

Report on Studies of Microorganisms on Surtsey, 1967

by

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The aim of the studies was to estimate the relative bacterial content of the air over the island as well as that of the surface of the tephra. The study in 1967 was a continuation of observations performed on Surtsey in the previous years (1964-1966). They had shown that the microbial flora in the air and the surface tephra at Surtsey was scanty and presumably influenced by weather conditions and dependent on elevation above sea level. Fewer bacteria were found at the higher elevation than at sea level, and it was also shown, that a high wind, with sea water spray over the island, increased the bacterial counts.

Air sampling

A study was performed on August the 3rd, 1967, during a calm day with light overcast. The methods used for investigating the bacterial content of the air were those described in the Proceedings of the Surtsey Research Conference, Reykjavik, June 25th - 28th 1967. The counts were performed from samples taken at three sites at different elevations: "Eiði" 1 meter above sea level, "Sandur" about 20 meters above sea level and "Bólfell" about 30 meters above sea level. The observation time was five and a half hour and media used were the same as described earlier.

Results did not differ substantially from the previous findings. The bacterial counts were as follows: At "Sandur" 0,0 colonies pr. plate pr. hour, at "Bólfell" 0,2 colonies pr. plate pr. hour and at "Eiði" 1,8 colonies pr. plate pr. hour. The types of microorganisms which were isolated were of the same general kinds as described in earlier studies, saprophytic bacteria and a few species of moulds.

Tephra sampling

On the 21st of July thirteen samples of surface tephra were collected at various sites and different elevation. Five of the sampling sites were located on a transect from the lagoon across the ridge (Háls) 120 meters above sea level and down to the southwest coast. Samples had been collected from these same sites, in the years 1965 and 1966. Several samples were taken on the northern coast, where a few individuals of higher plants had already colonized, and in addition one sample was taken close to the hut (Pálsbær). The tephra samples were collected aseptically in sterile plastic containers, each sample weighing 100-200 gr. They have been stored at -22°C since the 23rd of July 1967. The samples will be kept for later investigations for autotrophic bacteria as well as saprophytic species.

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