

Panoramic Visions: Sven Hedin in “Transhimalaya” 1906–1909

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Abstract

This chapter studies the panoramic visions created by Swedish geographer Sven Hedin on a journey to Tibet between 1906 and 1909. It reads Hedin’s geographic images and texts through a broader nineteenth-century history of the panorama and indicates how his panoramic visions were part of a broader media culture of the century. Furthermore, the chapter claims that Hedin’s geographic images and texts contributed to the shaping of a modern regime of vision where the world in overview was a desirable object. Using intermediality as a method, I display how these visions emerged through a network of media formats, including photographs, hand-drawn panoramas, water-colour sketches, and texts. The article argues that these formats were combined through “descriptive layering.” They shared the panorama as a motif, yet they were also layered in a material sense: attached to, and interlaced with, each other. I argue that descriptive layering was a way of handling the vexed relationship between overview and detail, and it allowed the panoramic representations to move between knowledge-based and aesthetic experiences.

In a documentary broadcasted on Swedish television in 1971, historians Hans Villius and Olle Häger described the Swedish geographer Sven Hedin (1865–1952) as “a voice from the past”; a person marked by an era of European imperialism, by a world of “Garibaldi, Bismarck, and Kipling. He never grew out of that

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world, even though he lived into our own time.”¹ Hedin completed four journeys between 1893 and 1935, traveling in the deserts of inner Asia and the highlands of Tibet. He described the wandering lake Lop-Nor, parts of Himalaya, and the sources of the rivers Brahmaputra and Indus. Books written by the Swede are filled with idealized accounts of journeys and his own manly bravery. Furthermore, Hedin is a notorious character in Swedish history, infamous for his profound conservatism, his Nazi sympathies, and his personal friendship with Adolf Hitler.

His biography, political sensibilities and tales of heroism are well documented. Instead, I explore the *panoramic visions* that Hedin produced in images and texts while traveling in Himalaya between 1906 and 1909. He repeated a European tradition going back to the 1700s, where expeditions were opportunities for data collection and cultural performances. Previous studies of this tradition, and of turn-of-the-twentieth-century geography, have offered fine-grained analyses of how the European discoverer was idealized and of how geography was institutionalized as a scientific discipline.² My aim is to contribute to a media history of geography by tying the discipline to the new “modes of perception, sensations and somatic engagement with the world” which widespread nineteenth-century media like photography, telegraphy, the

¹ Hans Villius and Olle Häger, “En röst ur det förgångna,” svtplay.se, accessed February 8, 2018, <https://www.oppetarkiv.se/video/1363736>. The quote is translated from Swedish by the author. This study is part of a larger research project financed by Riksbankens jubileumsfond (The Swedish Foundation for Humanities and Social Science). I am indebted to Fredrik Krohn Andersson, Peter Gillgren, Elina Druker, and the editors for valuable comments.

² Vanessa Heggie, “Why Isn’t Exploration a Science,” *Isis* 105, no. 2 (2014); David Livingstone, *The Geographical Tradition: Episodes in the History of a Contested Enterprise* (Oxford: Blackwell, 1992); Simon Naylor and James R. Ryan, “Exploration and the Twentieth Century,” in *New Spaces of Exploration: Geographies of Discovery in the Twentieth Century*, ed. Simon Naylor and James R. Ryan (London: Tauris, 2010), 1–22; Marie-Claire Robic, “Geography,” in *The Cambridge History of Science: The Modern Social Sciences*, ed. Theodore M. Porter (Cambridge: Cambridge University Press, 2003), 379–390.

telephone, and motion picture produced.³ More important in this case, the century saw the emergence of “overview media” aimed at seeing the whole world in a bird’s eye view. Dioramas, ballooning, and world exhibitions augmented experiences and were considered productive to understand nature and society.⁴

An important example of overview media was the panorama. It became a mass medium in nineteenth-century visual culture and profoundly altered modes of seeing.⁵ Scholars like Bernard Comment, Stephan Oettermann, and Erkki Huhtamo have indicated how artists known as “panoramists” carried out meticulous surveys of landscapes, creating “encyclopaedic” documentation.⁶ Certainly, as noted by Charlotte Bigg, panoramic descriptions were related to scientific discourse: the panorama was discussed as a tool for research in physical geography throughout the nineteenth century. It opened for realistic renditions, and panorama painting was a “continuation of the topographer’s activity.”⁷

Yet, panorama historians have not systematically studied how geographers utilized, and contributed to, the panorama as a

³ Alison Griffiths, “Sensory Media: The World Without and the World Within,” in *A Cultural History of the Senses: In the Age of Empire*, ed. Constance Classen (London: Bloomsbury Academic, 2014), 211–234, 211.

⁴ Anders Ekström, “Seeing from Above: A Particular History of the General Observer,” *Nineteenth-Century Contexts* 31, no. 3 (2009); Charlotte Bigg, “The Panorama, or la Nature a Coup d’Oeil,” in *Observing Nature – Representing Experience: The Osmotic Dynamics of Romanticism 1800–1850*, ed. Erna Fiorentini (Berlin: Reimer, 2007), 73–95.

⁵ Bernard Comment, *The Panorama* (London: Reaktion, 1999); Stephan Oettermann, *The Panorama: History of a Mass Medium* (New York: Zone Books, 1997); Erkki Huhtamo, *Illusions in Motion: Media Archeology of the Moving Panorama and Related Spectacles* (Cambridge: MIT Press, 2013).

⁶ Comment, *The Panorama*, 85–86.

⁷ Bigg, “The Panorama, or la Nature a Coup d’Oeil,” 74–75. Quote on p. 90. Marie-Clarie Robic has suggested the panorama as one of the ways in which geographers tried to handle the limitations of ground-level photography, although Robic instead focuses on aerial photography: Marie-Claire Robic, “From the Sky to the Ground: The Aerial View and the Ideal of *Vue Raisonnée* in Geography during the 1920s,” in *Seeing From Above: The Aerial View in Visual Culture*, ed. Mark Dorrian and Frédéric Pousin (London and New York: I. B. Tauris, 2013), 163–187, 164.

knowledge-making practice around 1900. In combining the history of geography with the history of overview media, I want to indicate how Hedin's panoramic representations formed a basis for geographical knowledge making and as an effect, how geography added to the emergence of a "modern and heterogeneous regime of vision."⁸ According to Marie-Claire Robic, geographers' main concern was knowing how to look, and through maps and images they communicated their gaze to a larger public.⁹ Geographers like Sven Hedin contributed to ongoing "perceptual recalibrations" of the era through technologies of display and projection. There was a keen interest in exploration, and Hedin's books and articles were bestsellers, reaching millions of people. His panoramic visions invited audiences that never traveled to Asia to envision large landscapes and experience remote and inaccessible environs.

The bulk of this chapter will be devoted to indicating how Sven Hedin's panoramic visions emerged through exchanges between media formats—including photography, hand-drawn panoramas, watercolour-sketches, texts, and books—which reinforced each other. My method to unpack the construction and function of panoramic visions is intermediality, which is a concept that allows an understanding of how media technologies strengthen and "remediate" each other.¹⁰ To specify the idea of intermediality, I argue that the formats Hedin utilized formed *descriptive layering*. According to Maria Antonella Pelizzari, descriptive layering indicates how words and images "echo and intensify each other."¹¹ Hedin's panoramic visions emerged through a network of visual

⁸ Kathryn Yusoff, "Configuring the Field: Photography in Early Twentieth-century Antarctic Exploration," in *New Spaces of Exploration: Geographies of Discovery in the Twentieth Century*, ed. James R. Ryan and Simon Naylor (London: I. B. Tauris, 2010), 52–77, 56.

⁹ Robic, "From the Sky to the Ground," 164–165.

¹⁰ Jay David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge: MIT Press, 1999); David Thorburn and Henry Jenkins, "Introduction: Toward an Aesthetic of Transition," in *Rethinking Media Change: The Aesthetic of Transition*, eds. David Thorburn and Henry Jenkins (Cambridge: MIT Press, 2003), 1–16.

¹¹ Maria Antonella Pelizzari, "Retracing the Outlines of Rome: Intertextuality and Imaginative Geographies in Nineteenth-century Photographs," in *Picturing Place: Photography and the Geographical Imagination*, eds. Joan M.

and textual media formats that enhanced and complemented each other. Of particular importance is how traffic between the formats enabled Hedin to determine the meaning of panoramic visions and allow that meaning to vary in the right ways.

Sven Hedin's third expedition took place between 1906 and 1909. He had the ambition to map a section of Himalaya that had not yet been described on European maps. Crossing the mountain range a handful of times, he dubbed the area "Transhimalya." The results from the journey were presented in two major works. The first was *Southern Tibet: Discoveries in Former Times Compared with My Own Researches in 1906–1908*, published in twelve volumes covering the geography, orography, geology, and hydrography of the area as well as the work of previous travelers. A massive work summing up Hedin's results, the volumes contained 552 sketched panoramas, which were collected in a separate volume entitled *Southern Tibet: Atlas of Tibetan Panoramas*. Second, the expedition was presented in the three-volume work *Transhimalaya: Discoveries and Adventures in Tibet*. The volumes were prepared and published once back in Sweden, and on the cover sheet Hedin stated that they contained "544 illustrations from photographs, watercolour-sketches, and drawings by the author."¹² In *Southern Tibet* and *Transhimalaya*, Hedin published visual depictions of the Tibetan landscape as well as intermittently discussing the status and function of panoramic outlooks. The two works share the importance of the panorama, yet they also differ in narrative style. *Southern Tibet* envisions a scholarly audience through its detailed reports of data about geographical features, and Hedin himself described it as "the scientific report" of his journey.¹³ *Transhimalaya* is written with a broader audience in mind; the narrative about adventures is central, yet stories of secluded monks, harsh weather, and wild yaks are repeatedly interspersed with visual and textual panoramas.

Schwartz and James R. Ryan (London and New York: I. B. Tauris, 2003), 55–73, 57.

¹² Sven Hedin, *Transhimalaya: Discoveries and Adventures in Tibet*, 3 vols., vol. 2 (New Delhi: Asian Educational Services, 1999 [1909]), cover sheet.

¹³ Hedin, *Transhimalaya*, 101.

The Panoramic Genre, Geography, and Imperialism

Both the word “panorama” and the medium it denoted were invented at the turn of the nineteenth century. Originally, it was a “form of landscape painting” which “reproduced a 360-degree view” and was placed in a rotunda.¹⁴ Panoramas became a mass medium in Europe from 1800, with a second boom in the late 1800s. The medium attracted millions of spectators and put the onlooker in places which differed radically from everyday experiences, thus contributing to collective dreams of the distant. The panorama was gradually replaced by new mass media in the late nineteenth century, including magazines and cinema.¹⁵ When Sven Hedin went to Tibet, the medium experienced, in Bernhard Comment’s words, “the last gasp of a dying man.”¹⁶

The differences between the panorama as a mass medium and Hedin’s panoramic visions should be noted. The images of the Swedish explorer were not displayed in specially built rotundas, nor constructed by specialized artists. Nevertheless, the word “panorama” was transformed during the nineteenth century into a broader concept gesturing at the capacity to display landscapes as a whole. The meaning of the word became metaphorical and “the panoramic view” turned into “a mode of seeing” which denoted overview, a circular vista produced from an elevated point, or survey of a field of knowledge.¹⁷ Indeed, following Erkki Huhtamo, panoramas should be understood beyond a history of the stationary medium; they were an early manifestation of a broader media culture, including a whole landscape of mass spectacle.¹⁸ Hedin’s panoramic visions were part of this “panoramic genre”: designed in a horizontal, oblong format and with the desire to create an all-encompassing view.¹⁹ Indeed, they were part of the long history

¹⁴ Comment, *The Panorama*, 7; Oettermann, *The Panorama*, 5–6.

¹⁵ Comment, *The Panorama*, 66–67, 116–117; Oettermann, *The Panorama*, 4–14; Huhtamo, *Illusions in Motion*, 1–5.

¹⁶ Comment, *The Panorama*, 75.

¹⁷ Oettermann, *The Panorama*, 7, 22.

¹⁸ Huhtamo, *Illusions in Motion*, 5–10.

¹⁹ Comment, *The Panorama*, 83.

of panoramas instructing the audience to see nature in a specific way and became a “pattern for organizing visual experience.”²⁰

Links between geography and the panoramic genre cannot be fully understood without considering the context of imperialism. Europeans produced new forms of Western power as they mapped areas in Africa, Asia, and the Arctic. Existing research has acknowledged how geography became the “queen of all imperial sciences.”²¹ A crucial aspect of European imperialism was viewing the world as a unit and the earth as a surface to be mapped and controlled. The panorama furthered colonial gazes aimed at taking possession of landscapes.²²

Sven Hedin fit in this historical schema, and he represented a world of imperialistic efforts. The individual Western explorer traveling by himself in an unmapped territory with a team of local assistants—presenting his findings in adventure books—was partly outdated even in Hedin’s own lifetime. In fact, the Swede himself acknowledged the transition: “The four final decades of the nineteenth century may with justice be called the last phase of the great age of geographical discovery.”²³ Nevertheless, he by and large fulfilled the nineteenth-century paradigm of geography and carried an imperialistic world order all the way up to the mountain passes in Tibet. The Swede traveled as a lone European, utilizing local carriers and assistants to form the expedition party with scarce acknowledgment of them as contributors to the scientific results. Filling in the white spots on maps of Himalaya was a paramount driving force for his efforts.²⁴ Moreover, Hedin picked

²⁰ Oettermann, *The Panorama*, 22.

²¹ Michael Heffernan, “Histories of Geography,” in *Key Concepts in Geography*, eds. Nicholas Clifford, et al. (London: SAGE, 2009), 3–20: 10. See also Livingstone, *The Geographical Tradition*; Morag Bell, Robin Butlin, and Michael Heffernan, *Geography and Imperialism 1820–1940* (Manchester: Manchester University Press, 1994).

²² John Zarobell, “Jean-Charles Langlois’s Panorama of Algiers (1833) and the Prospective Colonial Landscape,” *Art History* 26, no. 5 (2003): 638–668, 640.

²³ Sven Hedin, “The Scientific Results of Dr. Sven Hedin’s Last Journey,” *The Geographical Journal* 24, no. 5 (1904): 524–545, 524.

²⁴ Sven Hedin, *My Life as an Explorer* (Washington: National Geographic Adventure Classics, 2003 [1925]), 381, 441.

up the imperialistic tradition to understand the earth as a surface to see at one view, using the technologies of the panoramic genre.

Understanding the Whole Landscape

Sven Hedin described the orography (studies of the topographic relief of mountains) of Tibet and the sources of rivers like Brahmaputra. Panoramic visions were a way to transform massive amounts of data into overviews, or in Hedin's own words "a much clearer idea of the habitus and morphology of the country than any maps or any verbal descriptions could do."²⁵ Panoramas gave "an idea of the general view," and the distances they sketched were sometimes staggering.²⁶ Even contours of mountains lying "fully ten days journey" away were occasionally discernible.²⁷ The effort to understand landscapes as a whole was key in Hedin's geographical endeavors.

His career as a geographer was lined with controversy. Author August Strindberg was one of Hedin's most aggressive critics, and in one of their debates, he claimed that the geographer had merely mapped well-known heaps of sand and rocky knolls.²⁸ Nevertheless, Strindberg admitted that Hedin's depictions of Tibet allowed an arrangement of details into "a clear vision of the depicted" landscape.²⁹ The two combatants agreed on this issue, as Hedin himself stated that his drawings and sketches of landscapes "become a series of milestones, giving a vision of the drawn."³⁰ The ability to see the landscape as a whole was also thought to separate the Western explorer from natives in Tibet. Eric Wennerholm's hagiographic biography of Hedin is telling in the way he distinguishes between the geographer's and the

²⁵ Sven Hedin, *Southern Tibet: Discoveries in Former Times Compared with My Own Researches in 1906–1908*, 9 vols., vol. 4 (Stockholm: Lithographic Institute of the General Staff of the Swedish Army, 1922), 5.

²⁶ Hedin, *Southern Tibet*, vol. 2, 316.

²⁷ Hedin, *Transhimalaya*, vol. 3, 35.

²⁸ Villius and Häger, "En röst ur det förgångna."

²⁹ Eric Wennerholm, *Sven Hedin: En biografi* (Stockholm, Bonniers, 1978), 184.

³⁰ Wennerholm, *Sven Hedin*, 184.

Tibetan's perception of the mountains. The "nomads" knew "the narrow valley" where they traveled, yet they lacked "every concept of the scope and structure of the whole land." Indeed, Hedin had "discovered" the country in the sense that he had "measured, mapped, described" the area and "with the right dimensions put it into its larger context."³¹ It is not surprising then that Hedin in his description of the mountains claimed that the "Tibetans very seldom give general names for whole ranges."³²

The ambition to picture a complex mountain landscape in apprehensible overviews had inherent difficulties. From mountain passes at the height of 6,000 meters, Hedin described the country as "a confusion of hills and ridges."³³ To get "a clear idea of the general orographic arrangement" was sometimes difficult or "impossible."³⁴ All the explorer could see from the pass Shib-La was a "labyrinth of ridges."³⁵ At several points, the presence of "high mountains" obstructed a "distant view."³⁶ Moreover, the relationship between details and overview was vexed: the latter potentially eradicating the former. Moving from masses of detailed observations to coherent images threatened to obliterate important data. The "near-far paradigm" had marked nineteenth-century discussions about panoramic representations, indicating the relationship between a distant image enabling landscape to emerge in its totality and a close-up image that left nothing out but restricted itself to fragments.³⁷ Hopes were tied to the panorama to transcend this potential contradiction, for example, when naturalists portrayed the Alps and wanted to capture both an all-encompassing view and pay attention to detail.³⁸ Hedin used photographs, hand-drawn panoramas, watercolour sketches, text, and the book itself

³¹ Wennerholm, *Sven Hedin*, 135.

³² Hedin, *Southern Tibet*, vol. 2, 299.

³³ Hedin, *Southern Tibet*, vol. 3, 328.

³⁴ Hedin, *Southern Tibet*, vol. 2, 316. For yet another example, see Hedin, *Transhimalaya*, vol. 2, 100.

³⁵ Hedin, *Southern Tibet*, vol. 3, 255.

³⁶ Hedin, *Southern Tibet*, vol. 3, 359. See also 252.

³⁷ Comment, *The Panorama*, 112.

³⁸ Bigg, "The Panorama, or la Nature a Coup d'Oeil," 79.

as descriptive layers to create panoramas and steer the onlooker's understanding of both overview and detail.

Photographic Panoramas

Sven Hedin was educated in the German geographical tradition where scientific instruments were emphasized, and he used photographic equipment as a knowledge-making tool to capture geographical phenomena.³⁹ Research in the history of geography has indicated how the new visual technology increasingly became part of the instrumental arsenal of discovery from the 1850s onwards.⁴⁰ Geographers declared the unique potential to objectivity and visual legibility; in the words of Marie-Claire Robic, they were “infatuated with the photographic medium.”⁴¹ Considered a tool to achieve objectivity, it had originally promised to clear away individual idiosyncrasies among observers. Following the title of William Henry Fox Talbot's first photographically illustrated book, published between 1844 and 1846, the technique was described as “the pencil of nature.” The photograph was interpreted as a surface where the object of the imaging could be read, interpreted, and perceived in new ways.⁴² Moreover, the panorama had been tested since in the early stages of photography and used as an instrument to capture the vastness of distant and complex landscapes. It created new criteria for authenticity.⁴³

According to some geographers, the photograph had the potential to synthesize details and efficiently present nature's proportions

³⁹ Hedin, *Southern Tibet*, vol. 1, xiii.

⁴⁰ Joan M. Schwartz and James R. Ryan, “Introduction: Photography and the Geographical Imagination,” in *Picturing Place: Photography and the Geographical Imagination*, eds. Joan M. Schwartz and James R. Ryan (London: Tauris, 2003), 1–18; James R. Ryan, “Photography, Visual Revolutions, and Victorian Geography,” in *Geography and Revolution*, eds. David Livingstone and Charles W. Withers (Chicago: University of Chicago Press, 2005), 199–238.

⁴¹ Robic, “From the Sky to the Ground,” 164.

⁴² Yusoff, “Configuring the Field,” 71; Jennifer Tucker, *Nature Exposed: Photography as Eyewitness in Victorian Science* (Baltimore: The Johns Hopkins University Press, 2005), 239.

⁴³ Comment, *The Panorama*, 8; Huhtamo, *Illusions in Motion*, 274; Rebecca Solnit, *River of Shadows: Eadweard Muybridge and the Technological Wild West* (New York: Penguin Books, 2003), 156–157.

to the observer. Other commentators had doubts, and the reality effects of photographs were increasingly challenged towards the end of the nineteenth century. Applied to geography, critics argued that photographs carried with them too many details. Others argued that the limited and rectangular format was problematic: it could only inadequately capture the wide 360° perspective that met the eye in the field.⁴⁴ Albeit Hedin did not partake in these epistemological discussions, he handled the issues in practice. The Swede transported cameras and a large number of glass plates on his travels. Pictures were taken on “Edwards’s plates. All the large photographs were taken with a camera by Watson of London, and about a thousand of the small photographs on glass were taken with a Richard’s Verascope camera.”⁴⁵ The importance of taking pictures of the landscape is also illustrated by the large collection of photographs by the Swedish explorer kept in a special section of his personal archive (*Sven Hedins Kartsamling*).

From elevated positions, Hedin utilized opportunities of photographs to picture proportions of the landscape, for instance through taking several pictures “forming a consecutive series.”⁴⁶ Once developed, the pictures were literally overlapped to shape a wider scope. This practice to measure topographical features was named photogrammetry and had been developed since the mid-nineteenth century. It had been introduced in Swedish natural science in the 1880s.⁴⁷ The technique had also been tried by panoramists, projecting several juxtaposed photographs onto a circular canvas and toning down the joins between them.⁴⁸

As figure 1 indicates, Hedin taped photographs together to enable the geographical outlook not to be interrupted by the edges of the pictures. The desired overview could thus be captured. The

⁴⁴ Yusoff, “Configuring the Field,” 63, 71; Naylor and Ryan, “Exploration and the Twentieth Century,” 6–7; Magnus Bremmer, *Konsten att tāmja en bild: Fotografiet och läsarens uppmärksamhet i 1800-talets Sverige* (Stockholm: Mediehistoriskt arkiv, 2015), 80, 94.

⁴⁵ Hedin, “The Scientific Results,” 539.

⁴⁶ Hedin, *Transhimalaya*, vol. 2, 102.

⁴⁷ Bremmer, *Konsten att tāmja en bild*, 156.

⁴⁸ Comment, *The Panorama*, 76, 86.



Figure 1. A photographic panorama consisting of interlaced images by Sven Hedin. From *Sven Hedins Kartsamling* (vol. GI 0917-958, no. 720811: 954). Copyright: The Sven Hedin Foundation and National Archive of Sweden/Sven Hedins stiftelse and Riksarkivet, Stockholm. License: CC-BY-NC-ND.

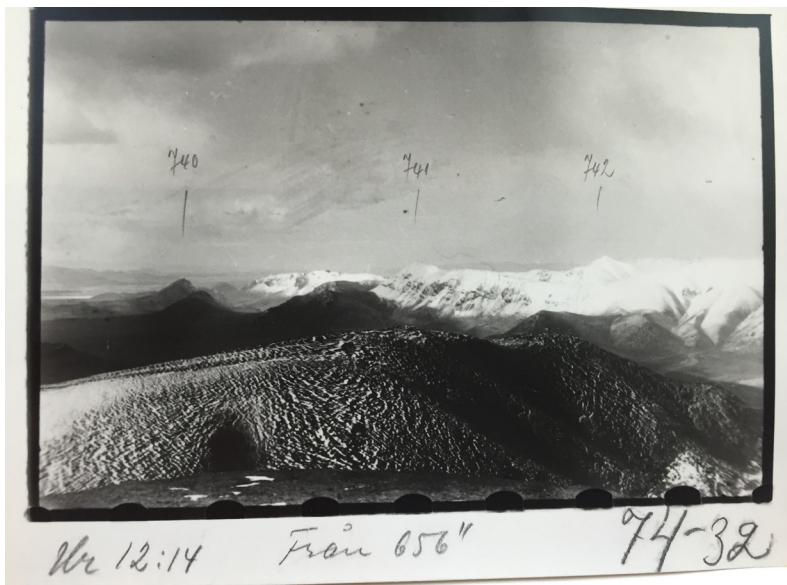


Figure 2. Photograph from Transhimalaya by Sven Hedin. From *Sven Hedins Kartsamling* (vol. GI 0917-958, no. 720811: 945). Copyright: The Sven Hedin Foundation and National Archive of Sweden/Sven Hedins stiftelse and Riksarkivet, Stockholm. License: CC-BY-NC-ND.

practice was repeatedly used, testified to by the presence of at least 50 similar specimens saved in his archive.

In one sense then, the descriptive layering was material as edges of photographs were placed over each other. Yet layers of information were also added to the surface of photographs as data were scribbled down on them. On numerous photographs, the geographer wrote notes to indicate geographically important phenomena. The image displayed in Figure 1 contains a note determining the place where the pictures were taken, (“Från punkt 5200”), as well as the numbers of the photographs to place them correctly in large series of images, “212:83,” “83:12” and “83:13.”

Yet another example displays even more written information. In this picture from Transhimalaya (Figure 2), Hedin has scribbled down notes indicating his system of determining the location of summits, glaciers, branches of rivers, and other features of the landscape. The notes determined the position where the photograph was taken (“Från 656”), as well as the number on the peaks that it showed (740, 741, 742). Written data transferred features and characteristics in the field into geographically and orographically important data. Indeed, in the examples displayed in Figures 1 and 2, the photograph was a basis for knowledge making rather than a surface of immediate projection. The photograph did not convey robust and unsupported visual information. In both cases, the image was combined or molded to create meaning. Photographic panoramas needed to be supplemented or enhanced to create overview (as in Figure 1) and fixate the very locale being displayed (as in both Figures 1 and 2). They eventually found their way into Hedin’s published work, where larger sections of text functioned as supporting layers—an issue to which I will return.

Visual Layers: Photographs, Hand-Drawn Panoramas, and Watercolour Sketches

In a comment on his work published after the trip to Tibet, Hedin described how his published illustrations had been produced through “autotypes” which “consist for the most part of

reproductions of my own photographs; in addition to them there are a number of drawings by my own pencil.”⁴⁹ Prior to the trip, the Swede declared that he had not allowed the camera to make him “unfaithful to the pen and the brush.”⁵⁰ In the introduction to *Southern Tibet*, Hedin stated that the camera had not been the only tool for mapping, since he was unable to bring “the thousands of photographic plates which would have been necessary” to survey using only the camera. Accordingly, his panoramas were “meant in some measure to compensate for the want of photogrammetric material.”⁵¹ Hedin combined photographs with hand-drawn panoramas and watercolour sketches, and the formats were brought together by panoramic visions as a visionary motif in the description of geographical features. Furthermore, the combination of formats offered aesthetic as well as scientific experiences.

Picturing landscapes was part of the Swedish geographer’s everyday routine in Tibet. He produced hundreds of handmade panoramas from the mountains in Transhimalaya, often as high up as 5000 meters.⁵² Indeed, at “almost every camp [...] I drew a panorama of the surroundings and tried sometimes to paint small water-colour drawings.”⁵³ Repeatedly, he stopped to make panoramic sketches of mountain pass.⁵⁴ The readers of his work *Southern Tibet* were informed how “I made it a rule to draw a panorama of the whole region, within my horizon, from each camp and from each dominating pass.”⁵⁵ Sketched panoramas were produced in the same setting as photographs, both part of grinding scientific work.⁵⁶ “I sit at the fire, drawing and making

⁴⁹ Hedin, “The Scientific Results,” 539.

⁵⁰ Sven Hedin, *En levnads teckning* (Stockholm: Albert Bonniers förlag, 1920), 100. Quote translated by the author.

⁵¹ Hedin, *Southern Tibet*, vol. 1, xvi.

⁵² Hedin, *Southern Tibet*, vol. 2, 261.

⁵³ Hedin, *Transhimalaya*, vol. 2, 261–262.

⁵⁴ See for instance Hedin, *Transhimalaya*, vol. 2, 100; Sven Hedin, “Journeys in Tibet 1906–1908,” *The Geographical Journal* 33, no. 4 (1909): 353–392, 361.

⁵⁵ Hedin, *Southern Tibet*, vol. 1, xv.

⁵⁶ Hedin, *My Life as an Explorer*, 339.

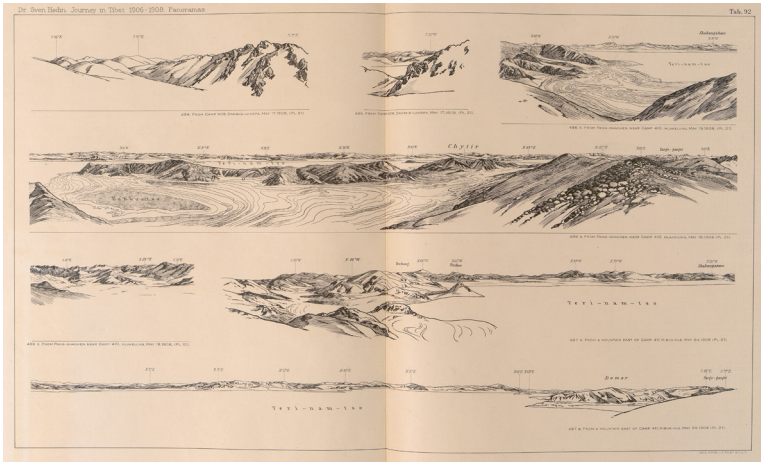


Figure 3. Hand-drawn panorama by Sven Hedin. From *Southern Tibet: Atlas of Tibetan Panoramas* (illustrations 494–497). Reproduction: National Library of Sweden/Kungliga biblioteket, Stockholm. License: CC-BY-NC-ND.



Figure 4. Panoramic photograph by Sven Hedin. From *Sven Hedins Kartsamling* (vol. GI 0917-958, no. 720811: 931). Copyright: The Sven Hedin Foundation and National Archive of Sweden/Sven Hedins stiftelse and Riksarkivet, Stockholm. License: CC-BY-NC-ND.

observations as on all the passes.”⁵⁷ In *Transhimalaya*, Hedin explicated how he at one point first took several photographs and immediately afterward “sat for nearly four hours drawing a panorama which embraced the whole horizon.”⁵⁸

Intermittently, Hedin also emphasized the scientific value of both sketches and photographs. To the reader of *Southern Tibet* he argued: “The several panoramas and the photos I took at different places will, together with my map, give a clearer view of the situation than any description in words.”⁵⁹ Moreover, the panorama could give “the spectator an idea of the layout” of the mountains.⁶⁰ The “panoramas I have sketched and the photographs I have taken,” he argued, would even “give an idea” of sections of the landscape he had not been able to traverse.⁶¹ In commenting on the separate volume *Southern Tibet: Atlas of Tibetan Panoramas*, he suggested that the many sketches secured a “richer” and “more systematic” illustration compared to previous publications.⁶² The hand-drawn panoramas were not to be considered “little works of art to be put behind glass and frame on the wall”; instead, their purpose was topographical.

The particular quality of the panorama was the fact that it offered a horizontal view to complement the vertical, and much reduced overview offered by maps in very high resolution. They displayed the landscape “horizontally and the mountains from the side.”⁶³ Each panorama was provided with notes defining the point from where it was made, and “from which sheet of the map its projection is to be found. Thus it will be possible, in each separate case, to compare the horizontal view with the vertical one.”⁶⁴ The panoramas, stated Hedin, “embraces the whole horizon,” and they could be compared with the vertical outlook of maps, and in

⁵⁷ Hedin, *Transhimalaya*, vol. 3, 35. See also 51.

⁵⁸ Hedin, *Transhimalaya*, vol. 2, 102. See also 33.

⁵⁹ Hedin, *Southern Tibet*, vol. 2, 260.

⁶⁰ Hedin, *En levnads teckning*, 101. Quote translated by the author.

⁶¹ Hedin, *Southern Tibet*, vol. 3, 284.

⁶² Hedin, *Southern Tibet*, vol. 4, 4–5; Sven Hedin, *Southern Tibet: Atlas of Tibetan Panoramas* (Stockholm: Lithographic Institute of the General Staff of the Swedish Army, 1917).

⁶³ Hedin, *En levnads teckning*, 101. Quote translated by the author.

⁶⁴ Hedin, *Southern Tibet*, vol. 1, xvi.

combining them, the observer could “recognize all the topographical details. One has only to remember the laws of perspective.”⁶⁵ Other geographers besides Hedin argued the scientific value of panoramas along the same lines: they complemented the vertical projection of maps with a horizontal projection.⁶⁶

The combination of media formats also meant that Hedin’s production of images was developed on the border between science and art. He repeatedly painted “watercolours representing Tibetan landscapes.”⁶⁷ Exchanges between science and art, for example between landscape painting and photography, were commonplace in the nineteenth century. Several scientists borrowed visual motifs from artists, and the language of naturalism shaped discourses of scientific images.⁶⁸ As noted by Charlotte Bigg, science and art were combined in panoramic descriptions among naturalists in the Alps already in the early nineteenth century.⁶⁹

Hedin repeated this tradition, sometimes explicitly arguing that the sceneries in Asia would have been perfect objects for landscape painters.⁷⁰ The importance of his watercolour sketches and drawings is indicated by the fact that he became acknowledged as an able geographical artist. On several occasions, his visual works were displayed to the public. In 1920 an exhibition was arranged in Stockholm, and according to one of Hedin’s biographers, the quality of his sketches and paintings surprised the art critics. Several commentators agreed that Hedin was “absolutely an artist,” indeed an important sketcher in “black and white.”⁷¹ The exhibition also resulted in the book *En levnads teckning*, republished in an abbreviated version as *Sven Hedin as Artist*.⁷²

⁶⁵ Hedin, *Southern Tibet*, vol. 4, 5.

⁶⁶ Oettermann, *The Panorama*, 38.

⁶⁷ Hedin, *Southern Tibet*, vol. 1, xiii.

⁶⁸ Solnit, *River of Shadows*, 42; Tucker, *Nature Exposed*, 125–126.

⁶⁹ Bigg, “The Panorama, or la Nature a Coup d’Oeil,” 79–80.

⁷⁰ Hedin, *En levnads teckning*, 106.

⁷¹ Wennerholm, *Sven Hedin*, 185, 291.

⁷² Hedin, *En levnads teckning*; Gösta Montell, *Sven Hedin as Artist: For the Centenary of Sven Hedin’s Birthday* (Stockholm: Bonniers, 1964).



Figure 5. Watercolour sketch by Sven Hedin. Copyright: The Sven Hedin Foundation and National Archive of Sweden/Sven Hedins stiftelse and Riksarkivet, Stockholm. License: CC-BY-NC-ND.

The watercolour sketches were mainly integrated in books like *Transhimalaya* with a wider audience in mind. Figure 5 gives an example of a watercolour-sketch drawing that portrayed “The holy lake Manasarowar from Tugu-gompa.” In a comment, Hedin added, “On August 10 I sat in my tent door and painted Kailas in different lights (Illust. 260).”⁷³ The image is not directly surrounded by scientific discourse as was the case with drawings and photographs. Instead, Hedin described the beauty and sublime nature of the surroundings. The “white summit” of the mountain Kailas “stood out cold and bare against a bright blue cloudless sky, and the lake was of a deep, dazzling ultramarine.”⁷⁴ Nevertheless, the image is placed in a textual flow in *Transhimalaya* where Hedin discussed his efforts to sound the depth of the lake Manasarowar. Albeit sensitive to the religious status of the place, and taken by its beauty, the lake was a scientific project for the Western explorer:

⁷³ Hedin, *Transhimalaya*, vol. 2, 153.

⁷⁴ Hedin, *Transhimalaya*, vol. 2, 153. For another example of watercolour sketches by Hedin see illustrations 301–305.

“the lake had never been sounded—I would sink my lead to the bottom and make a map of its bed.”⁷⁵

In sum, photographs, hand-drawn panoramas, and watercolour-sketch drawings were descriptive layers rather than isolated genres. The panorama was a theme binding these media formats together, and as in other instances of the history of the panorama, sketches, and paintings were combined with photographs in a “hybrid process” to create and explain panoramas.⁷⁶ The descriptive layering enabled Sven Hedin to produce a vision of the Tibetan landscape where room was made for both overview and detail. Moreover, geographical knowledge was combined with artistic expressions with an appeal beyond the limited circle of geographical peers.

Anchoring Meaning: Texts as Steering Device

In *Southern Tibet* and *Transhimalaya*, visual panoramas were complemented with texts anchoring the meaning of the pictures. A repeated issue in the history of nineteenth-century scientific photography was how to make the observer able to distinguish vital elements in images and the object that they were meant to convey.⁷⁷ The same concern surfaced in Hedin’s books, and the solution was to design sections of text, captions, and the very layout of the book as descriptive layers which steered the reader’s gaze and clarified the geographically valuable insights.

Sections of text in Hedin’s books had a visionary quality and produced an image before the eyes of the reader. In these passages, Hedin textually described a 360° panorama and the narrative became a tool to place the reader in the location where he had been standing. The Swede repeatedly described the height of his camps, for example, “Camp 188” at a “height of 4.590 m. (15.055 feet).”⁷⁸ In his narrative—as well as in his actual travel—Hedin paused in the high places to gaze the surroundings: such

⁷⁵ Hedin, *Transhimalaya*, vol. 2, 111.

⁷⁶ Huhtamo, *Illusions in Motion*, 274–275.

⁷⁷ Tucker, *Nature Exposed*, 80, 94.

⁷⁸ Hedin, *Southern Tibet*, vol. 2, 322. See also 326, 327.

locations gave “a very extensive and most instructive view.”⁷⁹ In *Southern Tibet* the audience was invited to experience the landscape: “Quite a new panorama now opens up to the west, with a mighty part of the Himalaya called Mogum-gangri.”⁸⁰ The geographer turned to “the south” where “the view is surprising” as mountains which had been very distant before, now presents “every detail of their wild, black, rugged peaks, the *nevees* in the background, and the mighty glaciers between the rocks.”⁸¹ From another location Hedin told his readers:

The Dongdong massive appears to the S. 50° W.; to the right of it is a glacier, and W.S.W the wild peaks of Chemayundung-pu. Due west is another glacier, which must also send a brook to the Chemayundung-chu. To the N. 78° W. is a snow-covered group with an abrupt promontory N. 10° W., called Dugmo-kar. N. 68° W. the country looks rather open. N. 55° W. the mountains which belong to the Transhimalaya are visible. N. 35° W. is a violet-coloured conical peak in our neighbourhood.⁸²

Several passages in Hedin’s books defined the ideal consumption of image and text in combination, thus creating and amplifying panoramic visions. In *Southern Tibet*, he found it “suitable to say a few words” of the panorama as “a way of illustrating the journey.” Even though the visual techniques were important, Hedin also pointed out the necessity of a combined reading. “The text in the following chapters will be much better understood if the corresponding panoramas are studied simultaneously. Text and illustrations have to follow each other.”⁸³ Also in *Transhimalaya* the geographer explicitly commented on the relation between image and text, in this case focusing on the site in the mountains

⁷⁹ Hedin, *Southern Tibet*, vol. 2, 256. For a related example see Hedin, *Transhimalaya*, vol. 2, 95.

⁸⁰ Hedin, *Southern Tibet*, vol. 2, 321. For a related example see Hedin, *Transhimalaya*, vol. 2, 92 and 256.

⁸¹ Hedin, *Southern Tibet*, vol. 2, 256.

⁸² Hedin, *Southern Tibet*, vol. 2, 263. For more examples see also 317, 321, 322; Hedin, *Transhimalaya*, vol. 2, 102.

⁸³ Hedin, *Southern Tibet*, vol. 4, 4–5.

where he argued that the river Brahmaputra had its source: "In order to give the reader a notion of the scene I here reproduce a part of the panorama embracing the Kubi-gangri."⁸⁴ Immediately following the comment, Hedin went on to textually describe the geographical features visible in the panorama, including peaks and glaciers.⁸⁵

Captions are yet another example of how image and text could, and should, be experienced in tandem. Hedin's publications were part of the emergence of the photo-illustrated book as a media format. Photographs were only slowly integrated in books—and in scientific prints more specifically—thus expanding the visual potential of the page. A recurring feature in photographically illustrated publications in the late nineteenth century was the effort to instruct the viewer on how to perceive the images. Accordingly, captions became a genre to regulate or enhance the content of images.⁸⁶

Hedin published his travel narratives accompanied by auto-typified photographs, and he used new opportunities with the halftone technique.⁸⁷ Captions explained the content of images; in *Transhimalaya* Hedin explained pictures displaying a view "from Singrul, looking towards the pass Chang-La" or the "View from Sultak."⁸⁸ In several instances, captions also conveyed more geographically dense messages, highlighting what phenomena the reader was seeing. Sketched panoramas were accompanied by explanatory information about geographical features, for example, the "Chomo-uchong group from the Kinchen-La, May 23, 1907."⁸⁹ Or even more informative: "Kubi-Gangri from camp 201. S 19° E., Ngomo-dingding (I), with the Ngomo-dingding glacier below. S. 2° W., Absi (2), with the Absi glacier. S. 21°-35° W., the massive of Mukchung-simo (3)."⁹⁰

⁸⁴ Hedin, *Transhimalaya*, vol. 2, 102.

⁸⁵ Hedin, *Transhimalaya*, vol. 2, 102 and illustration 242.

⁸⁶ Bremmer, *Konsten att tāmja en bild*, 12–18, 150, 196–198.

⁸⁷ Hedin, *Southern Tibet*, vol. 1, xiii.

⁸⁸ Hedin, *Transhimalaya*, vol. 1, illustration 42.

⁸⁹ Hedin, *Transhimalaya*, vol. 2, illustration 199.

⁹⁰ Hedin, *Transhimalaya*, vol. 2, illustration 197.

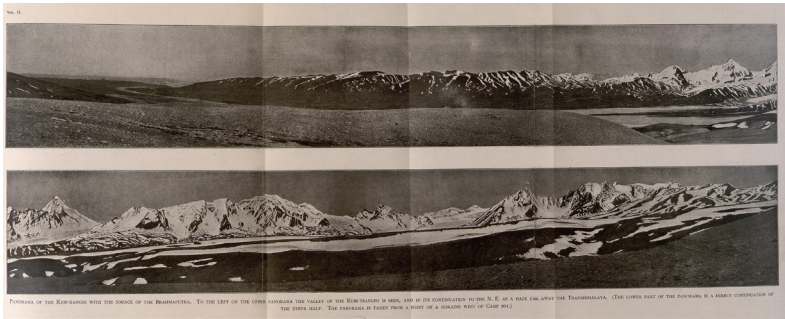


Figure 6. Unfolded panoramic image where the lower section is a continuation of the upper, together forming a 360° panorama, by Sven Hedin. From *Southern Tibet: Discoveries in Former Times Compared with My Own Researches in 1906–1908*, vol. 2. Reproduction: National Library of Sweden/Kungliga biblioteket, Stockholm. License: CC-BY-NC-ND.

A related technique was to photograph a 360° panorama which was then printed as two separate sections onto the book page. A caption explained how the image was to be interpreted. As Figure 6 indicates, in *Southern Tibet*, Hedin offered the reader such a panorama which was folded into the book. The instructive caption reads: “The lower part of the panorama is a direct continuation of the upper part.”⁹¹

Furthermore, Hedin used the potential of the book medium to place explanatory text adjacent to illustrations, making the book spread into an entity. In *Transhimalaya*, he repeatedly placed text which described experiences of the landscape on the left page while a visual panorama in the form of photograph, hand-drawn image, or watercolour sketch was placed on the right page. For example, a hand-drawn panorama could be accompanied by text stating that the “view is marvelous,” and that “peaks of the Himalaya rise like islands above the sea of clouds.”⁹² In certain places, crucial geographical features like the source of the river

⁹¹ Hedin, *Southern Tibet*, vol. 2, 262. See also x.

⁹² See for example Hedin, *Transhimalaya*, vol. 2, 78 and illustration 233. See also 26.

Brahmaputra was described, and the reader could fold out the right page and see a visual display of the area.⁹³

Conclusion: Descriptive Layers and a Network of Media Formats

I have suggested the importance of a media history of geographical knowledge making, and the perspective of intermediality has functioned as a method to indicate how Sven Hedin's panoramic visions were constructed. Photographs, hand-drawn panoramas, watercolour sketches, and texts contributed to the emergence of these visions, while also making them intelligible and meaningful. I have argued that the panoramic visions should be considered a network of media formats, and to define their intermedial relations, I have discussed them as descriptive layers. The concept highlights how images and texts were joined together thematically—sharing the panorama as a motif—as well as concretely: text written onto photographs or images attached to each other. Ultimately, they allowed Hedin to present and understand landscapes scientifically.

To see in overview was a recurring desire, yet fraught with tensions. Descriptive layers addressed the inherent problems of media formats: none of them could both create overview and capture enough details. When the formats complemented each other, however, these inherent difficulties could be addressed. Moreover, through descriptive layers, the narrative about Tibet could move between the knowledge making carried by photographs and meticulously hand-drawn panoramas and the artwork presented in watercolour sketches. This offered opportunities to shift the meaning of panoramic visions; combined, the media formats allowed the meaning of panoramic visions to vary in productive ways. Watercolour sketches opened for a story about the sublime nature of the landscape, while as a geographer Hedin could simultaneously present the scientific results by way of related imagery. In this regard, the book page became crucial by bringing together image and text, illustrations, and captions, and knowledge and

⁹³ Hedin, *Transhimalaya*, vol. 2, 102 and illustration 242.

aesthetics. The book was part of the network of media formats, and in highlighting it, I have followed Elisabeth Baigent's suggestion that a history of geography at the turn of the twentieth century must include a "history of the book."⁹⁴

The perspective of intermediality suggests a dismantling of boundaries between media technologies like photography, art, or the book. The idea also illustrates the fact that Hedin's panoramic visions were part of a broader nineteenth-century history of the panorama as a motif and practice (rather than isolated medium) in the media culture of the late nineteenth century. Erkki Huhtamo has indicated how the panorama in this broader sense crisscrossed mediated experiences. With Hedin as an example of an influential geographer around 1900, the lines between the history of panoramic experiences and the history of geography emerge.

There are important lessons to be learned from panorama historians. Huhtamo, for example, clearly indicates how panoramic viewpoints massively shaped nineteenth-century outlooks on the world, indeed he argues that the panorama dissolved the boundary between "local existence and global vision."⁹⁵ The same claim can be made about Hedin's panoramic visions: they made it possible to experience the inaccessible. Most people at the time never traveled to the mountainous regions in Asia. To see coherence in chaotic mountain landscapes demanded a transformation of what did not emerge to the naked eye into something comprehensible. In that sense, Hedin contributed to a regime of vision where visual and textual portraits of the earth "instituted a globalised time of landscape—as a telepresent terrain—where even the 'ends of the earth' could be made available to vision."⁹⁶

Even though Sven Hedin was a voice from the past—and even though the imperial European vision of the world was decidedly changed after the heyday of colonialism around 1900—his

⁹⁴ Elisabeth Baigent, "Deeds not Words? Life Writing and Early Twentieth-century British Polar Exploration," in *New Spaces of Exploration: Geographies of Discovery in the Twentieth Century*, eds. Simon Naylor and James R. Ryan (London: I. B. Tauris, 2010), 23–51, 24.

⁹⁵ Huhtamo, *Illusions in Motion*, 5.

⁹⁶ Yusoff, "Configuring the Field," 71. See also Bigg, "The Panorama, or la Nature a Coup d'Oeil," 86.

panoramic visions indicate historical trajectories and forms of intermediality with an impact on late modern experiences of larger patterns in nature and culture. After the Second World War, the ability to see the earth in overview was invested with new meaning as technologies developed into photographs from space shuttles and satellites. In the 1960s, such images were interpreted in a context of a growing environmental movement and a gradually developing discourse about globalization. The geographic knowledge that Hedin and other imperialistic adventurers circulated through interconnected forms of media later fed into technologies which have made possible what literary scholar Ursula Heise has labeled “a sense of planet.”⁹⁷

References

- Baigent, Elisabeth. “Deeds not Words? Life Writing and Early Twentieth-century British Polar Exploration.” In *New Spaces of Exploration: Geographies of Discovery in the Twentieth Century*, edited by Simon Naylor and James R. Ryan, 32–51. London: I. B. Tauris, 2010.
- Bell, Morag, Robin Butlin, and Michael Heffernan. *Geography and Imperialism 1820-1940*. Manchester: Manchester University Press, 1994.
- Bigg, Charlotte. “The Panorama, or La Nature a Coup d’Oeil.” In *Observing Nature – Representing Experience: The Osmotic Dynamics of Romanticism 1800–1850*, edited by Erna Fiorentini, 73–95. Berlin: Reimer, 2007.
- Bolter, Jay David, and Richard Grusin. *Remediation: Understanding New Media*. Cambridge: MIT Press, 1999.
- Bremmer, Magnus. *Konsten att tämja en bild: Fotografiet och läsarens uppmärksamhet i 1800-talets Sverige*. Stockholm: Mediehistoriskt arkiv, 2015.
- Comment, Bernard. *The Panorama*. London: Reaktion, 1999.

⁹⁷ Ursula K. Heise, *Sense of Place and Sense of Planet: The Environmental Imagination of the Global* (Oxford: Oxford University Press, 2008).

- Ekström, Anders. "Seeing from Above: A Particular History of the General Observer." *Nineteenth-Century Contexts* 31, no. 3 (2009): 185–207.
- Griffiths, Alison. "Sensory Media: The World Without and the World Within." In *A Cultural History of the Senses: In the Age of Empire*, edited by Constance Classen, 211–234. London: Bloomsbury Academic, 2014.
- Hedin, Sven. *En levnads teckning*. Stockholm: Albert Bonniers förlag, 1920.
- Hedin, Sven. "Journeys in Tibet 1906–1908: General Narrative." *The Geographical Journal* 33, no. 4 (1909): 353–392.
- Hedin, Sven. *My Life as an Explorer*. Washington: National Geographic Adventure Classics, 2003 [1925].
- Hedin, Sven. *Southern Tibet: Atlas of Tibetan Panoramas*. Stockholm: Lithographic Institute of the General Staff of the Swedish Army, 1917.
- Hedin, Sven. *Southern Tibet: Discoveries in Former Times Compared with My Own Researches in 1906–1908*. 9 vols., vol. 1. Stockholm: Lithographic Institute of the General Staff of the Swedish Army, 1917.
- Hedin, Sven. *Southern Tibet: Discoveries in Former Times Compared with My Own Researches in 1906–1908*. 9 vols., vol. 2. Stockholm: Lithographic Institute of the General Staff of the Swedish Army, 1917.
- Hedin, Sven. *Southern Tibet: Discoveries in Former Times Compared with My Own Researches in 1906–1908*. 9 vols., vol. 3. Stockholm: Lithographic Institute of the General Staff of the Swedish Army, 1917.
- Hedin, Sven. *Southern Tibet: Discoveries in Former Times Compared with My Own Researches in 1906–1908*. 9 vols., vol. 4. Stockholm: Lithographic Institute of the General Staff of the Swedish Army, 1922.
- Hedin, Sven. "The Scientific Results of Dr. Sven Hedin's Last Journey." *The Geographical Journal* 24, no. 5 (1904): 524–45.
- Hedin, Sven. *Transhimalaya: Discoveries and Adventures in Tibet*. 3 vols., New Delhi: Asian Educational Services, 1999 [1909].

- Heffernan, Michael. "Histories of Geography." In *Key Concepts in Geography*, edited by Nicholas Clifford, Sarah Holloway, Stephen P. Rice, and Valentine Gill, 3–20. London: SAGE, 2009.
- Heggie, Vanessa. "Why Isn't Exploration a Science?" *Isis* 105, no. 2 (2014): 318–334.
- Heise, Ursula K. *Sense of Place and Sense of Planet: The Environmental Imagination of the Global*. Oxford: Oxford University Press, 2008.
- Huhtamo, Erkki. *Illusions in Motion: Media Archeology of the Moving Panorama and Related Spectacles*. Cambridge: MIT Press, 2013.
- Livingstone, David. *The Geographical Tradition: Episodes in the History of a Contested Enterprise*. Oxford: Blackwell, 1992.
- Montell, Gösta. *Sven Hedin as Artist: For the Centenary of Sven Hedin's Birthday*. Stockholm: Bonniers, 1964.
- Naylor, Simon, and James R. Ryan. "Exploration and the Twentieth Century." In *New Spaces of Exploration: Geographies of Discovery in the Twentieth Century*, 1–22. London: Tauris, 2010.
- Oettermann, Stephan. *The Panorama: History of a Mass Medium*. New York: Zone Books, 1997.
- Pelizzari, Maria Antonella. "Retracing the Outlines of Rome: Intertextuality and Imaginative Geographies in Nineteenth-century Photographs." In *Picturing Place: Photography and the Geographical Imagination*, edited by Joan M. Schwartz and James R. Ryan, 55–73. London and New York: I. B. Tauris, 2003.
- Robic, Marie-Claire. "From the Sky to the Ground: The Aerial View and the Ideal of *Vue Raisonnée* in Geography during the 1920s." In *Seeing From Above: The Aerial View in Visual Culture*, edited by Mark Dorrian and Frédéric Pousin, 163–187. London and New York: I. B. Tauris, 2013.
- Robic, Marie-Claire. "Geography." In *The Cambridge History of Science: The Modern Social Sciences*, edited by Theodore M. Porter, 379–390. Cambridge: Cambridge University Press, 2003.
- Ryan, James R. "Photography, Visual Revolutions, and Victorian Geography." In *Geography and Revolution*, edited by David

Livingstone and Charles W. Withers, 199–238. Chicago: University of Chicago Press, 2005.

Schwartz, Joan M., and James R. Ryan. “Introduction: Photography and the Geographical Imagination.” In *Picturing Place: Photography and the Geographical Imagination*, edited by Joan M. Schwartz and James R. Ryan, 1–18. London: Tauris, 2003.

Solnit, Rebecca. *River of Shadows: Eadweard Muybridge and the Technological Wild West*. New York: Penguin Books, 2003.

Thorburn, David, and Henry Jenkins. “Introduction: Toward an Aesthetic of Transition.” In *Rethinking Media Change: The Aesthetic of Transition*, edited by David Thorburn and Henry Jenkins, 1–16. Cambridge: MIT Press, 2003.

Tucker, Jennifer. *Nature Exposed: Photography as Eyewitness in Victorian Science*. Baltimore: The Johns Hopkins University Press, 2005.

Wennerholm, Eric. *Sven Hedin: En biografi*. Stockholm: Bonniers, 1978.

Yusoff, Kathryn. “Configuring the Field: Photography in Early Twentieth-century Antarctic Exploration.” In *New Spaces of Exploration: Geographies of Discovery in the Twentieth Century*, edited by James R. Ryan and Simon Naylor, 52–77. London: I. B. Tauris, 2010.

Zarobell, John. “Jean-Charles Langlois’s Panorama of Algiers (1833) and the Prospective Colonial Landscape,” *Art History* 26, no. 5 (2003): 638–668.