

TEMPERATURE CONDITIONS IN NE SPITSBERGEN AT THE END OF THE 19TH CENTURY

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Spitsbergen, in particular its western part, is the warmest area in the Arctic and is significantly influenced by atmospheric and oceanic circulations. Apart from Greenland, the regular recording of temperature here is the longest in the Arctic and started in 1911 at Green Harbour. Prior to this, our only records are derived from exploratory and scientific expeditions to this area, during some of which meteorological observations were carried out. For the purposes of this paper, two available temperature data series with hourly resolution have been collected for NE Spitsbergen for the 19th century. The first series (1872/73) comes from Mossel Bay and the Swedish North Pole expedition captained by Adolf Erik Nordenskiöld. This series and the series from Kapp Thordsen (central Spitsbergen, not analysed here) are the second oldest ones for the whole of Svalbard (after a series from Bjørnøya, 1865/66). The second temperature series which is available for the study period (station Treurenberg, 1899/1900) was gathered by the Swedish-Russian scientific expedition which was sent to Spitsbergen in 1899 to measure an arc of the Earth's meridian.

General temperature characteristics are analysed, including annual and daily courses. A comparison is drawn with the most recent data available from Nordaustlandet Island for the years 1944/45 and 2008-2010 to estimate different aspects of temperature changes between historical and contemporary periods.