On Glaciers and Avalanches

CRAC Alsace (Altkirch, France)
Octobre 2017 – January 2018
On Glaciers and Avalanches
at CRAC Alsace

Ground floor

Top floor

Room I
i  Fragments from Fluhälp, 2014
ii  Fragment from Aletschgletscher, 2013
iii  Fragment from Gornergletscher, 2014
iv  Fragments from Monchrous Hut, 2014
v  Vertical Fragments, 2014
vi  Fragments from Findelengletscher, 2013
vii Fragments from Klein Matterhorn, 2014

Room II
i  Lichens from Fluhälp, 2014
ii  View from Grosser Aletschgletscher in Four Parts, 2017
iii  View from Grosser Aletschgletscher in Three Parts, 2017
iv  Book On Glaciers and Avalanches

Room III
i  Tree Lines, 2015
ii  Gornergletscher from On Top, Figure 26, 2017

Room IV
i  Gornergletscher from On Top, 2014
ii  Gornergletscher from On Top, Figure 20, 2017
iii  Gornergletscher from On Top, Figure 18, 2017
iv  View from Grosser Aletschgletscher, 2013

Room V
i  Gornergletscher from On Top, Figure 13, 2017
ii  Tree Lines Davos, Two Slopes from On Top, 2012–2014

Room VI
i  Gornergletscher from On Top, Figure 8, 2017
ii  Rhône Glacier Moraine, 2017

Room VII
i  Tree Lines, 2015
ii  Gornergletscher from On Top, Figure 26, 2017

Room VIII
i  Tree Lines Davos, Two Slopes from Below, 2014

Room IX
i-vi Research materials
vii View from Grosser Aletschgletscher in Four Parts, 2017
Four days to paint one slope, four days to paint the other. One drawing per day. This idea of facing mountainsides also appears in *Tree Lines Davos, Two Slopes From On Top* (V-ii) and *Tree Lines Davos, Two Slopes From Below* (VIII-i), made with watercolour and colour pencils respectively. They capture the tree masses that define the temperature of the territory and the action of the avalanches as seen from above and from below. In the second one in particular, the attempt at differentiating the two species of trees is perceptible in the two tones of green. *Lichens from Fluhalp* (II-i) is another series of eight drawings made by the artist when the meteorological conditions prevented her from painting the glaciers. She then decided to concentrate on natural patterns of a different scale such as those made by lichens on rocks, which are oddly similar to those of the glacier. These organisms, which cover large surfaces of territory but usually go unnoticed until one pays attention, may be used to measure air pollution. The purer the air, the more they extend, especially in rocky areas where other species cannot live, absorbing enormous quantities of nitrogen and carbon dioxide from the atmosphere and attaching themselves to the ground.

And then, of course, there is the glacier. Together with the series of four drawings *View of Grosser Aletschgletscher* (IV-iv), where tones of white, brown, and black present different views of the glacier, various series of fragments from different glaciers unfold in the space, distributing and situating alpine geographical points in the rooms. In the central space on the top floor, *Gornengletscher From On Top* (IV-i), an installation of 28 drawings, shows the whole glacier through various drawn fragments and the gaps between them. For ten days, the artist drew the areas of the glacier with the most shapes and textures, leaving gaps with no drawing where the surface of the ice was smooth, thus establishing an arbitrary methodology that allowed her to apprehend the landscape and narrow it down. This piece was then used to create a new ceramic sculpture series. Superimposing the shape of the glacier onto the floor plan of CRAC, we selected some of the drawings that, now materialised as volumes, have been spread throughout the rooms, resting on the points of coincidence on the ground.
Room I

i  Fragments from Fluhalp, 2014
   pencil on paper
   2 drawings, 37.5 × 28.5 cm each (framed)

ii Fragment from Aletschgletscher, 2013
   pencil on paper
   5 drawings, 37.5 × 28.5 cm each (framed)

iii Fragment from Gornergletscher, 2014
   pencil on paper
   1 drawing, 37.5 × 28.5 cm (framed)

iv Fragments from Monterosa Hut, 2014
   pencil on paper
   3 drawings, 37.5 × 28.5 cm each (framed)

v Vertical Fragments, 2014
   pencil on paper
   3 drawings, 28.5 × 37.5 cm each (framed)

vi Fragments from Findelengletscher, 2013
   pencil on paper
   2 drawings, 37.5 × 28.5 cm each (framed)

vii Fragment from Klein Matterhorn, 2014
   pencil on paper
   1 drawing, 37.5 × 28.5 cm (framed)
Lichens from Fluhalp, 2014
coloured pencil on paper
8 drawings, 30 × 40 cm each
184 × 71.5 cm (framed)
View from Grosser Aletschgletscher in Four Parts, 2017
pencil on paper
92 × 57 cm (framed)
View from Grosser Aletschgletscher in Three Parts, 2017
pencil on paper
66.5 × 71 cm (framed)
Tree Lines, 2015
acrilic on canvas
4 paintings, 250 × 190 × 3.5cm each
Gornegrletscher from On Top, Figure 26, 2017
porcelain, 80 × 50 × 1 cm
Gornergletscher from On Top, 2014
pencil on paper
28 drawings, 21 × 29 cm each
115 × 456.5 cm (assembled)
Gornergletscher from On Top, Figure 20, 2017
porcelain, $74 \times 56 \times 1$ cm
Gornergletscher from On Top, Figure 18, 2017
porcelain, 208 × 9 × 1 cm
IV-iv

*View from Grosser Aletschgletscher, 2013*
coloured pencil on paper
4 drawings, 30 × 42 cm each
74.5 × 98.5 cm (framed)
Gornergletscher from On Top, Figure 13, 2017
porcelain, 91 × 48 × 1 cm
Tree Lines Davos, Two Slopes from On Top, 2012–2014
watercolour on paper
8 drawings, 40 × 30 cm each
2 frames, 145 × 200 cm each
Room VI
Gornergletscher from On Top, Figure 8, 2017
porcelain, 110 × 26 × 1 cm
Rhône Glacier Moraine, 2017
coloured pencil on paper
3 drawings, 35 × 47 cm each (framed)
Tree Lines, 2015
acrilic on canvas
4 paintings, 250 × 190 × 3.5 cm each
Gornergletscher from On Top, Figure 2, 2017
porcelain, 167 × 60 × 1 cm
Room VIII
Tree Lines Davos, Two Slopes from Below, 2014
coloured pencil on paper
10 drawings, 30 × 30 cm each
2 frames, 178.5 × 42.5 cm each
View from Grosser Altesgletscher in Four Parts, 2017
chalk, painted wall, 685 × 316 cm
Eugène Viollet-Le-Duc, *Le Massif du Mont-Blanc*, 1876
map drawn at 1/4000ème, 104 × 124 cm, ed. Baudry, Paris
- Horace-Bénédict de Saussure, *Voyages dans les Alpes*, 1779–1796
- Henri Hogard, *Recherches sur les glaciers et sur les formations erratiques des Alpes de la Suisse*, 1858
Scientific Material: increment borer (1), infra-red photo (2), tree core samples (3), tree cross sections (4).
Trees Larix decidua and Picea abies, Davos.
Exhibition booklet

*Irene Kopelman – On Glaciers and Avalanches*

17 × 24 cm, 16 pages
A year-long residency at the Foundation Laurenz House in Basel, Switzerland, from October 2012—October 2013, resulted in an interconnected project concentrating on glaciers and avalanches.

Glaciers had already been an essential part of the project “50 Meters distance or more” which departed from my trip to the Antarctic territory in 2010.

After my return from the expedition I got in touch with Prof. Dr. J. (Hans) Oerlemans from the Institute for Marine and Atmospheric Research Utrecht (IMAU) in an attempt to understand the complexity of glaciers. At the beginning of my residency in Switzerland I joined Hans Oerlemans for a hike at the Morteratschgletscher, where I started to understand the physicality of glacier changes. This first experience was followed by visits to archives, museums, and dialogues with different institutions related to glacier and snow studies.

One of these institutions is the World Glacier Monitoring Service (WGMS). For more than a century, the WGMS and its predecessor organizations have been collecting standardized data on changes in mass, volume, area and length of glaciers (glacier fluctuations), as well as statistical information on the distribution of perennial surface ice in spatial dimension (glacier inventories).

With the invaluable help of Michael Zemp (Director WGMS, PD Dr. sc. nat.), Dr. Samuel Nussbaumer and Dr. Isabelle Gartner-Roer, and through my participation in the Summer School on Mass Balance Measurements and Analysis 2013,* I was introduced to different levels of understanding glacier studies, such as the reading/visualization of the landscape and the political implications embedded in the perception of it. One of the most striking details I came across in glacier research, is the use of art-historical sources as a tool for reconstructing past glacier behaviour. Systematic and precise data about glacier fluctuation is reflected in the works of artists such as Samuel Birmann (1793–1847) who extensively documented the Unterer Grindelwaldgletscher and the Mer de Glace, even before the study of glaciers became relevant in modern scientific studies.

Long-term glacier observations help to give insight in processes of climatic change and provide fundamental information with respect to the possible effects of atmospheric changes (e.g. warming). There is an accelerating loss of mountain glaciers in most parts of the world. According to Prof. Wilfried Haeberli, the long-term research that has been carried out in the Alps confirms that the disappearance of many mountain glaciers is likely to be a matter of a few decades.

* From 2–7 September 2013, the WGMS organized a Summer School on Mass Balance Measurements and Analysis. The course was restricted to about a dozen participants from the Andes and Asia who are involved with ongoing mass balance programmes in their region. The participants were trained in both field and office work by an international team of experts in glacier monitoring and capacity building. This summer school was carried out within the framework of the project “Capacity Building and Twinning for Climate Observing Systems” (CATCOS) which is led by MeteoSwiss and funded by the Swiss Agency for Development and Cooperation (SDC). For more information, see: www.wgms.ch/mb_summerschool.html
Research

Musée d’Histoire des Sciences, Geneva

Last image: Muséum d'Histoire Naturelle de la Ville de Genève

Kunstmuseum Basel

Landscape

From left to right:
Grosser Aletschgletscher
Findelegletscher and Klein Matterhorn
Rhonegletscher

From left to right:
Findelegletscher and former tributary Adlergletscher
Grenzgletscher, Schwarzegg-, Breithorn-, and Theodulgletscher
Grenzgletscher and Gornergletscher
During spring and summer (2013), when the snow had melted, I could start walking and drawing in the mountain landscape. On a few occasions I joined the WGMS activities, at other times I went by myself, thus giving time to not only learn about this landscape but also to contemplate it and to get a sense of it. From within these immense, monochrome landscapes it was not always easy to define what to draw. The ice-sheet surface has different textures that give the impression of various forces operating within such a massive material. I settled for drawing small zones with a different texture than the surrounding areas.

Another institute I collaborated with was the Swiss Federal Institute for Snow and Avalanche Research, SLF, Research Unit Community Ecology, Mountain Ecosystems (part of the WSL). The Swiss Federal Institute for Snow and Landscape Research, WSL, comprises a number of research departments (and predecessor organizations) in an effort to study the Swiss mountain landscape. The Central Institute for Forest Research was founded in 1885 and was primarily concerned with forest management, forest protection, and the protective function of the forest against flooding. The Avalanche Research Commission was founded in 1931, and resulted in the first snow laboratory, built on the Weissfluhjoch (Davos) in 1936. From its onset, the Snow Laboratory in Davos has been concerned with the study of avalanches, hydrology and snow research. Today its core subject is still snow, not only as a hazard but now also as an endangered resource.

One of the most important ecosystem boundaries is the upper alpine tree line—the zone between subalpine forests and alpine meadows. Scientific interest in tree lines is increasing, as changes in tree line position have important implications for mountain ecosystems. Its animal and plant species, though accustomed to harsh environmental conditions such as long-lasting snow cover, short growing seasons and disturbances such as avalanches, may react sensitively to climate changes, land use and disturbance regimes.

As part of this project, and with the vital help of Dr. Peter Bebi, Dr. Alejandro Casteller and Lisa Erdle of the SLF research unit, I joined in the field work (focusing on mountain ecosystems above and below the tree line) and the research (connecting links between ecosystem research of the WSL and avalanche topics of the SLF in Davos). Peter, Alejandro, and Lisa introduced me to a very specific “reading” of the landscape. Walking with them through the mountains was an eye opener to the way one can read the history of a place, sometimes just by observing. The correlation between the forest forms (its outlines) and the avalanches is strikingly visual. During the fieldwork I was introduced to the scientific systems of data collection, and the further processing of it afterwards.

I realized two trips to the mountains in Davos, during which I sat and drew from opposite slopes of the mountains. I could then draw what I had in front of me: the shape of the forest, and the way in which the avalanches, the light and the wind have defined the morphology of the forest.

All the pieces were made in the field, besides the series of paintings which was produced in Casa Wabi, a residency program situated near the town of Puerto Escondido along the Pacific coast of the State of Oaxaca, Mexico.
Research

Tree ring cores on wooden core mounts

First image:
Cross-section was taken from a Pseudotsuga menziesii tree in a torrent located at Brazo Huemul of Nahuel Huapi lake, Neuquén province

Landscape

South-facing slope of Dischmavalley

North-facing slope (Stillberg)
Related exhibition

**On Glaciers and Avalanches**

Galería Labor (Mexico City, Mexico)
Related exhibition

**On Glaciers and Avalanches**

ETH Zurich (Switzerland)
April – June 2018
Related exhibition

*On Glaciers and Avalanches*

ETH Zurich (Switzerland)
April – June 2018

*Poster project, 2018*
ColorWave prints on 80g/m² uncoated paper
841 × 1189 mm (A0) each
Edition of 3 + A/P
On Glaciers and Avalanches

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