> | 1924 | Asteraceae | <i>Vernonia</i> | <i>scorpioides</i> | Peru | -10.046111 | -76.621389 |
| PURN6216 | <i>Puccinia</i> | <i>illatabilis</i> | 1924 | Asteraceae | <i>Vernonia</i> | <i>scorpioides</i> | Peru | -10.046111 | -76.621389 |
| PURN6218 | <i>Puccinia</i> | <i>trachylaena</i> | 1975 | Asteraceae | <i>Vernonia</i> | <i>sodiroid</i> | Ecuador | -0.167606 | -78.45071 |
| PURN6221 | <i>Puccinia</i> | <i>sp.</i> | 1968 | Asteraceae | <i>Vernonia</i> | <i>cuneifolia</i> | Paraguay | -26.176526 | -56.436737 |
| PURN6236 | <i>Puccinia</i> | <i>noackii</i> | 1976 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Brazil | -18.975688 | -44.483961 |
| PURN6242 | <i>Puccinia</i> | <i>spiegazzinii</i> | 1975 | Asteraceae | <i>Mikania</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURN6253 | <i>Puccinia</i> | <i>caeomarifformis</i> | 1924 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -0.2001 | -78.475341 |
| PURN6254 | <i>Puccinia</i> | <i>caeomarifformis</i> | 1924 | Asteraceae | <i>Baccharis</i> | <i>floribunda</i> | Ecuador | -2.20584 | -79.90795 |
| PURN6255 | <i>Puccinia</i> | <i>caeomarifformis</i> | 1924 | Asteraceae | <i>Baccharis</i> | <i>trinervis</i> | Ecuador | -2.218369 | -80.228825 |
| PURN6288 | <i>Puccinia</i> | <i>abrupta</i> | 1930 | Asteraceae | <i>Verbesina</i> | <i>australis</i> | Uruguay | -34.87 | -56.22 |
| PURN6295 | <i>Puccinia</i> | <i>ludoviciana</i> | 1989 | Asteraceae | <i>Artemisia</i> | <i>ludoviciana</i> | USA | 41.34254 | -105.57552 |
| PURN6307 | <i>Puccinia</i> | <i>artemisiae-norvegicae</i> | 1986 | Asteraceae | <i>Artemisia</i> | <i>artica</i> | USA | 61.14917 | -149.36583 |
| PURN6308 | <i>Puccinia</i> | <i>liabi</i> | 1924 | Asteraceae | <i>Liabum</i> | <i>hastifolium</i> | Peru | -10.24045 | -76.615485 |
| PURN6309 | <i>Puccinia</i> | <i>liabi</i> | 1924 | Asteraceae | <i>Liabum</i> | <i>hastifolium</i> | Peru | -10.24045 | -76.615485 |
| PURN6310 | <i>Puccinia</i> | <i>liabi</i> | 1924 | Asteraceae | <i>Liabum</i> | <i>sp.</i> | Peru | -10.24045 | -76.615485 |
| PURN6311 | <i>Puccinia</i> | <i>senecionicola</i> | 1980 | Asteraceae | <i>Senecio</i> | <i>oaxacarum</i> | Mexico | 21.345649 | -97.838467 |
| PURN6314 | <i>Puccinia</i> | <i>senecionicola</i> | 1990 | Asteraceae | <i>Crassocephalum</i> | <i>crepidioides</i> | USA | 21.312225 | -157.755883 |
| PURN6327 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1920 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Peru | -9.049722 | -77.774444 |
| PURN6332 | <i>Puccinia</i> | <i>stromatifera</i> | 1939 | Asteraceae | <i>Perezia</i> | <i>palmeri</i> | Mexico | 26.116667 | -111.6 |
| PURN6337 | <i>Puccinia</i> | <i>crepidis-montanae</i> | 1991 | Asteraceae | <i>Youngia</i> | <i>japonica</i> | USA | 20.896984 | -156.204407 |
| PURN6392 | <i>Puccinia</i> | <i>conoclinii</i> | 1969 | Asteraceae | <i>Eupatorium</i> | <i>macrocephalum</i> | Argentina | -41.750444 | -71.381994 |
| PURN6393 | <i>Puccinia</i> | <i>conoclinii</i> | 1930 | Asteraceae | <i>Eupatorium</i> | <i>macrocephalum</i> | Argentina | -26.816532 | -65.215729 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-----------------------|------|------------------|---------------------|----------------------|-------------|------------|-------------|
| PURN6394 | <i>Puccinia</i> | <i>lilloana</i> | 1904 | Asteraceae | <i>Baccharis</i> | <i>lilloi</i> | Argentina | -26.727948 | -65.265854 |
| PURN6396 | <i>Puccinia</i> | <i>enceliae</i> | 1994 | Asteraceae | <i>Simsia</i> | <i>dombeyana</i> | Argentina | -26.070411 | -65.979296 |
| PURN6397 | <i>Puccinia</i> | <i>exornata</i> | 1997 | Asteraceae | <i>Baccharis</i> | <i>sp.</i> | Argentina | -26.111468 | -64.642305 |
| PURN6398 | <i>Puccinia</i> | <i>eupatorii</i> | 1994 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Argentina | -26.070411 | -65.979296 |
| PURN6399 | <i>Puccinia</i> | <i>baccharidis</i> | 1994 | Asteraceae | <i>Baccharis</i> | <i>lilloi</i> | Argentina | -26.070411 | -65.979296 |
| PURN6400 | <i>Puccinia</i> | <i>justiciae</i> | 1994 | Acanthaceae | <i>Chaetothylax</i> | <i>umbrosus</i> | Argentina | -26.238136 | -65.495747 |
| PURN6749 | <i>Puccinia</i> | <i>malvacearum</i> | 2013 | Malvaceae | <i>Alcea</i> | <i>rosea</i> | USA | 40.42328 | -86.919 |
| PURN678 | <i>Puccinia</i> | <i>veronicae</i> | 1892 | Asteraceae | <i>Veronica</i> | <i>virginica</i> | USA | 43.30331 | -91.7857 |
| PURN6910 | <i>Puccinia</i> | <i>linkii</i> | 2014 | Viburnaceae | <i>Viburnum</i> | <i>edulae</i> | USA | 61.32139 | -149.568 |
| PURN7007 | <i>Puccinia</i> | <i>coronata</i> | 1968 | Poaceae | <i>Elymus</i> | <i>arenarius</i> | USA | 43.66 | -87.7229 |
| PURN7106 | <i>Puccinia</i> | <i>splendens</i> | 1948 | Asteraceae | <i>Hymenoclea</i> | <i>fasciculata</i> | USA | 36.446055 | -114.44873 |
| PURN7230 | <i>Puccinia</i> | <i>oxidalis</i> | 1996 | Oxalidaceae | <i>Oxalis</i> | <i>non-data</i> | USA | 37.90604 | -122.545 |
| PURN724 | <i>Puccinia</i> | <i>andropogonis</i> | 1897 | Plantaginaceae | <i>Penstemon</i> | <i>albidus</i> | USA | 39.3318 | -99.3022 |
| PURN7415 | <i>Puccinia</i> | <i>graminis</i> | 1997 | Poaceae | <i>Avena</i> | <i>sativa</i> | USA | 37.90048 | -122.644 |
| PURN7421 | <i>Puccinia</i> | <i>infuscans</i> | 1983 | Poaceae | <i>Bothriochloa</i> | <i>sp.</i> | Venezuela | 8.672295 | -62.630815 |
| PURN7425 | <i>Puccinia</i> | <i>chloridis</i> | 1968 | Poaceae | <i>Bouteloua</i> | <i>curtipendula</i> | USA | 43.01418 | -88.4726 |
| PURN7443 | <i>Puccinia</i> | <i>bambusarum</i> | 1998 | Poaceae | <i>Pariana</i> | <i>sp.</i> | Brazil | -4.016807 | -53.415039 |
| PURN7467 | <i>Puccinia</i> | <i>redfieldiae</i> | 1923 | Poaceae | <i>Redfieldia</i> | <i>flexuosa</i> | USA | 40.49863 | -98.9479 |
| PURN7470 | <i>Puccinia</i> | <i>graminis</i> | 1964 | Poaceae | <i>Poa</i> | <i>pratensis</i> | USA | 43.68929 | -87.742 |
| PURN7504 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1986 | Asteraceae | <i>Synedrella</i> | <i>nodiflora</i> | Colombia | 6.25184 | -75.563591 |
| PURN7528 | <i>Puccinia</i> | <i>palicoureae</i> | 1990 | Rubiaceae | <i>Palicourea</i> | <i>non-data</i> | Brazil | 0.214677 | -51.0667 |
| PURN7537 | <i>Puccinia</i> | <i>cnici-oleracei</i> | 1998 | Asteraceae | <i>Parthenium</i> | <i>hysterophorus</i> | USA | 30.407202 | -99.867307 |
| PURN7542 | <i>Puccinia</i> | <i>sp.</i> | 1962 | Asteraceae | <i>Vernonia</i> | <i>baccharoides</i> | Peru | -5.637309 | -78.531198 |
| PURN7543 | <i>Puccinia</i> | <i>sp.</i> | 1964 | Asteraceae | <i>Vernonia</i> | <i>scorpiodes</i> | Peru | -5.666667 | -77.75 |
| PURN7544 | <i>Puccinia</i> | <i>sp.</i> | 1975 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN7545 | <i>Puccinia</i> | <i>sp.</i> | 1960 | Asteraceae | <i>Vernonia</i> | <i>niederleinii</i> | Argentina | -28.549392 | -56.040766 |
| PURN7599 | <i>Puccinia</i> | <i>dayi</i> | 1959 | Primulaceae | <i>Lysimachia</i> | <i>ciliata</i> | USA | 40.4717 | -86.8583 |
| PURN7600 | <i>Puccinia</i> | <i>dayi</i> | 1960 | Primulaceae | <i>Lysimachia</i> | <i>ciliata</i> | USA | 37.08907 | -81.1749 |
| PURN7734 | <i>Puccinia</i> | <i>neorotundata</i> | 1945 | Asteraceae | <i>Vernonia</i> | <i>baccharoides</i> | Colombia | 3.442371 | -73.310196 |
| PURN7757 | <i>Puccinia</i> | <i>lorentzii</i> | 1998 | Asteraceae | <i>Vernonia</i> | <i>scorpioides</i> | Brazil | -22.398698 | -48.864444 |
| PURN7784 | <i>Puccinia</i> | <i>thaliae</i> | 2013 | Cannaceae | <i>Canna</i> | <i>indica</i> | Guyana | 6.49 | -58.09 |
| PURN7786 | <i>Puccinia</i> | <i>nakanishikii</i> | 2013 | Poaceae | <i>Cymbopogon</i> | <i>citratus</i> | USA | 25.29 | -80.29 |
| PURN7817 | <i>Puccinia</i> | <i>guizotiae</i> | 1985 | Asteraceae | <i>Guizotia</i> | <i>scabra</i> | Nigeria | 9.166667 | 9.75 |
| PURN7843 | <i>Puccinia</i> | <i>coronata</i> | 1993 | Poaceae | <i>Festuca</i> | <i>arundinacea</i> | USA | 36.06258 | -94.1574 |
| PURN7877 | <i>Puccinia</i> | <i>mesomajalis</i> | 1932 | Liliaceae | <i>Clintonia</i> | <i>borealis</i> | USA | 45.66472 | -85.5573 |
| PURN7884 | <i>Puccinia</i> | <i>thaliae</i> | 1998 | Cannaceae | <i>Canna</i> | <i>sp.</i> | Brazil | -24.09 | -48.21 |
| PURN7932 | <i>Puccinia</i> | <i>eupatorii</i> | 1998 | Asteraceae | <i>Eupatorium</i> | <i>vauthierianum</i> | Brazil | -22.512305 | -48.916169 |
| PURN8094 | <i>Puccinia</i> | <i>menthae</i> | 1989 | Lamiaceae | <i>Mentha</i> | <i>sp.</i> | Brazil | -22.398698 | -48.864444 |
| PURN8095 | <i>Puccinia</i> | <i>menthae</i> | 1950 | Lamiaceae | <i>Mentha</i> | <i>arensis</i> | USA | 40.95471 | -105.349 |
| PURN81 | <i>Puccinia</i> | <i>menthae</i> | 1938 | Lamiaceae | <i>Acinos</i> | <i>arvensis</i> | Finland | 60.18333 | 19.98333 |
| PURN8126 | <i>Puccinia</i> | <i>graminis</i> | 2001 | Poaceae | <i>Bromus</i> | <i>inermis</i> | USA | 42.31346 | -122.967 |
| PURN8152 | <i>Puccinia</i> | <i>cynodontis</i> | 1986 | Poaceae | <i>Cynodon</i> | <i>dactylon</i> | El Salvador | 13.69552 | -89.2993 |
| PURN8226 | <i>Puccinia</i> | <i>gnaphaliicola</i> | 1981 | Asteraceae | <i>Gnaphalium</i> | <i>americanum</i> | Mexico | 21.345649 | -97.838467 |
| PURN8253 | <i>Puccinia</i> | <i>eupatorii</i> | 1975 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Colombia | 3.5 | -73 |
| PURN8267 | <i>Puccinia</i> | <i>hydrocotyles</i> | 1989 | Araliaceae | <i>Hydrocotyle</i> | <i>sp.</i> | Colombia | 6.25184 | -75.569084 |
| PURN8268 | <i>Puccinia</i> | <i>oxalidis</i> | 1989 | Oxalidaceae | <i>Oxalis</i> | <i>sp.</i> | Colombia | 6.25184 | -75.569084 |
| PURN8270 | <i>Puccinia</i> | <i>sp.</i> | 1925 | Asteraceae | <i>Viguiera</i> | <i>longifolia</i> | Peru | -14.338681 | -71.766731 |
| PURN8276 | <i>Puccinia</i> | <i>sp.</i> | 1974 | Alstroemeriaceae | <i>Bomarea</i> | <i>sp.</i> | Colombia | 8.446162 | -74.52367 |
| PURN8305 | <i>Puccinia</i> | <i>porophylli</i> | 1787 | Asteraceae | <i>Porophyllum</i> | <i>ruderae</i> | Peru | -16.316667 | -70.7 |
| PURN8312 | <i>Puccinia</i> | <i>culcitii</i> | 1963 | Asteraceae | <i>Senecio</i> | <i>serratifolius</i> | Bolivia | -15.731265 | -64.529297 |
| PURN8313 | <i>Puccinia</i> | <i>culcitii</i> | 1964 | Asteraceae | <i>Senecio</i> | <i>werneroides</i> | Peru | -16.330868 | -71.58629 |
| PURN8317 | <i>Puccinia</i> | <i>grindeliae</i> | 1950 | Asteraceae | <i>Senecio</i> | <i>Colombianus</i> | USA | 46.064581 | -118.343021 |
| PURN8387 | <i>Puccinia</i> | <i>levis</i> | 1990 | Rubiaceae | <i>Brachiaria</i> | <i>decumbens</i> | Brazil | -22.5123 | -48.9162 |
| PURN8388 | <i>Puccinia</i> | <i>corteziana</i> | 1892 | Poaceae | <i>Brachypodium</i> | <i>mexicanum</i> | Mexico | 19.1957 | -99.18 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|----------------------|--------------------------------|------|-----------------|-----------------------|--------------------------|-----------|-------------------|-------------------|
| PURN8490 | <i>Puccinia</i> | <i>arachidis</i> | 1974 | Fabaceae | <i>Arachis</i> | <i>glabrata</i> | Argentina | -28.549392 | -56.040766 |
| PURN8491 | <i>Puccinia</i> | <i>arachidis</i> | 1994 | Fabaceae | <i>Arachis</i> | <i>cardenasii</i> | Bolivia | -15.731265 | -64.529297 |
| PURN8496 | <i>Puccinia</i> | <i>arachidis</i> | 1977 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -25.25 | -57 |
| PURN8497 | <i>Puccinia</i> | <i>arachidis</i> | 1977 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -25.25 | -57 |
| PURN8498 | <i>Puccinia</i> | <i>arachidis</i> | 1959 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -26.176526 | -56.436737 |
| PURN8499 | <i>Puccinia</i> | <i>arachidis</i> | 1977 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -22.833333 | -55.95 |
| PURN8500 | <i>Puccinia</i> | <i>arachidis</i> | 1977 | Fabaceae | <i>Arachis</i> | <i>sp.</i> | Paraguay | -22.833333 | -55.95 |
| PURN8511 | <i>Puccinia</i> | <i>allii</i> | 1992 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Argentina | -26.824144 | -65.2226 |
| PURN8519 | <i>Puccinia</i> | <i>burchardiae</i> | 1922 | Colchicaceae | <i>Burchardia</i> | <i>umbellata</i> | Australia | -30 | 135 |
| PURN8554 | <i>Puccinia</i> | <i>windsoriae</i> | 1961 | Poaceae | <i>Triodia</i> | <i>flava</i> | USA | 37.47483 | -89.3789 |
| PURN8555 | <i>Puccinia</i> | <i>windsoriae</i> | 1961 | Poaceae | <i>Triodia</i> | <i>flava</i> | USA | 39.94167 | -87.0917 |
| PURN8696 | <i>Puccinia</i> | <i>palicoureae</i> | 1979 | Rubiaceae | <i>Palicourea</i> | <i>non-data</i> | Brazil | -21.9667 | -47.8167 |
| PURN8702 | <i>Puccinia</i> | <i>subnitens</i> | 1994 | Saururaceae | <i>Anemopsis</i> | <i>californica</i> | USA | 37.46052 | -115.193 |
| PURN8729 | <i>Puccinia</i> | <i>subdecora</i> | 1995 | Asteraceae | <i>Brickellia</i> | <i>grandiflora</i> | USA | 40.954707 | -105.349152 |
| PURN8814 | <i>Puccinia</i> | <i>symphoricarpi</i> | 1999 | Caprifoliaceae | <i>Symphoricarpos</i> | <i>albus</i> | USA | 42.19458 | -122.709 |
| PURN8816 | <i>Puccinia</i> | <i>lygodii</i> | 2000 | Lygodiaceae | <i>Lygodium</i> | <i>japonicum</i> | USA | 29.65139 | -82.325 |
| PURN8844 | <i>Puccinia</i> | <i>huberi</i> | 1990 | Poaceae | <i>Panicum</i> | <i>microspermum</i> | Brazil | <i>non-data</i> | <i>non-data</i> |
| PURN8865 | <i>Puccinia</i> | <i>fergussoni</i> | 1917 | Violaceae | <i>Viola</i> | <i>langsдорffii</i> | USA | 60.705886 | -142.931641 |
| PURN8874 | <i>Puccinia</i> | <i>grindeliae</i> | 1996 | Asteraceae | <i>Heterotheca</i> | <i>villosa</i> | USA | 41.31137 | -105.5911 |
| PURN8876 | <i>Puccinia</i> | <i>grindeliae</i> | 1988 | Asteraceae | <i>Machaeranthera</i> | <i>glabriuscula</i> | USA | 41.31137 | -105.5911 |
| PURN8976 | <i>Puccinia</i> | <i>adueta</i> | 1974 | Solanaceae | <i>Solanum</i> | <i>non-data</i> | Mexico | 23.00635 | -99.2643 |
| PURN8995 | <i>Puccinia</i> | <i>limnanthemii</i> | 1920 | Apiaceae | <i>Centella</i> | <i>asiatica</i> | Ecuador | -2.900545 | -79.004527 |
| PURN9057 | <i>Puccinia</i> | <i>sp.</i> | 1929 | Asteraceae | <i>Viguiera</i> | <i>australis</i> | Bolivia | -15.731265 | -64.529297 |
| PURN9058 | <i>Puccinia</i> | <i>sp.</i> | 1924 | Asteraceae | <i>Viguiera</i> | <i>sp.</i> | Ecuador | -0.467137 | -78.7475 |
| PURN9059 | <i>Puccinia</i> | <i>sp.</i> | 1919 | Asteraceae | <i>Viguiera</i> | <i>glutinosa</i> | Bolivia | -15.731265 | -15.731265 |
| PURN906 | <i>Puccinia</i> | <i>calcitrapae</i> | 1987 | Asteraceae | <i>Arctium</i> | <i>minus</i> | USA | 44.88804 | -93.173103 |
| PURN9073 | <i>Puccinia</i> | <i>xanthii</i> | 1981 | Asteraceae | <i>Xanthium</i> | <i>strumarium</i> | Iraq | 33.597064 | 43.000977 |
| PURN9088 | <i>Puccinia</i> | <i>subnitens</i> | 1986 | Juncaginaceae | <i>Triglochin</i> | <i>maritima</i> | USA | 41.31137 | -105.591 |
| PURN912 | <i>Puccinia</i> | <i>coronata</i> | 1995 | Rhamnaceae | <i>Rhamnus</i> | <i>cathartica</i> | USA | 43.66389 | -93.786 |
| PURN9456 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Cyperaceae | <i>Carex</i> | <i>fecunda</i> | Bolivia | -15.76667 | -68.63333 |
| PURN9457 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Cyperaceae | <i>Carex</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURN9458 | <i>Puccinia</i> | <i>sp.</i> | 1920 | Cyperaceae | <i>Carex</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURN9497 | <i>Puccinia</i> | <i>sp.</i> | 1922 | Cyperaceae | <i>Cryptangium</i> | <i>leptocladum</i> | Guyana | 5.99 | -58.53653 |
| PURN9517 | <i>Puccinia</i> | <i>sp.</i> | 1975 | Cyperaceae | <i>Cyperaceae</i> | <i>sp.</i> | Colombia | 4.495866 | -74.134521 |
| PURN9518 | <i>Puccinia</i> | <i>sp.</i> | 1922 | Cyperaceae | <i>Cyperaceae</i> | <i>sp.</i> | Guyana | 5 | -59 |
| PURN9587 | <i>Puccinia</i> | <i>farameae</i> | 1983 | Rubiaceae | <i>Rubiaceae</i> | <i>non-data</i> | Brazil | -22.5123 | -48.9162 |
| PURN9598 | <i>Puccinia</i> | <i>borreriae</i> | 1997 | Rubiaceae | <i>Borreria</i> | <i>non-data</i> | Brazil | -4.01681 | -53.415 |
| PURN97 | <i>Puccinia</i> | <i>coronata</i> | 1909 | Rhamnaceae | <i>Frangula</i> | <i>alnus</i> | Finland | 61 | 24.25 |
| PURN9763 | <i>Puccinia</i> | <i>vernoniae-mollis</i> | 1989 | Asteraceae | <i>Vernonia</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PURN9764 | <i>Puccinia</i> | <i>vernoniae-canescens</i> | 1922 | Asteraceae | <i>Vernonia</i> | <i>canescens</i> | Colombia | 3.5 | -73 |
| PURN9824 | <i>Puccinia</i> | <i>calcitrapae</i> | 1996 | Asteraceae | <i>Arctium</i> | <i>minus</i> | USA | 40.58526 | -105.084423 |
| TA427 | <i>Puccinia</i> | <i>cf. cyperi tegetiformis</i> | 2019 | Cyperaceae | <i>Cyperus</i> | <i>sp.</i> | Benin | 9.235811044618805 | 2.290612737899794 |
| PUR12336 | <i>Pucciniastrum</i> | <i>circaeae</i> | 1935 | Onagraceae | <i>Circaea</i> | <i>pricei</i> | Taiwan | 23.5 | 121 |
| PUR12339 | <i>Pucciniastrum</i> | <i>Uromyces acuminatus</i> | 1903 | Poaceae | <i>Spartina</i> | <i>alterniflora</i> | USA | 29.9 | -81.31667 |
| PUR18587 | <i>Pucciniastrum</i> | <i>Puccinia emaculata</i> | 1905 | Poaceae | <i>Gramineae</i> | <i>Panicum capillare</i> | USA | 41.428919 | -71.465576 |
| PUR3364 | <i>Pucciniastrum</i> | <i>hydrangeae</i> | 1896 | Hydrangeaceae | <i>Hydrangea</i> | <i>arborescens</i> | USA | 40.41667 | -86.87528 |
| PUR3395 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1916 | Rosaceae | <i>Agrimonia</i> | <i>striata</i> | USA | 36.55809 | -105.115 |
| PUR3437 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1905 | Rosaceae | <i>Agrimonia</i> | <i>parviflora</i> | USA | 38.99317 | -80.23144 |
| PUR3442 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1913 | Rosaceae | <i>Agrimonia</i> | <i>parviflora</i> | USA | 40.41667 | -86.87528 |
| PUR3455 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1920 | Rosaceae | <i>Agrimonia</i> | <i>parviflora</i> | USA | 34.23289 | -89.3623 |
| PUR3474 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1904 | Rosaceae | <i>Agrimonia</i> | <i>pubescens</i> | USA | 37.75144 | -80.47022 |
| PUR3486 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1911 | Rosaceae | <i>Agrimonia</i> | <i>pubescens</i> | USA | 38.99872 | -77.25443 |
| PUR3499 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1919 | Rosaceae | <i>Agrimonia</i> | <i>rostellata</i> | USA | 38.77886 | -86.35593 |
| PUR3500 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1898 | Rosaceae | <i>Agrimonia</i> | <i>sp.</i> | Mexico | 19.43417 | -99.13861 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|----------------------|--------------------------------------|------|---------------|-----------------------|-------------------------|-----------|-----------|-------------|
| PUR3509 | <i>Pucciniastrum</i> | <i>potentillae</i> | 1920 | Rosaceae | <i>Sibbaldiopsis</i> | <i>tridentata</i> | USA | 44.21616 | -73.59097 |
| PUR3513 | <i>Pucciniastrum</i> | <i>arcticum</i> | 1899 | Rosaceae | <i>Rubus</i> | <i>chamaemorus</i> | USA | 57.79 | -152.40722 |
| PUR3517 | <i>Pucciniastrum</i> | <i>arcticum</i> | 1919 | Rosaceae | <i>Rubus</i> | <i>pubescens</i> | USA | 46.49328 | -90.41435 |
| PUR3529 | <i>Pucciniastrum</i> | <i>americanum</i> | 1922 | Rosaceae | <i>Rubus</i> | <i>leucodermis</i> | USA | 38.97011 | -76.80136 |
| PUR3541 | <i>Pucciniastrum</i> | <i>americanum</i> | 1886 | Rosaceae | <i>Rubus</i> | <i>strigosus</i> | USA | 44.88313 | -68.67198 |
| PUR3557 | <i>Pucciniastrum</i> | <i>americanum</i> | 1912 | Rosaceae | <i>Rubus</i> | <i>strigosus</i> | USA | 43.07305 | -89.40123 |
| PUR3562 | <i>Pucciniastrum</i> | <i>americanum</i> | 1917 | Rosaceae | <i>Rubus</i> | <i>strigosus</i> | Canada | 43.55 | -80.25 |
| PUR3572 | <i>Pucciniastrum</i> | <i>americanum</i> | 1916 | Rosaceae | <i>Rubus</i> | <i>strigosus</i> | USA | 39.711393 | -74.8090652 |
| PUR3579 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1921 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 37.53046 | -107.00976 |
| PUR3588 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1903 | Pinaceae | <i>Abies</i> | <i>concolor</i> | USA | 39.12221 | -104.9172 |
| PUR3594 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1903 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 46.20262 | -121.49064 |
| PUR3598 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1907 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | Canada | 49.0923 | -117.57122 |
| PUR3608 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1923 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 59.45833 | -135.31389 |
| PUR3623 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1906 | Onagraceae | <i>Chamerion</i> | <i>angustifolium</i> | USA | 38.61178 | -79.87423 |
| PUR3631 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1911 | Onagraceae | <i>Chamerion</i> | <i>angustifolium</i> | USA | 48.38829 | -115.556 |
| PUR3641 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1915 | Onagraceae | <i>Chamerion</i> | <i>angustifolium</i> | Canada | 49.23453 | -121.76079 |
| PUR3650 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1923 | Onagraceae | <i>Chamerion</i> | <i>angustifolium</i> | Canada | 49.9925 | -123.12778 |
| PUR3660 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1920 | Onagraceae | <i>Chamerion</i> | <i>angustifolium</i> | USA | 45.7254 | -121.81924 |
| PUR3675 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1919 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | USA | 43.75451 | -74.79295 |
| PUR3685 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1909 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | USA | 47.64287 | -122.54236 |
| PUR3695 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1910 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | USA | 39.6536 | -105.1911 |
| PUR3708 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1914 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | USA | 48.23251 | -101.29627 |
| PUR3717 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1918 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | USA | 42.54723 | -100.81681 |
| PUR3722 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1923 | Onagraceae | <i>Epilobium</i> | <i>anagallidifolium</i> | USA | 59.45833 | -135.31389 |
| PUR3757 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1906 | Onagraceae | <i>Epilobium</i> | <i>sp.</i> | USA | 42.60118 | -76.18048 |
| PUR3778 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1915 | Ericaceae | <i>Pyrola</i> | <i>minor</i> | Canada | 51.43333 | -116.18333 |
| PUR3784 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1919 | Ericaceae | <i>Pyrola</i> | <i>asarifolia</i> | USA | 40.21891 | -105.53726 |
| PUR3808 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1924 | Ericaceae | <i>Orthilia</i> | <i>secunda</i> | USA | 48.79157 | -113.65738 |
| PUR3818 | <i>Pucciniastrum</i> | <i>Pucciniastrum sparsum</i> | 1915 | Ericaceae | <i>Arbutus</i> | <i>sp.</i> | Guatemala | 14.8 | -91.51667 |
| PUR3821 | <i>Pucciniastrum</i> | <i>Pucciniastrum sparsum</i> | 1923 | Ericaceae | <i>Arctostaphylos</i> | <i>manzanita</i> | USA | 45.51212 | -121.66946 |
| PUR3830 | <i>Pucciniastrum</i> | <i>Pucciniastrum sparsum</i> | 1911 | Ericaceae | <i>Arctostaphylos</i> | <i>sp.</i> | USA | 40.30627 | -121.23191 |
| PUR3834 | <i>Pucciniastrum</i> | <i>Pucciniastrum sparsum</i> | 1921 | Ericaceae | <i>Arctostaphylos</i> | <i>alpina</i> | USA | 58.70548 | -136.43921 |
| PUR3882 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1891 | Ericaceae | <i>Rhododendron</i> | <i>canadense</i> | USA | 44.030345 | -71.685914 |
| PUR3883 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1920 | Ericaceae | <i>Lyonia</i> | <i>ligustrina</i> | USA | 34.74648 | -92.2896 |
| PUR3895 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1888 | Ericaceae | <i>Gaylussacia</i> | <i>baccata</i> | USA | 42.06676 | -72.861487 |
| PUR3911 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1914 | Ericaceae | <i>Vaccinium</i> | <i>caespitosum</i> | USA | 57.05306 | -135.33 |
| PUR3919 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1919 | Ericaceae | <i>Vaccinium</i> | <i>corymbosum</i> | USA | 39.68372 | -75.74966 |
| PUR3927 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1913 | Ericaceae | <i>Vaccinium</i> | <i>membranaceum</i> | USA | 48.742291 | -122.442139 |
| PUR3928 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1919 | Ericaceae | <i>Vaccinium</i> | <i>membranaceum</i> | USA | 48.68318 | -113.800171 |
| PUR3950 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1924 | Ericaceae | <i>Vaccinium</i> | <i>myrtilus</i> | USA | 48.79157 | -113.65738 |
| PUR3965 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1910 | Ericaceae | <i>Vaccinium</i> | <i>pallidum</i> | USA | 42.360447 | -73.599302 |
| PUR3974 | <i>Pucciniastrum</i> | <i>guttatum</i> | 1915 | Rubiaceae | <i>Galium</i> | <i>triflorum</i> | Canada | 49.743284 | -124.274722 |
| PUR3981 | <i>Pucciniastrum</i> | <i>guttatum</i> | 1919 | Rubiaceae | <i>Galium</i> | <i>triflorum</i> | USA | 37.71632 | -119.66517 |
| PUR4132 | <i>Pucciniastrum</i> | <i>Pucciniastrum goeppertianum</i> | 1909 | Pinaceae | <i>Abies</i> | <i>balsamea</i> | Canada | 45.68316 | -62.7103 |
| PUR4148 | <i>Pucciniastrum</i> | <i>Pucciniastrum goeppertianum</i> | 1924 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 48.79157 | -113.65738 |
| PUR41587 | <i>Pucciniastrum</i> | <i>Puccinia cnici-oleracei Pers.</i> | 1895 | Asteraceae | <i>Aster</i> | <i>paniculatus</i> | USA | 44.36692 | -97.850917 |
| PUR43393 | <i>Pucciniastrum</i> | <i>Pucciniastrum goeppertianum</i> | 1897 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 48.28845 | -112.83234 |
| PUR44019 | <i>Pucciniastrum</i> | <i>hydrangeae</i> | 1934 | Pinaceae | <i>Tsuga</i> | <i>canadensis</i> | USA | 35.05445 | -83.1926 |
| PUR44031 | <i>Pucciniastrum</i> | <i>hydrangeae</i> | 1918 | Hydrangeaceae | <i>Hydrangea</i> | <i>arborescens</i> | USA | 38.98955 | -78.14111 |
| PUR44034 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1931 | Rosaceae | <i>Agrimonia</i> | <i>gryposepala</i> | Canada | 45.9669 | -73.22216 |
| PUR44041 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1934 | Rosaceae | <i>Agrimonia</i> | <i>parviflora</i> | USA | 35.72287 | -83.31599 |
| PUR44043 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1929 | Rosaceae | <i>Agrimonia</i> | <i>rostellata</i> | USA | 41.13899 | -72.30342 |
| PUR44047 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1929 | Rosaceae | <i>Agrimonia</i> | <i>striata</i> | USA | 43.76335 | -103.46615 |
| PUR44057 | <i>Pucciniastrum</i> | <i>americanum</i> | 1931 | Rosaceae | <i>Rubus</i> | <i>strigosus</i> | USA | 44.27229 | -71.53897 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|----------------------|-------------------------------------|------|---------------|-----------------------|----------------------|------------------|-----------|-------------|
| PUR44067 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1926 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 45.74156 | -115.91903 |
| PUR44085 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1932 | Onagraceae | <i>Chamerion</i> | <i>angustifolium</i> | USA | 39.03011 | -79.49839 |
| PUR44098 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1932 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | USA | 43.3533 | -95.1625 |
| PUR44101 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1931 | Onagraceae | <i>Epilobium</i> | <i>coloratum</i> | USA | 35.87139 | -83.30933 |
| PUR44116 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1898 | Ericaceae | <i>Pyrola</i> | <i>chlorantha</i> | USA | 45.54682 | -110.91977 |
| PUR44128 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1929 | Pinaceae | <i>Tsuga</i> | <i>canadensis</i> | USA | 44.34063 | -68.58891 |
| PUR44141 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1923 | Ericaceae | <i>Vaccinium</i> | <i>caespitosum</i> | USA | 57.05306 | -135.33 |
| PUR44149 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1929 | Ericaceae | <i>Vaccinium</i> | <i>angustifolium</i> | USA | 45.255543 | -87.081226 |
| PUR44158 | <i>Pucciniastrum</i> | <i>guttatum</i> | 1925 | Rubiaceae | <i>Galium</i> | <i>triflorum</i> | USA | 40.403288 | -111.602419 |
| PUR47269 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1931 | Onagraceae | <i>Fuchsia</i> | <i>sp.</i> | USA | 40.77846 | -81.92239 |
| PUR47813 | <i>Pucciniastrum</i> | <i>Pucciniastrum goeppertianum</i> | 1934 | Ericaceae | <i>Vaccinium</i> | <i>scoparium</i> | USA | 44.59829 | -107.3584 |
| PUR48168 | <i>Pucciniastrum</i> | <i>Pucciniastrum sparsum</i> | 1938 | Ericaceae | <i>Arctostaphylos</i> | <i>patula</i> | USA | 40.30755 | -121.24443 |
| PUR48523 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1935 | Ericaceae | <i>Vaccinium</i> | <i>sp.</i> | USA | 56.47083 | -132.37667 |
| PUR48526 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1933 | Ericaceae | <i>Pyrola</i> | <i>sp.</i> | USA | 60.10417 | -149.44222 |
| PUR51871 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1949 | Ericaceae | <i>Rhododendron</i> | <i>sp.</i> | USA | 35.2085 | -83.564604 |
| PUR51872 | <i>Pucciniastrum</i> | <i>hydrangeae</i> | 1949 | Hydrangeaceae | <i>Hydrangea</i> | <i>arborescens</i> | USA | 34.75814 | -84.13105 |
| PUR52196 | <i>Pucciniastrum</i> | <i>Pucciniastrum sparsum</i> | 1923 | Ericaceae | <i>Arbutus</i> | <i>menziesii</i> | USA | 37.92743 | -122.59192 |
| PUR52322 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1948 | Onagraceae | <i>Epilobium</i> | <i>sp.</i> | USA | 33.005 | -105.87837 |
| PUR52399 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1950 | Ericaceae | <i>Orthilia</i> | <i>secunda</i> | USA | 43.2887 | -109.83479 |
| PUR52908 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1949 | Ericaceae | <i>Chimaphila</i> | <i>umbellata</i> | USA | 40.89347 | -123.47143 |
| PUR52911 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1949 | Ericaceae | <i>Vaccinium</i> | <i>membranaceum</i> | USA | 40.959875 | -123.086913 |
| PUR53885 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1926 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | USA | 40.86991 | -123.68958 |
| PUR53891 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1936 | Ericaceae | <i>Chimaphila</i> | <i>umbellata</i> | USA | 41.07347 | -123.46394 |
| PUR54720 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1951 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | Canada | 51.37092 | -55.59082 |
| PUR55397 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1955 | Ericaceae | <i>Vaccinium</i> | <i>membranaceum</i> | USA | 47.886868 | -114.131597 |
| PUR56788 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1957 | Ericaceae | <i>Vaccinium</i> | <i>membranaceum</i> | USA | 43.81816 | -110.70549 |
| PUR56842 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1957 | Onagraceae | <i>Epilobium</i> | <i>halleanum</i> | USA | 36.19831 | -112.25101 |
| PUR56848 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1934 | Onagraceae | <i>Epilobium</i> | <i>oreganum</i> | USA | 40.75903 | -123.67227 |
| PUR57185 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1952 | Onagraceae | <i>Epilobium</i> | <i>ciliatum</i> | Canada | 49.38333 | -121.43333 |
| PUR58017 | <i>Pucciniastrum</i> | <i>Pucciniastrum goeppertianum</i> | 1953 | Ericaceae | <i>Vaccinium</i> | <i>membranaceum</i> | USA | 39.977806 | -120.717285 |
| PUR62662 | <i>Pucciniastrum</i> | <i>Pucciniastrum goeppertianum</i> | 1968 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 42.36604 | -111.50577 |
| PUR63256 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1963 | Onagraceae | <i>Chamerion</i> | <i>angustifolium</i> | Canada | 55.624447 | -114.93973 |
| PUR65029 | <i>Pucciniastrum</i> | <i>Pucciniastrum goeppertianum</i> | 1914 | Ericaceae | <i>Vaccinium</i> | <i>ovatum</i> | USA | 43.930194 | -120.519531 |
| PUR65196 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1975 | Ericaceae | <i>Vaccinium</i> | <i>myrtillus</i> | USA | 36.59600 | -105.45450 |
| PUR65270 | <i>Pucciniastrum</i> | <i>arcticum</i> | 1960 | Rosaceae | <i>Rubus</i> | <i>pubescens</i> | Canada | 55.515 | -122.51861 |
| PUR65432 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1911 | Onagraceae | <i>Chamerion</i> | <i>angustifolium</i> | USA | 45.00244 | -122.77943 |
| PUR65962 | <i>Pucciniastrum</i> | <i>hydrangeae</i> | 1977 | Hydrangeaceae | <i>Hydrangea</i> | <i>arborescens</i> | USA | 34.86938 | -84.24445 |
| PUR66035 | <i>Pucciniastrum</i> | <i>Pucciniastrum goeppertianum</i> | 1975 | Ericaceae | <i>Vaccinium</i> | <i>parvifolium</i> | USA | 47.970086 | -123.862421 |
| PUR66661 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1973 | Rosaceae | <i>Agrimonia</i> | <i>parviflora</i> | USA | 39.86258 | -82.8915 |
| PUR66855 | <i>Pucciniastrum</i> | <i>G.H. Oth</i> | 1982 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 48.68318 | -113.800171 |
| PUR89312 | <i>Pucciniastrum</i> | <i>Uromyces perigynius</i> | 1958 | Cyperaceae | <i>Carex</i> | <i>misera</i> | USA | 35.83858 | -83.624695 |
| PUR89403 | <i>Pucciniastrum</i> | <i>americanum</i> | 1985 | Rosaceae | <i>Rubus</i> | <i>idaeus</i> | USA | 42.13453 | -73.8918 |
| PURF10284 | <i>Pucciniastrum</i> | <i>boehmeriae</i> | 1939 | Urticaceae | <i>Boehmeria</i> | <i>sp.</i> | Papua New Guinea | -6.41921 | 147.06199 |
| PURF10293 | <i>Pucciniastrum</i> | <i>potentillae</i> | 1939 | Rosaceae | <i>Potentilla</i> | <i>sp.</i> | Papua New Guinea | -6.31494 | 147.24274 |
| PURF11943 | <i>Pucciniastrum</i> | <i>castaneae</i> | 1932 | Fagaceae | <i>Castanea</i> | <i>sp.</i> | China | 32.00000 | 117.00000 |
| PURF12317 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1934 | Rosaceae | <i>Agrimonia</i> | <i>pilosa</i> | North Korea | 39.977806 | 127.046387 |
| PURF12337 | <i>Pucciniastrum</i> | <i>coriariae</i> | 1898 | Coriariaceae | <i>Coriaria</i> | <i>japonica</i> | Japan | 35.67769 | 139.76521 |
| PURF12354 | <i>Pucciniastrum</i> | <i>fagi</i> | 1939 | Fagaceae | <i>Fagus</i> | <i>crenata</i> | Japan | 33.47606 | 130.92613 |
| PURF126 | <i>Pucciniastrum</i> | <i>boehmeriae</i> | 1925 | Urticaceae | <i>Cypholophus</i> | <i>brunneolus</i> | Philippines | 16.33513 | 120.56091 |
| PURF12811 | <i>Pucciniastrum</i> | <i>Uromyces polygoni-avicularis</i> | 1923 | Polygonaceae | <i>Polygonum</i> | <i>aviculare</i> | Japan | 43.225278 | 144.071944 |
| PURF149 | <i>Pucciniastrum</i> | <i>arcticum</i> | 1900 | Rosaceae | <i>Rubus</i> | <i>arcticus</i> | Norway | 69.66667 | 18.96667 |
| PURF150 | <i>Pucciniastrum</i> | <i>arcticum</i> | 1915 | Rosaceae | <i>Rubus</i> | <i>arcticus</i> | Sweden | 65.58333 | 22.15 |
| PURF15555 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1945 | Onagraceae | <i>Epilobium</i> | <i>brasiliense</i> | Argentina | -29.19779 | -66.89364 |
| PURF15877 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1934 | Rosaceae | <i>Agrimonia</i> | <i>eupatoria</i> | India | 30.70367 | 77.86249 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|----------------------|-----------------------------------|----------|---------------|---------------------|-----------------------|-------------|------------|-------------|
| PURF159 | <i>Pucciniastrum</i> | <i>padi</i> | 1925 | Rosaceae | <i>Prunus</i> | <i>padus</i> | Norway | 59.91667 | 10.75 |
| PURF16220 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1958 | Ericaceae | <i>Pyrola</i> | <i>sp.</i> | Japan | 43.73333 | 142.98333 |
| PURF16247 | <i>Pucciniastrum</i> | <i>areolatum</i> | 1957 | Rosaceae | <i>Prunus</i> | <i>ssiori</i> | Japan | 43.6441717 | 142.9007709 |
| PURF184 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1926 | Onagraceae | <i>Epilobium</i> | <i>roseum</i> | Switzerland | 46.92127 | 8.99799 |
| PURF19656 | <i>Pucciniastrum</i> | <i>americanum</i> | 1980 | Rosaceae | <i>Rubus</i> | <i>strigosus</i> | Chile | -34.74048 | -70.99915 |
| PURF199 | <i>Pucciniastrum</i> | <i>circaeae</i> | 1886 | Onagraceae | <i>Circaea</i> | <i>intermedia</i> | Germany | 50.96667 | 14.03333 |
| PURF19946 | <i>Pucciniastrum</i> | <i>hydrangeae</i> | 1980 | Hydrangeaceae | <i>Hydrangea</i> | <i>anomala</i> | China | 26.17516 | 117.92725 |
| PURF208 | <i>Pucciniastrum</i> | <i>circaeae</i> | 1889 | Onagraceae | <i>Circaea</i> | <i>lutetiana</i> | Germany | 52.45413 | 13.30564 |
| PURF216 | <i>Pucciniastrum</i> | <i>Pucciniastrum pyrolae</i> | 1899 | Ericaceae | <i>Orthilia</i> | <i>secunda</i> | Germany | 54.57325 | 13.65974 |
| PURF224 | <i>Pucciniastrum</i> | <i>Pucciniastrum tripetaleiae</i> | 1930 | Ericaceae | <i>Elliottia</i> | <i>paniculata</i> | Japan | 35.35396 | 134.51369 |
| PURF228 | <i>Pucciniastrum</i> | <i>Pucciniastrum gaultheriae</i> | 1907 | Ericaceae | <i>Gaultheria</i> | <i>nummularioides</i> | India | 29.83333 | 79.5 |
| PURF229 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1920 | Ericaceae | <i>Pernettya</i> | <i>pentlandii</i> | Bolivia | -15.76667 | -68.63333 |
| PURF271 | <i>Pucciniastrum</i> | <i>guttatum</i> | 1926 | Rubiaceae | <i>Galium</i> | <i>odoratum</i> | Switzerland | 46.921271 | 8.997992 |
| PURF292 | <i>Pucciniastrum</i> | <i>miyabeanum</i> | 1929 | Viburnaceae | <i>Viburnum</i> | <i>furcatum</i> | Japan | 35.247845 | 134.356702 |
| PURN1193 | <i>Pucciniastrum</i> | <i>agrimoniae</i> | 1995 | Rosaceae | <i>Agrimonia</i> | <i>gryposepala</i> | USA | 43.25408 | -93.55579 |
| PURN1660 | <i>Pucciniastrum</i> | <i>americanum</i> | 1985 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | USA | 42.13744 | -73.88906 |
| PURN1661 | <i>Pucciniastrum</i> | <i>americanum</i> | 1996 | Rosaceae | <i>Rubus</i> | <i>strigosus</i> | USA | 41.34382 | -81.14317 |
| PURN1676 | <i>Pucciniastrum</i> | <i>G.H. Otth</i> | 1995 | Rosaceae | <i>Rubus</i> | <i>strigosus</i> | USA | 45.07917 | -93.19722 |
| PURN6455 | <i>Pucciniastrum</i> | <i>americanum</i> | 1916 | Rosaceae | <i>Rubus</i> | <i>sp.</i> | USA | 42.06676 | -72.86149 |
| PURN6465 | <i>Pucciniastrum</i> | <i>goeppertianum</i> | non-data | Ericaceae | <i>Vaccinium</i> | <i>scoparium</i> | USA | 40.82831 | -106.07779 |
| PURN6466 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1992 | Ericaceae | <i>Vaccinium</i> | <i>membranaceum</i> | USA | 46.00956 | -121.7823 |
| PURN8063 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1998 | Onagraceae | <i>Fuchsia</i> | <i>sp.</i> | USA | 42.19063 | -122.6984 |
| PURN8069 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1996 | Onagraceae | <i>Epilobium</i> | <i>adenocaulon</i> | USA | 41.34854 | -106.21704 |
| PURN8073 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1940 | Ericaceae | <i>Vaccinium</i> | <i>sp.</i> | USA | 41.35108 | -106.22585 |
| PURN8075 | <i>Pucciniastrum</i> | <i>vaccinii</i> | 1971 | Ericaceae | <i>Vaccinium</i> | <i>scoparium</i> | USA | 41.298299 | -106.180253 |
| PURN878 | <i>Pucciniastrum</i> | <i>epilobii</i> | 1994 | Onagraceae | <i>Epilobium</i> | <i>sp.</i> | Canada | 49.26019 | -123.246 |
| PUR088328 | <i>Puccinosira</i> | <i>tuberculata</i> | 1984 | Malvaceae | <i>Alcea</i> | <i>rosea</i> | USA | 41.31137 | -105.591 |
| PUR53062 | <i>Puccinosira</i> | <i>pallidula</i> | 1951 | Malvaceae | <i>Triumfetta</i> | <i>calderonii</i> | Honduras | 15.5 | -86.4667 |
| PUR63483 | <i>Puccinosira</i> | <i>dorata</i> | 1976 | Malvaceae | <i>Heliocarpus</i> | <i>palmeri</i> | Mexico | 28.79672 | -111.943 |
| PUR65345 | <i>Puccinosira</i> | <i>brickelliae</i> | 1940 | Asteraceae | <i>Brickellia</i> | <i>cavanillesi</i> | Mexico | 24.66209 | -107.397 |
| PURF19706 | <i>Puccinosira</i> | <i>anthocleistae</i> | 1986 | Gentianaceae | <i>Anthocleista</i> | <i>djalonsensis</i> | Nigeria | 6.4402 | 7.4943 |
| PURF8675 | <i>Puccinosira</i> | <i>pallidula</i> | 1898 | Malvaceae | <i>Triumfetta</i> | <i>lappula</i> | Colombia | 4.206944 | -75.958056 |
| PURF8676 | <i>Puccinosira</i> | <i>pallidula</i> | 1924 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Ecuador | -1.708836 | -79.043114 |
| PURF8677 | <i>Puccinosira</i> | <i>pallidula</i> | 1920 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Bolivia | -16.397025 | -67.651947 |
| PURF8679 | <i>Puccinosira</i> | <i>pallidula</i> | 1920 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Ecuador | -2.20584 | -79.90795 |
| PURF8681 | <i>Puccinosira</i> | <i>pallidula</i> | 1913 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8684 | <i>Puccinosira</i> | <i>pallidula</i> | 1913 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Venezuela | 10.488011 | -66.879193 |
| PURF8686 | <i>Puccinosira</i> | <i>pallidula</i> | 1913 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8687 | <i>Puccinosira</i> | <i>pallidula</i> | 1921 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8688 | <i>Puccinosira</i> | <i>pallidula</i> | 1921 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8689 | <i>Puccinosira</i> | <i>pallidula</i> | 1921 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8690 | <i>Puccinosira</i> | <i>pallidula</i> | 1921 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8691 | <i>Puccinosira</i> | <i>pallidula</i> | 1913 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF8695 | <i>Puccinosira</i> | <i>arthuri</i> | 1920 | Asteraceae | <i>Eupatorium</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURN3898 | <i>Puccinosira</i> | <i>pallidula</i> | 1924 | Malvaceae | <i>Triumfetta</i> | <i>semitriloba</i> | Ecuador | -2.218369 | -80.228825 |
| PURN4416 | <i>Puccinosira</i> | <i>pallidula</i> | 1988 | Malvaceae | <i>Triumfetta</i> | <i>sp.</i> | Brazil | -15.461 | -55.6563 |
| PURN8201 | <i>Puccinosira</i> | <i>pallidula</i> | 1980 | Malvaceae | <i>Dombeya</i> | <i>walichii</i> | Mexico | 21.34565 | -97.8385 |
| PURF11250 | <i>Puccinostele</i> | <i>philippinensis</i> | 1915 | Saxifragaceae | <i>Astilbe</i> | <i>philippinensis</i> | Philippines | 16.668626 | 121.663086 |
| PURF12669 | <i>Puccinostele</i> | <i>marudschurica</i> | 1932 | Saxifragaceae | <i>Astilbe</i> | <i>microphylla</i> | Japan | 36.81017 | 138.1825 |
| PURF12672 | <i>Puccinostele</i> | <i>clarkiana</i> | 1930 | Saxifragaceae | <i>Astilbe</i> | <i>thunbergii</i> | Japan | 35.38333 | 133.5333 |
| PUR52262 | <i>Ravenelia</i> | <i>echinata</i> | 1951 | Fabaceae | <i>Calliandra</i> | <i>marginata</i> | Trinidad | 10.688447 | -61.754619 |
| PUR54652 | <i>Ravenelia</i> | <i>texensis</i> | 1945 | Fabaceae | <i>Acacia</i> | <i>angustissima</i> | USA | 31.7712 | -111.59567 |
| PUR54654 | <i>Ravenelia</i> | <i>humphreyana</i> | 1954 | Fabaceae | <i>Caesalpinia</i> | <i>mexicana</i> | USA | 25.91439 | -97.486694 |
| PUR57064 | <i>Ravenelia</i> | <i>mesillana</i> | 1959 | Fabaceae | <i>Cassia</i> | <i>bauhinioides</i> | Mexico | 28.796717 | -111.942675 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|------------------|---------------------------|------|-------------|-----------------------|-----------------------|-------------|------------|-------------|
| PUR59224 | <i>Ravenelia</i> | <i>thornberiana</i> | 1961 | Fabaceae | <i>Acacia</i> | <i>constricta</i> | USA | 32.081005 | -109.204987 |
| PUR59972 | <i>Ravenelia</i> | <i>mimosae-sensitivae</i> | 1935 | Fabaceae | <i>Mimosa</i> | <i>caerulea</i> | Mexico | 19.256734 | -99.456624 |
| PUR60092 | <i>Ravenelia</i> | <i>cumminsii</i> | 1962 | Fabaceae | <i>Acacia</i> | <i>willardiana</i> | Mexico | 28.796717 | -111.942675 |
| PUR60154 | <i>Ravenelia</i> | <i>fragans</i> | 1963 | Fabaceae | <i>Mimosa</i> | <i>biuncifera</i> | Mexico | 28.836623 | -106.083333 |
| PUR60157 | <i>Ravenelia</i> | <i>thornberiana</i> | 1963 | Fabaceae | <i>Acacia</i> | <i>constricta</i> | Mexico | 28.622859 | -106.065885 |
| PUR6114 | <i>Ravenelia</i> | <i>floridana</i> | 1904 | Fabaceae | <i>Pithecellobium</i> | <i>unguis-cati</i> | USA | 25.753704 | -80.202454 |
| PUR6157 | <i>Ravenelia</i> | <i>cebil</i> | 1915 | Fabaceae | <i>Anadenanthera</i> | <i>peregrina</i> | Puerto Rico | 18.051412 | -66.718624 |
| PUR6173 | <i>Ravenelia</i> | <i>roemerianae</i> | 1916 | Fabaceae | <i>Acacia</i> | <i>roemeriana</i> | USA | 29.42412 | -98.49363 |
| PUR6181 | <i>Ravenelia</i> | <i>spiegazziniana</i> | 1915 | Fabaceae | <i>Acacia</i> | <i>farnesiana</i> | Guatemala | 14.783333 | -89.616667 |
| PUR6189 | <i>Ravenelia</i> | <i>acaciae-pennatulae</i> | 1903 | Fabaceae | <i>Acacia</i> | <i>cochliacantha</i> | Mexico | 19.91284 | -97.768135 |
| PUR6233 | <i>Ravenelia</i> | <i>texensis</i> | 1913 | Fabaceae | <i>Schrankia</i> | <i>diffusa</i> | Mexico | 19.137751 | -104.341916 |
| PUR6281 | <i>Ravenelia</i> | <i>mimosae-sensitivae</i> | 1915 | Fabaceae | <i>Mimosa</i> | <i>albida</i> | Costa Rica | 9.933333 | -84.083333 |
| PUR6299 | <i>Ravenelia</i> | <i>cassiaeicola</i> | 1913 | Fabaceae | <i>Chamaecrista</i> | <i>glandulosa</i> | Puerto Rico | 18.340385 | -66.007345 |
| PUR63554 | <i>Ravenelia</i> | <i>fragans</i> | 1970 | Fabaceae | <i>Mimosa</i> | <i>laxiflora</i> | Mexico | 28.796717 | -111.942675 |
| PUR64114 | <i>Ravenelia</i> | <i>rubra</i> | 1971 | Fabaceae | <i>Brongniartia</i> | <i>cfr. goldmanii</i> | Mexico | 24.662086 | -107.397337 |
| PUR64141 | <i>Ravenelia</i> | <i>corbula</i> | 1971 | Fabaceae | <i>Caesalpinia</i> | <i>eristachys</i> | Mexico | 23.196815 | -106.271576 |
| PUR6415 | <i>Ravenelia</i> | <i>brongniartiae</i> | 1899 | Fabaceae | <i>Brongniartia</i> | <i>intermedia</i> | Mexico | 18.93373 | -99.22849 |
| PUR6425 | <i>Ravenelia</i> | <i>similis</i> | 1896 | Fabaceae | <i>Brongniartia</i> | <i>nudiflora</i> | Mexico | 20.67005 | -103.35526 |
| PUR64304 | <i>Ravenelia</i> | <i>australis</i> | 1971 | Fabaceae | <i>Acacia</i> | <i>pennatula</i> | Mexico | 21.564688 | -105.27784 |
| PUR64521 | <i>Ravenelia</i> | <i>fragans</i> | 1971 | Fabaceae | <i>Mimosa</i> | <i>lindheimeri</i> | Mexico | 24.20376 | -104.65653 |
| PUR6463 | <i>Ravenelia</i> | <i>indigofera</i> | 1903 | Fabaceae | <i>Indigofera</i> | <i>cuernavacana</i> | Mexico | 18.93373 | -99.22849 |
| PUR64641 | <i>Ravenelia</i> | <i>texensis</i> | 1970 | Fabaceae | <i>Acacia</i> | <i>sp.</i> | Mexico | 24.662086 | -107.397337 |
| PUR64713 | <i>Ravenelia</i> | <i>indigofera</i> | 1971 | Fabaceae | <i>Indigofera</i> | <i>sphaerocarpa</i> | USA | 31.365377 | -110.773973 |
| PUR65070 | <i>Ravenelia</i> | <i>gracilis</i> | 1974 | Fabaceae | <i>Pithecellobium</i> | <i>pallens</i> | Mexico | 17.051561 | -96.726083 |
| PUR65074 | <i>Ravenelia</i> | <i>linda</i> | 1974 | Fabaceae | <i>Calliandra</i> | <i>sp.</i> | Mexico | 15.971321 | -92.001039 |
| PUR65086 | <i>Ravenelia</i> | <i>holwayi</i> | 1974 | Fabaceae | <i>Prosopis</i> | <i>glandulosa</i> | Mexico | 23.999997 | -98.778629 |
| PUR65540 | <i>Ravenelia</i> | <i>multispinosa</i> | 1935 | Fabaceae | <i>Pithecellobium</i> | <i>leucospermum</i> | Mexico | 23.286325 | -109.8573 |
| PUR87474 | <i>Ravenelia</i> | <i>geminipora</i> | 1983 | Fabaceae | <i>Plathymenia</i> | <i>reticulata</i> | Brazil | -21.966667 | -47.816667 |
| PUR88029 | <i>Ravenelia</i> | <i>sydowiana</i> | 1906 | Fabaceae | <i>Lonchocarpus</i> | <i>sp.</i> | Brazil | -28.758462 | -51.433333 |
| PUR88416 | <i>Ravenelia</i> | <i>zygiae</i> | 1983 | Fabaceae | <i>Albizzia</i> | <i>zygia</i> | Nigeria | 6.0176 | 7.0908 |
| PUR89213 | <i>Ravenelia</i> | <i>oligotheles</i> | 1980 | Fabaceae | <i>Cathormion</i> | <i>polyanthum</i> | Paraguay | -26.176526 | -56.436737 |
| PUR89214 | <i>Ravenelia</i> | <i>oligotheles</i> | 1976 | Fabaceae | <i>Cathormion</i> | <i>polyanthum</i> | Paraguay | -26.176526 | -56.436737 |
| PUR89529 | <i>Ravenelia</i> | <i>bakeriana</i> | 1978 | Fabaceae | <i>Derris</i> | <i>glabrescens</i> | Brazil | -6.748202 | -52.634766 |
| PUR89559 | <i>Ravenelia</i> | <i>pygmaea</i> | 1924 | Fabaceae | <i>Arthrosamanea</i> | <i>sp.</i> | Ecuador | -2.754284 | -79.739918 |
| PUR89707 | <i>Ravenelia</i> | <i>macrocarpa</i> | 1947 | Fabaceae | <i>Senna</i> | <i>birostris</i> | Peru | -10.441941 | -76.189861 |
| PUR89720 | <i>Ravenelia</i> | <i>humphreyana</i> | 1965 | Fabaceae | <i>Caesalpinia</i> | <i>caladenia</i> | Mexico | 18.914673 | -101.698399 |
| PUR89742 | <i>Ravenelia</i> | <i>theisseniana</i> | 1988 | Fabaceae | <i>Piptadenia</i> | <i>sp.</i> | Brazil | -21.966667 | -47.816667 |
| PUR90177 | <i>Ravenelia</i> | <i>geminipora</i> | 1986 | Fabaceae | <i>Plathymenia</i> | <i>reticulata</i> | Brazil | -18.975688 | -44.483961 |
| PURF10368 | <i>Ravenelia</i> | <i>hieronymi</i> | 1942 | Fabaceae | <i>Vachellia</i> | <i>farnesiana</i> | Chile | -41.870699 | -73.81622 |
| PURF10655 | <i>Ravenelia</i> | <i>mimosae-sensitivae</i> | 1941 | Fabaceae | <i>Mimosa</i> | <i>floribunda</i> | Colombia | 6.25184 | -75.563591 |
| PURF10845 | <i>Ravenelia</i> | <i>cassiaeicola</i> | 1939 | Fabaceae | <i>Chamaecrista</i> | <i>absus</i> | Venezuela | 8.887515 | -64.245439 |
| PURF10935 | <i>Ravenelia</i> | <i>oligotheles</i> | 1943 | Fabaceae | <i>Arthrosamanea</i> | <i>polyantha</i> | Argentina | -26.108569 | -60.862549 |
| PURF10978 | <i>Ravenelia</i> | <i>arthurii</i> | 1940 | Fabaceae | <i>Senna</i> | <i>atomaria</i> | Venezuela | 10.500139 | -66.893838 |
| PURF11094 | <i>Ravenelia</i> | <i>oligotheles</i> | 1943 | Fabaceae | <i>Arthrosamanea</i> | <i>polyantha</i> | Argentina | -26.108569 | -60.862549 |
| PURF11379 | <i>Ravenelia</i> | <i>lindquistii</i> | 1936 | Fabaceae | <i>Acacia</i> | <i>praecox</i> | Argentina | -28.416667 | -65.183333 |
| PURF11709 | <i>Ravenelia</i> | <i>australis</i> | 1949 | Fabaceae | <i>Acacia</i> | <i>cavenia</i> | Argentina | -34.920112 | -57.959259 |
| PURF11862 | <i>Ravenelia</i> | <i>cassiaeicola</i> | 1946 | Fabaceae | <i>Chamaecrista</i> | <i>nititans</i> | Barbados | 13.176642 | -59.539917 |
| PURF13052 | <i>Ravenelia</i> | <i>australis</i> | 1944 | Fabaceae | <i>Acacia</i> | <i>cavenia</i> | Argentina | -34.920112 | -57.959259 |
| PURF15611 | <i>Ravenelia</i> | <i>sessilis</i> | 1946 | Fabaceae | <i>Albizzia</i> | <i>lebbeek</i> | India | 26.220021 | 78.18867 |
| PURF16311 | <i>Ravenelia</i> | <i>macrocarpa</i> | 1950 | Fabaceae | <i>Senna</i> | <i>birostris</i> | Argentina | -26.852747 | -65.709832 |
| PURF17346 | <i>Ravenelia</i> | <i>comptula</i> | 1937 | Fabaceae | <i>Acacia</i> | <i>sp.</i> | Ecuador | -2.754284 | -79.739918 |
| PURF2063 | <i>Ravenelia</i> | <i>echinata</i> | 1920 | Fabaceae | <i>Calliandra</i> | <i>laxa</i> | Bolivia | -15.76667 | -68.63333 |
| PURF2065 | <i>Ravenelia</i> | <i>lagerheimiana</i> | 1920 | Fabaceae | <i>Calliandra</i> | <i>falcata</i> | Ecuador | -1.670984 | -78.647124 |
| PURF2066 | <i>Ravenelia</i> | <i>lagerheimiana</i> | 1920 | Fabaceae | <i>Calliandra</i> | <i>falcata</i> | Ecuador | -1.670984 | -78.647124 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|----------------------|---------------------------|----------|---------------|----------------------|------------------------|--------------|------------|------------|
| PURF2069 | <i>Ravenelia</i> | <i>echinata</i> | 1920 | Fabaceae | <i>Calliandra</i> | <i>sp.</i> | Ecuador | -2.754284 | -79.739918 |
| PURF2071 | <i>Ravenelia</i> | <i>hieronymi</i> | 1920 | Fabaceae | <i>Vachellia</i> | <i>farnesiana</i> | Chile | -34.24832 | -70.55543 |
| PURF2072 | <i>Ravenelia</i> | <i>australis</i> | 1877 | Fabaceae | <i>Acacia</i> | <i>cavenia</i> | Argentina | -36.842582 | -60.226112 |
| PURF2073 | <i>Ravenelia</i> | <i>hieronymi</i> | 1879 | Fabaceae | <i>Vachellia</i> | <i>farnesiana</i> | Argentina | -36.842582 | -60.226112 |
| PURF2074 | <i>Ravenelia</i> | <i>hieronymi</i> | 1896 | Fabaceae | <i>Vachellia</i> | <i>farnesiana</i> | Chile | -41.870699 | -73.81622 |
| PURF2076 | <i>Ravenelia</i> | <i>hieronymi</i> | 1910 | Fabaceae | <i>Vachellia</i> | <i>farnesiana</i> | Uruguay | -34.453333 | -56.390556 |
| PURF2102 | <i>Ravenelia</i> | <i>mimosae-sensitivae</i> | 1920 | Fabaceae | <i>Mimosa</i> | <i>albida</i> | Peru | -9.049722 | -77.774444 |
| PURF2122 | <i>Ravenelia</i> | <i>mimosae-sensitivae</i> | 1913 | Fabaceae | <i>Mimosa</i> | <i>albida</i> | Venezuela | 10.488011 | -66.879193 |
| PURF2155 | <i>Ravenelia</i> | <i>glabra</i> | 1880 | Fabaceae | <i>Calpurnia</i> | <i>sylvatica</i> | South Africa | -32.733333 | 25.583333 |
| PURF9494 | <i>Ravenelia</i> | <i>prospodiicola</i> | 1935 | Fabaceae | <i>Prosopis</i> | <i>sp.</i> | Argentina | -33.367256 | -69.143228 |
| PURF9555 | <i>Ravenelia</i> | <i>hieronymi</i> | 1940 | Fabaceae | <i>Vachellia</i> | <i>farnesiana</i> | Argentina | -33.834803 | -59.039081 |
| PURN10437 | <i>Ravenelia</i> | <i>microspora</i> | 1979 | Fabaceae | <i>Senna</i> | <i>aristeguietae</i> | Venezuela | 10.258379 | -71.368647 |
| PURN5001 | <i>Ravenelia</i> | <i>oligotheles</i> | 1963 | Fabaceae | <i>Arthrosamanea</i> | <i>polyantha</i> | Uruguay | -32.833056 | -56.030647 |
| PURN5002 | <i>Ravenelia</i> | <i>echinata</i> | 1927 | Fabaceae | <i>Calliandra</i> | <i>caracasana</i> | Venezuela | 10.500139 | -66.893838 |
| PURN5026 | <i>Ravenelia</i> | <i>spinulosa</i> | 1917 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Colombia | 2.324853 | -75.644694 |
| PURN5027 | <i>Ravenelia</i> | <i>spinulosa</i> | 1946 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Colombia | 10.75 | -74.983333 |
| PURN5028 | <i>Ravenelia</i> | <i>spinulosa</i> | 1927 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Colombia | 10 | -74.5 |
| PURN5029 | <i>Ravenelia</i> | <i>spinulosa</i> | 1918 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Colombia | 8.900294 | -74.529991 |
| PURN5030 | <i>Ravenelia</i> | <i>spinulosa</i> | 1941 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Colombia | 10.75 | -74.983333 |
| PURN5031 | <i>Ravenelia</i> | <i>spinulosa</i> | 1898 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Colombia | 10 | -74.5 |
| PURN5039 | <i>Ravenelia</i> | <i>platensis</i> | 1910 | Fabaceae | <i>Erythrina</i> | <i>crista-galli</i> | Uruguay | -33.063174 | -56.337402 |
| PURN5041 | <i>Ravenelia</i> | <i>humphreyana</i> | non-data | Fabaceae | <i>Caesalpinia</i> | <i>pulcherrima</i> | Costa Rica | 9.816877 | -84.112852 |
| PURN5302 | <i>Ravenelia</i> | <i>spinulosa</i> | 1966 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Peru | -5.881317 | -78.868164 |
| PURN5303 | <i>Ravenelia</i> | <i>spinulosa</i> | 1963 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Peru | -5.665155 | -78.678455 |
| PURN5304 | <i>Ravenelia</i> | <i>spinulosa</i> | 1973 | Fabaceae | <i>Senna</i> | <i>pallida</i> | Venezuela | 9.3402 | -66.258057 |
| PURN6753 | <i>Ravenelia</i> | <i>hobsonii</i> | 1991 | Fabaceae | <i>Pongamia</i> | <i>glabra</i> | India | 17.24821 | 77.648999 |
| PURN6849 | <i>Ravenelia</i> | <i>indica</i> | 1991 | Fabaceae | <i>Albizia</i> | <i>lebbek</i> | India | 28.6 | 77.199313 |
| PURN6862 | <i>Ravenelia</i> | <i>macrocarpa</i> | 1970 | Fabaceae | <i>Senna</i> | <i>multiglandulosa</i> | Peru | -14.338681 | -71.766731 |
| PURN6863 | <i>Ravenelia</i> | <i>macrocarpa</i> | 1838 | Fabaceae | <i>Senna</i> | <i>birostris</i> | Peru | -11.499167 | -76.748889 |
| PURN6864 | <i>Ravenelia</i> | <i>macrocarpa</i> | 1954 | Fabaceae | <i>Senna</i> | <i>birostris</i> | Peru | -8.16989 | -77.976376 |
| PURN6865 | <i>Ravenelia</i> | <i>macrocarpa</i> | 1950 | Fabaceae | <i>Senna</i> | <i>birostris</i> | Peru | -10.379104 | -77.279688 |
| PURN6930 | <i>Ravenelia</i> | <i>stictica</i> | 1912 | Fabaceae | <i>Mundulea</i> | <i>sericea</i> | South Africa | -25.706944 | 28.229444 |
| PURN8167 | <i>Ravenelia</i> | <i>platensis</i> | non-data | Fabaceae | <i>Erythrina</i> | <i>crista-galli</i> | Argentina | -21.946528 | -66.050163 |
| PURN8168 | <i>Ravenelia</i> | <i>platensis</i> | non-data | Fabaceae | <i>Erythrina</i> | <i>sp.</i> | Uruguay | -32.833056 | -56.030647 |
| PURN8410 | <i>Ravenelia</i> | <i>arthurii</i> | non-data | Fabaceae | <i>Senna</i> | <i>atomaria</i> | Venezuela | 11.940646 | -69.807937 |
| PURN8527 | <i>Ravenelia</i> | <i>cebil</i> | 1988 | Fabaceae | <i>Anadenanthera</i> | <i>sp.</i> | Brazil | 0.050843 | -51.071667 |
| PURN8529 | <i>Ravenelia</i> | <i>cohniana</i> | 1990 | Fabaceae | <i>Caesalpinia</i> | <i>sp.</i> | Brazil | -4.31356 | -38.743707 |
| PURN8788 | <i>Ravenelia</i> | <i>sonorensis</i> | 1974 | Fabaceae | <i>Acacia</i> | <i>conzattii</i> | Mexico | 21.345649 | -97.838467 |
| PURN9194 | <i>Ravenelia</i> | <i>cassiaeicola</i> | 1977 | Fabaceae | <i>Chamaecrista</i> | <i>nititans</i> | USA | 35.641193 | -93.443239 |
| PURN9195 | <i>Ravenelia</i> | <i>cassiaeicola</i> | 1983 | Fabaceae | <i>Chamaecrista</i> | <i>sp.</i> | Venezuela | 8 | -66 |
| PURN9560 | <i>Ravenelia</i> | <i>echinata</i> | 1992 | Fabaceae | <i>Calliandra</i> | <i>calothyrsus</i> | Guatemala | 15.454542 | -90.438965 |
| PURF19947 | <i>Scalariospora</i> | <i>hashiokai</i> | 1980 | Vitaceae | <i>Tetrastigma</i> | <i>hypoglaucaum</i> | China | 35.66899 | 102.6066 |
| PUR42822 | <i>Scopella</i> | <i>bautiniicola</i> | 1904 | Fabaceae | <i>Bauhinia</i> | <i>glabra</i> | Cuba | 23.13194 | -82.3642 |
| PUR42912 | <i>Scopella</i> | <i>sapotae</i> | 1903 | Sapotaceae | <i>Achras</i> | <i>sapota</i> | Bahamas | 25.06795 | -77.3099 |
| PURF15274 | <i>Scopella</i> | <i>sebastianae</i> | 1949 | Euphorbiaceae | <i>Sebastiana</i> | <i>schottiana</i> | Uruguay | -32.833056 | -56.030647 |
| PURF17766 | <i>Scopella</i> | <i>gentilis</i> | 1968 | Sapotaceae | <i>Mimusops</i> | <i>hexandra</i> | India | 25.31813 | 82.97803 |
| PURF17800 | <i>Scopella</i> | <i>sebastianae</i> | 1965 | Euphorbiaceae | <i>Sebastiana</i> | <i>klotschiana</i> | Brazil | -28.7585 | -51.4333 |
| PUR51704 | <i>Skierka</i> | <i>holwayi</i> | 1947 | Sapindaceae | <i>Sapindus</i> | <i>aponaris</i> | Honduras | 14.45139 | -87.6375 |
| PUR5704 | <i>Skierka</i> | <i>cristata</i> | 1916 | Sapindaceae | <i>Cupania</i> | <i>americana</i> | Cuba | 23.13194 | -82.3642 |
| PUR66567 | <i>Skierka</i> | <i>congensis</i> | 1982 | Euphorbiaceae | <i>Alchornea</i> | <i>cordifolia</i> | Nigeria | 6.785706 | 7.403086 |
| PURF12058 | <i>Skierka</i> | <i>agallocha</i> | 1940 | Euphorbiaceae | <i>Excoecaria</i> | <i>agallocha</i> | Japan | 26.33583 | 127.8014 |
| PURF9757 | <i>Skierka</i> | <i>philippinensis</i> | 1925 | Burseraceae | <i>Canarium</i> | <i>asperum</i> | Philippines | 15.88765 | 120.6234 |
| PURF9762 | <i>Skierka</i> | <i>canarii</i> | 1936 | Burseraceae | <i>Canarium</i> | <i>sp.</i> | New Guinea | -6.84919 | 146.9316 |
| PURF9765 | <i>Skierka</i> | <i>cristata</i> | 1913 | Sapindaceae | <i>Cupania</i> | <i>americana</i> | Trinidad | 10.5 | -61.25 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|--------------------|-------------------------|-----------------------|----------|---------------|---------------------|---------------------|--------------------------|------------|-------------|
| PURN2575 | <i>Skierka</i> | <i>diploglottidis</i> | 1945 | Sapindaceae | <i>Diploglottis</i> | <i>cunninghamii</i> | Australia | -27.3333 | 152.7667 |
| PUR6435 | <i>Sorataea</i> | <i>nephroidea</i> | 1918 | Fabaceae | <i>Lonchocarpus</i> | <i>latifolius</i> | Cuba | 23.13194 | -82.3642 |
| PUR66889 | <i>Sorataea</i> | <i>baphiae</i> | 1981 | Fabaceae | <i>Baphia</i> | <i>pubescens</i> | Nigeria | 6.785706 | 7.403086 |
| PUR89199 | <i>Sorataea</i> | <i>amiciae</i> | non-data | Fabaceae | <i>Amicia</i> | <i>sp.</i> | Peru | -7.644778 | -74.289062 |
| PURF10340 | <i>Sorataea</i> | <i>nephroidea</i> | 1940 | Fabaceae | <i>Lonchocarpus</i> | <i>sp.</i> | Peru | -14.338681 | -71.766731 |
| PURF2267 | <i>Sorataea</i> | <i>amiciae</i> | 1920 | Fabaceae | <i>Amicia</i> | <i>lobbiana</i> | Bolivia | -15.731265 | -64.529297 |
| PURF2268 | <i>Sorataea</i> | <i>amiciae</i> | 1920 | Fabaceae | <i>Amicia</i> | <i>lobbiana</i> | Bolivia | -15.731265 | -64.529297 |
| PURF6256 | <i>Sorataea</i> | <i>nephroidea</i> | 1928 | Fabaceae | <i>Lonchocarpus</i> | <i>fendleri</i> | Venezuela | 10.218442 | -67.330174 |
| PURF6258 | <i>Sorataea</i> | <i>periodica</i> | 1924 | Fabaceae | <i>Derris</i> | <i>heptaphylla</i> | Philippines | 14.83732 | 120.2928 |
| PURN9298 | <i>Sorataea</i> | <i>spp.</i> | 1953 | Fabaceae | <i>Lonchocarpus</i> | <i>lutescens</i> | Venezuela | 9.817545 | -63.613308 |
| PURN9299 | <i>Sorataea</i> | <i>spp.</i> | 1923 | Fabaceae | <i>Lonchocarpus</i> | <i>lutescens</i> | Venezuela | 9.410683 | -67.107623 |
| PURN9305 | <i>Sorataea</i> | <i>belemensis</i> | 1934 | Fabaceae | <i>Lonchocarpus</i> | <i>floribundus</i> | non-data | 5.45 | -55.2 |
| PURN9306 | <i>Sorataea</i> | <i>belemensis</i> | 1977 | Fabaceae | <i>Lonchocarpus</i> | <i>floribundus</i> | Venezuela | 3.5 | -66 |
| PURN9307 | <i>Sorataea</i> | <i>belemensis</i> | 1944 | Fabaceae | <i>Lonchocarpus</i> | <i>floribundus</i> | Colombia | 5 | -69.5 |
| PURN9308 | <i>Sorataea</i> | <i>belemensis</i> | 1973 | Fabaceae | <i>Lonchocarpus</i> | <i>floribundus</i> | Colombia | 5 | -69.5 |
| PUR59695 | <i>Sphaerophragmium</i> | <i>acaciae</i> | 1962 | Fabaceae | <i>Albizzia</i> | <i>lebbek</i> | USA | 25.72149 | -80.268384 |
| PUR66267 | <i>Sphaerophragmium</i> | <i>acaciae</i> | 1980 | Fabaceae | <i>Albizzia</i> | <i>lebbek</i> | Mexico | 21.345649 | -97.838467 |
| PURN10854 | <i>Sphaerophragmium</i> | <i>acaciae</i> | 1982 | Fabaceae | <i>Albizzia</i> | <i>lebbek</i> | Northern Mariana Islands | 15.1927123 | 145.745744 |
| PURN8202 | <i>Sphaerophragmium</i> | <i>acaciae</i> | 1980 | Fabaceae | <i>Albizzia</i> | <i>lebbek</i> | Mexico | 21.345649 | -97.838467 |
| PURN8792 | <i>Sphaerophragmium</i> | <i>acaciae</i> | 1976 | Fabaceae | <i>Albizzia</i> | <i>lebbek</i> | Mexico | 21.544434 | -104.9227 |
| PURN8794 | <i>Sphaerophragmium</i> | <i>acaciae</i> | 1988 | Fabaceae | <i>Albizzia</i> | <i>lebbek</i> | Brazil | -15.858899 | -56.082403 |
| PURN8795 | <i>Sphaerophragmium</i> | <i>acaciae</i> | non-data | Fabaceae | <i>Albizzia</i> | <i>lebbek</i> | Brazil | -4.31356 | -38.743707 |
| PUR58551 | <i>Sphenospora</i> | <i>sp.</i> | 1961 | Orchidaceae | <i>Catasetum</i> | <i>sp.</i> | Peru | -7.644778 | -74.289062 |
| PUR88034 | <i>Sphenospora</i> | <i>sp.</i> | 1975 | Dioscoreaceae | <i>Dioscorea</i> | <i>sp.</i> | Ecuador | -1.252369 | -78.622781 |
| PURF16330 | <i>Sphenospora</i> | <i>sp.</i> | 1957 | Orchidaceae | <i>Caucaea</i> | <i>phalaenopsis</i> | Ecuador | -1.808802 | -78.458374 |
| PURF16336 | <i>Sphenospora</i> | <i>sp.</i> | 1959 | Orchidaceae | <i>Rodriguezia</i> | <i>sp.</i> | Guyana | 4.719669 | -58.666504 |
| PURF16337 | <i>Sphenospora</i> | <i>sp.</i> | 1959 | Orchidaceae | <i>Rodriguezia</i> | <i>sp.</i> | Guyana | 4.719669 | -58.666504 |
| PURF16444 | <i>Sphenospora</i> | <i>sp.</i> | non-data | Orchidaceae | <i>Trizeuxis</i> | <i>falcata</i> | Trinidad | 10.5 | -61.25 |
| PURF16448 | <i>Sphenospora</i> | <i>sp.</i> | 1876 | Orchidaceae | <i>Orchidaceae</i> | <i>sp.</i> | Paraguay | -25.386111 | -57.140278 |
| PURF16475 | <i>Sphenospora</i> | <i>sp.</i> | 1960 | Orchidaceae | <i>Lycaste</i> | <i>sp.</i> | Peru | -7.644778 | -74.289062 |
| PURF2201 | <i>Sphenospora</i> | <i>smilacina</i> | 1913 | Smilacaceae | <i>Smilax</i> | <i>cumanensis</i> | Trinidad | 10.687634 | -61.395569 |
| PURF2207 | <i>Sphenospora</i> | <i>pallida</i> | 1921 | Dioscoreaceae | <i>Dioscorea</i> | <i>grandiflora</i> | Brazil | -22.865557 | -43.42723 |
| PUR62303 | <i>Spumula</i> | <i>heteromorpha</i> | 1967 | Fabaceae | <i>Acacia</i> | <i>schaffneri</i> | Mexico | 21.156101 | -100.871607 |
| PUR64606 | <i>Spumula</i> | <i>heteromorpha</i> | 1971 | Fabaceae | <i>Vachellia</i> | <i>farnesiana</i> | Mexico | 23.919931 | -104.322472 |
| PURN6737 | <i>Stomatosora</i> | <i>psychotriicola</i> | 2010 | Rubiaceae | <i>Psychotria</i> | <i>capensis</i> | South Africa | -29.816667 | -30.8833 |
| PURF12888 | <i>Thekopsora</i> | <i>guttatum</i> | 1934 | Rubiaceae | <i>Galium</i> | <i>verum</i> | North Korea | 39.977806 | 127.046387 |
| PURF1636 | <i>Trachyspora</i> | <i>intrusa</i> | 1898 | Rosaceae | <i>Alchemilla</i> | <i>acutiloba</i> | Germany | 47.40724 | 10.27939 |
| PURN181 | <i>Trachyspora</i> | <i>intrusa</i> | 1910 | Rosaceae | <i>Alchemilla</i> | <i>monticola</i> | Finland | 64.57714 | 26.52148 |
| PUR48238 | <i>Tranzschelia</i> | <i>fusca</i> | 1933 | Ranunculaceae | <i>Anemone</i> | <i>quinquefolia</i> | USA | 40.78538 | -123.881 |
| PUR51200 | <i>Tranzschelia</i> | <i>pulsatillae</i> | 1944 | Ranunculaceae | <i>Anemone</i> | <i>patens</i> | USA | 65.52444 | -148.545 |
| PUR54656 | <i>Tranzschelia</i> | <i>arthurii</i> | 1953 | Rosaceae | <i>Prunus</i> | <i>capuli</i> | USA | 25.45896 | -80.4524 |
| PUR56827 | <i>Tranzschelia</i> | <i>pruni-spinosae</i> | 1959 | Rosaceae | <i>Prunus</i> | <i>americana</i> | USA | 43.7258 | -90.5915 |
| PUR58590 | <i>Tranzschelia</i> | <i>thalictri</i> | 1963 | Ranunculaceae | <i>Thalictrum</i> | <i>dasyarpum</i> | USA | 43.18193 | -90.3246 |
| PUR61509 | <i>Tranzschelia</i> | <i>cohaesa</i> | 1966 | Ranunculaceae | <i>Anemone</i> | <i>berlandieri</i> | USA | 33.2282 | -91.7975 |
| PUR6740 | <i>Tranzschelia</i> | <i>arthurii</i> | 1905 | Ranunculaceae | <i>Hepatica</i> | <i>nobilis</i> | USA | 40.41261 | -86.8935 |
| PUR6863 | <i>Tranzschelia</i> | <i>ornata</i> | 1989 | Rosaceae | <i>Prunus</i> | <i>americana</i> | USA | 39.3318 | -99.3022 |
| PUR6870 | <i>Tranzschelia</i> | <i>arthurii</i> | 1921 | Rosaceae | <i>Prunus</i> | <i>americana</i> | USA | 39.93359 | -105.269 |
| PUR6931 | <i>Tranzschelia</i> | <i>fusca</i> | 1883 | Ranunculaceae | <i>Anemone</i> | <i>quinquefolia</i> | USA | 41.850033 | -87.650052 |
| PUR6983 | <i>Tranzschelia</i> | <i>pseudofusca</i> | 1925 | Ranunculaceae | <i>Anemone</i> | <i>tetonensis</i> | USA | 40.39079 | -111.646 |
| PUR7001 | <i>Tranzschelia</i> | <i>thalictri</i> | 1916 | Ranunculaceae | <i>Thalictrum</i> | <i>dioicum</i> | USA | 41.03399 | -73.7629 |
| PUR83763 | <i>Tranzschelia</i> | <i>arthurii</i> | 1962 | Rosaceae | <i>Prunus</i> | <i>capollin</i> | Ecuador | -0.687759 | -78.439626 |
| PURF10356/PUR77256 | <i>Tranzschelia</i> | <i>discolor</i> | 1941 | Rosaceae | <i>Prunus</i> | <i>armeniaca</i> | Argentina | -31.619882 | -60.702408 |
| PURF10358/PUR77258 | <i>Tranzschelia</i> | <i>discolor</i> | 1941 | Rosaceae | <i>Prunus</i> | <i>persica</i> | Argentina | -31.619882 | -60.702408 |
| PURF12044 | <i>Tranzschelia</i> | <i>fusca</i> | 1926 | Ranunculaceae | <i>Anemone</i> | <i>altaica</i> | Japan | 43.16667 | 141.0667 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|--------------------|---------------------|-------------------------|----------|------------------|---------------------|---------------------------------|-------------|-----------|-------------|
| PURF12045 | <i>Tranzschelia</i> | <i>pulsatillae</i> | 1935 | Ranunculaceae | <i>Pulsatilla</i> | <i>cernua</i> | Japan | 33.05 | 130.4833 |
| PURF1309 | <i>Tranzschelia</i> | <i>discolor</i> | 1918 | Rosaceae | <i>Prunus</i> | <i>persica</i> | Ecuador | -1.252369 | -78.622781 |
| PURF1312 | <i>Tranzschelia</i> | <i>discolor</i> | 1918 | Rosaceae | <i>Prunus</i> | <i>persica</i> | Ecuador | -1.252369 | -78.622781 |
| PURF1325 | <i>Tranzschelia</i> | <i>discolor</i> | 1918 | Rosaceae | <i>Prunus</i> | <i>armeniaca</i> | Ecuador | -1.252369 | -78.622781 |
| PURF1326/PUR68226 | <i>Tranzschelia</i> | <i>arthurii</i> | 1924 | Rosaceae | <i>Prunus</i> | <i>serotina</i> | Ecuador | -0.2001 | -78.475341 |
| PURF1335/PUR68235 | <i>Tranzschelia</i> | <i>discolor</i> | 1918 | Rosaceae | <i>Prunus</i> | <i>domestica</i> | Ecuador | -1.252369 | -78.622781 |
| PURF1368 | <i>Tranzschelia</i> | <i>thalictri</i> | 1880 | Ranunculaceae | <i>Thalictrum</i> | <i>flavum</i> | Switzerland | 47.36667 | 8.55 |
| PURF16864/PUR83764 | <i>Tranzschelia</i> | <i>discolor</i> | 1962 | Rosaceae | <i>Prunus</i> | <i>armeniaca</i> | Ecuador | -0.935206 | -78.615545 |
| PURN10615 | <i>Tranzschelia</i> | <i>ornata</i> | 1919 | Rosaceae | <i>Prunus</i> | <i>non-data</i> | USA | 36.0612 | -94.159 |
| PURN10625 | <i>Tranzschelia</i> | <i>arthurii</i> | 1991 | Rosaceae | <i>Prunus</i> | <i>capollin</i> | Ecuador | 0.35171 | -78.122333 |
| PURN1063 | <i>Tranzschelia</i> | <i>arthurii</i> | 1985 | Rosaceae | <i>Prunus</i> | <i>serotina</i> | USA | 40.4717 | -86.8583 |
| PURN10639 | <i>Tranzschelia</i> | <i>discolor</i> | 1996 | Rosaceae | <i>Prunus</i> | <i>amygdalus</i> | Honduras | 14.36387 | -87.0833 |
| PURN1090 | <i>Tranzschelia</i> | <i>mexicana</i> | 1993 | Rosaceae | <i>Prunus</i> | <i>serotina</i> | Colombia | 4.495866 | -74.134521 |
| PURN1091 | <i>Tranzschelia</i> | <i>mexicana</i> | 1985 | Rosaceae | <i>Prunus</i> | <i>serotina</i> | Colombia | 6.25184 | -75.563591 |
| PURN1092 | <i>Tranzschelia</i> | <i>discolor</i> | 1929 | Ranunculaceae | <i>Anemone</i> | <i>coronana</i> | USA | 44.62901 | -123.241 |
| PURN16382 | <i>Tranzschelia</i> | <i>mexicana</i> | 2016 | Rosaceae | <i>Rosaceae</i> | <i>sp.</i> | Peru | - | - |
| PURN1684 | <i>Tranzschelia</i> | <i>arthurii</i> | 1996 | Ranunculaceae | <i>Anemone</i> | <i>quinquefolia</i> | USA | 45.77227 | -92.7757 |
| PURN199 | <i>Tranzschelia</i> | <i>pruni-spinosae</i> | 1914 | Ranunculaceae | <i>Anemone</i> | <i>ranunculiae</i> | Finland | 61.11667 | 24.35 |
| PURN232 | <i>Tranzschelia</i> | <i>asiatica</i> | 1992 | Ranunculaceae | <i>Hepatica</i> | <i>nobilis</i> | Japan | 36.37053 | 140.4356 |
| PURN4968 | <i>Tranzschelia</i> | <i>ornata</i> | 1993 | Ranunculaceae | <i>Anemone</i> | <i>decapetala</i> | USA | 33.24895 | -97.4331 |
| PURN584 | <i>Tranzschelia</i> | <i>pruni-spinosae</i> | 1948 | Rosaceae | <i>Prunus</i> | <i>spinosa</i> | Finland | 60.45 | 22.28333 |
| PURN6603 | <i>Tranzschelia</i> | <i>arthurii</i> | 1938 | Rosaceae | <i>Prunus</i> | <i>serotina</i> | Peru | -6.553222 | -78.564117 |
| PURN665 | <i>Tranzschelia</i> | <i>hyrcanica</i> | 1994 | Rosaceae | <i>Prunus</i> | <i>spinosa</i> | Iran | 34.5332 | 47.9142 |
| PURN666 | <i>Tranzschelia</i> | <i>microcerasi</i> | 1972 | Rosaceae | <i>Amygdalus</i> | <i>spinossima</i> | Iran | 34.5332 | 47.9142 |
| PURF8713 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1924 | Heliotropiaceae | <i>Heliotropium</i> | <i>lanceolatum</i> | Ecuador | -0.2001 | -78.475341 |
| PURF8714 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1920 | Heliotropiaceae | <i>Tournefortia</i> | <i>loxensis</i> | Ecuador | -1.252369 | -78.622781 |
| PURF8716 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1920 | Heliotropiaceae | <i>Tournefortia</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF8717 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1920 | Heliotropiaceae | <i>Tournefortia</i> | <i>sp.</i> | Ecuador | -2.900545 | -79.004527 |
| PURN3905 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1975 | Heliotropiaceae | <i>Tournefortia</i> | <i>sp.</i> | Ecuador | -0.467137 | -78.7475 |
| PURN3906 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1975 | Heliotropiaceae | <i>Tournefortia</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PURN3907 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1975 | Heliotropiaceae | <i>Tournefortia</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURN3908 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1975 | Heliotropiaceae | <i>Tournefortia</i> | <i>sp.</i> | Ecuador | -0.935206 | -78.615545 |
| PURN3909 | <i>Trichopsora</i> | <i>tournefortiae</i> | 1975 | Heliotropiaceae | <i>Tournefortia</i> | <i>sp.</i> | Ecuador | -0.167606 | -78.45071 |
| PUR8616 | <i>Triphragmium</i> | <i>ulmariae</i> | 1899 | Rosaceae | <i>Filipendula</i> | <i>rubra</i> | USA | 40.404416 | -86.867734 |
| PURN197 | <i>Triphragmium</i> | <i>filipendulae</i> | 1909 | Rosaceae | <i>Filipendula</i> | <i>vulgaris</i> | Finland | 60.299722 | 22.35 |
| PURN245 | <i>Triphragmium</i> | <i>ulmariae</i> | 1992 | Rosaceae | <i>Filipendula</i> | <i>camtschatica</i> | Japan | 37.185772 | 139.515568 |
| PUR4240 | <i>Uredinopsis</i> | <i>osmundae</i> | 1910 | Osmundaceae | <i>Osmunda</i> | <i>claytoniana</i> | USA | 40.41807 | -86.88608 |
| PUR4244 | <i>Uredinopsis</i> | <i>osmundae</i> | 1903 | Osmundaceae | <i>Osmunda</i> | <i>claytoniana</i> | USA | 45.63446 | -68.714095 |
| PUR4255 | <i>Uredinopsis</i> | <i>americana</i> | 1911 | Pinaceae | <i>Abies</i> | <i>balsamea</i> | Canada | 45.36686 | -63.29533 |
| PUR4260 | <i>Uredinopsis</i> | <i>americana</i> | 1910 | Pinaceae | <i>Abies</i> | <i>balsamea</i> | USA | 46.133 | -90.0135 |
| PUR4274 | <i>Uredinopsis</i> | <i>americana</i> | 1909 | Pinaceae | <i>Abies</i> | <i>balsamea</i> | USA | 42.60703 | -73.0426 |
| PUR4285 | <i>Uredinopsis</i> | <i>americana</i> | 1915 | Onocleaceae | <i>Onoclea</i> | <i>sensibilis</i> | USA | 41.67093 | -73.67485 |
| PUR4287 | <i>Uredinopsis</i> | <i>americana</i> | non-data | Onocleaceae | <i>Onoclea</i> | <i>sensibilis</i> | Canada | 45.66667 | -62.7 |
| PUR4298 | <i>Uredinopsis</i> | <i>americana</i> | 1912 | Onocleaceae | <i>Onoclea</i> | <i>sensibilis</i> | USA | 42.54723 | -100.81681 |
| PUR4332 | <i>Uredinopsis</i> | <i>pteridis</i> | 1916 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 48.20111 | -120.59177 |
| PUR4336 | <i>Uredinopsis</i> | <i>pteridis</i> | 1914 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 44.50428 | -123.55131 |
| PUR4380 | <i>Uredinopsis</i> | <i>pteridis</i> | 1893 | Dennstaedtiaceae | <i>Peridium</i> | <i>aquilinum pubescens</i> | USA | 34.14779 | -118.14452 |
| PUR4381 | <i>Uredinopsis</i> | <i>pteridis</i> | 1922 | Dennstaedtiaceae | <i>Peridium</i> | <i>aquilinum pubescens</i> | Canada | 49.483333 | -117.283333 |
| PUR4382 | <i>Uredinopsis</i> | <i>pteridis</i> | 1920 | Dennstaedtiaceae | <i>Peridium</i> | <i>aquilinum pubescens</i> | USA | 48.0937 | -123.79159 |
| PUR4395 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1924 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 48.784602 | -116.888954 |
| PUR4399 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1903 | Athyriaceae | <i>Athyrium</i> | <i>filix-foemina cyclosorum</i> | USA | 41.312768 | -122.311732 |
| PUR4402 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1915 | Athyriaceae | <i>Athyrium</i> | <i>filix-foemina cyclosorum</i> | USA | 48.18074 | -116.90937 |
| PUR4412 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1921 | Athyriaceae | <i>Athyrium</i> | <i>filix-foemina cyclosorum</i> | USA | 44.17235 | -122.86064 |
| PUR4419 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1909 | Athyriaceae | <i>Athyrium</i> | <i>filix-foemina cyclosorum</i> | USA | 44.889592 | -87.858551 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|--------------------|----------------------------|------|------------------|--------------------|---------------------------------|-------------|------------|-------------|
| PUR44209 | <i>Uredinopsis</i> | <i>osmundae</i> | 1931 | Osmundaceae | <i>Osmunda</i> | <i>cinnamomea</i> | USA | 42,34868 | -76,95635 |
| PUR44213 | <i>Uredinopsis</i> | <i>osmundae</i> | 1929 | Osmundaceae | <i>Osmunda</i> | <i>regalis</i> | USA | 43,91372 | -69,55856 |
| PUR44219 | <i>Uredinopsis</i> | <i>americana</i> | 1935 | Pinaceae | <i>Abies</i> | <i>fraseri</i> | USA | 36.19623 | -82.0704 |
| PUR44224 | <i>Uredinopsis</i> | <i>americana</i> | 1929 | Onocleaceae | <i>Onoclea</i> | <i>sensibilis</i> | USA | 43,91372 | -69,55856 |
| PUR44233 | <i>Uredinopsis</i> | <i>pteridis</i> | 1922 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 48,69187 | -122,6651 |
| PUR44234 | <i>Uredinopsis</i> | <i>pteridis</i> | 1934 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | USA | 35,65423 | -83,43704 |
| PUR44243 | <i>Uredinopsis</i> | <i>pteridis</i> | 1925 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum pubescens</i> | USA | 46,403781 | -116,54598 |
| PUR4425 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1893 | Thelypteridaceae | <i>Thelypteris</i> | <i>palustris</i> | USA | 42,243414 | -84,404724 |
| PUR44255 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1932 | Athyriaceae | <i>Athyrium</i> | <i>filix-foemina cyclosorum</i> | USA | 46,0227 | -114,17814 |
| PUR4438 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1912 | Thelypteridaceae | <i>Phegopteris</i> | <i>connectilis</i> | USA | 42,54723 | -100,81681 |
| PUR4448 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1902 | Cystopteridaceae | <i>Cystopteris</i> | <i>bulbifera</i> | USA | 42,440628 | -76,496607 |
| PUR4449 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1924 | Blechnaceae | <i>Woodwardia</i> | <i>virginica</i> | USA | 43,90581 | -72,67456 |
| PUR4456 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1897 | Onocleaceae | <i>Matteuccia</i> | <i>struthiopteris</i> | Canada | 53,333333 | -60,416667 |
| PUR4459 | <i>Uredinopsis</i> | <i>phegopteridis</i> | 1912 | Pinaceae | <i>Abies</i> | <i>balsamea</i> | Canada | 55,77657 | -99,49219 |
| PUR49534 | <i>Uredinopsis</i> | <i>Magnus</i> | 1938 | Polypodiaceae | <i>Polypodium</i> | <i>plesiosorum</i> | Guatemala | 14,41506 | -90,59635 |
| PUR54168 | <i>Uredinopsis</i> | <i>pteridis</i> | 1930 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 41,17812 | -124,11579 |
| PUR54763 | <i>Uredinopsis</i> | <i>pteridis</i> | 1955 | Pinaceae | <i>Abies</i> | <i>procera</i> | USA | 45,47899 | -123,89013 |
| PUR55400 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1955 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 46,022698 | -114,178143 |
| PUR55832 | <i>Uredinopsis</i> | <i>pteridis</i> | 1955 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | Canada | 52,92215 | -122,49756 |
| PUR61723 | <i>Uredinopsis</i> | <i>glabra</i> | 1966 | Cystopteridaceae | <i>Cystopteris</i> | <i>fragilis</i> | USA | 33,40447 | -105,5505 |
| PUR63183 | <i>Uredinopsis</i> | <i>pteridis</i> | 1962 | Pinaceae | <i>Abies</i> | <i>grandis</i> | USA | 44,63698 | -123,26204 |
| PUR63184 | <i>Uredinopsis</i> | <i>pteridis</i> | 1963 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum pubescens</i> | USA | 44,63698 | -123,26204 |
| PUR65979 | <i>Uredinopsis</i> | <i>pteridis</i> | 1977 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | USA | 34,86938 | -84,24445 |
| PUR66570 | <i>Uredinopsis</i> | <i>longimucronata</i> | 1982 | Pinaceae | <i>Abies</i> | <i>lasiocarpa</i> | USA | 46,022698 | -114,178143 |
| PURF12392 | <i>Uredinopsis</i> | <i>adianti</i> | 1939 | Pteridaceae | <i>Adiantum</i> | <i>pedatum</i> | North Korea | 39,977806 | 127,046387 |
| PURF12402 | <i>Uredinopsis</i> | <i>hirosakiensis</i> | 1934 | Thelypteridaceae | <i>Thelypteris</i> | <i>palustris</i> | North Korea | 39,977806 | 127,046387 |
| PURF12413 | <i>Uredinopsis</i> | <i>struthiopteridis</i> | 1906 | Onocleaceae | <i>Matteuccia</i> | <i>struthiopteris</i> | Russia | 51 | 143.00000 |
| PURF15 | <i>Uredinopsis</i> | <i>filicina</i> | 1895 | Thelypteridaceae | <i>Phegopteris</i> | <i>connectilis</i> | Sweden | 60,6 | 15,633333 |
| PURF18573 | <i>Uredinopsis</i> | <i>kameiana</i> | 1975 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum latiusculum</i> | Japan | 35,43255 | 134,15576 |
| PURF19234 | <i>Uredinopsis</i> | <i>pteridis</i> | 1976 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | Brazil | -23.19597 | -46.87576 |
| PURF19957 | <i>Uredinopsis</i> | <i>athyrii</i> | 1980 | Athyriaceae | <i>Athyrium</i> | <i>non-data</i> | China | 26,17516 | 117,92725 |
| PURF7 | <i>Uredinopsis</i> | <i>pteridis</i> | 1895 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum pubescens</i> | Russia | 52,26816 | 126,43066 |
| PURF9 | <i>Uredinopsis</i> | <i>pteridis</i> | 1921 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | Brazil | -22.865557 | -43.42723 |
| PURN11362 | <i>Uredinopsis</i> | <i>osmundae</i> | 1918 | Osmundaceae | <i>Osmunda</i> | <i>claytoniana</i> | USA | 43,14897 | -72,36064 |
| PURN1702 | <i>Uredinopsis</i> | <i>americana</i> | 1995 | Onocleaceae | <i>Onoclea</i> | <i>sensibilis</i> | USA | 45,92059 | -92,64204 |
| PURN3967 | <i>Uredinopsis</i> | <i>osmundae</i> | 1973 | Pinaceae | <i>Abies</i> | <i>non-data</i> | USA | 43,97541 | -74,20598 |
| PURN4036 | <i>Uredinopsis</i> | <i>pteridis</i> | 1976 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | Brazil | -28.93333 | -49.48333 |
| PURN4094 | <i>Uredinopsis</i> | <i>pteridis</i> | 1976 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | Brazil | -22.73398 | -45.57844 |
| PURN8050 | <i>Uredinopsis</i> | <i>pteridis</i> | 1996 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | Brazil | -21.966667 | -47.816667 |
| PURN8051 | <i>Uredinopsis</i> | <i>pteridis</i> | 1997 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | Brazil | -21.966667 | -47.816667 |
| PURN8236 | <i>Uredinopsis</i> | <i>pteridis</i> | 1995 | Dennstaedtiaceae | <i>Pteridium</i> | <i>aquilinum</i> | Mexico | 19,49378 | -97,14798 |
| PURN6916 | <i>Uredo</i> | <i>lueheae</i> | 1995 | Malvaceae | <i>Luehea</i> | <i>speciosa</i> | Brazil | -21.966667 | -47.816667 |
| PUR62273 | <i>Uredopeltis</i> | <i>dominicana</i> | 1967 | Euphorbiaceae | <i>Croton</i> | <i>ciliato-glandulifer</i> | Mexico | 25,24143 | -99,9733 |
| PUR87479 | <i>Uredopeltis</i> | <i>quettardae</i> | 1983 | Rubiaceae | <i>Guettarda</i> | <i>viurnoides</i> | Brazil | -22,5123 | -48,9162 |
| PURF14137 | <i>Uredopeltis</i> | <i>postgreviae</i> | 1932 | Malvaceae | <i>Grewia</i> | <i>parviflora</i> | China | 31,00242 | 103,6223 |
| PURF19739 | <i>Uredopeltis</i> | <i>congensis</i> | 1981 | Bignoniaceae | <i>Markhamia</i> | <i>tomentosa</i> | Nigeria | 6.8561 | 7.3927 |
| PURN10824 | <i>Uredopeltis</i> | <i>chevalieri</i> | 1952 | Malvaceae | <i>Grewia</i> | <i>asiatica</i> | India | 19,39461 | 77,98291 |
| PURN2600 | <i>Uredopeltis</i> | <i>sterculiae</i> | 1991 | Malvaceae | <i>Sterculia</i> | <i>sp.</i> | India | 13,37349 | 75,46869 |
| PUR088133 | <i>Uromyces</i> | <i>plumbarius</i> | 1984 | Onagraceae | <i>Gaura</i> | <i>biennis</i> | USA | 40,41261 | -86,8935 |
| PUR088209 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1977 | Fabaceae | <i>Desmodium</i> | <i>paniculatum</i> | USA | 34,868639 | -83,968018 |
| PUR11619 | <i>Uromyces</i> | <i>andropogonis</i> | 1908 | Poaceae | <i>Andropogon</i> | <i>glomeratus</i> | USA | 32,60986 | -85,48078 |
| PUR11667 | <i>Uromyces</i> | <i>clignyi</i> | 1917 | Poaceae | <i>Andropogon</i> | <i>brevifolius</i> | Cuba | 23,131944 | -82,364167 |
| PUR11683 | <i>Uromyces</i> | <i>graminicola</i> | 1922 | Poaceae | <i>Panicum</i> | <i>altum</i> | USA | 25,78165 | -80,21667 |
| PUR11827 | <i>Uromyces</i> | <i>seditiosus</i> | 1887 | Plantaginaceae | <i>Plantago</i> | <i>aristata</i> | USA | 38,95171 | -92,33407 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------------|------|----------------|---------------------|----------------------|-------------|------------|-------------|
| PUR11832 | <i>Uromyces</i> | <i>sediciosus</i> | 1922 | Plantaginaceae | <i>Plantago</i> | <i>aristata</i> | USA | 38.29889 | -86.955 |
| PUR11938 | <i>Uromyces</i> | <i>archerianus</i> | 1915 | Poaceae | <i>Chloris</i> | <i>virgata</i> | USA | 32.27593 | -106.76667 |
| PUR12101 | <i>Uromyces</i> | <i>hordeinus</i> | 1921 | Poaceae | <i>Festuca</i> | <i>actoflora</i> | USA | 30.26715 | -97.7431 |
| PUR12135 | <i>Uromyces</i> | <i>beckmaniae</i> | 1911 | Poaceae | <i>Beckmannia</i> | <i>Gramineae</i> | USA | 44.564566 | -123.262044 |
| PUR12160 | <i>Uromyces</i> | <i>dactylidis</i> | 1922 | Poaceae | <i>Dactylis</i> | <i>glomerata</i> | USA | 37.225573 | -80.397461 |
| PUR12195 | <i>Uromyces</i> | <i>peckianus</i> | 1920 | Amaranthaceae | <i>Atriplex</i> | <i>patula</i> | USA | 36.60079 | -121.869 |
| PUR12480 | <i>Uromyces</i> | <i>rhynchospora</i> | 1914 | Cyperaceae | <i>Rhynchospora</i> | <i>alba</i> | Canada | 42.98333 | -81.25 |
| PUR12497 | <i>Uromyces</i> | <i>rhynchosporae</i> | 1918 | Cyperaceae | <i>Rhynchospora</i> | <i>fascicularis</i> | Cuba | 23.131944 | -82.364167 |
| PUR12555 | <i>Uromyces</i> | <i>lineolatus</i> | 1909 | Apiaceae | <i>Cicuta</i> | <i>bulbifera</i> | USA | 41.78167 | -99.13315 |
| PUR12782 | <i>Uromyces</i> | <i>perigynius</i> | 1899 | Cyperaceae | <i>Carex</i> | <i>artitect</i> | USA | 41.60222 | -87.2583 |
| PUR13058 | <i>Uromyces</i> | <i>sparagani</i> | 1909 | Acoraceae | <i>Acorus</i> | <i>callinus</i> | USA | 42.84193 | -91.8021 |
| PUR13116 | <i>Uromyces</i> | <i>junci</i> | 1910 | Asteraceae | <i>Ambrosia</i> | <i>psilostachya</i> | USA | 46.30191 | -98.94816 |
| PUR13190 | <i>Uromyces</i> | <i>junci</i> | 1924 | Juncaceae | <i>Juncus</i> | <i>ater</i> | Canada | 51.66667 | -112.233 |
| PUR13295 | <i>Uromyces</i> | <i>silphii</i> | 1912 | Asteraceae | <i>Aster</i> | <i>macrophyllum</i> | USA | 43.37332 | -89.623455 |
| PUR14054 | <i>Uromyces</i> | <i>intricatus</i> | 1922 | Polygonaceae | <i>Eriogonum</i> | <i>saxatile</i> | USA | 34.24668 | -118.101 |
| PUR14497 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1913 | Fabaceae | <i>Desmodium</i> | <i>canescens</i> | USA | 32.52515 | -93.75018 |
| PUR14893 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1923 | Fabaceae | <i>Pisum</i> | <i>sativum</i> | USA | 44.98663 | -93.18318 |
| PUR15359 | <i>Uromyces</i> | <i>trifolii-repentis</i> | 1915 | Fabaceae | <i>Trifolium</i> | <i>pratense</i> | USA | 41.023584 | -73.564651 |
| PUR15765 | <i>Uromyces</i> | <i>appendiculatus</i> | 1915 | Fabaceae | <i>Phaseolus</i> | <i>sp.</i> | Guatemala | 14.74122 | -91.6639 |
| PUR15862 | <i>Uromyces</i> | <i>appendiculatus</i> | 1917 | Fabaceae | <i>Dolichus</i> | <i>laba</i> | Cuba | 23.13194 | -82.3642 |
| PUR15885 | <i>Uromyces</i> | <i>neurocarpi</i> | 1922 | Fabaceae | <i>Bradburya</i> | <i>jubescens</i> | El Salvador | 13.844282 | -89.917114 |
| PUR15947 | <i>Uromyces</i> | <i>dolicholi</i> | 1916 | Fabaceae | <i>Dolicholus</i> | <i>minimum</i> | Puerto Rico | 17.96867 | -66.9097 |
| PUR15981 | <i>Uromyces</i> | <i>euphorbiae</i> | 1913 | Euphorbiaceae | <i>Chamaesyce</i> | <i>albomarginata</i> | USA | 32.22174 | -110.926 |
| PUR16556 | <i>Uromyces</i> | <i>dictyosperma</i> | 1911 | Euphorbiaceae | <i>Euphorbia</i> | <i>spathulata</i> | USA | 40.01499 | -105.271 |
| PUR16592 | <i>Uromyces</i> | <i>jeniphae</i> | 1916 | Euphorbiaceae | <i>Manihot</i> | <i>domingensis</i> | Cuba | 23.13194 | -82.3642 |
| PUR16672 | <i>Uromyces</i> | <i>triguetrus</i> | 1915 | Hypericaceae | <i>Hypericum</i> | <i>pratense</i> | Guatemala | 14.68313 | -90.4215 |
| PUR16731 | <i>Uromyces</i> | <i>plumbarius</i> | 1921 | Onagraceae | <i>Gaura</i> | <i>angustifolia</i> | USA | 33.44909 | -88.8192 |
| PUR17139 | <i>Uromyces</i> | <i>spermacoces</i> | 1899 | Rubiaceae | <i>Diodia</i> | <i>apiculata</i> | USA | 30.18968 | -82.63929 |
| PUR17176 | <i>Uromyces</i> | <i>novissimus</i> | 1913 | Cucurbitaceae | <i>Cayaponia</i> | <i>americana</i> | Puerto Rico | 18.0872 | -67.149 |
| PUR17178 | <i>Uromyces</i> | <i>novissimus</i> | 1923 | Cucurbitaceae | <i>Cayaponia</i> | <i>americana</i> | Puerto Rico | 18.00473 | -66.606 |
| PUR17221 | <i>Uromyces</i> | <i>compactus</i> | 1910 | Asteraceae | <i>Aster</i> | <i>spinosus</i> | USA | 32.22174 | -110.926 |
| PUR17230 | <i>Uromyces</i> | <i>polymniae</i> | 1915 | Asteraceae | <i>Polymnia</i> | <i>maculata</i> | Guatemala | 14.68313 | -90.4215 |
| PUR17242 | <i>Uromyces</i> | <i>mantinii</i> | 1903 | Asteraceae | <i>Melanthera</i> | <i>hastata</i> | USA | 28.01459 | -82.6387 |
| PUR17300 | <i>Uromyces</i> | <i>Colombianus</i> | 1909 | Asteraceae | <i>Melanthera</i> | <i>aspera</i> | Bahamas | 24.67821 | -77.7667 |
| PUR17313 | <i>Uromyces</i> | <i>cucullatus</i> | 1920 | Asteraceae | <i>Baltimora</i> | <i>recta</i> | Cuba | 22.39981 | -79.9211 |
| PUR34939 | <i>Uromyces</i> | <i>shearianus</i> | 1920 | Amaranthaceae | <i>Atriplex</i> | <i>californica</i> | USA | 32.71533 | -117.157 |
| PUR3537 | <i>Uromyces</i> | <i>cestri</i> | 1924 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Peru | -13.534876 | -73.694051 |
| PUR35442 | <i>Uromyces</i> | <i>cestri</i> | 1915 | Solanaceae | <i>Cestrum</i> | <i>aurantiacum</i> | Guatemala | 14.77044 | -91.2794 |
| PUR36520 | <i>Uromyces</i> | <i>glycyrrhizae</i> | 1895 | Fabaceae | <i>Glycyrrhiza</i> | <i>glutinosa</i> | USA | 38.13094 | -120.338 |
| PUR36681 | <i>Uromyces</i> | <i>montanoae</i> | 1915 | Asteraceae | <i>Montanoa</i> | <i>dumicola</i> | Costa Rica | 9.933333 | -84.0833 |
| PUR36689 | <i>Uromyces</i> | <i>bidenticola</i> | 1915 | Asteraceae | <i>Bidens</i> | <i>expansa</i> | USA | 33.76696 | -118.189 |
| PUR36691 | <i>Uromyces</i> | <i>bidenticola</i> | 1917 | Asteraceae | <i>Bidens</i> | <i>aurea</i> | Guatemala | 14.74122 | -91.6639 |
| PUR36741 | <i>Uromyces</i> | <i>bidenticola</i> | 1916 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Cuba | 21.66667 | -82.8333 |
| PUR38612 | <i>Uromyces</i> | <i>heterodermus</i> | 1924 | Liliaceae | <i>Erythronium</i> | <i>giganteum</i> | USA | 47.64592 | -122.609 |
| PUR38665 | <i>Uromyces</i> | <i>tranzschelii</i> | 1908 | Euphorbiaceae | <i>Euphorbia</i> | <i>brachycera</i> | USA | 39.74249 | -105.51361 |
| PUR38755 | <i>Uromyces</i> | <i>rudbeckiae</i> | 1924 | Asteraceae | <i>Rudbeckia</i> | <i>laciniata</i> | Canada | 51.15 | -100.05 |
| PUR38756 | <i>Uromyces</i> | <i>rudbeckiae</i> | 1920 | Asteraceae | <i>Rudbeckia</i> | <i>laciniata</i> | USA | 40.37417 | -86.7689 |
| PUR42397 | <i>Uromyces</i> | <i>guatemalensis</i> | 1921 | Fabaceae | <i>Bauhinia</i> | <i>ungulata</i> | El Salvador | 13.70167 | -89.1094 |
| PUR42413 | <i>Uromyces</i> | <i>agnatus</i> | 1894 | Euphorbiaceae | <i>Cnidocolus</i> | <i>stimulosus</i> | USA | 26.6159 | -80.057 |
| PUR42945 | <i>Uromyces</i> | <i>holmbergii</i> | 1923 | Rubiaceae | <i>Borreria</i> | <i>verticillata</i> | Puerto Rico | 18.377205 | -66.042793 |
| PUR44906 | <i>Uromyces</i> | <i>libocedri</i> | 1933 | Rosaceae | <i>Amelanchier</i> | <i>alnifolia</i> | USA | 41.11863 | -123.546 |
| PUR45093 | <i>Uromyces</i> | <i>andropogonis</i> | 1934 | Violaceae | <i>Viola</i> | <i>affinis</i> | USA | 36.595106 | -82.188744 |
| PUR45127 | <i>Uromyces</i> | <i>fragilipes</i> | 1933 | Poaceae | <i>Agrostis</i> | <i>diegoensis</i> | USA | 40.89616 | -123.771 |
| PUR45234 | <i>Uromyces</i> | <i>holwayi</i> | 1929 | Liliaceae | <i>Lilium</i> | <i>Colombianum</i> | USA | 48.91767 | -117.792 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------------|------|----------------|-----------------------|---------------------|--------------------|-----------|-------------|
| PUR45388 | <i>Uromyces</i> | <i>plumbarius</i> | 1916 | Onagraceae | <i>Camissonia</i> | <i>ovata</i> | USA | 36.60024 | -121.895 |
| PUR45389 | <i>Uromyces</i> | <i>eugentianae</i> | 1929 | Gentianaceae | <i>Gentianella</i> | <i>amarella</i> | Canada | 52.61667 | -103.929 |
| PUR45396 | <i>Uromyces</i> | <i>spermacoces</i> | 1925 | Rubiaceae | <i>Diodia</i> | <i>teres</i> | USA | 39.782845 | -90.732162 |
| PUR45400 | <i>Uromyces</i> | <i>colombianus</i> | 1925 | Asteraceae | <i>Melanthera</i> | <i>buchii</i> | Dominican Republic | 19.00065 | -70.3999 |
| PUR48549 | <i>Uromyces</i> | <i>krameriae</i> | 1939 | Krameriaceae | <i>Krameria</i> | <i>lanceolata</i> | USA | 29.84633 | -81.961 |
| PUR49058 | <i>Uromyces</i> | <i>antiguanus</i> | 1938 | Fabaceae | <i>Desmodium</i> | <i>orbiculare</i> | Guatemala | 14.56111 | -90.73444 |
| PUR49114 | <i>Uromyces</i> | <i>celosiae</i> | 1938 | Amaranthaceae | <i>Iresine</i> | <i>galea</i> | Guatemala | 14.56111 | -90.73444 |
| PUR49879 | <i>Uromyces</i> | <i>andropogonis</i> | 1941 | Poaceae | <i>Andropogon</i> | <i>elliottii</i> | USA | 38.33444 | -86.46417 |
| PUR50017 | <i>Uromyces</i> | <i>senecionicola</i> | 1941 | Asteraceae | <i>Senecio</i> | <i>acutangulus</i> | Guatemala | 14.74122 | -91.6639 |
| PUR50338 | <i>Uromyces</i> | <i>bonariensis</i> | 1941 | Amaranthaceae | <i>Gomphrena</i> | <i>tuerckheimii</i> | Guatemala | 15.593558 | -90.217024 |
| PUR50437 | <i>Uromyces</i> | <i>scleriae</i> | 1941 | Cyperaceae | <i>Scleria</i> | <i>bracteata</i> | Guatemala | 15.593558 | -90.217024 |
| PUR50746 | <i>Uromyces</i> | <i>niteroyensis</i> | 1941 | Poaceae | <i>Setaria</i> | <i>geniculata</i> | Cuba | 22.399809 | -79.92111 |
| PUR50783 | <i>Uromyces</i> | <i>zygadeni</i> | 1942 | Melanthiaceae | <i>Zygadenus</i> | <i>gramineus</i> | USA | 41.52666 | -105.5 |
| PUR50908 | <i>Uromyces</i> | <i>asclepiadis</i> | 1887 | Apocynaceae | <i>Asclepias</i> | <i>syriaca</i> | USA | 40.04444 | -89.0332 |
| PUR51533 | <i>Uromyces</i> | <i>betae</i> | 1942 | Amaranthaceae | <i>Beta</i> | <i>cicla</i> | USA | 37.44188 | -122.143 |
| PUR51540 | <i>Uromyces</i> | <i>sommerfeltii</i> | 1934 | Asteraceae | <i>Solidago</i> | <i>corymbosa</i> | USA | 44.34682 | -106.699 |
| PUR51544 | <i>Uromyces</i> | <i>scleriae</i> | 1924 | Cyperaceae | <i>Scleria</i> | <i>microcarpa</i> | Guyana | 5 | -59 |
| PUR51546 | <i>Uromyces</i> | <i>plumbarius</i> | 1932 | Onagraceae | <i>Oenothera</i> | <i>biennis</i> | USA | 35.99403 | -78.8986 |
| PUR51697 | <i>Uromyces</i> | <i>rhynchosporae</i> | 1947 | Cyperaceae | <i>Rhynchospora</i> | <i>tenuis</i> | Honduras | 14.054836 | -86.85 |
| PUR52090 | <i>Uromyces</i> | <i>houstoniatus</i> | 1949 | Verbenaceae | <i>Hosta</i> | <i>caerulea</i> | Canada | 47.2 | -65.1833 |
| PUR52266 | <i>Uromyces</i> | <i>commelinae</i> | 1951 | Commelinaceae | <i>Commelina</i> | <i>nudiflora</i> | Trinidad | 10.5 | -61.25 |
| PUR52267 | <i>Uromyces</i> | <i>commelinae</i> | 1951 | Commelinaceae | <i>Commelina</i> | <i>nudiflora</i> | Trinidad | 10.5 | -61.25 |
| PUR52268 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1950 | Poaceae | <i>Eriochloa</i> | <i>polystachya</i> | Trinidad | 10.5 | -61.25 |
| PUR52270 | <i>Uromyces</i> | <i>brasiliensis</i> | 1951 | Convolvulaceae | <i>Convolvulus</i> | <i>nodiflorus</i> | Trinidad | 10.688447 | -61.754619 |
| PUR52379 | <i>Uromyces</i> | <i>lycoctoni</i> | 1949 | Ranunculaceae | <i>Aconitum</i> | <i>colombianum</i> | USA | 43.68438 | -110.69 |
| PUR52896 | <i>Uromyces</i> | <i>aureus</i> | 1942 | Amaryllidaceae | <i>Allium</i> | <i>validum</i> | USA | 40.50709 | -123.497 |
| PUR53002 | <i>Uromyces</i> | <i>graminicola</i> | 1951 | Poaceae | <i>Panicum</i> | <i>hirticaula</i> | Honduras | 14.05 | -87.216667 |
| PUR53398 | <i>Uromyces</i> | <i>amphidymus</i> | 1954 | Poaceae | <i>Glyceria</i> | <i>borealis</i> | USA | 43.05349 | -89.4035 |
| PUR54734 | <i>Uromyces</i> | <i>unitus</i> | 1953 | Montiaceae | <i>Lewisia</i> | <i>redivia</i> | Canada | 49.74328 | -124.275 |
| PUR54737 | <i>Uromyces</i> | <i>ervi</i> | 1956 | Fabaceae | <i>Vicia</i> | <i>hirsuta</i> | Canada | 45.85972 | -61.9208 |
| PUR54761 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1956 | Poaceae | <i>Eriochloa</i> | <i>michauxii</i> | USA | 29.959118 | -82.928183 |
| PUR54868 | <i>Uromyces</i> | <i>asclepiadis</i> | 1892 | Apocynaceae | <i>Asclepias</i> | <i>syriaca</i> | USA | 41.52427 | -72.0759 |
| PUR55892 | <i>Uromyces</i> | <i>minimus</i> | 1958 | Poaceae | <i>Muhlenbergia</i> | <i>racemosa</i> | USA | 45.7595 | -85.01083 |
| PUR56471 | <i>Uromyces</i> | <i>brodiaeae</i> | 1923 | Liliaceae | <i>Hesperoscordum</i> | <i>lacteam</i> | USA | 38.90108 | -120.062 |
| PUR56476 | <i>Uromyces</i> | <i>epicampis</i> | 1957 | Poaceae | <i>Muhlenbergia</i> | <i>rigens</i> | USA | 31.994859 | -109.334076 |
| PUR56479 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1957 | Fabaceae | <i>Lathyrus</i> | <i>arizonicus</i> | USA | 34.91535 | -111.724 |
| PUR56481 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1956 | Fabaceae | <i>Lathyrus</i> | <i>fabae</i> | USA | 61.45778 | -149.72889 |
| PUR56495 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1958 | Fabaceae | <i>Desmodium</i> | <i>canadense</i> | USA | 43.053488 | -89.403503 |
| PUR56511 | <i>Uromyces</i> | <i>sporoboli</i> | 1959 | Amaryllidaceae | <i>Allium</i> | <i>canadense</i> | USA | 40.412609 | -86.893471 |
| PUR57042 | <i>Uromyces</i> | <i>dactylidis</i> | 1959 | Poaceae | <i>Alopecurus</i> | <i>aristulatus</i> | USA | 34.95962 | -111.544 |
| PUR58286 | <i>Uromyces</i> | <i>commelinae</i> | 1962 | Vitaceae | <i>Cissus</i> | <i>incisa</i> | USA | 25.89281 | -97.5054 |
| PUR58288 | <i>Uromyces</i> | <i>commelinae</i> | 1962 | Commelinaceae | <i>Commelina</i> | <i>erecta</i> | USA | 25.90175 | -97.4975 |
| PUR58599 | <i>Uromyces</i> | <i>jacksonii</i> | 1930 | Poaceae | <i>Agrostis</i> | <i>hallii</i> | USA | 40.76467 | -123.874 |
| PUR59981 | <i>Uromyces</i> | <i>crotalariae</i> | 1940 | Fabaceae | <i>Crotalaria</i> | <i>eriocarpa</i> | Mexico | 24.66209 | -107.397 |
| PUR60054 | <i>Uromyces</i> | <i>eragrostidis</i> | 1963 | Asparagaceae | <i>Anthericum</i> | <i>torreyi</i> | Mexico | 22.70848 | -100.347 |
| PUR60504 | <i>Uromyces</i> | <i>compactus</i> | 1962 | Asteraceae | <i>Aster</i> | <i>spinosus</i> | Mexico | 27.79414 | -109.91 |
| PUR60507 | <i>Uromyces</i> | <i>commelinae</i> | 1963 | Commelinaceae | <i>Commelina</i> | <i>elegans</i> | Mexico | 22.742 | -99.1762 |
| PUR60519 | <i>Uromyces</i> | <i>junci</i> | 1964 | Juncaceae | <i>Juncus</i> | <i>balticus</i> | Mexico | 32.53831 | -116.628 |
| PUR60539 | <i>Uromyces</i> | <i>striatus</i> | 1964 | Fabaceae | <i>Hosackia</i> | <i>disticha</i> | Mexico | 31.87575 | -116.593 |
| PUR60549 | <i>Uromyces</i> | <i>indigoferae</i> | 1962 | Fabaceae | <i>Indigofera</i> | <i>laevis</i> | Mexico | 28.79672 | -111.943 |
| PUR60796 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1907 | Fabaceae | <i>Desmodium</i> | <i>alemani</i> | Mexico | 19.224359 | -99.201878 |
| PUR60886 | <i>Uromyces</i> | <i>mexicanus</i> | 1965 | Fabaceae | <i>Desmodium</i> | <i>procumbens</i> | Mexico | 24.007143 | -104.655273 |
| PUR60990 | <i>Uromyces</i> | <i>costaricensis</i> | 1966 | Poaceae | <i>Lasiacis</i> | <i>divaricata</i> | USA | 25.7501 | -80.204493 |
| PUR61078 | <i>Uromyces</i> | <i>minor</i> | 1964 | Fabaceae | <i>Trifolium</i> | <i>parryi</i> | USA | 39.92554 | -105.682 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|--------------------|-----------------|--------------------------------|-----------------|-----------------|----------------------|----------------------|--------------------|-------------|--------------|
| PUR61113 | <i>Uromyces</i> | <i>minor</i> | 1964 | Fabaceae | <i>Trifolium</i> | <i>dasyphyllum</i> | USA | 40.44054 | -105.774 |
| PUR61229 | <i>Uromyces</i> | <i>montanus</i> | 1966 | Fabaceae | <i>Lupinus</i> | <i>aschenbornii</i> | Costa Rica | 9.904645 | -83.8028 |
| PUR61478 | <i>Uromyces</i> | <i>intricatus</i> | 1965 | Polygonaceae | <i>Eriogonum</i> | <i>jamesii</i> | USA | 37.19604 | -104.512 |
| PUR61483 | <i>Uromyces</i> | <i>dactylidis</i> | 1920 | Poaceae | <i>Alopecurus</i> | <i>aristulatus</i> | Canada | 49.61667 | -105.983 |
| PUR61583 | <i>Uromyces</i> | <i>silenes</i> | 1966 | Caryophyllaceae | <i>Cerastium</i> | <i>sp.</i> | USA | 44.42559 | -110.582 |
| PUR62672 | <i>Uromyces</i> | <i>aemulus</i> | 1968 | Amaryllidaceae | <i>Allium</i> | <i>brandegei</i> | USA | 41.68456 | -111.634 |
| PUR63378 | <i>Uromyces</i> | <i>lapponicus</i> | 1939 | Fabaceae | <i>Astragalus</i> | <i>cucosmus</i> | Canada | 51.48333 | -78.7667 |
| PUR63402 | <i>Uromyces</i> | <i>eragrostidis</i> | 1910 | Asparagaceae | <i>Anthericum</i> | <i>torreyi</i> | USA | 30.67154 | -104.055 |
| PUR63493 | <i>Uromyces</i> | <i>mexicanus</i> | 1970 | Fabaceae | <i>Desmodium</i> | <i>neomexicanum</i> | USA | 31.488389 | -110.362434 |
| PUR63532 | <i>Uromyces</i> | <i>sonorencis</i> | 1970 | Convolvulaceae | <i>Merremia</i> | <i>palmeri</i> | Mexico | 28.79672 | -111.943 |
| PUR63661 | <i>Uromyces</i> | <i>inaequalis</i> | 1969 | Caryophyllaceae | <i>Silene</i> | <i>parryi</i> | USA | 47.1954 | -120.939 |
| PUR63872 | <i>Uromyces</i> | <i>appendiculatus</i> | 1969 | Fabaceae | <i>Macroptilium</i> | <i>atropurpureum</i> | Mexico | 28.1493 | -105.424 |
| PUR64079 | <i>Uromyces</i> | <i>costaricensis</i> | 1971 | Poaceae | <i>Lasiacis</i> | <i>divaricata</i> | Mexico | 20.013095 | -97.531148 |
| PUR64110 | <i>Uromyces</i> | <i>globosus</i> | 1971 | Euphorbiaceae | <i>Sapium</i> | <i>lateriflorum</i> | Mexico | 20.0131 | -97.5311 |
| PUR64263 | <i>Uromyces</i> | <i>bauhinicola</i> | 1971 | Fabaceae | <i>Bauhinia</i> | <i>pringlei</i> | Mexico | 20.81323 | -103.338 |
| PUR64430 | <i>Uromyces</i> | <i>galphinae</i> | 1908 | Malpighiaceae | <i>Galphimia</i> | <i>burchiana</i> | Mexico | 17.05156 | -96.7261 |
| PUR64609 | <i>Uromyces</i> | <i>bourvadiae</i> | 1940 | Rubiaceae | <i>Bouvardia</i> | <i>bouvardioides</i> | Mexico | 24.66209 | -107.397 |
| PUR64614 | <i>Uromyces</i> | <i>epicampis</i> | 1971 | Poaceae | <i>Muhlenbergia</i> | <i>dubia</i> | Mexico | 24.01699 | -104.49989 |
| PUR64831 | <i>Uromyces</i> | <i>jonesii</i> | 1973 | Ranunculaceae | <i>Ranunculus</i> | <i>alismaefolius</i> | USA | 38.84972 | -107.1 |
| PUR65124 | <i>Uromyces</i> | <i>tenuistipes</i> | 1974 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Mexico | 16.185549 | -92.097961 |
| PUR65130 | <i>Uromyces</i> | <i>bauhiniae</i> | 1974 | Fabaceae | <i>Bauhinia</i> | <i>sp.</i> | Mexico | 16.18739 | -93.8387 |
| PUR65172 | <i>Uromyces</i> | <i>bidenticola</i> | 1974 | Asteraceae | <i>Bidens</i> | <i>sp.</i> | Mexico | 16.185549 | -92.097961 |
| PUR65186 | <i>Uromyces</i> | <i>cucullatus</i> | 1969 | Asteraceae | <i>Aspilia</i> | <i>angusta</i> | Mexico | 21.03518 | -104.244 |
| PUR65490 | <i>Uromyces</i> | <i>coloradensis</i> | 1961 | Fabaceae | <i>Vicia</i> | <i>americana</i> | USA | 37.85055 | -109.547 |
| PUR65831 | <i>Uromyces</i> | <i>appendiculatus</i> | 1977 | Fabaceae | <i>Phaseolus</i> | <i>vulgaris</i> | Costa Rica | 9.904645 | -83.8028 |
| PUR65869 | <i>Uromyces</i> | <i>cucullatus</i> | 1974 | Asteraceae | <i>Perymenium</i> | <i>sp.</i> | Mexico | 16.72816 | -92.8105 |
| PUR65877 | <i>Uromyces</i> | <i>miruae</i> | 1962 | Liliaceae | <i>Fritillaria</i> | <i>kamchatkensis</i> | USA | 51.54222 | -178.983 |
| PUR69801/PURF2901 | <i>Uromyces</i> | <i>dietelianus</i> | 1921 | Fabaceae | <i>Bauhinia</i> | <i>sp.</i> | Brazil | -22.8656 | -43.4272 |
| PUR69804 | <i>Uromyces</i> | <i>venezuelanus</i> | 1921 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Trinidad | - | - |
| PUR69805 | <i>Uromyces</i> | <i>venezuelanus</i> | 1921 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Trinidad | - | - |
| PUR69806 | <i>Uromyces</i> | <i>venezuelanus</i> | 1928 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Venezuela | - | - |
| PUR69806/PURF2906 | <i>Uromyces</i> | <i>venezuelanus</i> | 1928 | Fabaceae | <i>Bauhinia</i> | <i>pauletia</i> | Venezuela | 10.21844 | -67.3302 |
| PUR77063/PURF10163 | <i>Uromyces</i> | <i>foveolatus</i> | 1936 | Fabaceae | <i>Bauhinia</i> | <i>viscidula</i> | Brazil | -19.1187 | -54.5963 |
| PUR78429 | <i>Uromyces</i> | <i>superfixus</i> | 1948 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Venezuela | - | - |
| PUR78615/60058 | <i>Uromyces</i> | <i>eragrostidis</i> | 1946 | Poaceae | <i>Eragrostis</i> | <i>cilianensis</i> | Mexico | 23.98718909 | -104.6133811 |
| PUR83813/PURF16913 | <i>Uromyces</i> | <i>niteroyensis</i> | 1946 | Poaceae | <i>Panicum</i> | <i>antidotale</i> | Argentina | -34.921454 | -57.954533 |
| PUR84645/PURF17745 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1885 | Poaceae | <i>Eriochloa</i> | <i>monevidensis</i> | Argentina | -26.266307 | -60.983398 |
| PUR87214 | <i>Uromyces</i> | <i>unionensis</i> | 1983 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Brazil | -21.229178 | -44.980742 |
| PUR87329 | <i>Uromyces</i> | <i>ratus</i> | 1983 | Cucurbitaceae | <i>Cucurbitaceae</i> | <i>non-data</i> | Brazil | -21.3269 | -46.3654 |
| PUR87430 | <i>Uromyces</i> | <i>oblectaneus</i> | 1983 | Cyperaceae | <i>Rhynchospora</i> | <i>sp.</i> | Brazil | -22.512305 | -48.916169 |
| PUR87852 | <i>Uromyces</i> | <i>vegassii</i> | 1984 | Fabaceae | <i>Bauhinia</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PUR88382 | <i>Uromyces</i> | <i>silphii</i> | 1925 | Juncaceae | <i>Juncus</i> | <i>dudleyi</i> | Canada | 51.483333 | -78.766667 |
| PUR88398 | <i>Uromyces</i> | <i>rhynchospora</i> | 1902 | Cyperaceae | <i>Rhynchospora</i> | <i>alba</i> | USA | 40.805056 | -81.935143 |
| PUR88474 | <i>Uromyces</i> | <i>lespedezae-procumbentis</i> | 1985 | Fabaceae | <i>Lespedeza</i> | <i>procumbens</i> | USA | 33.96095 | -83.3779 |
| PUR88670 | <i>Uromyces</i> | <i>amoenus</i> | <i>non-data</i> | Asteraceae | <i>Anaphalis</i> | <i>margaritacea</i> | Canada | 49.07944 | -113.851 |
| PUR88690 | <i>Uromyces</i> | <i>hedysari-obscuri</i> | 1980 | Fabaceae | <i>Hedysarum</i> | <i>alpinum</i> | Canada | 49.00944 | -114.051 |
| PUR89105 | <i>Uromyces</i> | <i>clignyi</i> | 1984 | Poaceae | <i>Schizachyrium</i> | <i>sp.</i> | Brazil | -19.466721 | -44.172511 |
| PUR89495 | <i>Uromyces</i> | <i>bicolor</i> | 1985 | Amaryllidaceae | <i>Allium</i> | <i>canadense</i> | USA | 36.04841 | -94.0969 |
| PUR89656 | <i>Uromyces</i> | <i>australiensis</i> | 1986 | Apocynaceae | <i>Alyxia</i> | <i>ruscifolia</i> | Australia | -26.846 | 151.5452 |
| PUR89838 | <i>Uromyces</i> | <i>Braziliensis</i> | 1930 | Convolvulaceae | <i>Convolvulus</i> | <i>nodiflorus</i> | Dominican Republic | 19.47055 | -70.6939 |
| PUR89865a | <i>Uromyces</i> | <i>vicosensis</i> | 1977 | Fabaceae | <i>Bauhinia</i> | <i>forficata</i> | Brazil | -18.9757 | -44.484 |
| PUR9401 | <i>Uromyces</i> | <i>libocedri</i> | 1923 | Cupressaceae | <i>Calocedrus</i> | <i>decurrens</i> | USA | 40.88238 | -121.661 |
| PURF10327 | <i>Uromyces</i> | <i>wedeliae</i> | 1939 | Asteraceae | <i>Wedelia</i> | <i>biflora</i> | New Guinea | -7.72762 | 147.5982 |
| PURF10359 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1941 | Fabaceae | <i>Lens</i> | <i>esculenta</i> | Argentina | -31.621051 | -60.697601 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------------|----------|-----------------|-----------------------|----------------------|------------------|------------|------------|
| PURF10360 | <i>Uromyces</i> | <i>appendiculatus</i> | 1921 | Fabaceae | <i>Phaseolus</i> | <i>vulgaris</i> | Argentina | -31.621051 | -60.697601 |
| PURF10361 | <i>Uromyces</i> | <i>striatus</i> | 1941 | Fabaceae | <i>Medicago</i> | <i>sativa</i> | Argentina | -31.621051 | -60.697601 |
| PURF10362 | <i>Uromyces</i> | <i>lupini</i> | 1941 | Fabaceae | <i>Lupinus</i> | <i>sp.</i> | Argentina | -31.621051 | -60.697601 |
| PURF10478 | <i>Uromyces</i> | <i>poivetae</i> | 1939 | Fabaceae | <i>Poiretia</i> | <i>scandens</i> | Venezuela | 10.467466 | -66.910181 |
| PURF10636 | <i>Uromyces</i> | <i>geranii</i> | 1940 | Geraniaceae | <i>Geranium</i> | <i>aconiti</i> | India | 35.42694 | 74.76648 |
| PURF10648 | <i>Uromyces</i> | <i>vignae</i> | 1941 | Fabaceae | <i>Vigna</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURF10662 | <i>Uromyces</i> | <i>euphorbiae</i> | 1941 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | Colombia | 6.25184 | -75.563591 |
| PURF10892 | <i>Uromyces</i> | <i>ehrhartae</i> | 1943 | Poaceae | <i>Microlaena</i> | <i>stipoides</i> | Australia | -27.46785 | 153.02801 |
| PURF10932 | <i>Uromyces</i> | <i>mulini</i> | 1944 | Apiaceae | <i>Mulinum</i> | <i>spinosum</i> | Argentina | -35.078313 | -69.587273 |
| PURF10987 | <i>Uromyces</i> | <i>cisneroanus</i> | 1939 | Euphorbiaceae | <i>Sapium</i> | <i>sp.</i> | Venezuela | 10.349255 | -67.684516 |
| PURF10990 | <i>Uromyces</i> | <i>dolichosporus</i> | 1939 | Heliotropiaceae | <i>Tournefortia</i> | <i>sericea</i> | Venezuela | 10.467357 | -66.606626 |
| PURF10997 | <i>Uromyces</i> | <i>vignae</i> | 1938 | Fabaceae | <i>Vigna</i> | <i>luteola</i> | Venezuela | 10.488011 | -66.879193 |
| PURF11173 | <i>Uromyces</i> | <i>suksdorfii</i> | 1923 | Caryophyllaceae | <i>Silene</i> | <i>chilensis</i> | Peru | -15.412768 | -72.670927 |
| PURF11174 | <i>Uromyces</i> | <i>blainvilleae</i> | 1923 | Asteraceae | <i>Baltimora</i> | <i>recta</i> | Peru | -9.3125 | -77.762778 |
| PURF11175 | <i>Uromyces</i> | <i>euphorbiae</i> | 1923 | Euphorbiaceae | <i>Chamaesyce</i> | <i>lasiocarpa</i> | Peru | -14.338681 | -71.766731 |
| PURF11176 | <i>Uromyces</i> | <i>euphorbiae</i> | 1922 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Peru | -11.846081 | -76.386809 |
| PURF11177 | <i>Uromyces</i> | <i>euphorbiae</i> | 1922 | Euphorbiaceae | <i>Euphorbia</i> | <i>rhytisperma</i> | Peru | -11.846081 | -76.386809 |
| PURF11178 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1922 | Fabaceae | <i>Desmodium</i> | <i>uncinatum</i> | Peru | -10.155129 | -76.339575 |
| PURF11179 | <i>Uromyces</i> | <i>bidenticola</i> | 1922 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Peru | -11.846081 | -76.386809 |
| PURF11180 | <i>Uromyces</i> | <i>bidenticola</i> | 1922 | Asteraceae | <i>Bidens</i> | <i>leucanthema</i> | Peru | -9.930617 | -76.242228 |
| PURF11182 | <i>Uromyces</i> | <i>eragrostidis</i> | 1922 | Poaceae | <i>Eragrostis</i> | <i>pilosa</i> | Peru | -11.846081 | -76.386809 |
| PURF11183 | <i>Uromyces</i> | <i>trifolii-megalanthi</i> | 1922 | Fabaceae | <i>Trifolium</i> | <i>peruvianum</i> | Peru | -15.412768 | -72.670927 |
| PURF11184 | <i>Uromyces</i> | <i>araucanus</i> | 1922 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Peru | -11.668752 | -76.086457 |
| PURF11186 | <i>Uromyces</i> | <i>striatus</i> | 1922 | Fabaceae | <i>Medicago</i> | <i>lupulina</i> | Peru | -11.93787 | -75.338627 |
| PURF11187 | <i>Uromyces</i> | <i>commelinae</i> | 1922 | Commelinaceae | <i>Tradescantia</i> | <i>cymbispatha</i> | Peru | -11.93787 | -75.338627 |
| PURF11232 | <i>Uromyces</i> | <i>neurocarpi</i> | 1945 | Fabaceae | <i>Clitoria</i> | <i>arborescens</i> | Trinidad | 10.5 | -61.25 |
| PURF11382 | <i>Uromyces</i> | <i>commelinae</i> | 1944 | Commelinaceae | <i>Commelina</i> | <i>sp.</i> | Argentina | -27.46056 | -58.983886 |
| PURF11525 | <i>Uromyces</i> | <i>trifolii</i> | 1942 | Fabaceae | <i>Trifolium</i> | <i>repens</i> | Falkland Islands | -51.289225 | -59.622356 |
| PURF11530 | <i>Uromyces</i> | <i>euphorbiae</i> | 1948 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Venezuela | 10.258324 | -67.611727 |
| PURF11531 | <i>Uromyces</i> | <i>cestricola</i> | non-data | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Bolivia | -17.118938 | -65.950439 |
| PURF11532 | <i>Uromyces</i> | <i>cestricola</i> | 1947 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Bolivia | -17.118938 | -65.950439 |
| PURF11541 | <i>Uromyces</i> | <i>vernalis</i> | 1905 | Amaryllidaceae | <i>Allium</i> | <i>striatellum</i> | Argentina | -34.571605 | -58.422155 |
| PURF11654 | <i>Uromyces</i> | <i>dichromenae</i> | 1948 | Cyperaceae | <i>Dichromena</i> | <i>radicans</i> | Trinidad | 10.5 | -61.25 |
| PURF11655 | <i>Uromyces</i> | <i>dichromenae</i> | 1945 | Cyperaceae | <i>Dichromena</i> | <i>radicans</i> | Trinidad | 10.5 | -61.25 |
| PURF11656 | <i>Uromyces</i> | <i>dichromenae</i> | 1947 | Cyperaceae | <i>Dichromena</i> | <i>radicans</i> | Trinidad | 10.5 | -61.25 |
| PURF11710 | <i>Uromyces</i> | <i>novissimus</i> | 1948 | Cucurbitaceae | <i>Cayaponia</i> | <i>ficifolia</i> | Argentina | -34.809538 | -57.984552 |
| PURF11711 | <i>Uromyces</i> | <i>holmbergii</i> | 1942 | Rubiaceae | <i>Diodia</i> | <i>dasycephala</i> | Argentina | -24.784237 | -65.412333 |
| PURF11712 | <i>Uromyces</i> | <i>bonariensis</i> | 1949 | Amaranthaceae | <i>Gomphrena</i> | <i>elegans</i> | Argentina | -27.566675 | -56.914669 |
| PURF11713 | <i>Uromyces</i> | <i>bonariensis</i> | 1913 | Amaranthaceae | <i>Gomphrena</i> | <i>elegans</i> | Argentina | -33.008871 | -61.807463 |
| PURF11714 | <i>Uromyces</i> | <i>commelinae</i> | 1948 | Commelinaceae | <i>Commelina</i> | <i>sp.</i> | Argentina | -34.921454 | -57.954533 |
| PURF11715 | <i>Uromyces</i> | <i>eragrostidis</i> | 1964 | Poaceae | <i>Eragrostis</i> | <i>lugens</i> | Argentina | -34.921454 | -57.954533 |
| PURF11716 | <i>Uromyces</i> | <i>platensis</i> | 1949 | Amaranthaceae | <i>Pfaffia</i> | <i>stenophylla</i> | Argentina | -27.566675 | -56.914669 |
| PURF11717 | <i>Uromyces</i> | <i>limonii</i> | 1940 | Plumbaginaceae | <i>Limonium</i> | <i>brasilensis</i> | Argentina | -34.570278 | -59.105 |
| PURF11718 | <i>Uromyces</i> | <i>tessariae</i> | 1944 | Asteraceae | <i>Tessaria</i> | <i>integrifolia</i> | Argentina | -27.46056 | -58.983886 |
| PURF11719 | <i>Uromyces</i> | <i>kurtzii</i> | 1944 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Argentina | -34.617717 | -68.330066 |
| PURF11720 | <i>Uromyces</i> | <i>rumicis</i> | 1947 | Polygonaceae | <i>Rumex</i> | <i>crispus</i> | Argentina | -34.92145 | -57.95453 |
| PURF11721 | <i>Uromyces</i> | <i>circumscriptus</i> | 1946 | Loranthaceae | <i>Tristerix</i> | <i>verticillatus</i> | Argentina | -33.57653 | -69.01538 |
| PURF11722 | <i>Uromyces</i> | <i>cisneroanus</i> | 1947 | Euphorbiaceae | <i>Sapium</i> | <i>hematospermum</i> | Argentina | -34.921454 | -57.954533 |
| PURF11724 | <i>Uromyces</i> | <i>americanus</i> | 1967 | Cyperaceae | <i>Schoenoplectus</i> | <i>americanus</i> | Chile | -33.45 | -70.666667 |
| PURF11725 | <i>Uromyces</i> | <i>patagonicus</i> | 1943 | Fabaceae | <i>Glycyrrhiza</i> | <i>astragalina</i> | Argentina | -32.591695 | -69.348722 |
| PURF11727 | <i>Uromyces</i> | <i>kurtzii</i> | 1944 | Asteraceae | <i>Senecio</i> | <i>subulatus</i> | Argentina | -34.617717 | -68.330066 |
| PURF11728 | <i>Uromyces</i> | <i>asclepiadis</i> | 1944 | Apocynaceae | <i>Calotropis</i> | <i>procera</i> | Colombia | 6.7672 | -73.197461 |
| PURF11846 | <i>Uromyces</i> | <i>antioquiensis</i> | 1948 | Cyperaceae | <i>Rhynchospora</i> | <i>polyphylla</i> | Trinidad | 10.5 | -61.25 |
| PURF11898 | <i>Uromyces</i> | <i>cestri</i> | 1942 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Chile | -33.45 | -70.666667 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|--------------------|-----------------|-----------------------------|------|-----------------|------------------------|------------------------|--------------|------------|------------|
| PURF11899 | <i>Uromyces</i> | <i>cestri</i> | 1946 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Bolivia | -17.118938 | -65.950439 |
| PURF11980 | <i>Uromyces</i> | <i>pazschkeanus</i> | 1945 | Fabaceae | <i>Vigna</i> | <i>venulosa</i> | Sierra Leone | 9.5 | -12.2333 |
| PURF12930 | <i>Uromyces</i> | <i>durus</i> | 1932 | Amoryllidaceae | <i>Allium</i> | <i>nipponicum</i> | Japan | 31.56019 | 130.5581 |
| PURF12985 | <i>Uromyces</i> | <i>costaricensis</i> | 1949 | Poaceae | <i>Lasiacis</i> | <i>divaricata</i> | Trinidad | 10.5 | -61.25 |
| PURF13053 | <i>Uromyces</i> | <i>novissimus</i> | 1949 | Cucurbitaceae | <i>Cayaponia</i> | <i>ficifolia</i> | Argentina | -34.809538 | -57.984552 |
| PURF13054 | <i>Uromyces</i> | <i>polymniae</i> | 1949 | Asteraceae | <i>Polymnia</i> | <i>connata</i> | Argentina | -34.809538 | -57.984552 |
| PURF13055 | <i>Uromyces</i> | <i>tessariae</i> | 1879 | Asteraceae | <i>Tessaria</i> | <i>absinthiodes</i> | Argentina | -28.665588 | -68.380616 |
| PURF13056 | <i>Uromyces</i> | <i>planiusculus</i> | 1940 | Polygonaceae | <i>Rumex</i> | <i>sp.</i> | Argentina | -40.155234 | -71.351015 |
| PURF13057 | <i>Uromyces</i> | <i>patagonicus</i> | 1940 | Fabaceae | <i>Glycyrrhiza</i> | <i>astragalina</i> | Argentina | -38.899164 | -70.054423 |
| PURF13058 | <i>Uromyces</i> | <i>striatus</i> | 1949 | Fabaceae | <i>Medicago</i> | <i>lupulina</i> | Argentina | -32.83427 | -62.294303 |
| PURF13059 | <i>Uromyces</i> | <i>americanus</i> | 1950 | Cyperaceae | <i>Schoenoplectus</i> | <i>americanus</i> | Argentina | -34.921454 | -57.954533 |
| PURF13060 | <i>Uromyces</i> | <i>americanus</i> | 1947 | Cyperaceae | <i>Schoenoplectus</i> | <i>americanus</i> | Argentina | -32.85273 | -68.828373 |
| PURF14198 | <i>Uromyces</i> | <i>stellariae-saxatilis</i> | 1932 | Caryophyllaceae | <i>Stellaria</i> | <i>sp.</i> | China | 34.47889 | 110.0694 |
| PURF14465 | <i>Uromyces</i> | <i>vignae</i> | 1948 | Fabaceae | <i>Vigna</i> | <i>vexillata</i> | Trinidad | 10.5 | -61.25 |
| PURF14560 | <i>Uromyces</i> | <i>pretoriensis</i> | 1942 | Commelinaceae | <i>Commelina</i> | <i>africana</i> | South Africa | -25.7069 | 28.22944 |
| PURF14563 | <i>Uromyces</i> | <i>casside-mimosoides</i> | 1937 | Fabaceae | <i>Cassia</i> | <i>mimosoides</i> | South Africa | -25.7833 | 28.5 |
| PURF14683 | <i>Uromyces</i> | <i>neurocarpi</i> | 1951 | Fabaceae | <i>Clitoria</i> | <i>arborescens</i> | Trinidad | 10.5 | -61.25 |
| PURF14684 | <i>Uromyces</i> | <i>scleriae</i> | 1952 | Cyperaceae | <i>Scleria</i> | <i>melaleuca</i> | Trinidad | 10.5 | -61.25 |
| PURF14685 | <i>Uromyces</i> | <i>costaricensis</i> | 1952 | Poaceae | <i>Lasiacis</i> | <i>divaricata</i> | Trinidad | 10.5 | -61.25 |
| PURF14925 | <i>Uromyces</i> | <i>commelinae</i> | 1953 | Commelinaceae | <i>Commelina</i> | <i>elegans</i> | Trinidad | 10.5 | -61.25 |
| PURF14926 | <i>Uromyces</i> | <i>commelinae</i> | 1953 | Commelinaceae | <i>Commelina</i> | <i>elegans</i> | Trinidad | 10.5 | -61.25 |
| PURF14927 | <i>Uromyces</i> | <i>jatrophae</i> | 1953 | Euphorbiaceae | <i>Manihot</i> | <i>esculenta</i> | Trinidad | 10.5 | -61.25 |
| PURF14928 | <i>Uromyces</i> | <i>brasiliensis</i> | 1953 | Convolvulaceae | <i>Convolvulus</i> | <i>nodiflorus</i> | Trinidad | 10.688447 | -61.754619 |
| PURF14929 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1953 | Poaceae | <i>Setaria</i> | <i>poiretiana</i> | Trinidad | 10.5 | -61.25 |
| PURF15062 | <i>Uromyces</i> | <i>ixiae</i> | 1913 | Iridaceae | <i>Ixia</i> | <i>leucantha</i> | South Africa | -33.9258 | 18.42322 |
| PURF15111 | <i>Uromyces</i> | <i>plegerae</i> | 1925 | Poaceae | <i>Digitaria</i> | <i>adscendens</i> | Philippines | 16.8801 | 120.8477 |
| PURF15153 | <i>Uromyces</i> | <i>megalospermus</i> | 1923 | Asteraceae | <i>Tessaria</i> | <i>integrifolia</i> | Bolivia | -15.731265 | -64.529297 |
| PURF15160 | <i>Uromyces</i> | <i>dolichosporus</i> | 1920 | Heliotropiaceae | <i>Tournefortia</i> | <i>sp.</i> | Bolivia | -16.397025 | -67.651947 |
| PURF15163 | <i>Uromyces</i> | <i>polymniae</i> | 1920 | Asteraceae | <i>Polymnia</i> | <i>maculata</i> | Bolivia | -16.139956 | -67.724731 |
| PURF15276 | <i>Uromyces</i> | <i>renovatus</i> | 1951 | Fabaceae | <i>Lupinus</i> | <i>albus</i> | Argentina | -34.921454 | -57.954533 |
| PURF15277 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1952 | Fabaceae | <i>Desmodium</i> | <i>uncinatum</i> | Argentina | -34.623432 | -58.386353 |
| PURF15279 | <i>Uromyces</i> | <i>bidenticola</i> | 1950 | Asteraceae | <i>Bidens</i> | <i>laevis</i> | Argentina | -28.549903 | -67.651713 |
| PURF15551 | <i>Uromyces</i> | <i>polygoni-avicularis</i> | 1950 | Polygonaceae | <i>Polygonum</i> | <i>aviculare</i> | Argentina | -51.631006 | -69.622306 |
| PURF15552 | <i>Uromyces</i> | <i>trifolii</i> | 1950 | Fabaceae | <i>Trifolium</i> | <i>repens</i> | Argentina | -34.921454 | -57.954533 |
| PURF15575 | <i>Uromyces</i> | <i>columbianus</i> | 1953 | Asteraceae | <i>Melanthera</i> | <i>aspera</i> | Colombia | 6.25184 | -75.569084 |
| PURF15740 | <i>Uromyces</i> | <i>vignae</i> | 1953 | Fabaceae | <i>Vigna</i> | <i>vexillata</i> | Colombia | 6.25184 | -75.569084 |
| PURF15935 | <i>Uromyces</i> | <i>cuspidatus</i> | 1882 | Poaceae | <i>Festuca</i> | <i>purpurascens</i> | Argentina | -54.870758 | -67.416084 |
| PURF16265 | <i>Uromyces</i> | <i>coronatus</i> | 1958 | Poaceae | <i>Zizania</i> | <i>aquatica</i> | Japan | 34.666667 | 132.7 |
| PURF16322 | <i>Uromyces</i> | <i>mucunae</i> | 1955 | Fabaceae | <i>Mucuna</i> | <i>cochinchinensis</i> | India | 23.99507 | 85.36109 |
| PURF16372/PUR83272 | <i>Uromyces</i> | <i>inayati</i> | 1934 | Poaceae | <i>Apluda</i> | <i>mutica</i> | China | 19.679948 | 110.370199 |
| PURF16407 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1958 | Fabaceae | <i>Lens</i> | <i>esculenta</i> | Chile | -33.960844 | -71.873156 |
| PURF16683 | <i>Uromyces</i> | <i>beheris</i> | 1960 | Caryophyllaceae | <i>Silene</i> | <i>ruprechtii</i> | Turkey | 41.02083 | 40.52194 |
| PURF16897 | <i>Uromyces</i> | <i>circumscripatus</i> | 1956 | Loranthaceae | <i>Tristerix</i> | <i>verticillatus</i> | Argentina | -32.85273 | -68.828373 |
| PURF16900 | <i>Uromyces</i> | <i>dietelianus</i> | 1955 | Fabaceae | <i>Bauhinia</i> | <i>candicans</i> | Argentina | -34.72418 | -58.252646 |
| PURF16902 | <i>Uromyces</i> | <i>eragrostidis</i> | 1946 | Poaceae | <i>Eragrostis</i> | <i>lugens</i> | Argentina | -34.921454 | -57.954533 |
| PURF16910 | <i>Uromyces</i> | <i>novissimus</i> | 1958 | Cucurbitaceae | <i>Abobra</i> | <i>tenuifolia</i> | Argentina | -33.295012 | -66.335627 |
| PURF16911 | <i>Uromyces</i> | <i>novissimus</i> | 1937 | Cucurbitaceae | <i>Cayaponia</i> | <i>ficifolia</i> | Argentina | -34.921454 | -57.954533 |
| PURF16912 | <i>Uromyces</i> | <i>niteroyensis</i> | 1950 | Poaceae | <i>Setaria</i> | <i>caespitosa</i> | Argentina | -34.72418 | -58.252646 |
| PURF16913 | <i>Uromyces</i> | <i>niteroyensis</i> | 1946 | Poaceae | <i>Panicum</i> | <i>antidotale</i> | Argentina | -34.921454 | -57.954533 |
| PURF16914 | <i>Uromyces</i> | <i>niteroyensis</i> | 1898 | Poaceae | <i>Setaria</i> | <i>vaginata</i> | Argentina | -40.79828 | -62.980972 |
| PURF16915 | <i>Uromyces</i> | <i>ruiz-leali</i> | 1951 | Fabaceae | <i>Anarthrophyllum</i> | <i>desideratum</i> | Argentina | -50.336979 | -72.265135 |
| PURF16916 | <i>Uromyces</i> | <i>urbanianus</i> | 1897 | Loranthaceae | <i>Phrygilanthus</i> | <i>acutifolius</i> | Argentina | -24.785896 | -65.411664 |
| PURF16917 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1962 | Fabaceae | <i>Lens</i> | <i>esculenta</i> | Ecuador | -0.19457 | -78.49301 |
| PURF17217 | <i>Uromyces</i> | <i>silphii</i> | 1963 | Juncaceae | <i>Juncus</i> | <i>sp.</i> | Argentina | -43.085804 | -71.46386 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--------------------------------|------|-----------------|-----------------------|----------------------|----------------|------------|------------|
| PURF17236 | <i>Uromyces</i> | <i>danthoniae</i> | 1949 | Poaceae | <i>Danthonia</i> | <i>gracilis</i> | New Zealand | -44.842968 | 169.822021 |
| PURF17292 | <i>Uromyces</i> | <i>americanus</i> | 1964 | Cyperaceae | <i>Scirpus</i> | <i>sp.</i> | Chile | -33.44903 | -71.388672 |
| PURF17514 | <i>Uromyces</i> | <i>ficariae</i> | 1943 | Ranunculaceae | <i>Ficaria</i> | <i>verna</i> | Czech Republic | 49.67523 | 12.92044 |
| PURF17519 | <i>Uromyces</i> | <i>acetoseae</i> | 1949 | Polygonaceae | <i>Rumex</i> | <i>acetosa</i> | Slovakia | 49.16556 | 20.12662 |
| PURF17628 | <i>Uromyces</i> | <i>eragrostidis</i> | 1960 | Poaceae | <i>Desmostachya</i> | <i>bipinnata</i> | Pakistan | 25.42718 | 68.53619 |
| PURF17636 | <i>Uromyces</i> | <i>americanus</i> | 1967 | Cyperaceae | <i>Schoenoplectus</i> | <i>americanus</i> | Chile | -33.45 | -70.666667 |
| PURF17740 | <i>Uromyces</i> | <i>niteroyensis</i> | 1925 | Poaceae | <i>Setaria</i> | <i>onurus</i> | Argentina | -31.65293 | -64.42826 |
| PURF17742 | <i>Uromyces</i> | <i>niteroyensis</i> | 1946 | Poaceae | <i>Panicum</i> | <i>antidotale</i> | Argentina | -34.921454 | -57.954533 |
| PURF17743 | <i>Uromyces</i> | <i>niteroyensis</i> | 1898 | Poaceae | <i>Setaria</i> | <i>vaginata</i> | Argentina | -40.79828 | -62.980972 |
| PURF17745 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1885 | Poaceae | <i>Eriochloa</i> | <i>montevidensis</i> | Argentina | -26.266307 | -60.983398 |
| PURF17795 | <i>Uromyces</i> | <i>silphii</i> | 1963 | Juncaceae | <i>Juncus</i> | <i>sp.</i> | Argentina | -43.085804 | -71.46386 |
| PURF17799 | <i>Uromyces</i> | <i>limonii</i> | 1967 | Plumbaginaceae | <i>Limonium</i> | <i>brasilensis</i> | Argentina | -38.268756 | -57.836692 |
| PURF17853 | <i>Uromyces</i> | <i>commelinae</i> | 1968 | Commelinaceae | <i>Commelina</i> | <i>bengalensis</i> | India | 26.17608 | 91.76293 |
| PURF18077 | <i>Uromyces</i> | <i>kabatianus</i> | 1909 | Geraniaceae | <i>Geranium</i> | <i>dissectum</i> | Denmark | 55.9497 | 10.52539 |
| PURF18213 | <i>Uromyces</i> | <i>dianthi</i> | 1971 | Caryophyllaceae | <i>Dianthus</i> | <i>caryophyllus</i> | Colombia | 4.876608 | -74.437683 |
| PURF18250 | <i>Uromyces</i> | <i>silphii</i> | 1971 | Juncaceae | <i>Juncus</i> | <i>sp.</i> | Argentina | -43.250075 | -65.313295 |
| PURF18267 | <i>Uromyces</i> | <i>neurocarpi</i> | 1971 | Fabaceae | <i>Clitoria</i> | <i>sp.</i> | Colombia | 3.354564 | -73.011384 |
| PURF18268 | <i>Uromyces</i> | <i>emmeorrhize</i> | 1971 | Rubiaceae | <i>Emmeorrhiza</i> | <i>sp.</i> | Colombia | 6.25184 | -75.563591 |
| PURF18304 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1881 | Poaceae | <i>Eriochloa</i> | <i>montevidensis</i> | Argentina | -26.177534 | -58.178139 |
| PURF18323 | <i>Uromyces</i> | <i>combretii</i> | 1972 | Combretaceae | <i>Combretum</i> | <i>sp.</i> | Burma | 21.20229 | 96.01417 |
| PURF18435 | <i>Uromyces</i> | <i>gypsophilae</i> | 1951 | Caryophyllaceae | <i>Gypsophila</i> | <i>spiculata</i> | Romania | 46.43333 | 27.88333 |
| PURF18438 | <i>Uromyces</i> | <i>scutellatus</i> | 1969 | Euphorbiaceae | <i>Euphorbia</i> | <i>cyparissia</i> | Romania | 44.26667 | 23.85 |
| PURF18464 | <i>Uromyces</i> | <i>croci</i> | 1971 | Iridaceae | <i>Crocus</i> | <i>reticulatus</i> | Romania | 44.13235 | 27.60137 |
| PURF18671 | <i>Uromyces</i> | <i>vignae</i> | 1977 | Fabaceae | <i>Vigna</i> | <i>radiata</i> | Philippines | 14.17884 | 121.2419 |
| PURF18709c | <i>Uromyces</i> | <i>manihotis</i> | 1978 | Euphorbiaceae | <i>Manihot</i> | <i>esculenta</i> | Brazil | -20.756822 | -42.876638 |
| PURF18710 | <i>Uromyces</i> | <i>manihotis</i> | 1977 | Euphorbiaceae | <i>Manihot</i> | <i>esculenta</i> | Brazil | -4.01681 | -53.415 |
| PURF19003 | <i>Uromyces</i> | <i>cnidoscoli</i> | 1979 | Euphorbiaceae | <i>Cnidocolus</i> | <i>sp.</i> | Brazil | -12.2188 | -41.4717 |
| PURF19059 | <i>Uromyces</i> | <i>costaricensis</i> | 1979 | Poaceae | <i>Lasiacis</i> | <i>sp.</i> | Brazil | -19.466721 | -44.172511 |
| PURF19419 | <i>Uromyces</i> | <i>transversalis</i> | 1980 | Iridaceae | <i>Gladiolus</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURF19505 | <i>Uromyces</i> | <i>linearis</i> | 1975 | Poaceae | <i>Panicum</i> | <i>baumannii</i> | Nigeria | 6.8561 | 7.3927 |
| PURF19527 | <i>Uromyces</i> | <i>armeriae</i> | 1970 | Plumbaginaceae | <i>Armeria</i> | <i>macloviana</i> | Argentina | -54.8 | -69.3 |
| PURF19528 | <i>Uromyces</i> | <i>armeriae</i> | 1969 | Plumbaginaceae | <i>Armeria</i> | <i>macloviana</i> | Argentina | -53.8 | -67.683333 |
| PURF19529 | <i>Uromyces</i> | <i>commelinae</i> | 1969 | Commelinaceae | <i>Tradescantia</i> | <i>elongata</i> | Argentina | -34.809538 | -57.984552 |
| PURF19530 | <i>Uromyces</i> | <i>ellipticus</i> | 1970 | Fabaceae | <i>Glycyrrhiza</i> | <i>astragalina</i> | Argentina | -38.899164 | -70.054423 |
| PURF19537 | <i>Uromyces</i> | <i>limonii</i> | 1970 | Plumbaginaceae | <i>Limonium</i> | <i>patagonicum</i> | Argentina | -45.867043 | -67.488452 |
| PURF19538 | <i>Uromyces</i> | <i>mulini</i> | 1970 | Apiaceae | <i>Mulinum</i> | <i>spinosum</i> | Argentina | -45.783333 | -67.45 |
| PURF19539 | <i>Uromyces</i> | <i>mulini</i> | 1970 | Apiaceae | <i>Mulinum</i> | <i>spinosum</i> | Argentina | -46.549717 | -71.630862 |
| PURF19540 | <i>Uromyces</i> | <i>mulini</i> | 1970 | Apiaceae | <i>Mulinum</i> | <i>spinosum</i> | Argentina | -45.788083 | -68.056699 |
| PURF19541 | <i>Uromyces</i> | <i>mulini</i> | 1970 | Apiaceae | <i>Mulinum</i> | <i>spinosum</i> | Argentina | -45.783333 | -67.45 |
| PURF19543 | <i>Uromyces</i> | <i>plantaginis</i> | 1969 | Plantaginaceae | <i>Plantago</i> | <i>barbata</i> | Argentina | -54.8 | -68.3 |
| PURF19544 | <i>Uromyces</i> | <i>novissimus</i> | 1970 | Campanulaceae | <i>Pratia</i> | <i>repens</i> | Argentina | -54.833333 | -68.566667 |
| PURF19545 | <i>Uromyces</i> | <i>novissimus</i> | 1970 | Campanulaceae | <i>Pratia</i> | <i>repens</i> | Argentina | -54.8 | -68.3 |
| PURF19546 | <i>Uromyces</i> | <i>primaverilis</i> | 1969 | Amaryllidaceae | <i>Nothoscordum</i> | <i>euosmum</i> | Argentina | -38.11 | -62 |
| PURF19547 | <i>Uromyces</i> | <i>quinchamalii</i> | 1970 | Schoepfiaceae | <i>Quinchamalium</i> | <i>chilense</i> | Argentina | -46.549717 | -71.630862 |
| PURF19568 | <i>Uromyces</i> | <i>cestri</i> | 1960 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Uruguay | -34.566667 | -57 |
| PURF19569 | <i>Uromyces</i> | <i>bidenticola</i> | 1963 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Uruguay | -32.833056 | -56.030647 |
| PURF19570 | <i>Uromyces</i> | <i>commelinae</i> | 1964 | Commelinaceae | <i>Tradescantia</i> | <i>fluminensis</i> | Uruguay | -34.85806 | -56.17083 |
| PURF19753 | <i>Uromyces</i> | <i>itaici</i> | 1979 | Amaranthaceae | <i>Iresine</i> | <i>sp.</i> | Brazil | -21.9667 | -47.8167 |
| PURF19966 | <i>Uromyces</i> | <i>laburni</i> | 1980 | Fabaceae | <i>Caragana</i> | <i>arborescens</i> | China | 43 | 126 |
| PURF19967 | <i>Uromyces</i> | <i>lespedezae-procumbentis</i> | 1980 | Fabaceae | <i>Lespedeza</i> | <i>bicolor</i> | China | 48 | 128 |
| PURF2357 | <i>Uromyces</i> | <i>eragrostidis</i> | 1920 | Poaceae | <i>Eragrostis</i> | <i>virescens</i> | Bolivia | -17.118938 | -65.950439 |
| PURF2358 | <i>Uromyces</i> | <i>eragrostidis</i> | 1920 | Poaceae | <i>Eragrostis</i> | <i>virescens</i> | Bolivia | -17.055929 | -65.565918 |
| PURF2359 | <i>Uromyces</i> | <i>eragrostidis</i> | 1920 | Poaceae | <i>Eragrostis</i> | <i>virescens</i> | Bolivia | -15.76667 | -68.63333 |
| PURF2360 | <i>Uromyces</i> | <i>eragrostidis</i> | 1920 | Poaceae | <i>Eragrostis</i> | <i>virescens</i> | Ecuador | -1.670984 | -78.647124 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--------------------------|----------|----------------|---------------------|----------------------|-----------|------------|------------|
| PURF2361 | <i>Uromyces</i> | <i>eragrostidis</i> | 1920 | Poaceae | <i>Eragrostis</i> | <i>sp.</i> | Bolivia | -17.055929 | -65.565918 |
| PURF2362 | <i>Uromyces</i> | <i>eragrostidis</i> | 1920 | Poaceae | <i>Eragrostis</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF2363 | <i>Uromyces</i> | <i>procerus</i> | 1919 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF2364 | <i>Uromyces</i> | <i>procerus</i> | 1919 | Asteraceae | <i>Asteraceae</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF2366 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>dissitiflora</i> | Bolivia | -16.49667 | -68.13 |
| PURF2367 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>heironymi</i> | Bolivia | -16.49667 | -68.13 |
| PURF2368 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>heironymi</i> | Bolivia | -16.49667 | -68.13 |
| PURF2369 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>heironymi</i> | Bolivia | -16.49667 | -68.13 |
| PURF2370 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>lasiorrhachis</i> | Bolivia | -16.49667 | -68.13 |
| PURF2376 | <i>Uromyces</i> | <i>cuspidatus</i> | 1906 | Poaceae | <i>Festuca</i> | <i>purpurascens</i> | Chile | -53.130267 | -70.853963 |
| PURF2377 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>rigescens</i> | Bolivia | -16.49667 | -68.13 |
| PURF2378 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>rigescens</i> | Bolivia | -16.49667 | -68.13 |
| PURF2379 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF2380 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF2381 | <i>Uromyces</i> | <i>cuspidatus</i> | 1920 | Poaceae | <i>Festuca</i> | <i>sp.</i> | Bolivia | -16.49667 | -68.13 |
| PURF2383 | <i>Uromyces</i> | <i>epicampis</i> | 1919 | Poaceae | <i>Melica</i> | <i>laxiflora</i> | Chile | -41.870699 | -73.81622 |
| PURF2384 | <i>Uromyces</i> | <i>epicampis</i> | 1919 | Poaceae | <i>Melica</i> | <i>laxiflora</i> | Chile | -41.870699 | -73.81622 |
| PURF2385 | <i>Uromyces</i> | <i>epicampis</i> | 1919 | Poaceae | <i>Melica</i> | <i>laxiflora</i> | Chile | -41.870699 | -73.81622 |
| PURF2386 | <i>Uromyces</i> | <i>epicampis</i> | 1919 | Poaceae | <i>Melica</i> | <i>laxiflora</i> | Chile | -38.719107 | -72.619141 |
| PURF2387 | <i>Uromyces</i> | <i>epicampis</i> | 1919 | Poaceae | <i>Melica</i> | <i>laxiflora</i> | Chile | -35.758046 | -71.407898 |
| PURF2388 | <i>Uromyces</i> | <i>epicampis</i> | 1920 | Poaceae | <i>Muhlenbergia</i> | <i>dubia</i> | Bolivia | -15.76667 | -68.63333 |
| PURF2389 | <i>Uromyces</i> | <i>epicampis</i> | 1920 | Poaceae | <i>Muhlenbergia</i> | <i>rigidia</i> | Bolivia | -15.76667 | -68.63333 |
| PURF2397 | <i>Uromyces</i> | <i>epicampis</i> | 1920 | Poaceae | <i>Muhlenbergia</i> | <i>macroura</i> | Ecuador | -0.19457 | -78.49301 |
| PURF2398 | <i>Uromyces</i> | <i>pencanus</i> | 1919 | Poaceae | <i>Nassella</i> | <i>chilensis</i> | Chile | -41.870699 | -73.81622 |
| PURF2402 | <i>Uromyces</i> | <i>nasellae</i> | 1920 | Poaceae | <i>Nassella</i> | <i>pubiflora</i> | Bolivia | -16.49667 | -68.13 |
| PURF2404 | <i>Uromyces</i> | <i>pencanus</i> | 1920 | Poaceae | <i>Nassella</i> | <i>manicata</i> | Chile | -32.55538 | -71.45748 |
| PURF2405 | <i>Uromyces</i> | <i>pencanus</i> | 1919 | Poaceae | <i>Stipa</i> | <i>murconata</i> | Chile | -38.719107 | -72.619141 |
| PURF2406 | <i>Uromyces</i> | <i>pencanus</i> | 1919 | Poaceae | <i>Stipa</i> | <i>setigera</i> | Chile | -38.736248 | -72.616394 |
| PURF2407 | <i>Uromyces</i> | <i>pencanus</i> | 1920 | Poaceae | <i>Stipa</i> | <i>setigera</i> | Chile | -41.870699 | -73.81622 |
| PURF2408 | <i>Uromyces</i> | <i>pencanus</i> | 1919 | Poaceae | <i>Stipa</i> | <i>setigera</i> | Chile | -36.81297 | -73.04846 |
| PURF2409 | <i>Uromyces</i> | <i>pencanus</i> | 1919 | Poaceae | <i>Stipa</i> | <i>setigera</i> | Chile | -35.758046 | -71.407898 |
| PURF2411 | <i>Uromyces</i> | <i>pencanus</i> | 1919 | Poaceae | <i>Stipa</i> | <i>setigera</i> | Chile | -41.870699 | -73.81622 |
| PURF2412 | <i>Uromyces</i> | <i>pencanus</i> | 1919 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF2416 | <i>Uromyces</i> | <i>tenuicutis</i> | 1919 | Poaceae | <i>Sporobolus</i> | <i>poiretii</i> | Chile | -35.711578 | -71.334456 |
| PURF2417 | <i>Uromyces</i> | <i>tenuicutis</i> | 1920 | Poaceae | <i>Sporobolus</i> | <i>poiretii</i> | Bolivia | -17.055929 | -65.565918 |
| PURF2418 | <i>Uromyces</i> | <i>tenuicutis</i> | 1920 | Poaceae | <i>Sporobolus</i> | <i>poiretii</i> | Bolivia | -16.49667 | -68.13 |
| PURF2420 | <i>Uromyces</i> | <i>tenuicutis</i> | 1920 | Poaceae | <i>Sporobolus</i> | <i>poiretii</i> | Ecuador | -0.19457 | -78.49301 |
| PURF2427 | <i>Uromyces</i> | <i>tenuicutis</i> | 1921 | Poaceae | <i>Sporobolus</i> | <i>indicus</i> | Trinidad | 10.5 | -61.25 |
| PURF2436 | <i>Uromyces</i> | <i>niteroyensis</i> | 1922 | Poaceae | <i>Setaria</i> | <i>caespitosa</i> | Uruguay | -34.85806 | -56.17083 |
| PURF2442 | <i>Uromyces</i> | <i>niteroyensis</i> | 1922 | Poaceae | <i>Setaria</i> | <i>leiantha</i> | Argentina | -31.088407 | -64.489869 |
| PURF2451 | <i>Uromyces</i> | <i>costaricensis</i> | 1921 | Poaceae | <i>Lasiacis</i> | <i>sp.</i> | Trinidad | 10.5 | -61.25 |
| PURF2453 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1914 | Poaceae | <i>Panicum</i> | <i>purpurascens</i> | Peru | -5.533333 | -74.633333 |
| PURF2465 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1920 | Poaceae | <i>Panicum</i> | <i>purpurascens</i> | Peru | -5.533333 | -74.633333 |
| PURF2506 | <i>Uromyces</i> | <i>oblectaneus</i> | 1922 | Cyperaceae | <i>Rhynchospora</i> | <i>exaltata</i> | Brazil | -22.398698 | -48.864444 |
| PURF2547 | <i>Uromyces</i> | <i>magellanicus</i> | 1906 | Cyperaceae | <i>Carex</i> | <i>macloviana</i> | Chile | -53.130267 | -70.853963 |
| PURF2561 | <i>Uromyces</i> | <i>commelinae</i> | 1891 | Commelinaceae | <i>Tradescantia</i> | <i>elongata</i> | Bolivia | -17.118938 | -65.950439 |
| PURF2563 | <i>Uromyces</i> | <i>commelinae</i> | 1906 | Commelinaceae | <i>Tradescantia</i> | <i>sp.</i> | Argentina | -34.575987 | -58.425245 |
| PURF2566 | <i>Uromyces</i> | <i>pontederiae</i> | 1880 | Pontederiaceae | <i>Pontederia</i> | <i>cordata</i> | Argentina | -34.6 | -58.45 |
| PURF2567 | <i>Uromyces</i> | <i>pontederiae</i> | non-data | Pontederiaceae | <i>Pontederia</i> | <i>cordata</i> | Paraguay | -26.176526 | -56.426737 |
| PURF2573 | <i>Uromyces</i> | <i>junci</i> | 1920 | Juncaceae | <i>Juncus</i> | <i>involutus</i> | Bolivia | -17.118938 | -65.950439 |
| PURF2586 | <i>Uromyces</i> | <i>silphii</i> | 1919 | Juncaceae | <i>Juncus</i> | <i>cyperoides</i> | Chile | -41.319461 | -72.985378 |
| PURF2587 | <i>Uromyces</i> | <i>silphii</i> | 1919 | Juncaceae | <i>Juncus</i> | <i>imbricatus</i> | Chile | -35.758046 | -71.407898 |
| PURF2623 | <i>Uromyces</i> | <i>tritoleiae</i> | 1919 | Amaryllidaceae | <i>Leucocoryne</i> | <i>alliacea</i> | Chile | -38.736248 | -72.616394 |
| PURF2631 | <i>Uromyces</i> | <i>dusenii</i> | 1919 | Amaryllidaceae | <i>Gilliesia</i> | <i>graminea</i> | Chile | -38.736248 | -72.616394 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------------|----------|------------------|---------------------|----------------------|-----------|------------|------------|
| PURF2632 | <i>Uromyces</i> | <i>duzenii</i> | 1919 | Asparagaceae | <i>Ornithogalum</i> | <i>biflorum</i> | Chile | -41.870699 | -73.81622 |
| PURF2639 | <i>Uromyces</i> | <i>scillarum</i> | 1914 | Asparagaceae | <i>Muscari</i> | <i>comosum</i> | Ukraine | 50.48557 | 24.28025 |
| PURF2681 | <i>Uromyces</i> | <i>alstromaria</i> | 1922 | Alstroemeriaceae | <i>Alstroemeria</i> | <i>inodora</i> | Brazil | -21.9667 | -47.8167 |
| PURF2683 | <i>Uromyces</i> | <i>bunsteri</i> | 1906 | Iridaceae | <i>Sisyrinchium</i> | <i>sp.</i> | Chile | -53.130267 | -70.853963 |
| PURF2684 | <i>Uromyces</i> | <i>bunsteri</i> | 1919 | Iridaceae | <i>Sisyrinchium</i> | <i>sp.</i> | Chile | -35.758046 | -71.407898 |
| PURF2685 | <i>Uromyces</i> | <i>bunsteri</i> | 1919 | Iridaceae | <i>Sisyrinchium</i> | <i>graminifolium</i> | Chile | -41.870699 | -73.81622 |
| PURF2686 | <i>Uromyces</i> | <i>bunsteri</i> | 1919 | Iridaceae | <i>Sisyrinchium</i> | <i>graminifolium</i> | Chile | -38.736248 | -72.616394 |
| PURF2687 | <i>Uromyces</i> | <i>bunsteri</i> | 1919 | Iridaceae | <i>Sisyrinchium</i> | <i>cuspidatum</i> | Chile | -35.758046 | -71.407898 |
| PURF2688 | <i>Uromyces</i> | <i>bunsteri</i> | 1920 | Iridaceae | <i>Sisyrinchium</i> | <i>cuspidatum</i> | Chile | -41.870699 | -73.81622 |
| PURF2700 | <i>Uromyces</i> | <i>phthirusae</i> | 1913 | Loranthaceae | <i>Phthirusa</i> | <i>pyrifolia</i> | Colombia | 6.25184 | -75.563591 |
| PURF2749 | <i>Uromyces</i> | <i>crassipes</i> | 1919 | Polygonaceae | <i>Rumex</i> | <i>conglomeratus</i> | Chile | -38.736248 | -72.616394 |
| PURF2751 | <i>Uromyces</i> | <i>crassipes</i> | 1914 | Polygonaceae | <i>Rumex</i> | <i>cuneifolius</i> | Peru | -7.255558 | -76.475553 |
| PURF2752 | <i>Uromyces</i> | <i>crassipes</i> | 1915 | Polygonaceae | <i>Rumex</i> | <i>cuneifolius</i> | Peru | -13.258224 | -72.263888 |
| PURF2753 | <i>Uromyces</i> | <i>crassipes</i> | 1924 | Polygonaceae | <i>Rumex</i> | <i>cuneifolius</i> | Peru | -11.417007 | -75.686686 |
| PURF2754 | <i>Uromyces</i> | <i>crassipes</i> | 1924 | Polygonaceae | <i>Rumex</i> | <i>cuneifolius</i> | Peru | -14.102022 | -71.429431 |
| PURF2755 | <i>Uromyces</i> | <i>crassipes</i> | 1920 | Polygonaceae | <i>Rumex</i> | <i>cuneifolius</i> | Peru | -16.398889 | -71.535 |
| PURF2756 | <i>Uromyces</i> | <i>crassipes</i> | 1919 | Polygonaceae | <i>Rumex</i> | <i>sp.</i> | Chile | -32.55538 | -71.45748 |
| PURF2757 | <i>Uromyces</i> | <i>crassipes</i> | 1919 | Polygonaceae | <i>Rumex</i> | <i>sp.</i> | Chile | -41.319461 | -72.985378 |
| PURF2758 | <i>Uromyces</i> | <i>crassipes</i> | 1920 | Polygonaceae | <i>Rumex</i> | <i>sp.</i> | Chile | -39.827598 | -73.224246 |
| PURF2771 | <i>Uromyces</i> | <i>giganteus</i> | 1889 | Amaranthaceae | <i>Suaeda</i> | <i>fruticosa</i> | Portugal | 38.71667 | -9.13333 |
| PURF2791 | <i>Uromyces</i> | <i>iresines</i> | 1918 | Amaranthaceae | <i>Iresine</i> | <i>celosia</i> | Ecuador | -2.289024 | -78.983293 |
| PURF2794 | <i>Uromyces</i> | <i>iresines</i> | 1920 | Amaranthaceae | <i>Iresine</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF2795 | <i>Uromyces</i> | <i>iresines</i> | 1920 | Amaranthaceae | <i>Iresine</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF2796 | <i>Uromyces</i> | <i>iresines</i> | 1920 | Amaranthaceae | <i>Iresine</i> | <i>celosia</i> | Ecuador | -0.19457 | -78.49301 |
| PURF2797 | <i>Uromyces</i> | <i>bonariensis</i> | non-data | Amaranthaceae | <i>Gomphrena</i> | <i>elegans</i> | Argentina | -27.583059 | -58.732228 |
| PURF2798 | <i>Uromyces</i> | <i>bonariensis</i> | 1920 | Amaranthaceae | <i>Gomphrena</i> | <i>perennis</i> | Ecuador | -1.670984 | -78.647124 |
| PURF2799 | <i>Uromyces</i> | <i>bonariensis</i> | 1932 | Amaranthaceae | <i>Pfaffia</i> | <i>iresinoides</i> | Venezuela | 10.344473 | -67.043247 |
| PURF2800 | <i>Uromyces</i> | <i>bonariensis</i> | 1932 | Amaranthaceae | <i>Pfaffia</i> | <i>iresinoides</i> | Venezuela | 10.500139 | -66.893838 |
| PURF2891 | <i>Uromyces</i> | <i>perlebiae</i> | 1922 | Fabaceae | <i>Bauhinia</i> | <i>forficata</i> | Brazil | -21.9667 | -47.8167 |
| PURF2894 | <i>Uromyces</i> | <i>superfixus</i> | 1913 | Fabaceae | <i>Bauhinia</i> | <i>sp.</i> | Venezuela | 10.488011 | -66.879193 |
| PURF2899 | <i>Uromyces</i> | <i>hemmendorffii</i> | 1922 | Fabaceae | <i>Bauhinia</i> | <i>forficata</i> | Brazil | -21.9667 | -47.8167 |
| PURF2902 | <i>Uromyces</i> | <i>floralis</i> | 1898 | Fabaceae | <i>Bauhinia</i> | <i>rufa</i> | Brazil | -22.5123 | -48.9162 |
| PURF2919 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1920 | Fabaceae | <i>Desmodium</i> | <i>uncinatum</i> | Bolivia | -17.055929 | -65.565918 |
| PURF2923 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1920 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Bolivia | -16.139956 | -67.724731 |
| PURF2924 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1920 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF2925 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1921 | Fabaceae | <i>Desmodium</i> | <i>affine</i> | Trinidad | 10.5 | -61.25 |
| PURF2926 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1921 | Fabaceae | <i>Desmodium</i> | <i>scorpiurus</i> | Trinidad | 10.5 | -61.25 |
| PURF2927 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1891 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF2928 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1910 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Colombia | - | - |
| PURF2935 | <i>Uromyces</i> | <i>orbicularis</i> | 1920 | Fabaceae | <i>Desmodium</i> | <i>adscendens</i> | Bolivia | -15.76667 | -68.63333 |
| PURF2942 | <i>Uromyces</i> | <i>indigoferae</i> | 1935 | Fabaceae | <i>Indigofera</i> | <i>sp.</i> | Venezuela | 10.344473 | -67.043247 |
| PURF2948 | <i>Uromyces</i> | <i>lathyrus</i> | 1919 | Fabaceae | <i>Lathyrus</i> | <i>magellanicus</i> | Chile | -38.7362 | -72.6164 |
| PURF2978 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1920 | Fabaceae | <i>Vicia</i> | <i>faba</i> | Bolivia | -16.49667 | -68.13 |
| PURF2980 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1920 | Fabaceae | <i>Vicia</i> | <i>faba</i> | Ecuador | -1.670984 | -78.647124 |
| PURF2981 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1919 | Fabaceae | <i>Vicia</i> | <i>faba</i> | Chile | -41.870699 | -73.81622 |
| PURF2982 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1919 | Fabaceae | <i>Vicia</i> | <i>faba</i> | Chile | -36.81297 | -73.04846 |
| PURF3006 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1918 | Fabaceae | <i>Vicia</i> | <i>faba</i> | Ecuador | -1.252369 | -78.622781 |
| PURF3007 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1920 | Fabaceae | <i>Vicia</i> | <i>faba</i> | Ecuador | -1.252369 | -78.622781 |
| PURF3085 | <i>Uromyces</i> | <i>appendiculatus</i> | 1889 | Fabaceae | <i>Phaseolus</i> | <i>prostratus</i> | Paraguay | -25.691996 | -56.855649 |
| PURF3086 | <i>Uromyces</i> | <i>appendiculatus</i> | 1920 | Fabaceae | <i>Phaseolus</i> | <i>vestitus</i> | Peru | -9.049722 | -77.774444 |
| PURF3103 | <i>Uromyces</i> | <i>appendiculatus</i> | 1920 | Fabaceae | <i>Phaseolus</i> | <i>sp.</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3105 | <i>Uromyces</i> | <i>appendiculatus</i> | 1920 | Fabaceae | <i>Phaseolus</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF3113 | <i>Uromyces</i> | <i>vignae</i> | 1915 | Fabaceae | <i>Vigna</i> | <i>sp.</i> | Peru | -14.338681 | -71.766731 |
| PURF3121 | <i>Uromyces</i> | <i>dolicholi</i> | 1902 | Fabaceae | <i>Rhynchosia</i> | <i>senna</i> | Argentina | -27.344608 | -66.894647 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------------|----------|---------------|-------------------|----------------------|-----------|--------------------|--------------------|
| PURF3122 | <i>Uromyces</i> | <i>dolicholi</i> | 1881 | Fabaceae | <i>Rhynchosia</i> | <i>sp.</i> | Argentina | -34.62997 | -58.463293 |
| PURF3131 | <i>Uromyces</i> | <i>trifolii-repentis</i> | 1920 | Fabaceae | <i>Trifolium</i> | <i>amabile</i> | Bolivia | -15.76667 | -68.63333 |
| PURF3132 | <i>Uromyces</i> | <i>trifolii-repentis</i> | 1920 | Fabaceae | <i>Trifolium</i> | <i>amabile</i> | Bolivia | -16.49667 | -68.13 |
| PURF3137 | <i>Uromyces</i> | <i>trifolii-repentis</i> | 1920 | Fabaceae | <i>Trifolium</i> | <i>amabile</i> | Bolivia | -16.49667 | -68.13 |
| PURF3156 | <i>Uromyces</i> | <i>trifolii-repentis</i> | 1920 | Fabaceae | <i>Trifolium</i> | <i>sp.</i> | Bolivia | -17.118938 | -65.950439 |
| PURF3164 | <i>Uromyces</i> | <i>trifolii</i> | 1920 | Fabaceae | <i>Trifolium</i> | <i>repens</i> | Ecuador | -2.900545 | -79.004527 |
| PURF3165 | <i>Uromyces</i> | <i>trifolii</i> | 1920 | Fabaceae | <i>Trifolium</i> | <i>repens</i> | Ecuador | -0.19457 | -78.49301 |
| PURF3167 | <i>Uromyces</i> | <i>trifolii</i> | 1920 | Fabaceae | <i>Trifolium</i> | <i>repens</i> | Bolivia | -17.118938 | -65.950439 |
| PURF3169 | <i>Uromyces</i> | <i>trifolii</i> | 1918 | Fabaceae | <i>Trifolium</i> | <i>repens</i> | Bolivia | -15.731265 | -64.529297 |
| PURF3172 | <i>Uromyces</i> | <i>trifolii</i> | 1920 | Fabaceae | <i>Trifolium</i> | <i>repens</i> | Ecuador | -1.252369 | -78.622781 |
| PURF3174 | <i>Uromyces</i> | <i>trifolii-megalanthi</i> | 1919 | Fabaceae | <i>Trifolium</i> | <i>sp.</i> | Chile | -36.81297 | -73.04846 |
| PURF3185 | <i>Uromyces</i> | <i>striatus</i> | 1922 | Fabaceae | <i>Medicago</i> | <i>sativa</i> | Argentina | -31.417939 | -64.191254 |
| PURF3201 | <i>Uromyces</i> | <i>neurocarpi</i> | 1920 | Fabaceae | <i>Clitoria</i> | <i>brachystegia</i> | Ecuador | -3.717633677750735 | -79.62337042382869 |
| PURF3282 | <i>Uromyces</i> | <i>neurocarpi</i> | 1924 | Fabaceae | <i>Clitoria</i> | <i>sp.</i> | Ecuador | -2.20584 | -79.90795 |
| PURF3283 | <i>Uromyces</i> | <i>neurocarpi</i> | 1924 | Fabaceae | <i>Clitoria</i> | <i>sp.</i> | Ecuador | -2.218369 | -80.228825 |
| PURF3335 | <i>Uromyces</i> | <i>euphorbiae</i> | 1924 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | Ecuador | -2.218369 | -80.228825 |
| PURF3336 | <i>Uromyces</i> | <i>euphorbiae</i> | 1890 | Euphorbiaceae | <i>Euphorbia</i> | <i>pilulifera</i> | Ecuador | -2.754284 | -79.739918 |
| PURF3337 | <i>Uromyces</i> | <i>euphorbiae</i> | 1921 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | Trinidad | 10.5 | -61.25 |
| PURF3338 | <i>Uromyces</i> | <i>euphorbiae</i> | 1921 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | Trinidad | 10.5 | -61.25 |
| PURF3339 | <i>Uromyces</i> | <i>euphorbiae</i> | 1921 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | Trinidad | 10.5 | -61.25 |
| PURF3340 | <i>Uromyces</i> | <i>euphorbiae</i> | 1921 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | Trinidad | 10.5 | -61.25 |
| PURF3341 | <i>Uromyces</i> | <i>euphorbiae</i> | 1921 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | Trinidad | 10.5 | -61.25 |
| PURF3342 | <i>Uromyces</i> | <i>euphorbiae</i> | non-data | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | Suriname | 4.133836169295812 | -55.9889250371941 |
| PURF3343 | <i>Uromyces</i> | <i>euphorbiae</i> | 1915 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hirta</i> | non-data | 4.018592 | -55.875977 |
| PURF3353 | <i>Uromyces</i> | <i>euphorbiae</i> | 1920 | Euphorbiaceae | <i>Euphorbia</i> | <i>heterophylla</i> | Peru | -5.533333 | -74.633333 |
| PURF3356 | <i>Uromyces</i> | <i>euphorbiae</i> | 1920 | Euphorbiaceae | <i>Chamaesyce</i> | <i>hypericifolia</i> | Ecuador | -1.515042 | -78.244141 |
| PURF3357 | <i>Uromyces</i> | <i>euphorbiae</i> | 1920 | Euphorbiaceae | <i>Chamaesyce</i> | <i>lasiocarpa</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3358 | <i>Uromyces</i> | <i>euphorbiae</i> | 1920 | Euphorbiaceae | <i>Chamaesyce</i> | <i>lasiocarpa</i> | Peru | -5.533333 | -74.633333 |
| PURF3360 | <i>Uromyces</i> | <i>euphorbiae</i> | 1920 | Euphorbiaceae | <i>Chamaesyce</i> | <i>thymifolia</i> | Bolivia | -16.49667 | -68.13 |
| PURF3361 | <i>Uromyces</i> | <i>euphorbiae</i> | 1920 | Euphorbiaceae | <i>Chamaesyce</i> | <i>thymifolia</i> | Bolivia | -15.76667 | -68.63333 |
| PURF3362 | <i>Uromyces</i> | <i>euphorbiae</i> | 1920 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Ecuador | -1.670984 | -78.647124 |
| PURF3363 | <i>Uromyces</i> | <i>euphorbiae</i> | 1920 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3364 | <i>Uromyces</i> | <i>euphorbiae</i> | 1929 | Euphorbiaceae | <i>Euphorbia</i> | <i>sp.</i> | Peru | -12 | -76.834706 |
| PURF3376 | <i>Uromyces</i> | <i>excavatus</i> | 1909 | Euphorbiaceae | <i>Euphorbia</i> | <i>verrucosa</i> | France | 49.43333 | 0.433333 |
| PURF3394 | <i>Uromyces</i> | <i>andinus</i> | 1919 | Euphorbiaceae | <i>Euphorbia</i> | <i>portulacoides</i> | Chile | -41.870699 | -73.81622 |
| PURF3395 | <i>Uromyces</i> | <i>andinus</i> | 1895 | Euphorbiaceae | <i>Euphorbia</i> | <i>portulacoides</i> | Chile | -41.870699 | -73.81622 |
| PURF3397 | <i>Uromyces</i> | <i>jatrophae</i> | 1921 | Euphorbiaceae | <i>Manihot</i> | <i>esculenta</i> | Trinidad | 10.5 | -61.25 |
| PURF3398 | <i>Uromyces</i> | <i>jatrophae</i> | 1921 | Euphorbiaceae | <i>Manihot</i> | <i>esculenta</i> | Trinidad | 10.5 | -61.25 |
| PURF3399 | <i>Uromyces</i> | <i>jatrophae</i> | 1921 | Euphorbiaceae | <i>Manihot</i> | <i>esculenta</i> | Trinidad | 10.5 | -61.25 |
| PURF3402 | <i>Uromyces</i> | <i>cisneroanus</i> | 1881 | Euphorbiaceae | <i>Sapium</i> | <i>aucuparium</i> | Paraguay | -23.30108 | -58.523682 |
| PURF3403 | <i>Uromyces</i> | <i>cisneroanus</i> | 1906 | Euphorbiaceae | <i>Sapium</i> | <i>aucuparium</i> | Argentina | -34.571605 | -58.422155 |
| PURF3404 | <i>Uromyces</i> | <i>cisneroanus</i> | 1906 | Euphorbiaceae | <i>Sapium</i> | <i>biglandulosum</i> | Argentina | -34.585032 | -58.420095 |
| PURF3405 | <i>Uromyces</i> | <i>cisneroanus</i> | 1880 | Euphorbiaceae | <i>Sapium</i> | <i>biglandulosum</i> | Argentina | -34.639174 | -58.368853 |
| PURF3421 | <i>Uromyces</i> | <i>triquetus</i> | 1920 | Hypericaceae | <i>Hypericum</i> | <i>chilense</i> | Chile | -35.758046 | -71.407898 |
| PURF3422 | <i>Uromyces</i> | <i>triquetus</i> | 1920 | Hypericaceae | <i>Hypericum</i> | <i>chilense</i> | Chile | -41.870699 | -73.81622 |
| PURF3423 | <i>Uromyces</i> | <i>triquetus</i> | 1920 | Hypericaceae | <i>Hypericum</i> | <i>sp.</i> | Bolivia | -15.731265 | -64.529297 |
| PURF3424 | <i>Uromyces</i> | <i>triquetrus</i> | 1921 | Hypericaceae | <i>Hypericum</i> | <i>sp.</i> | Brazil | -18.9757 | -44.484 |
| PURF3426 | <i>Uromyces</i> | <i>triquetus</i> | 1890 | Hypericaceae | <i>Hypericum</i> | <i>sp.</i> | Ecuador | -0.19457 | -78.49301 |
| PURF3427 | <i>Uromyces</i> | <i>mulini</i> | 1919 | Apiaceae | <i>Mulinum</i> | <i>spinsum</i> | Chile | -41.870699 | -73.81622 |
| PURF3428 | <i>Uromyces</i> | <i>mulini</i> | 1906 | Apiaceae | <i>Azorella</i> | <i>trifurcata</i> | Chile | -53.130267 | -70.853963 |
| PURF3432 | <i>Uromyces</i> | <i>ferulae</i> | 1904 | Anemiacae | <i>Ferula</i> | <i>communis</i> | USA | 35.69111 | -0.64167 |
| PURF3434 | <i>Uromyces</i> | <i>myrsines</i> | 1892 | Primulaceae | <i>Myrsine</i> | <i>guyanensis</i> | Bolivia | -15.507659 | -67.88327 |
| PURF3436 | <i>Uromyces</i> | <i>myrsines</i> | 1920 | Primulaceae | <i>Rapanea</i> | <i>pseudocrenata</i> | Bolivia | -16.397025 | -67.651947 |
| PURF3437 | <i>Uromyces</i> | <i>myrsines</i> | 1920 | Primulaceae | <i>Rapanea</i> | <i>pseudocrenata</i> | Bolivia | -16.139956 | -67.724731 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|-----------------------------|------|-----------------|----------------------|----------------------|-------------|------------|------------|
| PURF3438 | <i>Uromyces</i> | <i>myrsines</i> | 1920 | Primulaceae | <i>Rapanea</i> | <i>pseudocrenata</i> | Bolivia | -16.5 | -68.15 |
| PURF3463 | <i>Uromyces</i> | <i>quinchamalii</i> | 1919 | Schoepfiaceae | <i>Quinchamalium</i> | <i>bracteosum</i> | Chile | -41.870699 | -73.81622 |
| PURF3464 | <i>Uromyces</i> | <i>quinchamalii</i> | 1920 | Schoepfiaceae | <i>Quinchamalium</i> | <i>gracile</i> | Bolivia | -16.49667 | -68.13 |
| PURF3465 | <i>Uromyces</i> | <i>quinchamalii</i> | 1919 | Schoepfiaceae | <i>Quinchamalium</i> | <i>majus</i> | Chile | -41.870699 | -73.81622 |
| PURF3466 | <i>Uromyces</i> | <i>quinchamalii</i> | 1949 | Schoepfiaceae | <i>Quinchamalium</i> | <i>thesioides</i> | Chile | -41.870699 | -73.81622 |
| PURF3468 | <i>Uromyces</i> | <i>hobsoni</i> | 1925 | Oleaceae | <i>Jasminum</i> | <i>aculeatum</i> | Philippines | 16.59778 | 120.89914 |
| PURF3479 | <i>Uromyces</i> | <i>asclepiadis</i> | 1920 | Apocynaceae | <i>Asclepias</i> | <i>curassavica</i> | Peru | -12 | -76.833333 |
| PURF3484 | <i>Uromyces</i> | <i>asclepiadis</i> | 1921 | Apocynaceae | <i>Asclepias</i> | <i>curassavica</i> | Trinidad | 10.5 | -61.25 |
| PURF3486 | <i>Uromyces</i> | <i>asclepiadis</i> | 1914 | Apocynaceae | <i>Asclepias</i> | <i>curassavica</i> | Peru | -12.05 | -77.05 |
| PURF3487 | <i>Uromyces</i> | <i>asclepiadis</i> | 1924 | Apocynaceae | <i>Asclepias</i> | <i>curassavica</i> | Peru | -13.534876 | -73.694051 |
| PURF3488 | <i>Uromyces</i> | <i>asclepiadis</i> | 1924 | Apocynaceae | <i>Asclepias</i> | <i>curassavica</i> | Peru | -11.233333 | -75.483333 |
| PURF3489 | <i>Uromyces</i> | <i>asclepiadis</i> | 1924 | Apocynaceae | <i>Asclepias</i> | <i>curassavica</i> | Peru | -10.046111 | -76.621389 |
| PURF3490 | <i>Uromyces</i> | <i>asclepiadis</i> | 1924 | Apocynaceae | <i>Asclepias</i> | <i>curassavica</i> | Peru | -15.555138 | -73.113347 |
| PURF3497 | <i>Uromyces</i> | <i>brasiliensis</i> | 1920 | Convolvulaceae | <i>Jacquemontia</i> | <i>punctantha</i> | Ecuador | -2.20584 | -79.90795 |
| PURF3502 | <i>Uromyces</i> | <i>brasiliensis</i> | 1918 | Convolvulaceae | <i>Jacquemontia</i> | <i>sp.</i> | Ecuador | -2.289024 | -78.983293 |
| PURF3506 | <i>Uromyces</i> | <i>vicinus</i> | 1921 | Convolvulaceae | <i>Ipomoea</i> | <i>speciosa</i> | Brazil | -18.9757 | -44.484 |
| PURF3511 | <i>Uromyces</i> | <i>dolichosporus</i> | 1920 | Heliotropiaceae | <i>Tournefortia</i> | <i>psilostachya</i> | Ecuador | -1.670984 | -78.647124 |
| PURF3520 | <i>Uromyces</i> | <i>cestri</i> | 1920 | Solanaceae | <i>Cestrum</i> | <i>auriculatum</i> | Bolivia | -15.76667 | -68.63333 |
| PURF3521 | <i>Uromyces</i> | <i>cestri</i> | 1920 | Solanaceae | <i>Cestrum</i> | <i>auriculatum</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3522 | <i>Uromyces</i> | <i>cestri</i> | 1924 | Solanaceae | <i>Cestrum</i> | <i>auriculatum</i> | Peru | -9.049722 | -77.774444 |
| PURF3523 | <i>Uromyces</i> | <i>cestri</i> | 1919 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Chile | -41.870699 | -73.81622 |
| PURF3524 | <i>Uromyces</i> | <i>cestri</i> | 1919 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Chile | -35.758046 | -71.407898 |
| PURF3525 | <i>Uromyces</i> | <i>cestri</i> | 1920 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Chile | -34.24832 | -70.55543 |
| PURF3526 | <i>Uromyces</i> | <i>cestri</i> | 1895 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Chile | -36.81297 | -73.04846 |
| PURF3527 | <i>Uromyces</i> | <i>cestri</i> | 1880 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Argentina | -34.661846 | -58.515442 |
| PURF3528 | <i>Uromyces</i> | <i>cestri</i> | 1910 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Uruguay | -32.833056 | -56.030647 |
| PURF3530 | <i>Uromyces</i> | <i>cestri</i> | 1920 | Solanaceae | <i>Cestrum</i> | <i>strigillatum</i> | Ecuador | -0.19457 | -78.49301 |
| PURF3531 | <i>Uromyces</i> | <i>cestri</i> | 1920 | Solanaceae | <i>Cestrum</i> | <i>undulatum</i> | Peru | -9.049722 | -77.774444 |
| PURF3532 | <i>Uromyces</i> | <i>cestri</i> | 1920 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Bolivia | -17.118938 | -65.950439 |
| PURF3533 | <i>Uromyces</i> | <i>cestri</i> | 1922 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF3534 | <i>Uromyces</i> | <i>cestri</i> | 1920 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Chile | -32.55538 | -71.45748 |
| PURF3538 | <i>Uromyces</i> | <i>cestri</i> | 1924 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Peru | -9.049722 | -77.774444 |
| PURF3539 | <i>Uromyces</i> | <i>cestri</i> | 1925 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Peru | -14.102022 | -71.429431 |
| PURF3540 | <i>Uromyces</i> | <i>cestri</i> | 1875 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Argentina | -31.413496 | -64.181052 |
| PURF3541 | <i>Uromyces</i> | <i>cestri</i> | 1914 | Solanaceae | <i>Cestrum</i> | <i>sp.</i> | Chile | -41.870699 | -73.81622 |
| PURF3542 | <i>Uromyces</i> | <i>maculans</i> | 1920 | Solanaceae | <i>Cestrum</i> | <i>calycinum</i> | Bolivia | -15.76667 | -68.63333 |
| PURF3544 | <i>Uromyces</i> | <i>salpichroae</i> | 1920 | Solanaceae | <i>Salpichroa</i> | <i>diffusa</i> | Ecuador | -2.90055 | -79.0045 |
| PURF3568 | <i>Uromyces</i> | <i>emmeorrhize</i> | 1920 | Rubiaceae | <i>Emmeorrhiza</i> | <i>umbellata</i> | Bolivia | -16.5 | -68.15 |
| PURF3604 | <i>Uromyces</i> | <i>novissimus</i> | 1901 | Cucurbitaceae | <i>Cayaponia</i> | <i>bonariensis</i> | Argentina | -34.585032 | -58.420095 |
| PURF3622 | <i>Uromyces</i> | <i>kurtzii</i> | 1906 | Asteraceae | <i>Senecio</i> | <i>andersonii</i> | Chile | -53.130267 | -70.853963 |
| PURF3623 | <i>Uromyces</i> | <i>kurtzii</i> | 1906 | Asteraceae | <i>Senecio</i> | <i>andersonii</i> | Chile | -53.13026 | -70.853963 |
| PURF3624 | <i>Uromyces</i> | <i>kurtzii</i> | 1906 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Chile | -53.130267 | -70.853963 |
| PURF3625 | <i>Uromyces</i> | <i>kurtzii</i> | 1892 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Argentina | -34.312976 | -68.795271 |
| PURF3626 | <i>Uromyces</i> | <i>wulfiae-stenoglossae</i> | 1921 | Asteraceae | <i>Wulfia</i> | <i>baccata</i> | Trinidad | 10.5 | -61.25 |
| PURF3627 | <i>Uromyces</i> | <i>wulfiae-stenoglossae</i> | 1921 | Asteraceae | <i>Wulfia</i> | <i>baccata</i> | Trinidad | 10.5 | -61.25 |
| PURF3628 | <i>Uromyces</i> | <i>wulfiae-stenoglossae</i> | 1921 | Asteraceae | <i>Wulfia</i> | <i>baccata</i> | Trinidad | 10.5 | -61.25 |
| PURF3629 | <i>Uromyces</i> | <i>wulfiae-stenoglossae</i> | 1913 | Asteraceae | <i>Wulfia</i> | <i>baccata</i> | Trinidad | 10.5 | -61.25 |
| PURF3630 | <i>Uromyces</i> | <i>wulfiae-stenoglossae</i> | 1921 | Asteraceae | <i>Wulfia</i> | <i>baccata</i> | Trinidad | 10.5 | -61.25 |
| PURF3636 | <i>Uromyces</i> | <i>columbianus</i> | 1921 | Asteraceae | <i>Melanthera</i> | <i>aspera</i> | Trinidad | 10.5 | -61.25 |
| PURF3637 | <i>Uromyces</i> | <i>columbianus</i> | 1910 | Asteraceae | <i>Melanthera</i> | <i>aspera</i> | Colombia | 6.25184 | -75.563591 |
| PURF3638 | <i>Uromyces</i> | <i>columbianus</i> | 1913 | Asteraceae | <i>Melanthera</i> | <i>aspera</i> | Trinidad | 10.5 | -61.25 |
| PURF3639 | <i>Uromyces</i> | <i>columbianus</i> | 1921 | Asteraceae | <i>Melanthera</i> | <i>aspera</i> | Trinidad | 10.5 | -61.25 |
| PURF3640 | <i>Uromyces</i> | <i>columbianus</i> | 1921 | Asteraceae | <i>Melanthera</i> | <i>aspera</i> | Trinidad | 10.5 | -61.25 |
| PURF3641 | <i>Uromyces</i> | <i>columbianus</i> | 1921 | Asteraceae | <i>Melanthera</i> | <i>aspera</i> | Trinidad | 10.5 | -61.25 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|----------------------------|----------|---------------|---------------------|---------------------|-------------|------------|------------|
| PURF3644 | <i>Uromyces</i> | <i>megalospermus</i> | 1920 | Asteraceae | <i>Tessaria</i> | <i>integrifolia</i> | Peru | -11.937765 | -76.693157 |
| PURF3645 | <i>Uromyces</i> | <i>bidenticola</i> | 1920 | Asteraceae | <i>Bidens</i> | <i>andicola</i> | Bolivia | -16.49667 | -68.13 |
| PURF3646 | <i>Uromyces</i> | <i>bidenticola</i> | 1920 | Asteraceae | <i>Bidens</i> | <i>andicola</i> | Bolivia | -15.76667 | -68.63333 |
| PURF3647 | <i>Uromyces</i> | <i>bidenticola</i> | 1920 | Asteraceae | <i>Bidens</i> | <i>macrantha</i> | Bolivia | -17.055929 | -65.565918 |
| PURF3649 | <i>Uromyces</i> | <i>bidenticola</i> | 1924 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Peru | -10.046111 | -76.621389 |
| PURF3651 | <i>Uromyces</i> | <i>bidenticola</i> | 1920 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Bolivia | -16.5 | -68.15 |
| PURF3655 | <i>Uromyces</i> | <i>bidenticola</i> | 1921 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Trinidad | 10.5 | -61.25 |
| PURF3656 | <i>Uromyces</i> | <i>bidenticola</i> | 1921 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Trinidad | 10.5 | -61.25 |
| PURF3661 | <i>Uromyces</i> | <i>bidenticola</i> | 1914 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Venezuela | 10.488011 | -66.879193 |
| PURF3662 | <i>Uromyces</i> | <i>bidenticola</i> | 1918 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Ecuador | -2.289024 | -78.983293 |
| PURF3666 | <i>Uromyces</i> | <i>bidenticola</i> | 1920 | Asteraceae | <i>Bidens</i> | <i>sp.</i> | Peru | -7.255558 | -76.475553 |
| PURF3670 | <i>Uromyces</i> | <i>bidentis</i> | 1924 | Asteraceae | <i>Bidens</i> | <i>sp.</i> | Peru | -10.046111 | -76.621389 |
| PURF3673 | <i>Uromyces</i> | <i>bidentis</i> | 1924 | Asteraceae | <i>Bidens</i> | <i>leucantha</i> | Ecuador | -2.218369 | -80.228825 |
| PURF3674 | <i>Uromyces</i> | <i>bidentis</i> | 1914 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Venezuela | 10.488011 | -66.879193 |
| PURF3675 | <i>Uromyces</i> | <i>bidentis</i> | 1914 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Venezuela | 10.488011 | -66.879193 |
| PURF3676 | <i>Uromyces</i> | <i>bidentis</i> | 1914 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Venezuela | 10.488011 | -66.879193 |
| PURF3677 | <i>Uromyces</i> | <i>bidentis</i> | 1924 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Peru | -15.555138 | -73.113347 |
| PURF3680 | <i>Uromyces</i> | <i>bidentis</i> | 1920 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Venezuela | 10.488011 | -66.879193 |
| PURF3682 | <i>Uromyces</i> | <i>bidentis</i> | 1913 | Asteraceae | <i>Bidens</i> | <i>sp.</i> | Venezuela | 10.488011 | -66.879193 |
| PURF3689 | <i>Uromyces</i> | <i>cacaliae</i> | 1928 | Asteraceae | <i>Adenostyles</i> | <i>alliariae</i> | Switzerland | 46.59014 | 9.775384 |
| PURF3701 | <i>Uromyces</i> | <i>blainvilleae</i> | 1914 | Asteraceae | <i>Blainvillea</i> | <i>latifolia</i> | India | 11.00555 | 76.96612 |
| PURF3702 | <i>Uromyces</i> | <i>werneriae</i> | 1920 | Asteraceae | <i>Werneria</i> | <i>nubigena</i> | Ecuador | -0.194568 | -78.493005 |
| PURF4600 | <i>Uromyces</i> | <i>pencanus</i> | 1922 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4602 | <i>Uromyces</i> | <i>pencanus</i> | 1922 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4603 | <i>Uromyces</i> | <i>pencanus</i> | 1922 | Poaceae | <i>Stipa</i> | <i>sp.</i> | Argentina | -31.088407 | -64.489869 |
| PURF4897 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1921 | Poaceae | <i>Eriochloa</i> | <i>punctata</i> | Trinidad | 10.5 | -61.25 |
| PURF5961 | <i>Uromyces</i> | <i>clarus</i> | 1921 | Amaranthaceae | <i>Iresine</i> | <i>celosia</i> | Trinidad | 10.5 | -61.25 |
| PURF8877 | <i>Uromyces</i> | <i>bonariensis</i> | 1921 | Amaranthaceae | <i>Pfaffia</i> | <i>iresinoides</i> | Trinidad | 10.5 | -61.25 |
| PURF8878 | <i>Uromyces</i> | <i>bonariensis</i> | 1921 | Amaranthaceae | <i>Pfaffia</i> | <i>iresinoides</i> | Trinidad | 10.5 | -61.25 |
| PURF8879 | <i>Uromyces</i> | <i>bonariensis</i> | 1921 | Amaranthaceae | <i>Pfaffia</i> | <i>iresinoides</i> | Trinidad | 10.5 | -61.25 |
| PURF9033 | <i>Uromyces</i> | <i>holmbergii</i> | 1921 | Rubiaceae | <i>Borreria</i> | <i>verticillata</i> | Brazil | -22.380857 | -42.857178 |
| PURF9177 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1920 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF9183 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1920 | Fabaceae | <i>Desmodium</i> | <i>sp.</i> | Bolivia | -15.76667 | -68.63333 |
| PURF9466 | <i>Uromyces</i> | <i>rumicis</i> | 1937 | Polygonaceae | <i>Rumex</i> | <i>crispus</i> | Argentina | -34.921454 | -57.954533 |
| PURF9468 | <i>Uromyces</i> | <i>pencanus</i> | 1937 | Poaceae | <i>Stipa</i> | <i>niesiana</i> | Argentina | -34.921454 | -57.954533 |
| PURF9469 | <i>Uromyces</i> | <i>andinus</i> | 1935 | Euphorbiaceae | <i>Euphorbia</i> | <i>lorentzii</i> | Argentina | -33.367256 | -69.143228 |
| PURF9474 | <i>Uromyces</i> | <i>bornmulleri</i> | 1935 | Berberidaceae | <i>Bongardia</i> | <i>chrypogonum</i> | Cyprus | 34.86667 | 33.30417 |
| PURF9476 | <i>Uromyces</i> | <i>novissimus</i> | 1937 | Cucurbitaceae | <i>Cayaponia</i> | <i>ficifolia</i> | Argentina | -34.921454 | -57.954533 |
| PURF9477 | <i>Uromyces</i> | <i>mulini</i> | 1933 | Apiaceae | <i>Azorella</i> | <i>monantha</i> | Argentina | -33.578963 | -69.017942 |
| PURF9478 | <i>Uromyces</i> | <i>mulini</i> | 1935 | Apiaceae | <i>Mulinum</i> | <i>sp.</i> | Argentina | -33.033583 | -68.881214 |
| PURF9483 | <i>Uromyces</i> | <i>urbanianus</i> | 1938 | Santalaceae | <i>Phoradendron</i> | <i>sp.</i> | Colombia | 3.5 | -73 |
| PURF9516 | <i>Uromyces</i> | <i>striatus</i> | 1939 | Fabaceae | <i>Medicago</i> | <i>lupulina</i> | Argentina | -32.889121 | -68.844994 |
| PURF9525 | <i>Uromyces</i> | <i>andinus</i> | 1935 | Euphorbiaceae | <i>Euphorbia</i> | <i>lorentzii</i> | Argentina | -33.367256 | -69.143228 |
| PURF9526 | <i>Uromyces</i> | <i>andinus</i> | 1901 | Euphorbiaceae | <i>Euphorbia</i> | <i>chilensis</i> | Argentina | -32.823895 | -69.913094 |
| PURF9527 | <i>Uromyces</i> | <i>andinus</i> | 1904 | Euphorbiaceae | <i>Euphorbia</i> | <i>caespitosa</i> | Argentina | -35.874579 | -57.897304 |
| PURF9528 | <i>Uromyces</i> | <i>trifolii</i> | 1929 | Fabaceae | <i>Trifolium</i> | <i>sp.</i> | Argentina | -34.921454 | -57.954533 |
| PURF9529 | <i>Uromyces</i> | <i>euphorbiae</i> | 1919 | Euphorbiaceae | <i>Euphorbia</i> | <i>hirtella</i> | Argentina | -32.407514 | -63.240161 |
| PURF9530 | <i>Uromyces</i> | <i>euphorbiae</i> | 1925 | Euphorbiaceae | <i>Euphorbia</i> | <i>pentadactyla</i> | Argentina | -31.658465 | -64.43158 |
| PURF9531 | <i>Uromyces</i> | <i>euphorbiae</i> | non-data | Euphorbiaceae | <i>Chamaesyce</i> | <i>serpens</i> | Argentina | -35.834903 | -64.357422 |
| PURF9532 | <i>Uromyces</i> | <i>euphorbiae</i> | 1937 | Euphorbiaceae | <i>Chamaesyce</i> | <i>serpens</i> | Argentina | -32.889121 | -68.844994 |
| PURF9539 | <i>Uromyces</i> | <i>pereskiae</i> | 1905 | Cactaceae | <i>Pereskia</i> | <i>sacharosa</i> | Argentina | -24.783117 | -65.420692 |
| PURF9804 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1930 | Poaceae | <i>Setaria</i> | <i>verticillata</i> | Venezuela | 10.488011 | -66.879193 |
| PURF9805 | <i>Uromyces</i> | <i>setariae-italicae</i> | 1934 | Poaceae | <i>Eriochloa</i> | <i>polystachya</i> | Venezuela | 9.781285 | -69.163304 |
| PURF9847 | <i>Uromyces</i> | <i>crassipes</i> | 1941 | Polygonaceae | <i>Rumex</i> | <i>sp.</i> | Bolivia | -17.055929 | -65.565918 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|-----------------|--------------------------------|------|-----------------|---------------------|---------------------|-------------|--------------------|--------------------|
| PURF9848 | <i>Uromyces</i> | <i>cestri</i> | 1941 | Solanaceae | <i>Cestrum</i> | <i>parqui</i> | Bolivia | -17.118938 | -65.950439 |
| PURN10005 | <i>Uromyces</i> | <i>scleriae</i> | 1994 | Cyperaceae | <i>Scleria</i> | <i>bracteata</i> | Brazil | -4.016807 | -53.415039 |
| PURN10113 | <i>Uromyces</i> | <i>castaneus</i> | 1975 | Fabaceae | <i>Desmodium</i> | <i>incanum</i> | Brazil | -4.31356 | -38.743707 |
| PURN10125 | <i>Uromyces</i> | <i>glycyrrhizae</i> | 1996 | Fabaceae | <i>Glycyrrhiza</i> | <i>lepidota</i> | USA | 34.90597 | -106.686 |
| PURN10157 | <i>Uromyces</i> | <i>junci</i> | 1986 | Asteraceae | <i>Helianthus</i> | <i>mutalii</i> | USA | 41.2983 | -106.103 |
| PURN10868 | <i>Uromyces</i> | <i>aloes</i> | 1974 | Asphodelaceae | <i>Aloe</i> | <i>claviflora</i> | Japan | 35.02522 | 138.3254 |
| PURN11125 | <i>Uromyces</i> | <i>occidentalis</i> | 1968 | Fabaceae | <i>Lupinus</i> | <i>arboreus</i> | USA | 37.71803 | -122.493 |
| PURN11367 | <i>Uromyces</i> | <i>hyalinus</i> | 1919 | Fabaceae | <i>Sophora</i> | <i>sericea</i> | USA | 35.21533 | -112.49 |
| PURN11432 | <i>Uromyces</i> | <i>dactylidis</i> | 1965 | Poaceae | <i>Dactylis</i> | <i>glomerata</i> | USA | 39.03375 | -76.9076 |
| PURN11606 | <i>Uromyces</i> | <i>halstedii</i> | 1995 | Melanthiaceae | <i>Trillium</i> | <i>flexipes</i> | USA | 45.372946 | -92.652429 |
| PURN11630 | <i>Uromyces</i> | <i>euphorbiae</i> | 2015 | Euphorbiaceae | <i>Euphorbia</i> | <i>graminea</i> | USA | 27.33597 | -80.331543 |
| PURN1206 | <i>Uromyces</i> | <i>minutus</i> | 1978 | Cyperaceae | <i>Carex</i> | <i>caroliniana</i> | USA | 31.243787 | -90.453154 |
| PURN1218 | <i>Uromyces</i> | <i>polygoni-avicularis</i> | 1986 | Polygonaceae | <i>Polygonum</i> | <i>arenastrum</i> | USA | 46.53301 | -93.7102 |
| PURN1225 | <i>Uromyces</i> | <i>lespedezae-procumbentis</i> | 1991 | Fabaceae | <i>Lespedeza</i> | <i>capitata</i> | USA | 45.05747 | -93.0738 |
| PURN131 | <i>Uromyces</i> | <i>sommerfeltii</i> | 1963 | Asteraceae | <i>Solidago</i> | <i>virgaurea</i> | Finland | 67.2925 | 28.15806 |
| PURN134 | <i>Uromyces</i> | <i>dactylidis</i> | 1972 | Ranunculaceae | <i>Ranunculus</i> | <i>auricomus</i> | Finland | 61.233333 | 25.883333 |
| PURN148 | <i>Uromyces</i> | <i>anthyllidis</i> | 1912 | Fabaceae | <i>Anthyllis</i> | <i>vulneraria</i> | Finland | 60.22072 | 19.96765 |
| PURN15037 | <i>Uromyces</i> | <i>savulescui</i> | 2014 | Plumbaginaceae | Plumbaginaceae | sp. | Peru | -7.163672 | -78.509958 |
| PURN15329 | <i>Uromyces</i> | <i>setariae-italicae</i> | 2016 | Poaceae | Poaceae | non-data | Bolivia | 15.5605555556 | -67.3216666667 |
| PURN15341 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 2014 | Fabaceae | <i>Desmodium</i> | sp. | Guyana | 6.8299944699837045 | -58.1185056696372 |
| PURN15342 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 2013 | non-data | non-data | non-data | Guyana | 6.816499112121531 | -58.16161858269988 |
| PURN15496 | <i>Uromyces</i> | <i>euphorbiae</i> | 2003 | Euphorbiaceae | <i>Euphorbia</i> | <i>hirta</i> | Guyana | 6.5229488673138185 | -58.25607213692377 |
| PURN15498 | <i>Uromyces</i> | <i>tenuicutis</i> | 2003 | Poaceae | <i>Sporobolus</i> | sp. | Guyana | - | - |
| PURN15516 | <i>Uromyces</i> | <i>neotropicalis</i> | 2003 | Cucurbitaceae | Cucurbitaceae | sp. | Guyana | - | - |
| PURN15521 | <i>Uromyces</i> | <i>neotropicalis</i> | 2003 | Cucurbitaceae | Cayaponia | sp. | Guyana | - | - |
| PURN15527 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 2003 | Fabaceae | <i>Desmodium</i> | sp. | Guyana | - | - |
| PURN16392 | <i>Uromyces</i> | <i>yurimaguasensis</i> | 2016 | Fabaceae | Fabaceae | sp. | Peru | -8.5333333333 | -74.75 |
| PURN16729 | <i>Uromyces</i> | <i>neotropicalis</i> | 2004 | Cucurbitaceae | Cucurbitaceae | sp. | Ecuador | - | - |
| PURN16743 | <i>Uromyces</i> | <i>traversalis</i> | 2016 | Iridaceae | Iridaceae | sp. | Venezuela | 8.571978699394494 | -71.17089372426295 |
| PURN1753 | <i>Uromyces</i> | <i>ferganensis</i> | 1993 | Poaceae | <i>Stipa</i> | <i>holosericea</i> | Iran | 34.5332 | 47.9142 |
| PURN1791 | <i>Uromyces</i> | <i>silphii</i> | 1991 | Juncaceae | <i>Juncus</i> | <i>tenuis</i> | USA | 47.03542 | -94.6969 |
| PURN22515 | <i>Uromyces</i> | <i>novissimus</i> | 2004 | non-data | non-data | non-data | Ecuador | - | - |
| PURN23063 | <i>Uromyces</i> | sp. | 2018 | Asteraceae | <i>Bidens</i> | sp. | Puerto Rico | 18.30149405 | -65.78420089 |
| PURN2529 | <i>Uromyces</i> | <i>giganteus</i> | 1987 | Amaranthaceae | <i>Ceratoides</i> | <i>giganteus</i> | USA | 42.26969 | -104.761 |
| PURN2544 | <i>Uromyces</i> | <i>iresines</i> | 1975 | Amaranthaceae | <i>Iresine</i> | <i>celosia</i> | Ecuador | -0.167606 | -78.45071 |
| PURN2545 | <i>Uromyces</i> | <i>iresines</i> | 1937 | Amaranthaceae | <i>Iresine</i> | <i>elongatae</i> | Ecuador | -0.167606 | -78.45072 |
| PURN2546 | <i>Uromyces</i> | <i>clarus</i> | 1920 | Amaranthaceae | <i>Iresine</i> | <i>celosia</i> | Bolivia | -16.5 | -68.15 |
| PURN2557 | <i>Uromyces</i> | <i>striatus</i> | 1994 | Fabaceae | <i>Medicago</i> | <i>sativa</i> | Argentina | -26.070411 | -65.979296 |
| PURN2564 | <i>Uromyces</i> | <i>trifolii</i> | 1975 | Fabaceae | <i>Trifolium</i> | sp. | Ecuador | -0.167606 | -78.45071 |
| PURN2565 | <i>Uromyces</i> | <i>trifolii</i> | 1975 | Fabaceae | <i>Trifolium</i> | sp. | Ecuador | -0.167606 | -78.45071 |
| PURN2566 | <i>Uromyces</i> | <i>trifolii</i> | 1975 | Fabaceae | <i>Trifolium</i> | sp. | Ecuador | -0.167606 | -78.45071 |
| PURN2782 | <i>Uromyces</i> | <i>celosiae</i> | 1979 | Amaranthaceae | <i>Achyranthes</i> | <i>prostrata</i> | Brazil | -12.218759 | -41.471673 |
| PURN3194 | <i>Uromyces</i> | <i>speciosus</i> | 1929 | Gentianaceae | <i>Frasera</i> | <i>speciosa</i> | USA | 39.01666 | -104.726 |
| PURN3239 | <i>Uromyces</i> | <i>neurocarpi</i> | 1987 | Fabaceae | <i>Clitoria</i> | sp. | Brazil | -2.607423 | -44.195963 |
| PURN3410 | <i>Uromyces</i> | <i>euphorbiae</i> | 1972 | Euphorbiaceae | <i>Euphorbia</i> | sp. | Venezuela | 10.402691 | -66.895972 |
| PURN3568 | <i>Uromyces</i> | <i>anguriae</i> | 1987 | Cucurbitaceae | <i>Gurania</i> | sp. | Brazil | -6.7482 | -52.6348 |
| PURN3889 | <i>Uromyces</i> | <i>rumicis</i> | 1981 | Polygonaceae | <i>Rumex</i> | sp. | Mexico | 21.34565 | -97.8385 |
| PURN3892 | <i>Uromyces</i> | <i>bidentis</i> | 1924 | Asteraceae | <i>Bidens</i> | sp. | Peru | -9.49396 | -76.8187 |
| PURN3893 | <i>Uromyces</i> | <i>bidentis</i> | 1924 | Asteraceae | <i>Bidens</i> | sp. | Peru | -9.49396 | -76.8187 |
| PURN3894 | <i>Uromyces</i> | <i>bidentis</i> | 1924 | Asteraceae | <i>Bidens</i> | sp. | Peru | -9.49396 | -76.8187 |
| PURN3912 | <i>Uromyces</i> | <i>socius</i> | 1992 | Loranthaceae | <i>Struthanthus</i> | <i>palmeri</i> | Mexico | 28.79672 | -111.943 |
| PURN3916 | <i>Uromyces</i> | <i>dolichosporus</i> | 1991 | Heliotropiaceae | <i>Tournefortia</i> | <i>psilostachya</i> | Ecuador | -1.833333 | -79.816667 |
| PURN3919 | <i>Uromyces</i> | <i>cucullatus</i> | 1974 | Asteraceae | <i>Baltimora</i> | <i>recta</i> | Mexico | 16.18739 | -93.8387 |
| PURN3935 | <i>Uromyces</i> | <i>bidenticola</i> | 1975 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Ecuador | -2.965497 | -78.431972 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|-------------|---------------------|----------------------------|------|-----------------|---------------------|-----------------------|------------------|-------------------|-------------------|
| PURN4190 | <i>Uromyces</i> | <i>blainvilleae</i> | 1907 | Asteraceae | <i>Blainvillea</i> | <i>non-data</i> | Brazil | -8.15478 | -42.2935 |
| PURN4387 | <i>Uromyces</i> | <i>bidenticola</i> | 1976 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Brazil | -22.5123 | -48.9162 |
| PURN4473 | <i>Uromyces</i> | <i>kurtzii</i> | 1967 | Asteraceae | <i>Senecio</i> | <i>sp.</i> | Argentina | -54.85 | -67.516667 |
| PURN4474 | <i>Uromyces</i> | <i>wulfiae</i> | 1924 | Asteraceae | <i>Wulfia</i> | <i>sp.</i> | Ecuador | -2.218369 | -80.228825 |
| PURN4562 | <i>Uromyces</i> | <i>tuberculatus</i> | 1996 | Euphorbiaceae | <i>Euphorbia</i> | <i>exigua</i> | Germany | 54.05 | 10.31667 |
| PURN4657 | <i>Uromyces</i> | <i>sabineae</i> | 1990 | Fabaceae | <i>Poitea</i> | <i>gracilis</i> | Cuba | 23.13194 | -82.3642 |
| PURN5064 | <i>Uromyces</i> | <i>rhynchosporae</i> | 1939 | Cyperaceae | <i>Rhynchospora</i> | <i>glauca</i> | Papua New Guinea | -7.018232 | 146.94812 |
| PURN5073 | <i>Uromyces</i> | <i>ari-triphylli</i> | 1990 | Araceae | <i>Peltandra</i> | <i>virginica</i> | USA | 33.20763 | -92.6663 |
| PURN5089 | <i>Uromyces</i> | <i>ambiguus</i> | 1913 | Amaryllidaceae | <i>Allium</i> | <i>schoenoprasum</i> | France | 48.89289 | 2.7967 |
| PURN5128 | <i>Uromyces</i> | <i>hedysari-paniculati</i> | 1978 | Fabaceae | <i>Desmodium</i> | <i>paniculatum</i> | USA | 42.552498 | -85.981087 |
| PURN5149 | <i>Uromyces</i> | <i>neurocarpi</i> | 1983 | Fabaceae | <i>Clitoria</i> | <i>sp.</i> | Venezuela | 8 | -66 |
| PURN5150 | <i>Uromyces</i> | <i>tarapotensis</i> | 1902 | Fabaceae | <i>Camptosema</i> | <i>sp.</i> | Peru | -6.491659 | -76.362943 |
| PURN5161 | <i>Uromyces</i> | <i>alpestris</i> | 1910 | Euphorbiaceae | <i>Euphorbia</i> | <i>cyparissia</i> | France | 48.40537 | 2.700199 |
| PURN5162 | <i>Uromyces</i> | <i>euphorbiae</i> | 1992 | Euphorbiaceae | <i>Euphorbia</i> | <i>dentata</i> | USA | 40.30504 | -87.8006 |
| PURN5185 | <i>Uromyces</i> | <i>bidenticola</i> | 1975 | Asteraceae | <i>Bidens</i> | <i>pilosa</i> | Ecuador | -0.167606 | -78.45071 |
| PURN7314 | <i>Uromyces</i> | <i>psoraleae</i> | 1987 | Fabaceae | <i>Psoralea</i> | <i>sp.</i> | USA | 40.89859 | -104.797 |
| PURN7317 | <i>Uromyces</i> | <i>striatus</i> | 1996 | Fabaceae | <i>Medicago</i> | <i>sativa</i> | Argentina | -26.231354 | -65.280254 |
| PURN7327 | <i>Uromyces</i> | <i>viciae-fabae</i> | 1997 | Fabaceae | <i>Vicia</i> | <i>faba</i> | Argentina | -28.2 | -67.483333 |
| PURN7333 | <i>Uromyces</i> | <i>polygoni-avicularis</i> | 1961 | Polygonaceae | <i>Polygonum</i> | <i>aviculare</i> | USA | 39.7754 | -86.0969 |
| PURN7361 | <i>Uromyces</i> | <i>heterianus</i> | 1983 | Rubiaceae | <i>Spermacoce</i> | <i>verticillata</i> | Brazil | -21.966667 | -47.816667 |
| PURN7391 | <i>Uromyces</i> | <i>limonii</i> | 1994 | Plumbaginaceae | <i>Limonium</i> | <i>californicum</i> | USA | 37.85896 | -122.486 |
| PURN8200 | <i>Uromyces</i> | <i>oaxacanus</i> | 1981 | Euphorbiaceae | <i>Cnidioscolus</i> | <i>multilobus</i> | Mexico | 21.345649 | -97.838467 |
| PURN8262 | <i>Uromyces</i> | <i>neurocarpi</i> | 1975 | Fabaceae | <i>Clitoria</i> | <i>sp.</i> | Colombia | 4.125545421899271 | -73.6201578612606 |
| PURN959 | <i>Uromyces</i> | <i>sparaganii</i> | 1987 | Acoraceae | <i>Acorus</i> | <i>calamus</i> | USA | 44.90491 | -93.1498 |
| PURN9947 | <i>Uromyces</i> | <i>euphorbiae</i> | 1990 | Euphorbiaceae | <i>Euphorbia</i> | <i>pilulifera</i> | Brazil | -4.31356 | -38.7437 |
| PURN9950 | <i>Uromyces</i> | <i>euphorbiae</i> | 1961 | Euphorbiaceae | <i>Euphorbia</i> | <i>glyptosperma</i> | USA | 40.42587 | -86.9271 |
| PURN9968 | <i>Uromyces</i> | <i>gernaii</i> | 1986 | Geraniaceae | <i>Geranium</i> | <i>eranthum</i> | USA | 61.21806 | -149.9 |
| PURF11032 | <i>Uromycladium</i> | <i>tepperianum</i> | 1943 | Fabaceae | <i>Acacia</i> | <i>concurrans</i> | Australia | -27.4679 | 153.028 |
| PURF18548 | <i>Uromycladium</i> | <i>maritimum</i> | 1963 | Fabaceae | <i>Acacia</i> | <i>longifolia</i> | Australia | -33.7619 | 150.9912 |
| PURN3325 | <i>Uromycladium</i> | <i>tepperianum</i> | 1992 | Fabaceae | <i>Acacia</i> | <i>saligna</i> | South Africa | -34.1667 | 18.33333 |
| PUR48738 | <i>Uropyxis</i> | <i>amorphae</i> | 1885 | Fabaceae | <i>Amorpha</i> | <i>canescens</i> | USA | 40.04444 | -89.0332 |
| PUR50305 | <i>Uropyxis</i> | <i>nissoliae</i> | 1940 | Fabaceae | <i>Nissolia</i> | <i>fruticosa</i> | Guatemala | 14.166667 | -89.833333 |
| PUR54680 | <i>Uropyxis</i> | <i>petalostemonis</i> | 1955 | Fabaceae | <i>Dalea</i> | <i>candida</i> | USA | 42.603901 | -89.071222 |
| PUR59213 | <i>Uropyxis</i> | <i>amorphae</i> | 1961 | Fabaceae | <i>Amorpha</i> | <i>californica</i> | USA | 31.976223 | -109.369781 |
| PUR59214 | <i>Uropyxis</i> | <i>holwayi</i> | 1964 | Fabaceae | <i>Eysenhardtia</i> | <i>polystachia</i> | USA | 31.340378 | -110.934253 |
| PUR61332 | <i>Uropyxis</i> | <i>amorphae</i> | 1962 | Fabaceae | <i>Amorpha</i> | <i>fruticosa</i> | USA | 31.981477 | -109.371729 |
| PUR64274 | <i>Uropyxis</i> | <i>heterospora</i> | 1971 | Fabaceae | <i>Apoplanesia</i> | <i>paniculata</i> | Mexico | 20.206401 | -104.822132 |
| PUR7334 | <i>Uropyxis</i> | <i>diphysae</i> | 1916 | Fabaceae | <i>Diphysa</i> | <i>carthagenensis</i> | Guatemala | 15.454542 | -90.438965 |
| PUR7343 | <i>Uropyxis</i> | <i>holwayi</i> | 1917 | Fabaceae | <i>Eysenhardtia</i> | <i>adenostylis</i> | Guatemala | 14.770436 | -91.279419 |
| PUR7351 | <i>Uropyxis</i> | <i>farlowii</i> | 1905 | Fabaceae | <i>Dalea</i> | <i>carthagenensis</i> | Cuba | 23.090246 | -82.378743 |
| PURF11381 | <i>Uropyxis</i> | <i>daleae</i> | 1942 | Fabaceae | <i>Dalea</i> | <i>leporina</i> | Argentina | -24.658784 | -65.363139 |
| PURF11395 | <i>Uropyxis</i> | <i>rickiana</i> | 1949 | Bignoniaceae | <i>Macfadyena</i> | <i>sp.</i> | Paraguay | -25.27742 | -57.576111 |
| PURF1943 | <i>Uropyxis</i> | <i>daleae</i> | 1920 | Fabaceae | <i>Dalea</i> | <i>pazensis</i> | Bolivia | -17.118938 | -65.950439 |
| PURF1944 | <i>Uropyxis</i> | <i>daleae</i> | 1920 | Fabaceae | <i>Dalea</i> | <i>pazensis</i> | Bolivia | -17.118938 | -65.950439 |
| PURF1947 | <i>Uropyxis</i> | <i>rickiana</i> | 1920 | Bignoniaceae | <i>Dolichandra</i> | <i>unguis-cati</i> | Argentina | -34.921454 | -57.954533 |
| PURF19995 | <i>Uropyxis</i> | <i>rickiana</i> | 1977 | Bignoniaceae | <i>Dolichandra</i> | <i>unguis-cati</i> | Argentina | -29.181858 | -58.078951 |
| PURN1824 | <i>Uropyxis</i> | <i>petalostemonis</i> | 2000 | Fabaceae | <i>Dalea</i> | <i>candida</i> | USA | 39.183608 | -96.571669 |
| PURN8678 | <i>Uropyxis</i> | <i>rickiana</i> | 1992 | Bignoniaceae | <i>Macfadyena</i> | <i>unguis-cati</i> | Argentina | -26.824144 | -65.2226 |
| PURN8679 | <i>Uropyxis</i> | <i>rickiana</i> | 1993 | <i>non-data</i> | <i>non-data</i> | <i>non-data</i> | Argentina | -26.82404 | -65.394424 |
| PURN8680 | <i>Uropyxis</i> | <i>rickiana</i> | 1997 | Bignoniaceae | <i>Macfadyena</i> | <i>unguis-cati</i> | Argentina | -25.593817 | -64.944187 |
| PURN8681 | <i>Uropyxis</i> | <i>rickiana</i> | 1997 | Bignoniaceae | <i>Macfadyena</i> | <i>unguis-cati</i> | Argentina | -25.796929 | -64.970939 |
| PUR63885 | <i>Xenodochus</i> | <i>carbonarius</i> | 1954 | Rosaceae | <i>Sanguisorba</i> | <i>menziesii</i> | Canada | 54.204057 | -130.140541 |

continued (Table s1).

| PUR Catalog | Rust genus | Rust species | Year | Host Family | Host genus | Host species | Country | Latitude | Longitude |
|--------------------|--------------------|-------------------------|-------------|--------------------|--------------------|---------------------|----------------|-----------------|------------------|
| PURF1593 | <i>Xenodochus</i> | <i>carbonarius</i> | 1875 | Rosaceae | <i>Sanguisorba</i> | <i>officinalis</i> | Russia | 53.69561 | 91.685516 |
| PURN10049 | <i>Ypsilospora</i> | <i>tucumanensis</i> cf. | 1999 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -24.22 | -47.01 |
| PURN7820 | <i>Ypsilospora</i> | <i>sp.</i> | 1981 | Fabaceae | <i>Baphia</i> | <i>nitida</i> | Nigeria | 6.8561 | 7.3927 |
| PURN8248 | <i>Ypsilospora</i> | <i>tucumanensis</i> | 1979 | Fabaceae | <i>Inga</i> | <i>sp.</i> | Brazil | -12.218759 | -41.4717 |
| PUR89236 | <i>Zaghouania</i> | <i>oleae</i> | 1948 | Oleaceae | <i>Olea</i> | <i>dioica</i> | India | 12.29617 | 75.87548 |
| PURN3392 | <i>Zaghouania</i> | <i>noteleae</i> | 1948 | Oleaceae | <i>Notelaea</i> | <i>ovata</i> | Australia | -25.5139 | 152.6969 |