

The work of Christian Pfister and his scientific network

In the field of Climate History I was isolated within my country after the publication of my history of *Climate since the Year 1000* in 1967. But the issue was taken up outside France. My friend Christian Pfister would significantly shape this research topic during the last quarter of the century and beyond, going on to lead this study that I had first opened up for the historical profession after 1957.

A team of Swiss German researchers joined Pfister in his work, and soon demonstrated considerable originality. Among them, I would mention [the geographer Hanspeter] Holzhauser, glaciologist and mountaineer, whose scientific research involved tracing the fluctuations of the Great Aletsch Glacier over the last 3,500 years. [The geographer] J[ürg] Luterbacher reconstructed the spatio-temporal [monthly European] climate variations of the late 17th century and later eras. He has also investigated the connection between the severe winters of 1940 to 1942 [in Russia], whose origins he traced to the El Niño Southern Oscillation on the other side of the Americas. In today's Czech Republic [the geographer] Rudolf Brázdil established himself as one of the leading historical climatologists in Europe, following the opening of the Iron Curtain. A team of Swiss German historical glaciologists and historical climatologists investigated the fluctuations of the Grindelwald and “Mer de Glace” glaciers. On the basis of visual and textual evidence drawn from old maps, prints, and engravings, paintings and photographs, and other images from the site, combined with narratives of English and European travelers, these historians of ancient and modern ice have reconstructed the evolution of the Grindelwald, Mer de Glace, and Bossons almost year by year from the 16th century to the present. The fluctuations of these glaciers reflect the mild second third of the sixteenth century, then the onset of the Little Ice Age of 1570-1854, and the subsequent retreats of the glaciers in 1860-1880 then irremediably from the 1930s to the present. The professor [Heinz J.] Zumbühl launched this tremendous

undertaking; [his student Samuel] Nussbaumer continued it along with his mentor into the 21st century. They recently completed a similar investigation of the “Mer de Glace” including its three pronounced Little Ice Age maxima in 1644, 1821, and 1852. The “Mer,” too, would fall victim to a catastrophic retreat from 1885-1880 and from the 1930s to the present. A French glaciologist, the Savoyard Christian Vincent, joined the two Swiss in the publication of an even more sophisticated book on the history of glaciers of the Mont Blanc massif (of which the “Mer” remains the crowning jewel, in spite of its aforementioned retreat). In Western Switzerland, Martine Rebetez joined the chorus of publications with a wonderful little book entitled *La Suisse se réchauffe* [Switzerland warms up].

On the whole, Christian Pfister, of the Bern University, remains the undisputed mentor of climate historians in Switzerland and German-speaking world in general. The leadership of Bern University (and Zurich) in this field still carries considerable weight on the Continent, even though Pfister has called me “founding father of historical climatology.” Moreover, Pfister’s frequent contributions to the prestigious journal *Climatic Change* emphasize his strong presence in the field.

His English-language work has been widely published in leading journals on both sides of the Atlantic and Channel. However, his books in German have received little international attention, since the necessary competence in German has been lacking in France and elsewhere. His German oeuvre, however, presents important details about extreme weather and climate over the past five hundred years, particularly his research on the connection between climatic disasters and demographic depressions in European countries. This statement also holds for Pfister’s little book about the Patriots in Switzerland [his PhD thesis “Agrarkonjunktur und Witterungsverlauf im westlichen Schweizer Mittelland zur Zeit der Ökonomischen Patrioten 1755-1797”, Bern, 1975] which concerns climatic variability and its bearing on the agricultural cycles of this period, focusing on the

subsistence crisis of 1770, which was also felt in France. The widespread harvest failure was brought on by a cold shock in April 1770 followed by intense precipitation during the summer of that year. These are some of the elements underlying skyrocketing grain prices, popular unrest, leading to political changes that year. In France this refers to the overthrow of [Etienne-François] Choiseul [as head of government] and the rise of the minister [René-Nicolas] Maupeou and the dirigist [Abbé] Terray to power. Terray again implemented state control of grain markets, which had been repealed in 1764, in order to ensure the provisioning of the population who had been suffering from dearth.

Pfister's many articles in English ensure the quality and endurance of his research. But in the end, his success is largely based on his thesis [Habilitationsschrift] *Klimageschichte [der Schweiz]* (1984) which first laid the now solid foundations of his work. As few scholars outside the German-speaking world have read this important work it would be appropriate to outline some of its main features.

The documentary sources are presented in detail, even including myths and legends. Recall that a chapel in the Chamonix valley, crushed by the advance of a large glacier in the fourteenth century, allegedly still rang out its bells from under the ice on holidays late into the Ancien Régime. As for the rest, it goes without saying that chronicles and annals, administrative documents, personal papers, and local journalism (in the widest sense) were used to reconstruct the history of glaciers and extreme weather. [...] Temperature and precipitation indices are available in form of tables in the final part of the two volumes of the thesis—month by month, season by season, year by year on the basis of instrumental measurements from the early 18th century and narrative data from 1525. Snow-falls and the freezing of rivers and lakes occupy an important place in this compilation of data, alongside with phenological data such as grape harvest dates and tree rings.

The homogenization of this mass of (massive) data and the construction of [monthly temperature and precipitation] indices resulted in the creation of a remarkable database named „Climhist-[CH]”.

From this overabundance of documentary evidence, we get a fluctuating yet discernible periodization of seasonal and monthly climate which agrees to some extent with the one proposed in our 1967 *Histoire du climat depuis l’an mil*. Following Pfister’s enormous contributions, this periodization would be further elaborated by the work of his students and other researchers: a rather mild period from 1530 to 1564 in western and central Europe; a climatic deterioration from 1565 to 1629; a general persistence of the LIA until the first decade of the 18th century; the coldest years historically arising in 1688 and in the extremes at the end of the 17th century. After the Maunder Minimum had vanished around 1715, temperatures rose, at times substantially, over the first third of the century until the end of the 1730’s. The cold returned in the first half of the nineteenth century which resulted in a far-reaching advance of Alpine glaciers, as symbolized by the maximum of the “Mer de Glace” in 1852-53.

On a centennial timescale, the differences between 1530 and 1855 are only a few tenths of a degree. On a decadal, multi-decadal, or especially annual timescale, they are substantially greater. To take an example from Pfister’s approach, we can find in his superbly illustrated *Wetternachhersage* [1999] accounts of notably harsh winters, even “Siberian” winters France. I tried to compare Pfister’s series with the evidence available for France.

[The remaining chapter deals with the detailed comparison of temperature extremes in France and Switzerland].

(from Emmanuel Le Roy Ladurie in *Naissance de l’ Histoire du Climat*, Paris 2012: 54-60, translated by Sam White, Ohio State University, Columbus USA, May 2017)