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SOME FUNGI FROM SPENCE BAY, BOOTHIA ISTHMUS*

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DURING the week of August 15-22, 1959, in the course of general botanical work at Spence Bay, I collected a number of fungi. Because of the paucity of records of fungi from the Canadian arctic, it seems worth while to present the complete list, although some of the collections have already been noted in a discussion of the botany of Somerset Island (Can. J. Bot. 37:959-1002, 1959). As indicated elsewhere (Can. Field Nat. 73:168-169, 1959), the settlement of Spence Bay straddles the Franklin-Keewatin Boundary. The specimens recorded below were thus all taken within about two miles of the boundary.

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Approximate distances are given from the Hudson's Bay Company post, which is at approximately 69°31′N 93°30′W. The specimens noted as being from north-northeast of the post were generally from the fertile talus and lower ledges of a large cliff, which proved to be a productive site. My collection numbers follow specimen citations.

Mucilago spongiosa (Leyss.) Morg. A large aethalium was found on heath tundra 1 mi. NNE of the H.B.C. post on Aug. 21 (*3901*). This slime mold is recorded from Finland as well as from many more southerly regions, but the present find is perhaps the most northerly record of its occurrence. A plasmodium probably of the same species, just starting to transform into an aethalium, was seen a few days previously, a few miles to the south, but was unfortunately not noticed until it had been severely damaged. The species may, therefore, be not uncommon in the area.

Peronospora parasitica (Pers.) Fr., *s. l.* A localized infection occurred on *Draba lactea* Adams near the H.B.C. post (*3825*). No appreciable distinction could be seen between this collection and material on *Capsella bursa-pastoris*, but it should be noted that *P. drabae* Gäum. and *P. norvegica* Gäum. have been described from *Draba* spp. If this collection were segregated from *P. parasitica* it would have to be placed in *P. norvegica*.

Allophylaria pusiola (Karst.) Nannf. A small amount of this little discomycete was found on dead leaves of *Poa arctica* R. Br., 4 mi. east of the H.B.C. post on the south shore of Middle Lake (*3845A*). There is a specimen in DAOM on the same host from Kenai Peninsula, Alaska. (Det. J. W. Groves.)

Lophodermium arundinaceum (Schrad. ex Fr.) Lév. var. *alpinum* Rehm On old leaves of *Elymus mollis* Trin. ssp. *villosissimus* (Scribn.) Löve, on sandspit 2 mi. NW of H.B.C. post (*3866B*). See discussion in Can. J. Bot. 37:979, 1959.

Lophodermium maculare (Fr.) DeN. A little on dead leaves apparently all of the previous year at the only colony seen of *Vaccinium uliginosum* (*3894*). The host is here evidently at its northern limit, but it reaches Ellesmere I. on the Baffin Bay coast and the fungus is recorded on it from there. The fungus, which is apparently purely saprophytic, seems to occur essentially throughout the range of the host, but it is inconspicuous and is frequently overlooked.

Mycosphaerella vaccinii (Cke.) Schroet. Heavy and at least in part on the first leaves of the current year in the colony of *Vaccinium uliginosum* L. noted under the last species (*3894A*). This fungus seems to be at least weakly parasitic; but it may have been more injurious here, at the limit of the host, than in the body of its geographic range. We have specimens on this host from Red Bay, Labrador; Coral Harbour, and Clyde Inlet. It occurs in the south on *Vaccinium* spp. (See Barr, Contr. Inst. Bot. Univ. Montreal 73:1-101, 1959.)

Pleospora affin. *herbarum* (Pers.) Rab. Occasional on old leaves of *Elymus mollis* Trin. ssp. *villosissimus* (Scribn.) Löve (*3866A*), at the sandspit NW of the settlement. The spores are of the herbarum type, but are somewhat large, 40-48 × 13.5-17. 5μ. It may be noted that Dearness (Rep. Can. arct. Exped., p. 9C, 1923) reported *P. herbarum* on this host from Bernard Harbour. It is also recorded on many hosts from other arctic stations, but several fungi may be involved.

Puccinia arenariae (Schum.) Wint. Heavy in a single colony of *Stellaria monantha* Hult. SE of the H.B.C. post (*3859*). Despite the paucity of published records, we have specimens of this rust taken at or north of treeline on eight hosts from a total of eleven localities. However, the Spence Bay record is the most northerly and it is doubtful whether the species will be found much farther north except in the extreme eastern arctic.

Puccinia bistortae (Strauss) DC. Moderately heavy on *Polygonum viviparum* L. SE of the H.B.C. post (*3857*). Also taken at Spence Bay by J. G. Chillcott in 1951. Recently taken at 74°06′N on Somerset Island, and likely to be found further north on the Baffin Bay coast. Common at low-arctic and subarctic localities.

Puccinia heucherae (Schw.) Diet. var. *saxifragae* (Schlecht.) Savile On *Saxifraga hieracifolia* Waldst. & Kit., south shore of Middle Lake (*3837*). Also taken at Spence Bay by J. G. Chillcott in 1951. Otherwise recorded on this host in Canada only from Prince Charles I.

Puccinia pazschkei Diet. var. *tricuspidatae* Savile Trace near H.B.C. post (*3883*) and heavy on south shore of Middle Lake (*3840*). Widespread at low-arctic and subarctic localities. Occurs sparingly north to 72°50′N on Somerset Island.

Puccinia fischeri Cruchet & Mayor On *Saxifraga oppositifolia* L. near H.B.C. post (*3891*) and north of post (*3879*). See discussion in Can. J. Bot. 38:980, 1950.

Puccinia helicalis Savile On *Pedicularis capitata* Adams NNE (*3899*) and south (*3858*) of H.B.C. post. See Can. J. Bot. 37:981, 1959, for description and discussion. Known otherwise only from Somerset Island and Cold Bay, Alaska, and since found sparingly at Coral Harbour, Southampton Island.

Uromyces lapponicus Lagh. The systemic aecia were found on *Oxytropis maydelliana* Trautv. NNE of the H.B.C. post (*3900*). Despite the late date (Aug. 21), no telia could be found. With one minor exception I have never found them north of treeline, and have found them with difficulty a considerable distance south of it. The exception was the finding in a 1959 collection, on *Astragalus richardsonii* Sheldon from Cambridge Bay, of a few telia on dead leaves of 1958. The teliospores were somewhat immature, despite 1958 being an unusually favorable year at Cambridge Bay and many other parts of the arctic, and none had germinated. It is therefore questionable whether the telia ever function in the arctic. It is possible that the aecia occasionally repeat, as in *Cronartium* and *Melampsorella;* but it must be remembered that plants bearing aecia remain infected perennially, and spread of the rust is possible even if telia are formed only once in about ten years. This collection and one on *Phaca frigida* L. from Herschel Island are apparently the most northerly ones known; but Spence Bay is much farther beyond treeline than Herschel Island.

Ustilago bistortarum (DC.) Körn. Locally abundant on *Polygonum viviparum* L. NNE of the H.B.C. post (*3895*). Occurs north to the limit of land but seldom abundant.

Ustilago vinosa (Berk.) Tul. Abundant in a single colony near the base o fa cliff NNE of the H.B.C. post on *Oxyria digyna* (L.) Hill (*3905*). Recorded north to Prince Patrick Island.

Ustilago violacea (Pers.) Roussel var. *violacea* A few infected plants of *Lychnis apetala* L. var. *arctica* (Fries) Cody were found near the H.B.C. post (*3826*). Very common on this host on Somerset Island, and its apparent scarcity at Spence Bay perhaps due to most infected plants having shriveled. Occurs north at least to 80°00′N on Ellesmere I. on *L. sorensenis* Boivin.

Exobasidium vaccinii Wor. Abundant in a single colony of *Cassiope tetragona* (L.) D. Don on the richly vegetated talus of a cliff NNE of the H.B.C. post (*3897*). Reported sparingly on this host north to Pond Inlet in the eastern arctic and Four Rivers Bay on Somerset Island.

Arcticomyces warmingii (Rostr.) Savile Despite the fruiting period for this fungus being largely over, a trace was found on *Saxifraga oppositifolia* L. near the H.B.C. post (*3880*). See discussion in Can. J. Bot. 37:984, 1959.

Asteromella picbaueri Petrak Locally abundant on *Astragalus alpinus* L. NNE of the H.B.C. post (*3898*). The pycnidia were conspicuous in the very pale infected leaflets. The spores and the systemic habit agree well with Petrak's Myc. Gen. 205, although the latter specimen, on *A. cicer* L., has more erumpent and more crowded pycnidia. I can find no prior record of this fungus in North America.

Bostrichonema alpestre Ces. A trace was seen on *Polygonum viviparum* L. east of the H.B.C. post (*3852*). Extensive searches on Somerset Island failed to reveal it and Spence Bay seems to be approximately its northern limit at least in the central part of the arctic. It is represented in DAOM from ten low arctic, subarctic or alpine situations from coast to coast.

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