ロブソン氷河の後退域における植生の一次遷移

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Primary succession of vegetation on the foreland of Robson glacier

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Primary succession of vegetation was investigated at the foreland of the Robson glacier in Mount Robson Provincial Park, British Columbia, Canada. Three study sites (Sites A, B, and C) that differed in the time since glacier retreat were established: Site A (14 years after glacier retreat) was on an outcrop mound and closest to the glacier snout, and Site B (approximately 60 years after the retreat) and Site C (102 years after the retreat) were on terminal moraines. A 9-m transect was laid out on each of the three sites, and 10 quadrats (1×1m) were set along the transect at a 1-m interval in August 2010. Plant species or genus and plant coverage (% relative to the quadrat area) within the quadrats were recorded. The chronosequence of primary succession of vegetation showed an overall pattern of accumulation of plant species over the 102-year period, except that *Dryas drumondii* increased initially during the first 60 years and then decreased thereafter (Table). Tisdale et al. (1966) conducted a vegetation survey at Site C in 1963 (55 years after the retreat). The data obtained at Site B in the present study exhibited a generally similar species composition to that reported by Tisdale et al. (1966), with greater coverages of *D. drumondii* and *Picea engelmannii* and lower coverage of *Salix* spp. and *Hedysarum boreale* in the present study. Comparing the vegetation at Site C in the present study with that of Tisdale et al. (1996) indicated a successional change in vegetation characterized by an increase of cryptogams on the ground, such shrubs as *Salix* spp. and *Arctostaphylos uva-ursi*, *P. engelmannii,* suggesting that the pattern of primary succession estimated with the chronosequence approach in the present study was in reasonable agreement with the time-series changes of primary succession. Fungi associated with dead leaves of major plant species are now under investigation to describe serial succession of fungi and its association with primary succession of vegetation in the glacier foreland.

Table. Coverage (%) of plants at three sites. Values are means of 10 quadrats.

Plant name / Site Time since the glacier retreat	Site A[1] 14 years	Site B[1] ca. 60 years	Site C[1] 102 years	Site C[2] 55 years
Dryas drumondii	3.7	26.0	4.3	7.2
Salix spp.	0.8	18.3	41.5	26.7
Hedysarum boreale	0.0	33.8	39.7	46.8
Picea engelmannii	0.0	17.3	32.4	0.0
Cryptogams (moss, lichen)	0.0	4.5	54.5	3.6
Arctostaphyloss uva-ursi	0.0	0.0	28.2	nr
Vaccinium uliginosum	0.0	0.0	14.5	nr
Shepherdia canadensis	0.0	0.0	11.5	nr
Arctostaphylos rubra	2.0	0.0	0.0	0.8
Epilobium latifolium	0.5	0.0	0.0	nr
Dryas octopetala	0.0	2.5	0.0	1.9
Eriogonum ovalifolium	0.0	1.0	0.0	nr
Castilleja occidentalis	0.5	0.5	0.0	6.8
Epilobium angustifolium	0.0	0.0	2.0	nr
Fragaria virginiana	0.0	0.0	0.9	nr

[1]The present study.

[2]Tisdale EW, Fosberg MA, Poulton CE (1966) Vegetation and soil development on a recently glaciated area near Mount Robson, British Columbia. Ecology 47: 517-523.

nr, not reported.