Drews / Ette / Kraft / Schneider-Kempf / Weber (Hg.)

Forster – Humboldt – Chamisso

Weltreisende im Spannungsfeld der Kulturen

V&R

V&R Academic

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Chamisso-Studien

Band 2

Herausgegeben von
Jutta Weber, Walter Erhart und Monika Sproll

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Julian Drews / Ottmar Ette / Tobias Kraft /
Barbara Schneider-Kempf / Jutta Weber (Hg.)

Forster – Humboldt – Chamisso

Weltreisende im Spannungsfeld der Kulturen

Mit 44 Abbildungen

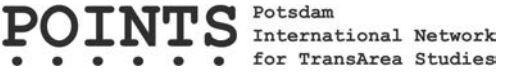
V&R unipress

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Bundesministerium
für Bildung
und Forschung

Staatsbibliothek
zu Berlin
Preußischer Kulturbesitz

Chamisso-Gesellschaft e. V.



Bibliografische Information der Deutschen Nationalbibliothek

Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über http://dnb.d-nb.de abrufbar.

ISSN 2512-7306
ISBN 978-3-8470-0751-7

Weitere Ausgaben und Online-Angebote sind erhältlich unter: www.v-r.de

Das diesem Band zugrundeliegende Vorhaben wurde mit Mitteln des Bundesministeriums für Bildung und Forschung unter dem Förderkennzeichen 01UO1302B gefördert. Die Verantwortung für den Inhalt dieser Veröffentlichung liegt bei den Autoren. Gedruckt wurde der Band mit freundlicher Unterstützung der Universität Potsdam, der Staatsbibliothek zu Berlin, der Chamisso-Gesellschaft e.V. und der Stiftung Preußische Seehandlung und dem Potsdam International Network for TransArea Studies (POINTS).

Titelbild: „Vue du Cajambé“. Kupferstich von Louis Bouquet nach einer Skizze von Alexander v. Humboldt, „Vues des Cordillères et monumens des peuples indigènes de l’Amérique“, Paris 1810. Bildagentur bpk No: 00023067. © bpk / Iberoamerikanisches Institut, SPK.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Inhalt

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Horizonte

Schreiben

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Sammeln

Transfer

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Ausblick

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Kristina Skåden

Scientific Relations and Production of Knowledge: Hertzberg, Goethe, and Humboldt

Niels Hertzberg (1759–1841) lived in *Ullensvang,* a small rural place on the west coast of Norway. His farm was sandwiched between *Sørfjorden*, an inlet fjord of the larger *Hardangerfjorden*, and *Hardangervidda,* the mountain area dividing western Norway from eastern Norway. Hertzberg served as a Protestant priest. His first love was probably God and the family, his second love was science. In 1825, he published the map entitled *Høiderne av de hidtil maalte Bjerge i Norske eller Rhinlandske Födder*, or in my translation, *The Heights of the Previously Measured Mountains in Norwegian or Rhineland feet.*[1]

It is a well-known argument that maps are immutable mobiles, artefacts that move around but keep their shape, and have the capacity to make an argument, to mobilize, and to dominate on a large scale.[2] The aim of this article is to provide snapshots of how Hertzberg and his map participated in the production of an intellectual space and in the production of knowledge. I will do this by drawing on theoretical resources from science and technology studies (STS).[3] I am particularly interested in how, and to what extent, Hertzberg was influenced by Johann Wolfgang von Goethe's (1749–1832) map *Höhen der alten und neuen Welt bildlich verglichen.* I will investigate this by closely reading both maps, and by focusing on their production and reception history. Thereby, I add an unknown network relation to the familiar contact between Goethe and Alexander von Humboldt (1769–1859). The argument is that this history of knowledge – Hertzberg's version of mapping – constituted, and was a result of, an intellectual space in the so-called periphery of Europe, which evolved through transnational knowledge networks with participating experts from at least Germany, France, Norway, England, and the Americas.[4]

1 I owe special thanks to Benedicte Gamborg Briså at the National Library of Norway for finding and discussing two copies of the map.
2 Latour 1986, pp. 10–13.
3 Latour 1988.
4 An earlier version of this paper was presented at the 3rd International Chamisso Conference,

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Hertzberg also published an 8-page introduction to the map. On the front page, he addressed an audience by dedicating the map to young students at the Norwegian University.[5] These students were a quite new category in Norwegian society; the first Norwegian University in Christiania (later renamed Oslo) was founded 1811 in the conglomerate state of Denmark-Norway. In 1814, after the Napoleonic Wars, the Danish Kingdom was on the losing side. The terms of the Treaty of Kiel put the Kingdom under pressure to cede Norway to Sweden. In the Norwegian-Swedish union, Norway kept its constitution from 1814, and most of its own independent institutions. At the time Hertzberg published the map/text, the main task of the university was to ensure Norwegian independence, and stand against a cultural and political convergence between Norway and Sweden.[6] Hertzberg was a member of the first Norwegian Parliament (1814), and thus well informed about politics and societal issues. If we interpreted Hertzberg's dedication in relation to this political situation, we may understand his dedication as an attempt to place himself into the institutionalized production of an imagined national space. Simultaneously, the text and the map argued that heterogeneous knowledge networks outside of the university framework contributed to constitute the national space.

While working on the map, Hertzberg sought to hang it in his living room along with some Norwegian landscape prospects. Probably during the summer of 1822, a student came to visit, and surprised him by insisting on taking the drawing back to Christiania. Half a year later on January 11, 1823, Hertzberg received a letter from a scientist, writing that he then had two different versions of Goethe's map. They were both in every respect significantly inferior to Hertzberg's map. In addition, Goethe's map did not contain Norwegian elevations. However, the scientist wanted to complement Hertzberg's map with more measurements, to make it, as he put it, "even more perfect".[7] Hertzberg was pleased; he wrote an introduction to the map, but time passed without anything happening. After numerous inquiries, the scientist finally replied orally by proclaiming that the map had too many similarities with Goethe's map. He wanted to refrain from supporting the release of the map. Nevertheless, Hertzberg funded the printing himself despite the scientist's change of mind.[8] Before returning to Hertzberg's narrative of the mapping, I will establish a relation between Humboldt, Goethe, and his map relevant for the current analysis.

Berlin State Library, 25–27 February 2016. I am grateful to the participants and to the editors of this book for their comments.

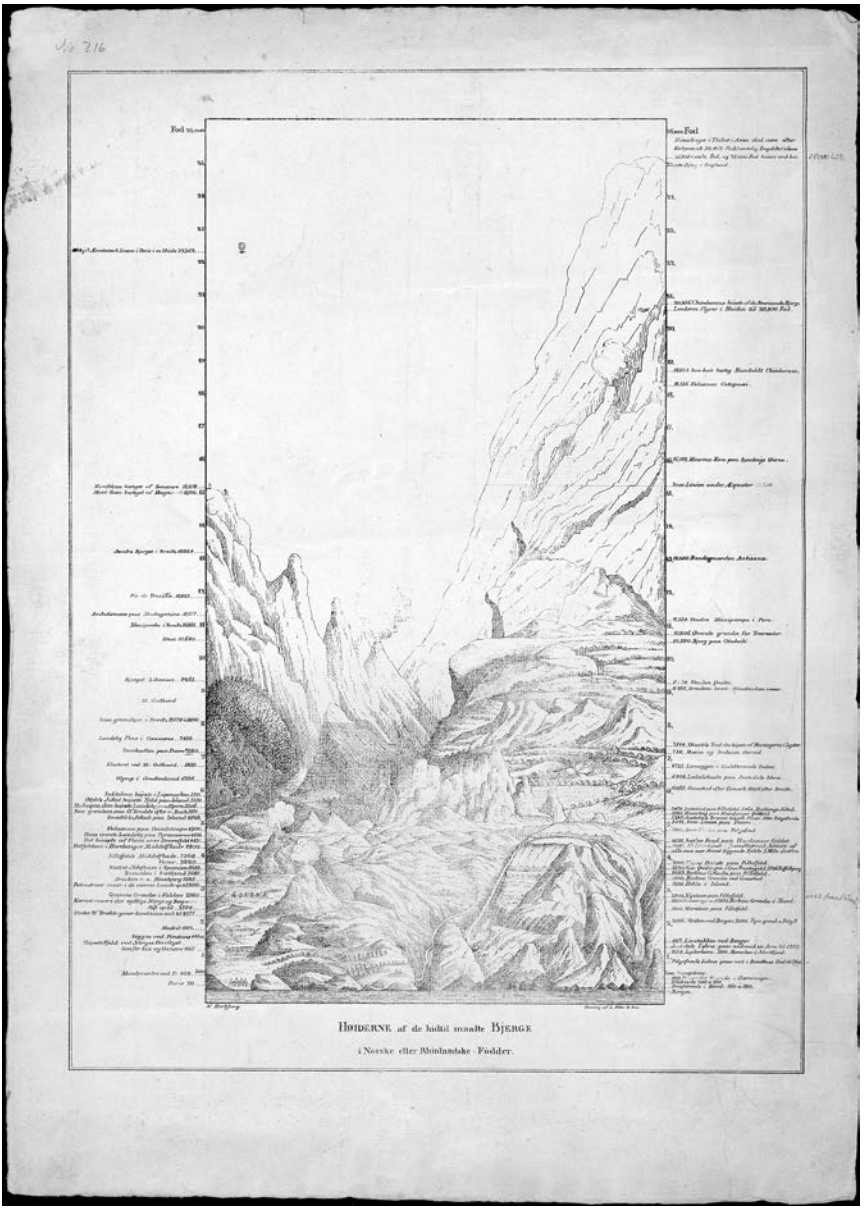
5 Hertzberg 1825, p. 1.

6 Collet 2011, p. 242.

7 Hertzberg 1824, p. 5.

8 Hertzberg 1825, pp. 5–6.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517



Ill 1: Niels Hertzberg draws and published the map *Høiderne av de hidtil maalte Bjerge i Norske eller Rhinlandske Fødder*, (The Heights of the Previously Measured Mountains in Norwegian or Rhineland feet) in 1825 (NB Map 216, 1).

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Making botanic and mountain space

Humboldt and the French botanist Aimé Bonpland's voyage 1799–1804 to the Americas led to international fame, an extraordinary scientific career, and extensive scientific publication, popular writing and lectures.[9] The event considered the most spectacular of the trip took place July 23, 1802, when Humboldt, Bonpland, Montufár, and a native guide nearly reached the top of Chimborazo, the volcano estimated as the tallest mountain in the world.[10] The small and first volume of Humboldt's scientific travel reports was *Ideen zu einer Geographie der Pflanzen, nebst einem Naturgemälde der Tropenländer* [Essay on the Geography of Plants]. Together with the integrated tableau, *Geographie der Pflanzen in den Tropen-Ländern: ein Naturgemälde der Anden* [Geography of Equatorial Plants: Physical Tableau of the Andes and the Neighboring Countries], a pictorial representation of physical, ecological, and societal properties arrayed along an elevational gradient, it provided science a new lens, "a geographic lens."[11] The *Tableau* was visual knowledge production, showing the profile of the two mountains, Chimborazo and Cotopaxi, systematically filled with names of individual plant species and vegetation zones from sea level to snowline, flanked by columns of numbers and words.[12] The *Essay/Tableau* was expounding observations and measurements made during the voyage by applying the concept *Pflanzengeographie*. Humboldt wrote that the science of the Geography of Plants existed up to that time in name only.

> This is the science that concerns itself with plants in their local association in the various climates. This science, as vast as its object, paints with a broad brush the immense space occupied by plants, from the regions of perpetual snows to the bottom of the ocean, and into the very interior of the earth, were there subsist in obscure caves some cryptogams that are as little known as the insects feeding upon them.[13]

By observation, measurement, and multivariate analysis Humboldt was aiming to create a new holistic science, a more general system for knowledge that sought to go beyond problems of classification.[14]

Goethe received the *Essay* in Weimar from Humboldt in March 1807, but the *Tableau* arrived first in the beginning of May.[15] Just days after the *Essay* appeared, inspired by the chapter *Höhen der vornehmsten Berge auf der Erde*, he drew a

9 Osterhammel 1999, pp. 106–108.
10 Jackson 2009, p. 14.
11 Ibid., p. 4.
12 'Tableau physique des Andes et pays voisins', in: Humboldt / Bonpland 1805.
13 English translation from: Jackson / Romanowski 2009, p. 64. The original German version, see: Humboldt / Bonpland 1807, pp. 2–3.
14 Romanowski 2009, pp. 178–179.
15 Wider 2004, pp. 142–143.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

sensuous, symbolic representation of mountain heights.[16] Goethe also mapped conventionally; however, in this particular case he turned numbers of elevations into a pictorial landscape map. He arranged the mountains in two landscape formations, Europe, the Old World on the left, and the Americas, the New World, on the right. Mountains and places Goethe saw or climbed during his three trips to Switzerland represented the European side.[17] At the *Weimar Mittwochsgesellschaft für Damen* in April, and on other occasions during the summer, he presented the map with success. It was received as a relevant didactic tool.[18] F. J. Bertuch, the leader of the *Geographische Anstalt* in Weimar, printed a new version of Goethe's map, entitled *Höhen der alten und neuen Welt bildlich verglichen,* in his geographical journal *Allgemeine Geographische Ephemeriden* (1813).[19] Goethe's approach, being "ein Augenmench," (an eye-person), observing and watching, was contributing to anthropogeographical thoughts about the relation between human life in the past and the present and the nature of different countries.[20] Published as a separate edition and in different versions, among others in French and England, with and without a reference to Goethe's original map, the landscape map matured to a new genre of maps.[21]

Too many similarities

Hertzberg admitted having seen Goethe's map; nevertheless, he argued that he for a long time worked on comparing heights. His original project was to shape mountain heights in wax in the right proportion placed on a horizontal surface. On the first Christmas day 1806, a hurricane disrupted him by demolishing his house, and destroying the scientific equipment he had collected for over twenty years.[22] Instead of mapping and waxing, he rebuilt the farm. There are no known sources telling which version of Goethe's map Hertzberg actually knew, but there is one more reference to Goethe in addition to the one in the introduction. Hertzberg asked his friend Christian Frederik Gotfred Bohr about a representation of the world's heights he had just seen. Bohr assumed it was the map made by Goethe using data collected by Humboldt, Saussure, and others. Bohr

16 Goethe 1813, pp. 5–7.
17 Wider 2009, p. 19. See also Wider 2004.
18 Mazzolini 2004, pp. 11–12.
19 Beruch / Goethe 1813, pp. 3–8. See the article of Gabrielle Bersier in in this volume.
20 Schmitthenner 1937, p. 166.
21 Bailly / Besse / Palsky 2014. Güttler 2014.
22 Hertzberg 1825, p. 3.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

himself owned a version of this map.[23] It is likely Hertzberg saw Bohr's map as well; thus, Bohr was a fellow in science from Bergen, exchanging knowledge of meteorology, mountaineering, and measurement.[24]

There are several parallels between Hertzberg's and Goethe's maps; however, Hertzberg transformed one or another of Goethe's map to a Norwegian version by withdrawing, adding, and reframing signs. By depicting 89 elevations into a drawn landscape, Hertzberg wanted to compare and give an overview of measured heights in Norway and in the world. He described the map as a perspective map of heights. Rather than mapping space top-down, he made use of, like Goethe, a frontal view. Like Goethe, he mapped egocentrically, in other words, putting the culture that produced the map in the center.[25] On the lower section, the motif resembles Hertzberg's vernacular view. The foreground marking the sea level is a narrow strip of water that echoes the fjord in front of Hertzberg's parsonage.[26] In the background, mountain formations dominate. Two steep hillsides divide the upper section. On the left flanks, Mont Blanc reaches a height of 15,218 Norwegian/Rhineland feet; on the right flank, significantly higher, Himalaya reaches 25,705 feet. Until 1815–1817, the heights of Himalaya were unknown, thus Himalaya was not included on Goethe's map. The mapping of Himalaya was one selling point made by Hertzberg, and the 41 Norwegian elevations were another selling point. Hertzberg adopted Goethe's cheerful idea of drawing tiny figures on the map illustrating scientific achievements: Gay Lussa's air balloon, de Saussure who was the first man to reach the summit of Mont Blanc, Humboldt next to the top of Chimborazo, and the French traveler Maynard on Monte Rose.

At first glance, it appears as if the mountains were the main subject of Hertzberg's map, but a closer look reveals his botanical gaze. Hertzberg compared growing conditions by combining information from Humboldt's trip (the upper tree line) with botanic knowledge about Norway (tree line for the birch on the mountain *Fillefjell*), and his own innovative agricultural practice. Very small details are the fruit trees in *Hardanger*, on the map recognizable as two dark, small, round dots. Hertzberg was famous for planting fruit trees, and particularly for his two cherry trees. Hertzberg expresses his version of the geography of plants in relation to a particular concern with snow. Different snowlines and his measurements of the glacier *Folgefonden* illustrated where the vegetation ended.[27] Thus, the map was a visualization of Hertzberg's publications on me-

23 I want to thank Niels Voje Johannsen for sharing his research concerning the relation between Bohr and Hertzberg. Letter from Gottfried Bohr to Niels Hertzberg, 22 May 1822. NB, Ms 4°.
24 Johansen / Jørgensen / Pettersen 2009, pp. 39–46.
25 Brotton 2012, p. 9.
26 Hertzberg 1825, Map 216, 1 and 2.
27 Hertzberg 1818.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Ill 2: Within the diameter of the two cheery trees in Hertzberg's garden there was place for 140 people (image copyright: O. Væring Eftf. AS).

teorology, and on biological conditions in his region. Moreover, the map anticipated a later argument, that *Hardanger* was of special interest for research and art because there it was possible to observe natural-science objects such as a "fjord," a "waterfall," a "mountain," and a "glacier." One view showed how nature turns from chaos and death to life.[28] One way of getting access to this laboratory of nature was by replacing the existing small path over *Hardangervidda* with a road for riding and driving horses, he argued.[29]

Ill 3: Hertzberg's cheery trees (see inserted red circle) were marked on his map, and part of his research of geography of plants (Section of NB Map 216, 1).

28 Hertzberg 1828.
29 Skåden 2013, pp. 51–85.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Producing space for science

Hertzberg made his own way into the making of science. During the previous 30 years, he often had a barometer in his hand, measuring mountain heights and glaciers, especially in his home area, Hertzberg writes in the introduction to the map.[30] Hence, he refers to his own skills, to empirical observations, and to his fate in life. According to Hertzberg's published autobiography, a text he partly uses for clarifying his education and position as an amateur scientist, his choice of career was forced on him. To make a long story short, and maybe too simple, in his childhood a theology student taught him for a while some French and English, strolling in nature, and drawing maps. At the age of 19, Hertzberg went to study theology at the only university in the Danish-Norwegian state in Copenhagen. Because of his father's difficult economic situation, he unfortunately had to return home after just eight months. At home, he mapped the area *Findaas,* and thereby earned enough for again visiting Copenhagen with yet another self-made map in his luggage. By showing this map to Geheimråd Hielmstiern at the Scientific Society, he hoped to qualify for a positon as surveyor assistant at the Danish Geodetic Survey. However, the professor told the young Hertzberg the realities of life: "Your father [also a priest] has written me, he wants you to take the lowest degree in theology and thereby become his associate."[31]

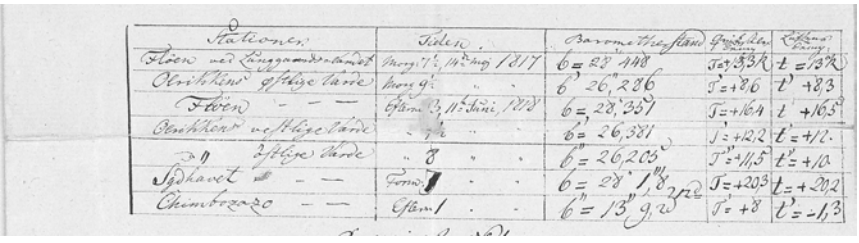
Nevertheless, Hertzberg developed significant skills in mapping. In a published article about meteorological observation, the use of barometers and thermometers, and the measuring of Norwegian heights, he narrates how he activated skills described in the books *Vollständige und auf Erfahrung gegründete Beschreibung von allen sowohl bisher bekannten als auch einigen neuen Barometern, wie sie zu verfertigen, zu berichtigen und übereinstimmend zu machen, dann auch zu meteorologischen Beobachtungen und Höhenmessungen anzuwenden* (1784), and *Vollständige und auf Erfahrung gegründete Anweisung die Thermometer zu verfertigen* (1781) by the German cleric and natural scientist Johann Friedrich Luz. Hertzberg transformed reading instructions for making barometers and thermometers into scientific craftsmanship and made instruments for his own and others' use, such as for Bohr in Bergen.[32]

Furthermore, Hertzberg explains how he was doing science by collecting heights described by travelers crossing the Alps: Professor Jens Esmark, the geologist Leopold von Buch, Christian Smith, Gotfred Bohr, Christopher Hansteen, Baltazar Mathias Keihau, Christian P. B. Boeck, Carl Friedrich Naumann, Wilhelm Maximilian Carpelan, and others. The STS historian Asdal ar-

30 Hertzberg 1825, p. 3.
31 Hertzberg 1835, p. 209.
32 Hertzberg 1813, pp. 173–186.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

gues that "the archive, or more broadly the textual materials that […] historians work with, can be approached as a form of field from where historians seek to tease out the practices of the past. Hence, 'the archive' is the historian's version of fieldwork."[33] This corresponds directly to Hertzberg. His version of fieldwork meant to read written sources about how measurement of elevations came about. Hertzberg participated in a local knowledge culture that explored facts and methods by analyzing travel books, scientific literature, newspapers, and journals. In 1823, Hertzberg counted 3,533 books on moral, historical, and economic subjects in his county.[34] The correspondence between Bohr and Hertzberg is an example of how local scientific practice was combined with international research; here Bohr's own local measurements in Bergen are inserted into a table along with Humboldt's measurements of Chimborazo.[35]



Ill 4: In a letter Gottfried Bohr send to Niels Hertzberg June 15, 1818 he listed in the same table his own measurements of heights in Bergen together with Humboldt's measurement of Chimborazo (NB Ms.4° 1106:A).

Hosting foreigners and tourists became a way of getting in touch with the wider world, and this guest house activity evolved Hertzberg's mapping. Hertzberg logged his foreign visitors, and thus documented that famous scientists were guests. In the years before Hertzberg published the map, the German geologist and paleologist Leopold von Buch, who had been in the Alps with Humboldt, stayed several days in September 1806. In 1810, the mineralogist Vargas Bedemar came, and in June 1821, the German mineralogist, physicist, and mathematician Carl Friedrich Neumann stayed at Hertzberg's farm.[36] These visits led to some correspondence linking the west Norwegian amateur scientists to the republic of letters – networks of correspondence and travel between scientific academies that stretched across many continents.

Most likely, Christopher Hansteen (1784–1873) was the anonymous scientist who rejected Hertzberg's map. He was the first Norwegian professor in applied

33 Asdal 2014, p. 311.
34 Hertzberg 1835, p. 241.
35 Letter from Gottfried Bohr to Niels Herztberg, 15 June 1818, NB Ms 4° 1106.
36 Riis 1884, pp. 2–26.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

mathematics, published *Untersuchungen über den Magnetismus der Erde* (1819), and became famous for a two-year expedition through Russia to locate the second Siberian Pole (1828). With this expedition, he was confronting a long European research tradition on terrestrial magnetism defended, among others, by Alexander von Humboldt. His work was conserved with the survey and mapping of the new nation of Norway.[37] The summer of 1821, he visited Hertzberg, and later Hertzberg supported him with meteorological observations, which Hansteen sent to Professor Schumacher in Altona.[38] Hertzberg scientific practice was a reminiscence of the very particular Nordic phenomenon, the enlightened cleric; he was a civil servant, and participated in a clerical network that served as "scientific field assistants" to an information system needed to run the conglomerate kingdom of Denmark-Norway.[39] Hansteen's rejection of Hertzberg's map was one way of turning production of knowledge into a more institutionalized practice and thereby limiting the capacity of Hertzberg's map to authorize the non-professional intellectual space he achieved at the rural west coast of Norway.

Sources

Archival sources

National Library of Norway, Map 216, 1 and 2 (Hertzberg, Nilse: *Høiderne av de hidtil maalte Bjerge I Norske eller Rhinlandske Födder, Christiania 1825*, lithograph, 34 x 47.9 cm).

National Library of Norway (NB) (Letter from Gottfried Bohr to Niels Hertzberg, 22 May 1822, Ms 4).

National Library of Norway (Letter from Gottfried Bohr to Niels Herztberg, 15 June 1818, Ms 4° 1106:A).

Letter from Hertzberg to Christopher Collin and Simon Olaus Wolff, 8 April 1822, 4° 2365:D:3, National Library of Norway.

Print

Asdal, Kristin: 'Versions of Milk and Versions of Care: The Emergence of Mother's Milk as an Interested Object and Medicine as a Form of Dispassionate Care', in: *Science in Context*, 27, 2 (2014), pp. 307–331.

37 Enebakk 2014, p. 587.

38 Letter from Hertzberg to Christopher Collin and Simon Olaus Wolff, 8 April 1822. NB, 4° 2365:D:3.

39 Eliassen 2009, p. xi.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Bailly, Jean-Christophe / Besse, Jean-Marc / Palsky, Gilles: *Le monde sur une feuille. Les tableaux comparatifs de montagnes et de fleuves dans les atlas du XIX^e siècle.* Lyon 2014.

Brotton, Jerry: *The History of the World on Twelve Maps.* London 2012.

Collet, John Peter: *1811–1870: Universitetet i nasjonen.* Oslo 2011.

Eliassen, Knut O.: 'Introduction', in: Andersen, Håkon W. / Brenna, Brita / Njåstad, Magne / Wale, Astrid (ed.): *Aemula Lauri. The Royal Norwegian Society of Sciences and Letters, 1760–2010.* Sagamore Beach 2009.

Enebakk, Vidar: 'Hansteen's magnetometer and the origin of the magnetic crusade', in: *BJHS* 47, 4 (2014), pp. 587–608.

Goethe, Johann W. von: 'Höhen der alten und neuen Welt bildlich verglichen', in: *Geographische Ephemeriden* 41 (1813), pp. 3–8.

Goethe, Johann W. von: 'Esquisse des Principales Hauteurs des Deux Continens [1813]', in: Mentelle, Edme / Brun, Malte (ed.): *Géographie mathématique, physique et politique de toutes les parties du monde. Atlas.* Paris 1804. Available at http://www.davidrumsey.com/luna/servlet/s/zgif7a [07.12.2016].

Goethe, Johann W.: 'Schreiben des Hrn. G. R. v. Göthe an den Herausgeber', in: *Geographische Ephemeriden* 41 (1813), pp. 5–8.

Güttler, Nils: *Das Kosmoskop. Karten und ihre Benutzer in der Pflanzengeographie des 19. Jahrhunderts.* Göttingen 2014.

Hertzberg, Niels: 'Mine 15aarige meterologiske Observasjoner, som endnu continuere' and 'Om Barometer, og Thermometer, Observasjoner og nogle Fjeldes Høide', in: *Historisk-Philosophiske Samlinger* 1 (1813), p. 16 and pp. 173–186.

Hertzberg, Niels: 'Noget om Kingservigs Præstegjed i Hardanger', in: *Budstikken* 86/87 (1818).

Hertzberg, Niels: 'Noget om Sneebræen Folgefond I Søndhordlehn og Hardangers Fogderie', in: *Budstikken* 90/91 (1818).

Hertzberg, Niels: *De Unge ved Norges Universitet Studerende Academiske Borgere helliges dete perspectiviske Høide-kart.* Christiania 1825.

Hertzberg, Niels: 'Indsendt', in: *Morgenbladet* 336 (1828).

Hertzberg, Niels: 'Biographie', in: Breton, R. N.: *Excursions in New South-Wales, western Australia and Van Diemens Land During the Years 1830, 31, 32, 33.* Bergen 1835, pp. 207–289.

Humboldt, Alexander von / Bonpland, Aimé: *Essai sur la Géographie des Plantes accompagné d'un tableau physique des régions équinoxiales. Fondé sur des mesures exécutées, depuis le dixième degré de latitude boréale jusqu'au dixième degré de latitude australe, pendant les années 1799, 1800 1801, 1802 et 1803.* Paris 1805. 'Tableau physique' available at http://www.davidrumsey.com/luna/servlet/s/nwgq0l [07.12.2016].

Humboldt, Alexander von / Bonpland, Aimé: *Ideen zu einer Geographie der Pflanzen: nebst einem Naturgemälde der Tropenländer, Auf Beobachtungen und Messungen gegründet, welche vom 10ten Grade nördlicher bis zum 10ten Grade südlicher Breite, in den Jahren 1799, 1800, 1801, 1802 und 1803 angestellt worden sind.* Tübingen, Paris 1807.

Humboldt, Alexander von / Bonpland, Aimé: 'Essay on the Geography of Plants', in: Jackson, Stephen T. / Romanowski, Sylvie (ed.): *Essay on the Geography of Plants.* Chicago, London 2009, pp. 47–155.

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517

Jackson, Stephen. T.: 'Introduction: Humboldt, Ecology, and the Cosmos', in: Jackson, Stephen T. / Romanowski, Sylvie (ed.): *Essay on the Geography of Plants.* Chicago, London 2009, pp. 1–52.

Johansen, Nils V. / Jørgensen, Magnus / Pettersen, Bjørn R.: *Christian Fredrik Gotfred Bohr – mannen som opplyste Bergen.* Bergen 2009.

Latour, Bruno: 'Visualisation and Cognition: Drawing Things Together', in: Long, Elizabeth / Kuklick, Henrika (ed.): *Knowledge and Society Studies in the Sociology of Culture Past and Present.* Greenwich 1986, pp. 1–40.

Latour, Bruno: *Science in Action. How to Follow Scientists and Engineers through Society.* Cambridge MA 1988.

Mazzolini, Renato G.: 'Bildnisse mit Berg: Goethe und Alexander von Humboldt', in: *HiN – Alexander von Humboldt im Netz. Internationale Zeitschrift für Humboldt-Studien* 5, 8 (2004), pp. 28–52, available at http://dx.doi.org/10.18443/47 [07.12.2016].

Osterhammel, Jürgen: 'Alexander von Humboldt: Historiker der Gesellschaft, Historiker der Natur', in: *Archiv für Kulturgeschichte* 81 (1999), pp. 105–132.

Riis, C.P.: 'Reisende i Hardanger i prost N. Hertzbergs embedstid', in: *Den norske Turistforenings Årbok for 1884.* Kristianina 1884, pp. 19–26.

Romanowski, Sylvie: 'Humboldt's Pictorial Science: An Analysis of the *Tableau physique des Andes et pays voisins*', in: Jackson, Stephen T. / Romanowski, Sylvie (ed.): *Essay on the Geography of Plants.* Chicago, London 2009, pp. 157–197.

Schmitthenner, Heinrich: 'Carl Ritter und Goethe', in: *Geographische Zeitschrift*, 43, 5 (1937), pp. 161–175.

Skåden, Kristina: *Vegarbeid. Transnasjonale relasjoneri perioden 1800–1942: Tre eksempler,* PhD thesis. University of Oslo, 2013.

Wider, Margrit: 'Vom Brocken zum Himalaja. Goethes 'Höhen der alten und neuen Welt' und ihre Wirkung', in: *Goethe-Jahrbuch 2004.* 121 (2004), pp. 141–164.

Wider, Margrit: 'Höhen der alten und neuen Welt – Goethes Beitrag zum Genre der vergleichenden Höhendarstellung', in: *Cartographica Helvetica* 39 (2009), pp. 11–26.

Web

Wider, Margit: Hypermedia-Modell zu Goethes Höhen der alten und neuen Welt, 2004, available at http://www.goethe-gesellschaft.ch/webh/hoehenbild.htm [07.12.2016].

ISBN Print: 9783847107514 – ISBN E-Book: 9783847007517