



Teliospores in combined surface view and optical section. Scale = 10μ .

Puccinia ornatula Holw., N. Am. Ured. 1: 67. 1907.

PYCNIA, AECIA and UREDINIA lacking. TELIA hypophyllous, individual sori 0.1-0.35 mm. diam., circular, bounded by a collar of persistent epidermis, not confluent although spores may form a confluent overlying mass, in circular groups if on lamina or in elongate groups if on veins, pulverulent, deep chestnut, the spores glinting in bright light under dissecting microscope. TELIOSPORES 27-47(-51)(-56) \times 15-26.5(-28) μ , ellipsoid to subcylindric, slightly or not constricted; walls 0.8-2.2 μ thick, with chestnut inner layer and yellow to yellow-brown outer layer, smooth except for widely spaced, steep-sided warts ca. 0.3-0.6 μ high \times 0.3-0.7 μ wide, sometimes scattered above but mainly in 3 to 7 nearly longitudinal rows more than 3 μ apart and sometimes tending to fuse into broken ridges; germ pores apical to 1/4(-1/2) depressed with subhyaline to yellow cap 0.8-2.3 μ high, and septal to 1/2(-2/3) depressed usually with smaller cap; pedicels hyaline, deciduous, basal to slightly (-moderately) offset. Mesospores rare.

Etymology: Slightly decorated, with reference to the sparse rows of warts on the spores.

HOST: *Viola glabella* Nutt.

DISTRIBUTION: Known only from Glacier National Park, Selkirk Mtns., B.C., and a single collection from southern Alaska.

COLLECTIONS: B.C.: Glacier: 11 Aug. 1901, PUR 40046 (Holway, Isotype); 3 Sept. 1902, PUR 40045, DAOM 108450 (Holway, North Amer. Uredinales 1058 p.p., also includes *P. glaciari*); 5 July 1918, PUR 40047, DAOM 10851 (Holway, also contains I of *P. violae*, *Synchytrium* sp., and immature leaf spot); 7 July 1918, PUR 40048 (Holway, also contains I of *P. violae*).

NOTES: Arthur (Manual of the Rusts, 1934) recorded *P. ornatula* on *Viola canadensis*, *V. glabella* and *V. rugulosa*. Examination of the material in the Arthur Herbarium shows that these names were applied by Ezra Brainerd between 1911 and 1919. *Viola canadensis*, to which PUR 40045 and 40046 were assigned, does not occur in B.C., although it reaches the Cordillera further south, and its leaves do not match those of these two specimens. *V. rugulosa*, the western Canada violet, does occur in B.C., but it reaches high elevations only on very dry mountains that become snow-free by the end of April. It is inconceivable that *V. rugulosa* should occur in the subalpine of Glacier and Rogers Pass where the

average snowpack of over 1000 cm. lasts at least to mid or late June. PUR 40048, which Brainerd assigned to *V. rugulosa*, was annotated by Holway as "tall yellow", which eliminates *V. rugulosa* and leaves only *V. glabella* as a possible host; for *V. orbiculata*, the other yellow-flowered species in the area, is low-growing and with very different leaves. The leaves of PUR 40048 are quite different from those of *V. rugulosa*, and, like those of the other rusted plants, are a close match for *V. glabella*. In DAO we have material of *V. glabella* from an unstated elevation in Glacier National Park, and we have collected it from nearby Mt. Revelstoke at 1830 m. *V. glabella* is also the host of the only specimen of *P. ornatula* known to me from elsewhere: Mt. Marathon, near Seward, Kenai Pen., Alaska, DAOM 54497 (Calder 5094).

For explanation of Arthur's confusing description (Manual of the Rusts, 1934) of *P. ornatula* see *P. glaciari* (Fungi Canadenses No. 78).

The true range of *P. ornatula* is in doubt. It probably thrives in moist low alpine or subalpine sites of the British Columbia Coast Mtns., most parts of which are highly inaccessible and poorly known biologically.

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