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Silicoflagellate flux and oceanographic conditions in the northern Subarctic Pacific and the southern Bering Sea, '90-94

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The sinking assemblages of silicoflagellate fluxes were studied in order to decipher the relationships between the silicoflagellates and oceanographic changes in the southern Bering Sea (Station AB: 53N, 177W) and the northern central Subarctic Pacific (Station SA: 49N, 174W). Mean silicoflagellate fluxes at Station AB throughout summer 1990-summer 1994 were 43.4 * 10^4 skeletons $m^{-2}d^{-1}$, which was intermediate level between the previous results in the Western Subarctic Gyre (WSG: 102.8 * 10^4skeletons $m^{-2}d^{-1}$ in 1998-2000) and the Alaskan Gyre (AG: 13 * 10^4skeletons $m^{-2}d^{-1}$in 1982-1986). The silicoflagellate assemblage at Station AB was mainly composed of Distephanus speculum. The assemblage at Station AB was continuously stable, which was relatively similar to the assemblage in the WSG rather than the AG. Mean silicoflagellate fluxes at Station SA were 28.2 * 10^4skeletons $m^{-2}d^{-1}$. The dominant species at Station SA were not consistent throughout the sampled period, and was one of Ds. speculum, Ds. octangulatus, and Dictyocha spp.When Dictyocha spp.increased at Station SA in 1993, the assemblage at Station SA resembled that of the AG. It is already known that foraminifer G. quinqueloba, which is the abundant in the AG, also increased at Station SA in 1993. Therefore, the silicoflagellate assemblage including abundant Dictyocha spp.at Station SA in 1993 may suggest the significant influence of the Alaskan Stream (westward current) rather than the Subarctic Current (eastward). Distephanus octangulatuswas the most abundant at Station SA among the previous studies and the results at Station AB. When Dictyocha spp.and Ds. octangulatusincreased at Station AB, vegetative valves of coastal diatoms slightly increased. When the Pacific waters such as the Alaskan Stream were advected into the Bering Sea via the Aleutian Island passes, mixed waters of coastal waters around the Aleutian Islands and Pacific waters could have been brought to the area around Station AB.

Keywords: silicoflagellate, sinking particle flux, sediment trap, North Pacific, Bering Sea