

Silicoflagellate and *Actiniscus* response to meltwater during the last deglaciation in the Alaska margin

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Silicoflagellate is a phytoplankton with biogenic opal skeleton, and its fossil assemblage is used for reconstruction of paleoenvironment. There are two major genera for modern silicoflagellates: *Dictyocha* mainly dwelling in tropical to temperate zone and *Stephanocha* mainly dwelling in subarctic zone. The *Dictyocha/Stephanocha* ratio has been used as a paleotemperature proxy. *Actiniscus pentasterias* is a species of Dinoflagellata with biogenic opal skeleton, indicator of coastal and low salinity environments. Gulf of Alaska is located eastern North Pacific. The southern Alaska margin has fjord created by the Cordilleran Ice Sheet. The purpose of this study is to clarify the silicoflagellate and *Actiniscus* assemblages to meltwater input from the Cordilleran Ice Sheet at the last deglaciation in the southern Alaska margin. A piston core KH17-3 CL14 was obtained from the southern Alaska margin (59° 33.350' N, 144° 09.344' E, water depth: 695 m). Age model of core KH17-3 CL14 is established by planktic foraminiferal radiocarbon dates and the bottom of the core is estimated to be ~17 ka. We used 48 samples for Silicoflagellate and *Actiniscus* analyses. 100 silicoflagellate specimens were counted for each slide and all *Actiniscus pentasterias* specimens were counted for each slide under light microscope. 7 species and 2 subspecies of genus *Dictyocha* and 4 species of genus *Stephanocha* were identified. Relative abundances of genus *Dictyocha* accounted for greater than 50% since Younger Dryas (YD), whereas genus *Stephanocha* (particularly *S. speculum*) was abundant during Bolling-Allerod (BA). This suggests that *Dictyocha/Stephanocha* ratio didn't simply reflect cold (YD) and warm (BA) events during the last deglaciation. Two *Actiniscus pentasterias* peaks were observed during the last deglaciation which were coincident with Meltwater Pulse 1A and 1B. This suggests salinity decline due to meltwater from the Cordilleran Ice Sheet. The meltwater into the subarctic Pacific may have led to enhanced productivity during BA. Because *Stephanocha speculum* is suggested to be an indicator of high productivity from modern sediment trap observation, high abundances of *S. speculum* in core KH17-3 CL14 during BA can be explained by the enhanced productivity driven by meltwater from the Cordilleran Ice Sheet.

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