

Hupfer, Franziska: *Das Wetter der Nation: Meteorologie, Klimatologie und der schweizerische Bundesstaat, 1860-1914.* – Zürich: Chronos 2019. – 377 S., Abb. – ISBN: 978-3-0340-1502-8 – € 48.00

The Swiss Academy of Sciences celebrated its bicentennial in 2015, including a publication covering the past 200 years of natural scientific activities in Switzerland (*Die ERDE* **146** (2-3): 205-207). As a follow-up, the historical developments that led to the Swiss Meteorological Office (now MeteoSwiss) as an official governmental institution was investigated by *Franziska Hupfer* who presents an easy to read and elucidating book covering the time period from 1860 to 1914, by when the meteorological observations were systematically established across Switzerland as a full fledged governmental institution.

The first instrumental recordings in Switzerland were carried out by *Johann Jakob Scheuchzer* in 1708, but in comparison to other European countries concerted meteorological observations were not well established in Switzerland during the 18th century. The Economical Society of Bern was the first to distribute identical instruments in 1760 to people in various regions of the Canton of Bern, but all incentives to keep such systematic meteorological observations active over longer time periods failed sooner or later. Only in 1860 did the Swiss Academy of Sciences take the decision to foster the organisation of regular meteorological observations across the whole country. In the beginning of this new era, the Astronomic Observatory of Bern played a key role, given the experience it had gained from previous work in the canton. These activities were on purely private and academic grounds. For the transition away from a strictly scientific data collection (as the basis for climatological characterisations) towards a public service in the hands of the government, the political framework was an important factor, as Hupfer emphasizes.

Switzerland in its present form was founded in 1848. Thus, 1848 marks the beginning of the successful development of modern Switzerland. Originally, this was a weak construct, but it was well understood that it was time to move weather observations from the level of the states (i.e., the cantons) to the national level in order to make them more consistent and more comparable, primarily across the country, but increasingly so also in the international context.

The Swiss Academy of Sciences guided the early developments with its Board of Experts (Meteorologische Kommission) with the goal to provide the relevant climatological information to the farmers in a still predominantly agrarian society. For scientific purposes, however, the board was strictly against the ‘unscientific’ incentives to add weather forecasts to the activities of the weather service. However, its director had the clear vision of the usefulness of weather forecasts for farmers and the wider public, despite the questionable reputation these forecasts had within the scientific community. At the same time, he realized that in the long run, such a service with a substantial financial demand from taxpayers can only be operated successfully, if the general public has a use of its products. Early weather forecasts struggled with the complex topography of Switzerland and the associated vague and unspecific wordings used in early forecasts. Thus, local farmers still relied more on their own predictive skills – and their belief in astrological influences on weather, or the 100-year calendar which suggested that weather patterns will repeat themselves every seven years. *Hupfer* nicely elaborates on the tensions between the Board of Experts which tried to restrict the work of the weather service to strictly scientific observations, versus the political and governmental bodies that saw the potential value of weather observations, including forecasts, and the climatological knowledge gained via long-term observations. This led to the transition of the authority guiding the meteorological office away from science (and the Academy) towards a full-fledged government institution.

Hupfer also elucidates important side-aspects of the meteorological activities, including weather modification experiments carried out between 1901 and 1906 to prevent hail damages in sensitive agricultural settings. She selected the case of the orographically right shore of the Lake of Zurich where the municipalities joined forces – and funds – to test hail cannons produced by a local iron foundry to protect the extensive vineyards. *Hupfer* clearly exposes the scientific problem behind this trial: there is no control, and whenever there was no hail after ‘successful’ hail cannon deployments, a wide range of alternative interpretations were always at hands. And thus the government subsidies were discontinued after this five year long experiment.

Hupfer’s focus on 1860-1914 prominently mentioned in the book title may be somewhat misleading: her research also covers the period before 1860 – the

year when the Swiss Academy of Sciences decided to organize meteorological observation in a systematic country-wide network of sites – and some aspects beyond 1914, which are important to understand the main period of development of the present-day Swiss weather service. The book is well written, and a plea-

sure to read for everyone interested in science history and the challenge to bridge between pure science and a wider societal relevance of meteorological and climatological observations in Switzerland.

Werner Eugster (Zürich)