History from the freezer: early scientific observations of Antarctic ice
Session 38 Understanding “the ice” through the Humanities, Arts and Social Sciences

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Iceberg B-9 (photo: U. Rack, January 2019)
According to viewer’s choice, landscapes and icebergs are popular.
Introduction

The early explorers had to deal with unknown ice conditions. However, observations led to findings which are the basis of our research/science today.

The term *Ice Shelf* (originally *Shelf Ice*) was proposed by Otto Nordenskjöld as a result of observations. He was the leader of the Swedish Antarctic Expedition, which was part of the first international collaboration in the Antarctic in 1901–1905 after the First International Polar year. Five nations participated and worked together on a strict coordinated programme to get a better understanding in glaciology, meteorology, magnetism, geology and life in the Antarctic (biology). This presentation is focused on snow and ice.
Linking the past and the future

Science of icebergs

Historical observations of ice

Fascination of Ice

Iceberg drift

Source: Antarctic iceberg tracking data base

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Swedish South Polar Expedition 1901 – 1903

The first who explored the Larsen Ice Shelf
Named after his captain Carl Anton Larsen

Recognised the different ice conditions
= shelf ice (later: ice shelf)
*In historical texts: ice barrier*

Weather station
Nordenskjöld’s route of southern dog sledge party in 1902 plotted on the first satellite imagery of the area (1962/63: Declassified Intelligence Satellite Photograph)
Collapse of Larsen-B and drift of gigantic tabular icebergs originating from the Ronne-Filchner Ice Shelf.

ENVISAT, March 16, 2002
Radar image by ESA.
Survey at the A-68 iceberg in January 2019, with *Agulhas II* parked against the ice wall. 
[https://weddellseaexpedition.org/](https://weddellseaexpedition.org/)
Legacy of early explorers

Glaciology:
Shelf-ice/ice-shelf (after the 1950s)
The maps of the early explorers are compared with modern satellite and radar imagery - in this way we evaluate ice-shelf change.
Thank you for your attention!

Any questions – please send to ursula.rack@canterbury.ac.nz wolfgang.rack@canterbury.ac.nz

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