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The Curated Forest

Seeing Aesthetically and Scientifically

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Lisa Cronjäger

Department Arts, Media, Philosophy, University of Basel,
lisa.cronjaeger@unibas.ch

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“The more beautiful a thing is, the more our pleasure will grow in getting a precise knowledge of this thing. I would like to remind the reader that we hardly ever are able to appreciate a good painting at the first sight or a high-quality work of music at first hearing in their whole value; I would like to remind also of the point of view of the scientist, who, familiar with the structure of insects by study, recognizes with the caterpillar the subdivision and with the millipede the order and does not dispute a certain beauty for both animals.”¹

In this passage by the Silesian forestry scientist Heinrich von Salisch an artwork, a caterpillar, as well as a piece of music or a millipede are regarded as beautiful. The perception of its beauty is determined by the engagement with a particular object or being and the precise knowledge pertaining to it—regardless of whether the engagement is that of a forester, an artist, or a scientist.

Thus, according to Salisch’s book *Forest Aesthetics*, the beauty of entities influences both scientific and aesthetic working practices. The work gave its name to what would be known as a school of thought in forestry. It was first published in 1885 and has been reprinted twice. The second edition from 1902 was translated into English in 2008. The fact that the the Forest History Society in the US published this latest edition strongly suggests that—more than a hundred years after the book was written—aesthetical thinking in forestry is still a relevant topic. In fact, the reception of Salisch’s work goes beyond forestry, ranging from environmental aesthetics to landscape gardening.

Books on trees have been in great demand in recent years, both in academia and among the general public. For example, *The Hidden Life of Trees*² by the German forester Peter Wohlleben was translated to several languages and spent weeks on

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1. Salisch, Heinrich von (1885): *Forest Aesthetics*, transl. by Walter L. Cook; Doris Wehlau, Durham, N.C. 2008, p. 30.

2. Wohlleben, Peter: *Das geheime Leben der Bäume. Was sie fühlen, wie sie kommunizieren – Die Entdeckung einer verborgenen Welt*, München 2015.

bestseller lists. Although Wohlleben was criticized for depicting trees in a humanlike way, the success of his books is possibly due to the way he narrates stories, making trees and their surrounding networks of roots and fungi, called mycorrhiza, into the protagonists. Besides, a certain aesthetics that aims at an attentive perception within forests seems to be popular among the readers. Comparable success stories can be found in the field of anthropology: both Eduardo Kohn's *How Forests Think: Toward an Anthropology beyond the Human*³ and Anna L. Tsing's *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*⁴ perform a shift in perspective away from a human-centered worldview, to a perception of networks from the point of view of trees and mushrooms.

The early example of forest aesthetics raises questions concerning both the relation between forests and human foresters and the complex relations between the disciplines forestry and art. Nowadays, forestry is often assigned to the natural sciences, although the discipline is based on various fields of knowledge ranging from mathematics, botany, chemistry, soil science, earth system science to economics, law, and history. In fact, the case of forest aesthetics directs attention to the founding period of academic forestry—and more specifically to the presence of artists at 19th century forest academies and to discussions about the introduction of lessons in aesthetics. In my view, the cross-pollination of thinking between the apparently remote disciplines of forestry and art can be of interest for the *Making of the Humanities*-conference and the *Basel Media Culture and Cultural Techniques Working Papers*. The last issues of the journal *History of Humanities* discussed and questioned the so-called great divide between the humanities and sciences.⁵ The common aim of our panel and working group *Media of Exactitude* was to analyze working practices, representations, and ideals in different disciplines.⁶ If we take a closer look at the concrete techniques at work, we will probably find out that accuracy is as important in many disciplines of the humanities as it is in the “exact sciences”. Some techniques are even pretty similar. Indeed, I hope here to bring your attention to the proximity between Salisch's ideal concerning forestry techniques and certain epistemic virtues in the sciences and the humanities.

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3. Kohn, Eduardo: *How Forests Think: Toward an Anthropology Beyond the Human*, Berkeley; Los Angeles; London 2013.

4. Tsing, Anna Löwenhaupt: *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*, Princeton, N.J. 2012.

5. Bod, Rens: “Has There Ever Been a Divide? A ‘Longue Durée’ Perspective,” *History of Humanities* 3 (1), 2018, p. 15–25; Krämer, Fabian: “Shifting Demarcations: An Introduction,” *History of Humanities* 3 (1), 2018, p. 5–14. Bod, Rens; Kursell, Julia; Maat, Jaap u. a.: “A New Field: History of Humanities,” *History of Humanities* 1 (1), 2016, p. 1–8.

6. Forthcoming publications that present the results of our working group are: Krajewski, Markus; Schöning, Antonia von; Wimmer, Mario (eds.): *Enzyklopädie der Genauigkeit*, Konstanz forthcoming 2021; Dätwyler, Larissa; Klarskov, Aurea; Knierzinger, Lucas (eds.): *Imagination und Genauigkeit. Passagen – Grenzen – Übertragungen*, Berlin forthcoming 2021.

As the title of my paper *The Curated Forest* suggests, I want to examine what the practice of curating could have meant for the forest aesthetics Salisch developed. As he puts it,

“the forest is to [the forester] art exhibition, concert hall, theatre and library, all at the same time. [...] To our educated eyes and our scientific understanding, the landscape has not remained a colorful image, but it presents itself to us as a self-grown work of art, in which the relations between cause and effect are expressed. [...] and in these forests we are the directors of the museum!”⁷

Like “directors in a museum” foresters too administer art works or as I would like to suggest: they curate the forest. The Latin verb “curare” can be translated as to take care of, to heal, to provide for. The noun “curator” also means overseer or guardian in English. It is interesting to analyze the effect this metaphor has on the relation between foresters and trees. If they are to treat forests as a “self-grown work of art”, foresters must develop “educated eyes”—they should be taught to see aesthetically. This, indeed, is one of Salisch’s main claims. My questions are then: How should foresters learn to see, according to Salisch? And: What can be concluded from the working techniques of forest aesthetics with regard to the relation between the humanities and the sciences around 1900?

For sure, Salisch builds on a long tradition of aesthetic reasoning about the forest developed in various disciplines. The 400-page long book is full of metaphors and references to philosophy, landscape gardening, history, German literature and music. However, in this paper, I will focus on the relations that can be traced between visual arts and forestry. First, I will look at the role forestry academies have played as interdisciplinary meeting points for artists and other scholars. According to Salisch, photographs and drawings are essential for teaching foresters how to evaluate a beautiful landscape. Therefore, in the second part of this paper, I will analyze three of the numerous images Salisch refers to in his book with the aim of understanding how forest planning build on the engagement with images. But let me start by framing forest aesthetics in its historical context.

1. Forest Aesthetics and Contexts of Knowledge Production

Forest aesthetics became popular in Germany at the end of the 19th century. This school of thought in forestry can be understood as a reaction to rigorous monocultures, which were considered to be sustainable in the first half of the 19th century. Forestry is rooted in cameral science—in the fiscal management of resources.⁸ In the late 18th century, the first academies and journals were founded.

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7. Salisch: *Forest Aesthetics*, 2008, p. 54.

8. For the origins of forestry in cameralism, see: Lowood, Henry E: “The Calculating Forester: Quantification, Cameral Science, and the Emergence of Scientific Forestry Management in Germany,” in: Frängsmyr, Tore; Heilbron, J. L.; Rider, Robin E. (eds.): *The Quantifying Spirit in the Eighteenth Century*, Berkeley 1990, p. 315–342. Warde, Paul: “Cameralist Writing in the Mirror of Practice: The Long Development of Forestry in Germany,” in: Tribe, Keith; Seppel, Marten (eds.): *Cameralism in Practice: State Administration and Economy in Early Modern Europe*, Woodbridge 2017, p. 111–132.

The first generation of educated foresters divided the forest into ideal parcels of land, whose trees should be of the same tree-type as well as the same age. Forest areas would be considered to be sustainable, if consistent amounts of timber were secured for long time periods.⁹ Eventually, monocultures of one tree-type and age-class led to the devastation of forest areas, as they lacked resilience to storms and insect infestation. Forest aesthetics can be considered a critique of monocultures.¹⁰ Yet, despite the criticism of intensive forestry, forest aesthetics did not question a need for economic progress as such. Instead, the aim was to include aesthetic thinking in the economic planning of forests.

The first representatives of this school of thought can be found around the Grand Ducal Saxon Forestry School in Eisenach. After the foundation of the forestry school in 1830, Gottlob König served as its first director. He taught classes in “forest embellishment” [*Waldverschönerung*] along with forest mathematics and dendrometry, the measurement of trees. König’s school advocated silvicultural methods aiming at mixed forests that met both economic and aesthetic criteria. König’s publications have titles like *The Poetry of Silviculture*¹¹ or *Waldpflege*¹² that could be translated literally as “Forest Tending”. The wording obviously alludes to a caring relationship between foresters and forests. However, it was Heinrich von Salisch who published the first book with the title *Forest Aesthetics* in 1886.

In 1902 the second edition of *Forest Aesthetics* got a lot of attention. The publication was accompanied by an increase of popularity of landscape embellishment societies [*Landschaftsverschönerungsvereine*] and other clubs for the preservation of cultural and natural heritage [*Heimatschutzvereine*].¹³ An important inspiration was the book *Die Gefährdung der Naturdenkmäler* by Hugo Conwentz, which was trans-

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9. For a recent overview on the history of sustainability, see: Warde, Paul: *The Invention of Sustainability. Nature and Destiny, c. 1500-1870*, New York 2018.

10. Grewe, Bernd Stefan; Hölzl, Richard: “Forestry in Germany, c. 1550-2000,” in: Oosthoek, K. Jan; Hölzl, Richard (eds.): *Managing Northern Europe’s Forests. Histories from the Age of Improvement to the Age of Ecology*, New York; Oxford 2018, p. 38 f; Schmoll, Friedemann: *Erinnerung an die Natur. Die Geschichte des Naturschutzes im deutschen Kaiserreich*, Frankfurt; New York 2004, p. 230 ff. Hölzl, Richard: “Natur ohne Wald? Oder warum ‚naturnaher Waldbau‘ und ‚Naturschutz‘ nicht zusammenfanden – Ein Essay,” in: Jakubowski-Tiessen, Manfred; Sprenger, Jana (eds.): *Natur und Gesellschaft. Perspektiven der interdisziplinären Umweltgeschichte*, Göttingen 2017, p. 103–113; Küster, Hansjörg: *Geschichte des Waldes. Von der Urzeit bis zur Gegenwart*, München 2008, p. 185–195.

11. König, Gottlob: “Poesie des Waldbaues,” in: Pannewitz, J. von (ed.): *Forstliches Cotta-Album*, Breslau; Oppeln 1844, p. 139–141.

12. König, Gottlob: *Die Waldpflege*, Gotha 1849.

13. For the history of “Landschaftsverschönerungsvereine” and the movement of “Natur- and Heimatschutz” see: Applegate, Celia: *A Nation of Provincials: The German Idea of Heimat*, Berkeley 1990; and with a focus on the “gleichschaltung” of these clubs: Uekötter, Frank: *The Green and the Brown: A History of Conservation in Nazi Germany*, Cambridge 2006. In addition to the mentioned rather conservative societies, several clubs were founded since the 1890 that were associated with the international labour movement, as for example the “Naturfreunde” who campaigned for free access to forests and mountain areas. However, there are no references to the *Naturfreunde* in Salisch’s books.

lated into English as *The Care of Natural Monuments* in 1909.¹⁴ The botanist argued for initiatives that would put trees and forest areas under protection. In parallel, the international conservation movement pleaded for the foundation of national parks.¹⁵ Despite of various honorable mentions of Conwentz,¹⁶ the forest aesthetics described by Salisch neither aimed at the foundation of protected areas, nor idealized forests as pristine or unspoiled nature. In fact, the book's first sentence defines forest aesthetics as the "teaching of the timber forest's beauty".¹⁷ The forests whose beauty matter should also thus be useful—timber producing.

"I will call forestry art the forestry economy that is done under aesthetic points of view."¹⁸

If we look further into the history and the contexts of forestry institutions in Europe, it should not surprise us that this economically oriented discipline took on concepts associated with the art sphere. What we find is that artists, writers and scholars often worked together in the surroundings of forestry academies: One famous example Salisch mentions is Johann Wolfgang von Goethe. He apparently enjoyed the presence of foresters and huntsmen in the woods during their festivities. According to Salisch, Goethe stood in continuous conversation with Gottlob König in Eisenach.¹⁹ The scenic location Tharandt near Dresden was another important

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14. Conwentz, Hugo: *Die Gefährdung der Naturdenkmäler und Vorschläge zu ihrer Erhaltung*, 2nd. ed., Berlin 1904; Id.: *The Care of Natural Monuments with special reference to Great Britain and Germany*, Cambridge (England) 1909.

15. On the history of nature conservation and national parks see: Gissibl, Bernhard; Höhler, Sabine; Kupper, Patrick (eds.): *Civilizing Nature: National Parks in Global Historical Perspective*, New York 2012; Bont, Raf de; Schleper, Simone; Schouwenburg, Hans: "Conservation Conferences and Expert Networks in the Short Twentieth Century," *Environment and History* 23 (4), 2017, p. 569–599. From 1913 to 1940 the majority of the participants at international conservation conferences were from colonial countries that were interested in the foundation of national parks in the global South.

16. "Den forstästhetischen Bestrebungen ist eine erfreuliche Bundesgenossenschaft durch die Pfleger der Naturdenkmäler – ich nenne in erster Linie Dr. Conwentz – und die verschiedenen Heimatschutzvereine erwachsen. Deren noch junge Literatur überflügelt die unsrige schon bei weitem." Salisch, Heinrich von: *Forstästhetik. Dritte, vermehrte Auflage. Mit 133 Textabbildungen*, Berlin 1911, p. 12.

17. "Forstästhetik ist die Lehre von der Schönheit des Wirtschaftswaldes. Sie soll zeigen, worin dessen Schönheit besteht, wie sie zu pflegen ist und wie man die schönen Waldungen zu Nutz und Frommen der Menschheit zugänglich machen kann." Ibid. p. 1.

18. Salisch: *Forest Aesthetics*, 2008, p. 1.

19. Salisch comments on the working relations between König, Goethe, and the landscape gardener Eduard Petzold (1815–1891): "Lange ehe er schriftstellerisch hervortrat, hat sich König als einsichtsvoller Forstästhetiker praktisch betätigt, indem er die herrlichen Waldungen bei Eisenach, welche ihm seit dem Jahre 1829 unterstanden, durch zweckmäßig geführte Wege erschloß. Wir dürfen annehmen, daß Goethe und Petzold ihm hierbei fördernd zur Seite gestanden haben, denn der große Dichter liebte es, an den geselligen Zusammenkünften der Jäger und Forstmänner teilzunehmen. Sein feines Verständnis für die Baumwelt wird er auf die herzoglichen Beamten übertragen haben." Salisch: *Forstästhetik*, 1911, p. 10. For Goethe's involvement in forestry, see: Wagner, Maria: *Goethe und die Forstwirtschaft*, Remagen 2007.

place in the network of academic forestry. König and other early founders of forestry schools started their education here.



Figure 1: The Royal Saxon Academy of Forestry in Tharandt was founded in 1808. The academy building was constructed in 1847. Photograph by the author 2016.

The director and founder of the academy, Heinrich Cotta, owned a mineral collection, which was the subject of many scholarly conversations. Alexander von Humboldt and Friedrich Schiller, among others, came to visit. After Cotta's death Humboldt persuaded the Berlin cabinet to buy Cotta's mineral specimens which nowadays constitute an important collection of the natural history museum.

Furthermore, renowned engravers and artists from Dresden regularly visited Tharandt: Caspar David Friedrich, Johan Christian Dahl, Hans Anton Willard, and other representatives of the romantic era went on extensive hiking tours, during which they were looking for landscape sceneries. The landscape artist Carl Blechen visited Tharandt on an excursion organized by the Berlin Academy of Arts in 1823. An early example of Blechen's work and a result of the excursion is a drawing of the Tharandt Castle.



Figure 2: Carl Blechen: *Burgruine Tharand bei Dresden*, 1823.
Kupferstichkabinett, Staatliche Museen zu Berlin.

The forestry school in Evo in Southern Finland serves as another example of the close interactions between foresters and artists. The school was founded in 1862 by Finnish foresters who were trained in Tharandt. The artist Helene Schjerfbeck was a niece of one of the forestry teachers and spent a lot of time at the school. Many of her paintings found inspiration in forestry motives.

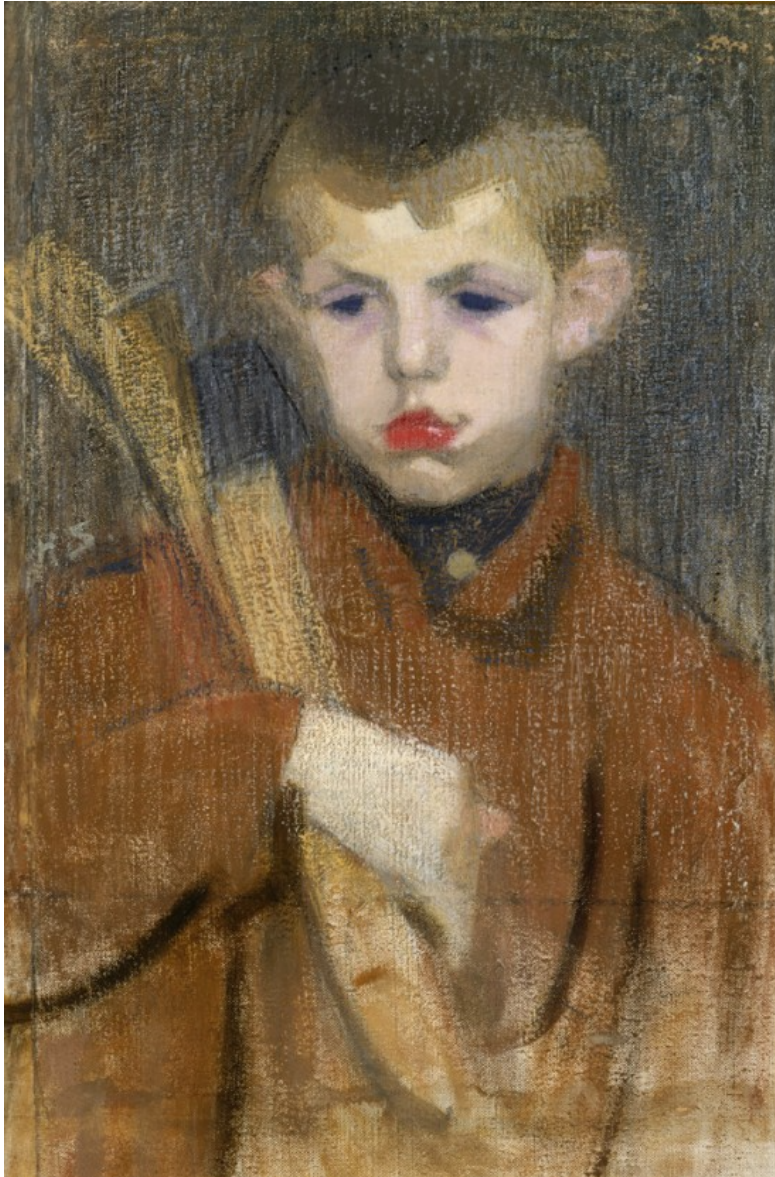


Figure 3: Helene Schjerfbeck: *The Woodcutter*, 1910-11. Finnish National Gallery.

There are in fact several influential artists with connections to this forestry academy, one example of which is Alvar Aalto. His designs are known to have been inspired by Finnish nature and organic shapes. Aino and Alvar Aalto's famous Savoy vase, for instance, could be compared to the form of a lake. The Evo forestry academy is located in the middle of three lakes.



Figures 4 and 5: *left*: Alvar and Aino Aalto: Savoy Vase, 1936. Image: Lahti, Louna: Aalto, Köln 2004, p. 34; *right*: Location of the Forest Academy in Evo, Southern Finland, founded in 1862.

Interestingly enough, Alvar Aalto was the grandchild of one of the teachers of the forestry academy.²⁰ Another grandchild spending time in Evo is the sculptor Sigrid af Forselles. She sculptured reliefs for the Helsinki Art Academy and worked with Camille Claudel and Auguste Rodin in Paris.²¹

In conclusion, one can say that Salisch's comparisons between the forester's and the artist's work are not surprising given the multiple occasions for exchange. Forestry academies obviously served as meeting places within international networks of correspondence that fostered both inspiration and scholarly discourse across the disciplines. The context of knowledge production at forestry academies thus provided ample opportunities to borrow from the arts, not only conceptual categories and vocabulary, but also, as we will see, practices.

2. Teaching Forest Aesthetics

Salisch publicly pleaded for establishing forest aesthetics lessons in the curricula of forestry education. He insisted on this point during two assemblies of the Society of German Foresters in Danzig (1905) and Darmstadt (1906). The partic-

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20. Sistola, Kalle: *Evolla Ensimmäisenä. Ewoisten metsänhoito-opistosta osaksi ammattikorkeakoulua 1862-2002*, Hämeenlinna 2002, p. 41 f.

21. Lindgren, Liisa: "Sigrid af Forselles and Hilda Flodin, Rodin's Finnish students", in: Hinners, Linda et al: *Rodin. Auguste Rodin (1840–1917) and the Nordic Countries*, Stockholm; Helsinki 2015, p. 109–117. I would like to thank Henrik Lindberg, Antti Sipilä and Risto Viitala for the conversations on the relations between artists and foresters in Evo and for further information (Evo, 9 January 2018).

ipants in the assemblies agreed to allow presentations about aesthetics in forest academies, but they rejected the establishment of a new subject. However, from Salisch's point of view, it did not suffice to teach some aspects of forest aesthetics during lessons devoted to other subjects. He argued that an intuition for beauty is not enough in order to avoid mistakes. While an artist can easily blend new colors and add new effects to a painting, a forester can never undo the mistake of cutting the wrong tree. A certain "security of judgement" [*Sicherheit des Urteils*]²² is thus crucial, and it is something to be learned in class, not something to be taken for granted.

Salisch argued for a particular education of the eye from his own experience. He would never have been able to perceive the beauty in certain tree constellations, had he not started taking painting lessons in Lübben in the Spreewald region close to Berlin. It was when he took a paint brush into his own hand that Salisch understood the beautiful way the contours of mixed forests with trees of various age classes stand out against the sky. Only the artist Max Fritz could help him perceive the characteristic "alignment" [*Linienführung*]²³ of different forests.²³

Apparently, painting helps to sharpen the eye for decision making in forestry. For this reason, Salisch longed for art collections close to forestry academies. Copies of landscape paintings should be provided as teaching material and managed by professional staff.²⁴ Furthermore, libraries should contain books from the fields of philosophy, gardening, architecture, arts, and literature. Among the authors cited by Salisch we find Hegel, Kant, Goethe, Theodor Vischer²⁵ as well as works on the picturesque by the British artist William Gilpin²⁶. By examining art works, poetry and philosophy, forestry students were to gain knowledge and learn routines for judging the beauty of forests.

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22. Salisch, *Forstästhetik*, 1911, p. 14.

23. "Am besten lernt man es, wenn man selbst den Pinsel zur Hand nimmt. Mit welcher herrlicher Linienführung ungleichaltrige Bestände, selbst klägliche bäuerliche Kusselwälder, sich vom Himmel abheben, das muß man dem Kunstmaler Max Fritz in Lübben abgesehen haben, um sich mit vollem Verständnis daran freuen zu können. So ist es mir selbst gegangen. Ich trieb schon 30 Jahre Forstästhetik und habe doch erst von Max Fritz gelernt, wie wechselreich und charakteristisch schön diese Linien sind." Salisch, *Forstästhetik*, 1911, p. 15. This passage was not included in the first edition of 1902 that was translated to English.

24. "Der forstästhetische Unterricht bedarf auch einiger Lehrmittel, und diese bedürfen eines kundigen Verwalters. Das Verständnis für so manche Naturschönheit erschließt sich dem aufnahmefähigen Sinn am vollkommensten, wenn Kunstwerke unsere Auffassungsgabe schärfen, darum muß der Lehrer Kunstblätter zur Hand haben! Wie eigentlich die Buchenstämme gefärbt sind, welche herrlichen Farbentöne der besonnten Winterlandschaft eigen sind, bleibt manchem unbekannt, bis er im Bilde bewundern kann, wie ein Künstlerrauge die Natur angeschaut hat." Ibid. p. 15.

25. One point of reference is Immanuel Kant's and Theodor Vischer's works on the notion of "das Naturschöne". For an overview of relevant aesthetical contributions in German in the 19th century, see: Müller-Tamm, Jutta: *Verstandenes Lebensbild. Ästhetische Wissenschaft von Humboldt bis Vischer. Eine Anthologie*, Berlin 2010.

26. Gilpin, William: *Three essays on picturesque beauty; on picturesque travel; and on sketching landscape: to which is added a poem, on landscape painting*, London 1792.

Although Salisch's ideas were never realized in an institution, in his widely read book he sets up an opportunity to learn how landscape paintings and photographs provide helpful directions on how to judge landscapes. Salisch's plea for "security of judgment"²⁷ around 1900 was subject to debates in forestry, but we might also consider it in a rather different context. The very similarity of expressions encourages us to look at how this might relate to what Lorraine Daston and Peter Galison explore in their history of objectivity.²⁸ On the basis of scientific atlases and common practices in different disciplines, the historians of science consider three "epistemic virtues" paradigmatic of a shift in scientific practice in the middle of the 19th century, and finally at the turn to the 20th century. For instance, botanical atlases before 1850 were mostly oriented towards the epistemic virtue of "truth to nature," as idealized images were supposed to contain the most important characteristics of a species. Around 1850, Daston and Galison situate the rise of another epistemic virtue: "mechanical objectivity". Photography and measuring devices were used to register everything, including all irregularities, automatically. "Images untouched by human hands" were the result of diligent working practices. Scientists should avoid subjective interpretation as much as possible. Although epistemic virtues prevail, supplement and influence each other, Daston and Galison point out that "trained judgment" became more and more important around 1900. In their words "seeing scientifically through an interpretative eye" is characteristic of this virtue.²⁹ Mechanically derived images were no longer taken as representations of objective truth, rather interpreting them became essential. An "expansion of scientific pedagogy"³⁰ accompanied and sustained this shift in perspective. Between 1880 and 1914, many scientific institutions and schools were founded. Curricula were standardized. In particular, teaching methods in which students perform active exercises were introduced. It has to be said that, from the beginning of the 19th century on, education at forest academies was based on practical exercises as well as an active evaluation of the situation in the forest. However, Heinrich von Salisch's suggestion to include training in forest aesthetics in the forestry curricula was in fact controversial around 1900. The debates on forest aesthetics, painting class and image collections run parallel to Daston's and Galison's observations with regard to skills in the use of pictures in various disciplines: "the scientist of the twentieth century entered as an expert with a trained eye that could perceive patterns where the novice saw confusion. The 'practiced eye' was as

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27. Salisch, *Forstästhetik*, 1911, p. 14.

28. Daston, Lorraine; Galison, Peter: *Objectivity*, New York 2007.

29. "[...] the ambition to produce an objective image mechanically came to be supplemented by a strategy that explicitly acknowledged the need to employ trained judgment in making and using images. Slowly at first and then more frequently, twentieth-century scientists stressed the necessity of *seeing scientifically through an interpretative eye*; they were after an interpreted image that became, at the very least, a necessary addition to the perceived inadequacy of the mechanical one." Daston; Galison 2007, p. 311.

30. Ibid. p. 325.

significant to geology as to electroencephalography.”³¹ After analyzing Salisch’s ideals for a working practice in forest aesthetics, it becomes clear that the “practiced eye” is valued well beyond science.

Salisch’s expressions “security of judgment” and “forestry art” come close to the rhetoric analyzed by the historians of science. However, in Salisch’s descriptions quoted above accuracy, exactitude, and empirical art are not put in opposition. Rather, artistic practice was considered as something that resembles the work of a natural scientist. And the forester is characterized as a director of a museum who administers tree constellations as art works.

To understand how Salisch imagined a perfect training for foresters, we will now take a closer look at three images presented in forest aesthetics. What can be learned from these images?

In Salisch’s book there are 75 photographs of scenic views and drawings, provided by photographers and other private persons. Among the credits two women are mentioned explicitly: “Fräulein E. V.D. Planitz in Weimar” and Johanna von Salisch, Heinrich’s wife. In general, changing impressions of the landscape are intended. In many pictures, the forest landscape enhances seasonal changes and variations of the daylight, as you can see on the picture “Larches with light shining through”, taken in Pontresina (Southern Switzerland).

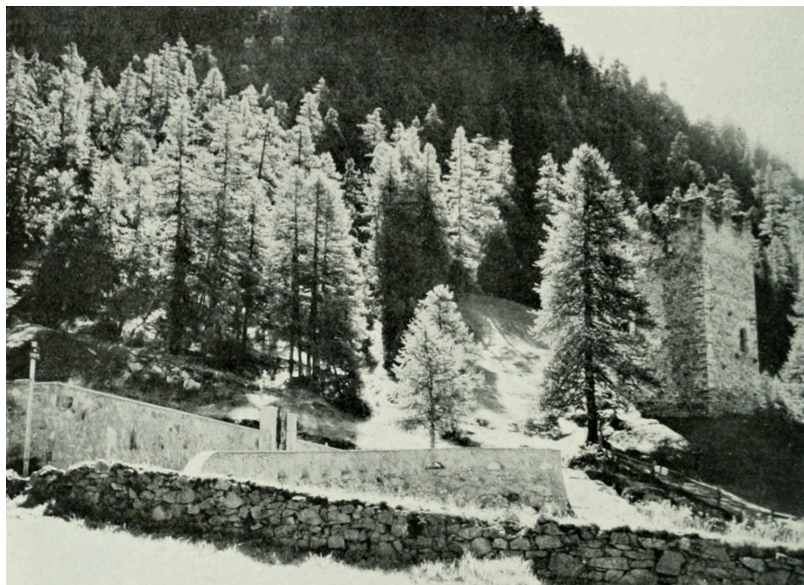


Figure 6: Lärchenbäume im durchscheinenden Licht. Photographie von Flury in Pontresina. Scan: Salisch, *Forstästhetik*, 1911, p. 45.

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31. Ibid. p. 328.

Another example is this picture with the subtitle “Sunspots”. In the foreground there are bright dots on the trunk of a tree and on the ground—accompanied by a bright, cleared area next to the cluster of trees—apparently a clearing.



Figure 7: *Sonnenflecke (nach Photographie)*. Scan: Salisch, *Forstästhetik*, 1911, p. 42.

Salisch underlines the importance of clearings in the forest in order to guarantee such variant landscape scenes and light effects. Forest aesthetics is fundamentally a plea against monocultural forests. Naturally grown and mixed trees are to be favored. Salisch constantly reminds his readers of the power of the wind and the Eurasian jay, because they spread seeds around the forest.³² The only condition is that seed trees remain standing close to clearings or are planted in freshly cut areas. Repeatedly, Salisch points out that foresters should not strive to create forests on their own. Instead, it is their responsibility to create good preconditions, for example by wisely choosing places for clearings. The processes of decision-making that these

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32. “Warum nehmen wir nicht lieber den eifrigen Häher, den stürmischen Westwind in unsere Dienste, die so gern und ganz unentgeltlich Eicheln und Eckern, Ahorn-, Eichen- und Nadelholzsamen ausbreiten, wenn wir nur für einige Samenbäume sorgen, sei es überhaltend, sei es sie anpflanzend. Jede Bestandeslücke, jede Kunststraße sollte darauf angesehen werden, ob sie Gelegenheit gibt, die Ansammlung für das Revier wichtiger Holzarten durch Voranbau von Samenbäumen zu ermöglichen. Je zahlreichere Holzarten zur Anbahnung einer Naturverjüngung vorgefunden werden, desto leichter gestaltet sich die Aufgabe des Wirtschafter, desto naturgemäßer und darum desto schöner verteilen und entwickeln sich die Holzarten [...]” Salisch, *Forstästhetik*, 1911, p. 263.

images help Salisch to explicate recognize the agency of trees and animals, instead of focusing solely on the forester's power. It is because monocultures would render the manifold interactions impossible that they are to be avoided.

There are, however, exceptions: Should the soil or pre-found conditions not allow a naturally grown forest, plantations with a regular shape should be chosen instead. Moreover, it can have positive effects if trees that are standing close to roads are ordered in parallel lines. As a result, people passing by get the impression of a tidily ordered forest. But the lines have to be parallel to the path so that passengers cannot see through them.³³ For the cases, when areas of the same tree type cannot be avoided, Salisch suggests these planting and seeding patterns:

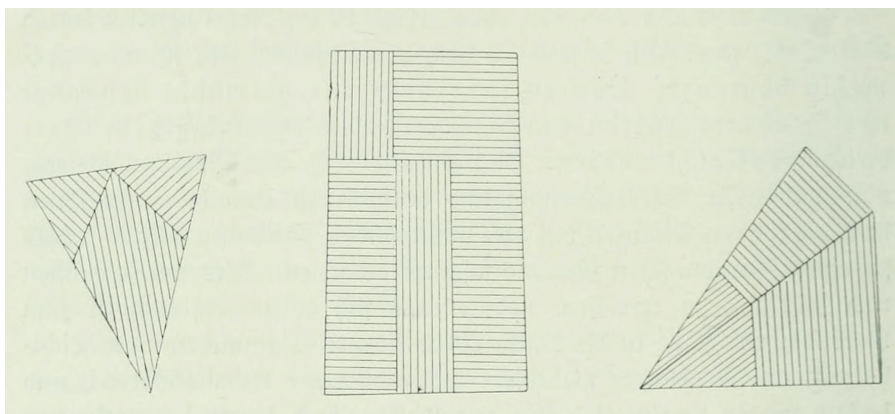


Figure 8: *Richtung der Saatstreifen*. Scan: Salisch, *Forstästhetik*, 1911, p. 268.

The hand drawings illustrate that parallel lines are always interrupted by lines following another direction. As a result, an impression of complete transparency is prevented in so far as possible. All in all, foresters are told to prefer variations and natural regeneration in forests to “pedantic schematism”.³⁴ Especially if castles, small hills or other observation points are nearby, tree plantations should not follow a regular pattern, because it would be boring to look at for promenaders and other observants.³⁵

As curators do, foresters deal with artworks already created or in process. They work on the composition of trees and aesthetical patterns, indeed, they are not working alone. Foresters prepare the planting and seeding of new trees, knowing that the wind, birds and other animals will possibly do a big part of the work. All in

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33. “Wer die Gradlinigkeit [...] nicht aufgeben will, ziehe seine Pflanzreihe parallel mit den Wegen, damit man nicht im Vorübergehen in die Pflanzreihen hineinsehen könne.” Ibid. p. 267.

34. Salisch, *Forstästhetik*, 1911, p. 265 f.: “Wenn man über die ganze Fläche unter dem Schirm des gleichmäßig gelichteten Altholzbestandes Voreinbau betrieben, Naturbesamung benutzt, und dann nach rechtzeitiger Räumung etwaige Fehlstellen kultiviert hätte, so würden – von allen wirtschaftlichen Vorteilen abgesehen –, noch *wechselreichere*, noch *schönere*, von *pedantischem Schematismus ganz freie Bilder* entstanden sein.”

35. Ibid. p. 267.

all, it is crucial to gain a trained eye for the always changing contexts in the forest: What kind of view is considered to be beautiful? How should trees be cut so that the wind and the animals transport seeds to the empty spaces? What about passing promenaders and their perspective on forests? The virtue of trained judgment is present throughout the book. “Useful beauty” is something to be learned in order to be able to recognize and justify it. Even variation doesn’t just happen, but has to be made possible by leaving seed trees untouched.

The methods of forest aesthetics teach foresters to refer situations in their forests to images and cases they have discussed—analogous to the ways in which some artists might learn painting techniques from their masters. Students of forest aesthetics should learn to develop an artistic eye by training themselves to detect visual patterns; this can be done *in situ* in the forest but also with images and schemes provided in class.

3. Forest Aesthetics and the History of the Humanities

The discipline of forestry is often associated with the “exact” sciences. But the case of forest aesthetics shows that artistic and aesthetic thinking played a more important role in the formation of forestry than one might have expected. As a popular school of thought in Germany around 1900, forest aesthetics ran parallel to the conservation movement and the protection of trees as natural heritage. Collections of tree and landscape photographs were begun in different places in Europe. For instance, in Switzerland the ETH Zurich owns a folder of tree photographs by the forest inspector Henri Badoux that was inspired by Salisch’s work.³⁶ *Swiss Tree Album* was a wide-reaching publication. Commissioned by the Swiss Department of Home Affairs, the book was published as a four-part series from 1896 to 1900.³⁷ Altogether, it contains photographs and descriptions of 25 trees that were considered to be remarkably beautiful or old. The tree’s location was mentioned, the tree’s approximate dimensions were given and its aesthetical qualities were described. Additionally, the histories of some trees were situated within the history of the Swiss

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36. ETH Library Zurich, University Archive, signature HS 440: 1. Henri Badoux (1871–1951) published several books on this topic. For instance, *De l’esthétique en forêt* (1923), an article on a conference of forest aesthetics that took place in Zurich in 1923. On the second page of the introduction Badoux quotes Salisch’s definition of forest aesthetics. Badoux-Jaccard, Henri: *De l’esthétique en forêt: Conférence faite à la 3e série de conférences forestières, du 5 au 10 mars [1923], à Zurich*, Bern 1923, p. 2. Another publication was *Les beaux arbres du Canton du Vaud* (1926), a catalogue commissioned by the Society of foresters in the canton of Valais. Badoux-Jaccard, Henri: *Les Beaux Arbres du Canton de Vaud. Catalogue*, publié par la Société Vaudoise des Forestiers, Vevey 1910.

37. Coaz, Johann: *Baum-Album der Schweiz. Bilder von Bäumen, die durch Grösse und Schönheit hervorragen oder ein besonderes geschichtliches Interesse bieten. Lichtdrucke nach photographischen Natur-Aufnahmen*, Bern 1896. A digitalized version is provided by the Swiss National Library, signature: nbdig-26842: <https://www.e-helvetica.nb.admin.ch/search?urn=nbdig-26842> [21.12.2020]. Denzler, Lukas: “Das Baum-Album der Schweiz von Johann Coaz – Eine Bestandesaufnahme nach 100 Jahren,” *Schweizerische Zeitschrift für das Forstwesen* 750 (1999) 5, p. 187–192.

Confederation. In the book's preface, there are comparisons between artworks and "beauties of nature" ["*Naturschönheiten*"] which are similar to those drawn by Salisch. Around 1900, many comparable collections of tree pictures were compiled in Switzerland. For example, in 1906 *Natur und Kunst im Walde* by the Professor of forestry Theodor Felber³⁸ and *Nos Arbres dans la Nature*³⁹ with one hundred water-colour paintings by Adèle and Fernand Correvon based in Geneva. In the Library of the Centre International de Sylviculture, one of the biggest historical book collections on forestry, which is located in the buildings of the Food and Agriculture Organization in Rome⁴⁰, some of the afore mentioned publications are subsumed under the signature L "Waldpflege, Forstschutz und Forstästhetik" ["*Forest Tending, Forest Protection, and Forest Aesthetics*"]⁴¹. Actually, this collection has its origin in the forestry academy's library in Eisenach which was shaped by Gottlob König's life work. Obviously, forest aesthetics was not an exception, but had deep roots in the institutions of forestry. Despite the critique of monocultures, forest aesthetics did not question the exploitation of timber forests either in Europe or in colonial contexts. It rather pleaded for taking aesthetical criteria under consideration in the administration of timber forests. In retrospect, it could be asked what role forest aesthetics could have played as a critical instance.

I would like to come back to one of the introductory questions: What can be concluded from the example of forest aesthetics with regard to the relation between the humanities and sciences? Firstly, I would like to suggest that the close interactions between forestry, arts, and aesthetics around 1900 and before should be taken into consideration, when we reflect on the making of histories of the humanities. As I specified in the first part, forestry academies played an important, so far understudied, role in the careers of artists, writers and other scholars. The most famous cases, which would require more research, are Johann Wolfgang von Goethe, Alexander von Humboldt, and Alvar Aalto. Besides, photographers and illustrators contributed to the collection of landscape pictures in Salisch's book and other collections. Many of the involved artists were women. In some cases, people from the general public sent in their pictures or drawings to book projects. The role of these and other "invisible"⁴² artists in the formation of aesthetical reasoning in forestry could be investigated more.

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38. Felber, Theodor: *Natur und Kunst im Walde. Vorschläge zur Verbindung der Forstästhetik mit rationeller Forstwirtschaft. Für Freunde des Waldes und des Heimatschutzes*, Frauenfeld 1906.

39. Correvon, Henry: *Nos Arbres dans la Nature; illustré de 100 planches en couleurs, tirées sur papier couché, d'après les aquarelles et peintures de Adèle et Fernand Correvon*, illustr. à la plume dans le texte par Hélène Ringel, Genève 1920.

40. Ball, Jim; Kollert, Walter: "The Centre International de Sylviculture and its historic book collection," *Unasylva* 240, 2013, p. 19–25.

41. Anonymous: *Catalogue of the Forestry Academy Eisenach (origin of the historic forestry books of the CIS, Berlin)*, preface by the forest assessor Schill, 1909, p. 65–68.

42. For the notion of the invisible technician in the history of science, see: Shapin, Steven: "The Invisible Technician," *American Scientist* 77, 1989, p. 554–563.

Against the controversial proposition of the “great divide” between the sciences and the humanities as “two cultures”—propagated in retrospect by the novelist and physical chemist C. P. Snow in 1959, the case of forest aesthetics shows different levels of interdependencies between aesthetically inspired, scientific, and economic methods. The school of thought held up as an ideal a forest that would both be a beautiful composition and a productive source of timber. Looking at the methods suggested in Salisch’s book, one can draw the conclusion that forest aesthetics relies as much on mathematical techniques as on methods associated with the aesthetic realm.

4. Learning to Perceive

My hypothesis is that if we look at the concrete practices, ideals, and representations applied in an artistic or scientific discipline, the boundaries between the so-called “exact sciences” and the humanities become blurry. A closer examination of the ways in which different disciplines train students to see can probably enrich discussions of this very theme in the humanities and sciences. Salisch’s suggestions for a good education of foresters include both painting lessons and the study of art collections. For the purpose of detecting visual patterns, landscape paintings and photographs are far more than a mere inspiration to forest aestheticians. Actually, the 75 images in Salisch’s book contribute decisively to the development of a common sense regarding the question how to evaluate the “useful beauty” of tree constellations. Salisch’s expression “security in judgment” is similar to Lorraine Daston’s and Peter Galison’s epistemic virtue of “trained judgment”. Among other methods, training in forest aesthetics should discipline the forester’s eyes for the many professional decisions concerning which tree to cut first.

To sum up, this close reading of forest aesthetics shows that both aesthetic and scientific techniques rely on visual training. According to Salisch, the perception, interpretation and composition of visual patterns play an important role in forestry. That is why a forester can easily be compared to a curator in an exhibition. In the case of forest aesthetics, natural sciences and humanities do not stand in opposition. Indeed, all techniques depend on an accurate observation of the beings and entities they deal with. If we take a closer look at how techniques are conducted and practiced in different disciplines, the relation between the humanities and the exact sciences becomes more and more complex. Heinrich von Salisch’s forest aesthetics was definitely inspired by practices of painting and curating. In fact, aesthetic considerations had such importance that they may have erased other perspectives: Salisch did not contest forest economies based on monocultures for any reason other than aesthetical ones. It could be worth asking, which perspectives are excluded or ignored by human curators trained to perceive above all the timber forest’s beauty.

References

- Anonymous: *Catalogue of the Forestry Academy Eisenach (origin of the historic forestry books of the CIS, Berlin)*, preface by the forest assessor Schill, 1909, p. 65–68.
- Applegate, Celia: *A Nation of Provincials: The German Idea of Heimat*, Berkeley 1990.
- Badoux-Jaccard, Henri: *Les Beaux Arbres du Canton de Vaud. Catalogue*, publié par la Société Vaudoise des Forestiers, Vevey 1910.
- Badoux-Jaccard, Henri: *De l'esthétique en forêt. Conférence faite à la 3e série de conférences forestières, du 5 au 10 mars [1923], à Zurich*, Bern 1923.
- Ball, Jim; Kollert, Walter: "The Centre International de Sylviculture and its historic book collection," *Unasylva* 240, 2013, p. 19–25.
- Berndt, Iris; Börsch-Supan, Helmut: *Carl Blechen. Innenansichten eines Genies*, Berlin 2017.
- Bod, Rens: "Has There Ever Been a Divide? A 'Longue Durée' Perspective," *History of Humanities* 3 (1), 2018, p. 15–25.
- Bod, Rens; Kursell, Julia; Maat, Jaap et al: "A New Field: History of Humanities," *History of Humanities* 1 (1), 2016, p. 1–8.
- Bont, Raf de; Schleper, Simone; Schouwenburg, Hans: "Conservation Conferences and Expert Networks in the Short Twentieth Century," *Environment and History* 23 (4), 2017, p. 569–599.
- Coaz, Johann: *Baum-Album der Schweiz. Bilder von Bäumen, die durch Grösse und Schönheit hervorragen oder ein besonderes geschichtliches Interesse bieten. Lichtdrucke nach photographischen Natur-Aufnahmen*, Bern 1896.
- Conwentz, Hugo: *Die Gefährdung der Naturdenkmäler und Vorschläge zu ihrer Erhaltung*, 2nd. ed., Berlin 1904.
- Conwentz, Hugo: *The Care of Natural Monuments with special reference to Great Britain and Germany*, Cambridge (England) 1909.
- Correvon, Henry: *Nos arbres dans la nature; illustré de 100 planches en couleurs, tirées sur papier couché, d'après les aquarelles et peintures de A. et F. Correvon*, Genève 1920.
- Dätwyler, Larissa; Klarskov, Aurea; Knierzinger, Lucas; (eds.): *Imagination und Genauigkeit. Passagen – Grenzen – Übertragungen*, Berlin forthcoming 2021.
- Daston, Lorraine; Galison, Peter: *Objectivity*, New York 2007.
- Denzler, Lukas: "Das Baum-Album der Schweiz von Johann Coaz – Eine Bestandesaufnahme nach 100 Jahren," *Schweizerische Zeitschrift für das Forstwesen* 750 (1999) 5, p. 187–192.
- Felber, Theodor: *Natur und Kunst im Walde. Vorschläge zur Verbindung der Forstästhetik mit rationeller Forstwirtschaft. Für Freunde des Waldes und des Heimatschutzes*, Frauenfeld 1906.
- Gilpin, William: *Three essays on picturesque beauty; on picturesque travel; and on sketching landscape: to which is added a poem, on landscape painting*, London 1792.
- Gissibl, Bernhard; Höhler, Sabine; Kupper, Patrick (ed.): *Civilizing Nature: National Parks in Global Historical Perspective*, New York 2012.
- Grewe, Bernd Stefan; Hölzl, Richard: "Forestry in Germany, c. 1550-2000," in: Oosthoek, K. Jan; Hölzl, Richard (eds.): *Managing Northern Europe's Forests: Histories from the Age of Improvement to the Age of Ecology*, New York; Oxford 2018, p. 15–65.
- Hölzl, Richard: "Natur ohne Wald? Oder warum 'naturnaher Waldbau' und 'Naturschutz' nicht zusammenfanden – Ein Essay," in: Jakubowski-Tiessen, Manfred; Sprenger, Jana (eds.):

- Natur und Gesellschaft. Perspektiven der interdisziplinären Umweltgeschichte*, Göttingen 2017, p. 103–113.
- Kohn, Eduardo: *How Forests Think: Toward an Anthropology Beyond the Human*, Berkeley; Los Angeles; London 2013.
- König, Gottlob: *Die Waldpflege*, Gotha 1849.
- König, Gottlob: "Poesie des Waldbaues," in: Pannewitz, J. von (ed.): *Forstliches Cotta-Album*, Breslau; Oppeln 1844, p. 139–141.
- Krajewski, Markus; Schöning, Antonia von; Wimmer, Mario (eds.): *Enzyklopädie der Genauigkeit*, Konstanz forthcoming 2021.
- Krämer, Fabian: "Shifting Demarcations: An Introduction," *History of Humanities* 3 (1), 2018, p. 5–14.
- Küster, Hansjörg: *Geschichte des Waldes. Von der Urzeit bis zur Gegenwart*, München 2008.
- Lahti, Louna: Aalto, Köln 2004.
- Lowood, Henry E: "The Calculating Forester: Quantification, Cameral Science, and the Emergence of Scientific Forestry Management in Germany," in: Frängsmyr, Tore; Heilbron, J. L.; Rider, Robin E. (ed.): *The Quantifying Spirit in the Eighteenth Century*, Berkeley 1990, p. 315–342.
- Lindgren, Liisa: "Sigrid af Forselles and Hilda Flodin, Rodin's Finnish students," in: Hinners, Linda; Naylor, Martin; Selwyn, Victoria et al (eds.): *Rodin: Auguste Rodin (1840-1917) and the Nordic Countries*, Stockholm; Helsinki 2015, p. 109–117.
- Müller-Tamm, Jutta: *Verstandenes Lebensbild. Ästhetische Wissenschaft von Humboldt bis Vischer. Eine Anthologie*, Berlin 2010.
- Salisch, Heinrich von: *Forstästhetik. Dritte, vermehrte Auflage. Mit 133 Textabbildungen*, Berlin 1911.
- Salisch, Heinrich von (1885): *Forest Aesthetics*, transl. by Walter L. Cook; Doris Wehlau, Durham, N.C. 2008.
- Schmoll, Friedemann: *Erinnerung an die Natur. Die Geschichte des Naturschutzes im deutschen Kaiserreich*, Frankfurt; New York 2004.
- Shapin, Steven: "The Invisible Technician," *American Scientist* 77, 1989, p. 554–563.
- Sistola, Kalle: *Evolla Ensimmäisenä. Ewoisten metsänhoito-opistosta osaksi ammattikorkeakoulua 1862-2002*, Hämeenlinna 2002.
- Tsing, Anna Löwenhaupt: *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins*, Princeton, N.J. 2012.
- Uekötter, Frank: *The Green and the Brown: A History of Conservation in Nazi Germany*, Cambridge 2006.
- Wagner, Maria: *Goethe und die Forstwirtschaft*, Remagen 2011.
- Warde, Paul: *The Invention of Sustainability: Nature and Destiny, c. 1500-1870*, New York 2018.
- Warde, Paul: "Cameralist Writing in the Mirror of Practice: The Long Development of Forestry in Germany," in: Tribe, Keith; Seppel, Marten (eds.): *Cameralism in Practice: State Administration and Economy in Early Modern Europe*, Woodbridge 2017, p. 111–132.
- Wohlleben, Peter: *Das geheime Leben der Bäume. Was sie fühlen, wie sie kommunizieren – Die Entdeckung einer verborgenen Welt*, München 2015.