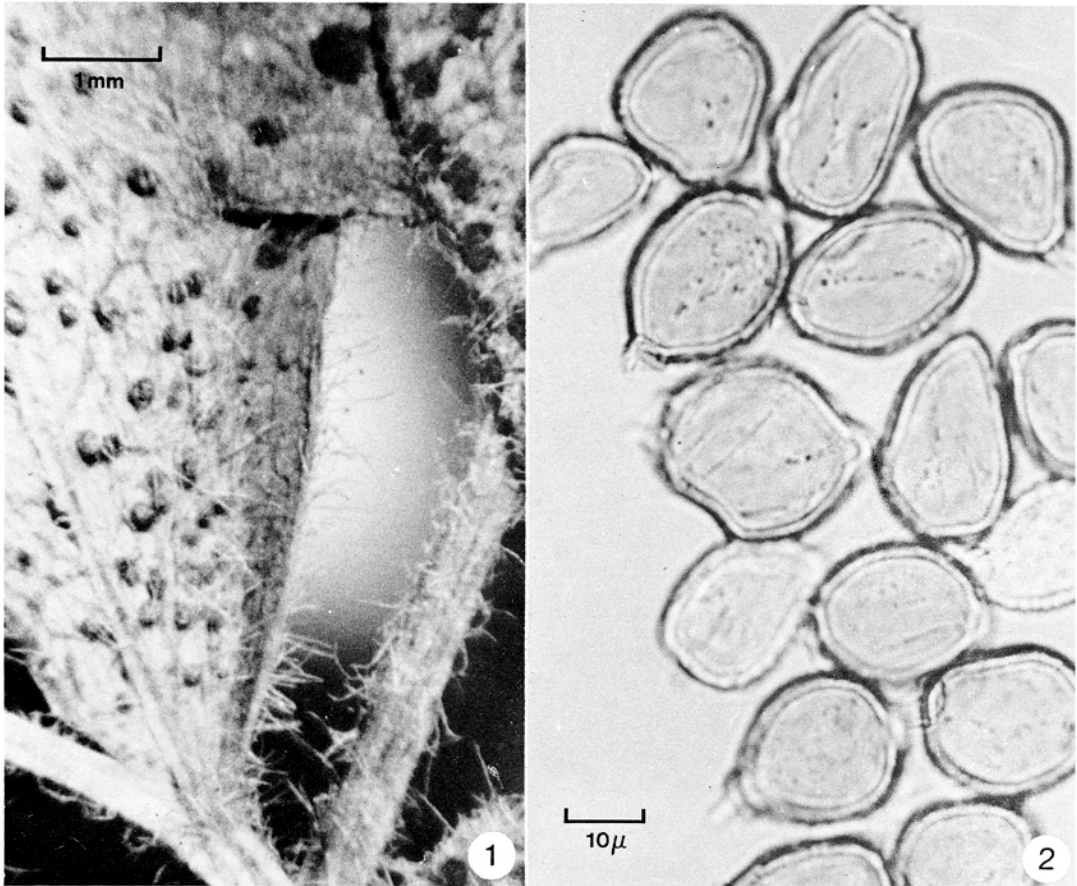


UROMYCES

PHACAE-FRIGIDAE



1, Enlarged view of telia on underside of leaflets; 2, teliospores, showing sparse rows of warts and ridges.

Uromyces phacae-frigidae (Wahl.) Hariot, Journ. de Bot. 7: 376. 1893.

Aecidium phacae-frigidae Wahl., Fl. Lapp. 525. 1812.

PYCNIA, AECIA and UREDINIA lacking. TELIA from systemic-perennial mycelium, mainly hypophyllous. TELIOSPORES (fully cleared) (20-)22-39(-41) μ long, (14-)15-26.5(-28) μ wide, globoid, ellipsoid or subpyriform (rarely subcylindric); walls 0.8-2.0(-2.3) μ (slightly thicker near pore), dark yellow-brown to light chestnut, with scattered steep-sided warts (0.3-)0.5-0.7((-1.0)) μ high, 0.5-1.2(-1.5) μ wide, often in widely spaced nearly longitudinal rows and then tending to fuse into short ridges; germ-pores apical -1/4(-1/3)((-1/2)) depressed, with small yellow papilla 1.0-2.2(-2.5) μ high, (4-)5-8 μ diam.; pedicel hyaline, deciduous.

HOST: *Astragalus umbellatus* Bunge.

DISTRIBUTION: Mackenzie District, Yukon Territory.

COLLECTIONS: Mackenzie Dist.: Mackenzie Mts., 62°-63° 30'N, 22 July 1967, DAOM 117854 (Cody &

Spicer 16382), 1 Aug. 1967, DAOM 117855 (Cody 17144), 3 Aug. 1967, DAOM 117856 (Cody 17386). Yukon Terr.: St. Elias Range, 60°49'N, 18 July 1966, DAOM 115695 (Murray 595); 61°33'N, 2 Aug. 1972, DAOM 145469 (Scotter 20846); N. of Mayo, 29 July 1949, DAOM 23628 (Calder & Billard 3971), 6 Aug. 1949, DAOM 23701 (Gillett et al. 4375); Ogilvie Mtns., 65°39'N, 26 June 1960, DAOM 139602 (Calder & Gillett 25959); near Komakuk Beach, 69°36'N, 17 July 1963, DAOM 115761 (Parmelee 2840), 20 July 1963, DAOM 115765 (P. 2859).

NOTES: Known also on *A. umbellatus* in Alaska from Unga I. (Arthur, Manual p. 303, 1934), Eagle Summit and Wiseman (Anderson, Iowa State Coll. Journ. Sci. 26: 506, 1952), near Chicken (Calder & Gillett 26415). Known in Norway (Type from near Polmak, E. Finnmark), Sweden and Russian Fennoscandia, on the sibling species *Astragalus frigidus* (L.) A. Gray (*Phaca frigida* L.). Also scattered along the arctic coast of U.S.S.R. on both host species. Four Scandinavian specimens examined agree closely with Canadian material, except that in some of them the maximum spore width rarely reaches 28 μ rather than 26.5 μ . The spores are very similar to those of the correlated demicyclic *U. lapponicus*, but generally have slightly thinner walls with coarser warts than in that species.

D.B.O. Savile
J.A. Parmelee