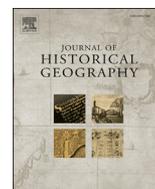




Contents lists available at ScienceDirect

Journal of Historical Geography

journal homepage: www.elsevier.com/locate/jhg

Spasmodic research as executive duties permit: Space, practice, and the localization of forest management expertise in British Columbia, 1912–1928



David Brownstein

Klahanie Research Ltd., 7-2160 W 39th Ave, Vancouver, British Columbia, V6M 1T5, Canada

ARTICLE INFO

Article history:

Received 28 May 2013

Received in revised form

12 January 2016

Accepted 12 January 2016

Keywords:

Localization

Historical geography of science

Forestry

Natural history

British Columbia

Canada

ABSTRACT

What are the mechanisms by which local knowledge spreads across space? By focusing on the methods that British Columbia foresters used to learn of the province's trees, we see that the Forest Branch performed the scientific work necessary to localize management models for use in a new place. With little authority and vulnerable to outside criticism, the Branch had to generate quality knowledge that would withstand the scrutiny of a powerful but fractious industry reluctant to submit to regulation. It also had to satisfy a general public becoming increasingly horrified by a landscape peppered with clearcuts growing in size. The urgency of forest regeneration problems in a context of increased logging pressured the Branch to transform its research from a spasmodic shared burden to the exclusive activity of a few individuals. Such centralization coincided with the birth of non-governmental forest policy critics, the societies and associations that would rail against forest management practices for decades to come. This necessitated a transformed structure from a dispersed, egalitarian network to a more centralized activity. These findings confirm observations regarding the spread of nineteenth-century environmental concerns, stress how unique ecologies constrained and shaped forestry more than simplified histories suggest, and contradict the assumption that German forestry science was hegemonic by the end of the nineteenth century.

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The period from 1912, when the British Columbia Forest Branch was established, to 1928, when Branch managers created the first forest experiment stations, was one in which the provincial Forest Branch has been described by Richard Rajala as 'very weak scientifically.'¹ Branch staff themselves characterized pre-1922 B.C. silvicultural research as 'carried on spasmodically by various technical officers ... as time from executive duties permitted.'² Despite these accusations of impotence, my research reveals this to have been an era in which the Forest Branch was very busy pursuing a strategy to confront sceptical challenges on two emerging fronts: first, from an industry reluctant to accept any

imposed logging regulations; and second, from an informed public beginning to question the impacts of logging, and not yet used to engaging with the state in environmental controversies. In combating these challenges the Forest Branch moved from a flat organization of egalitarian knowledge producers, to a hierarchical bureaucracy in which authority centralized in limited experts. Throughout the political struggles, the civil servants used the empirical theories of Prussian *Forstwissenschaft* to create a perception of authority. The cloistered nature of the branch's research gave the public they served, and subsequent scholars, the mistaken impression that B.C. forestry was the implementation of universal principles understood in common by foresters around the globe. In actual fact, European forestry practices had been imported in part (mensuration), while the crucial ecological details of forest regeneration (silviculture) was left entirely to local invention. Forestry practices had to be created anew. Thus the paper examines the spatial organization of scientific practice in a particular time and place—at once on the frontier of empire and the cusp of modernity.

E-mail address: info@klahanieresearch.ca.

¹ R. Rajala, *Clearcutting the Pacific Rain Forest: Production, Science and Regulation*, Vancouver, 1998, 112; Weak, however, was a word equally applicable to the entire civil service. See also R. MacDonald, 'The quest for 'modern administration': British Columbia's civil service, 1870s to 1940s, *BC Studies* 161 (2009) 9–34.

² J. Alexander, 'Silvicultural investigation in British Columbia, *The Forestry Chronicle* 3 (1927) np.

The historical geography of global forest science

In recent years, historians of science have become pre-occupied with problems of space and spatiality.³ Temporal demarcation (modernization, modernity) is increasingly complemented or even replaced by spatial concerns, often communicated in terms of globalization. This is a significant disciplinary shift because the founders of that field adopted, by definition, a nonspatial approach—they assumed that scientific knowledge circulated simply because it was true.⁴ Historical geographer David Livingstone sought to highlight the role of place in scientific investigation, emphasizing that scientific practices happen in places and they must be understood in their spatial patterns and contexts.⁵ However, the more local and specific our studies of knowledge production's contexts have become, the harder it is to see how knowledge travels from one place to another.⁶ Thus, if scholarship of the last 25 years was about the contextualization of knowledge production, many now seek to rectify this shortcoming by linking the local with the global as 'knowledge in transit'.⁷

Formerly diffusionist models have given way to interactive accounts. Knowledge grounded in European cultures, once transplanted, becomes hybrid.⁸ Tracing these movements necessarily emphasizes the connections and disconnections of science on the global stage. Historical geographers have enlisted the phrase 'translocal' as an analytical tool to stress that places represent networks of relations.⁹ 'The insight that the global is local at every point has troubled the ease with which local and global may be disaggregated.' Livingstone thus urges scholars 'to explore the mechanisms by which local knowledge spreads—and spreads unevenly—across space and time.'¹⁰

This contemporary spatial understanding of knowledge's spread exemplifies how *Forstwissenschaft* came to British Columbia and I demonstrate how this was transformed in the context of a North American ecology and politics. First, I review the international forest history literature to illustrate similar examples of the global, translated for use in new places. Next, the specific British Columbia narrative explores the complexities of knowledge localization. This arc follows the origin story of B.C. state forest management.

³ D. Finnegan, The spatial turn: geographical approaches in the history of science, *Journal of the History of Biology* 41 (2008) 369–388; R. Kohler, *Landscapes & Labscapes: Exploring the Lab-Field Border in Biology*, Chicago, 2002; S. Montgomery, *Science In Translation: Movements Of Knowledge Through Cultures And Time*, Chicago, 2000; J. Agar and C. Smith, *Making Space for Science: Territorial Themes in the Shaping of Knowledge*, London, 1998; D. Outram, New spaces in natural history, in: N. Jardine, J. Secord and E. Spary (Eds.), *Cultures of Natural History*, Cambridge, 1996, 249–265.

⁴ The more general observation can be found in J. Secord, Halifax keynote address: knowledge in transit, *Isis* 95 (2004) 654–652; An overview of this literature is R. Powell, Geographies of science: histories, localities, practices, futures, *Progress in Human Geography* 31 (2007) 309–329.

⁵ D. Livingstone, *Putting Science in Its Place: Geographies of Scientific Knowledge*, Chicago, 2003.

⁶ Knowledge's 'spacialiaion' from the lab to beyond, in Simon Schaffer's words. The eighteenth Brumaire of Bruno Latour, *Studies in History and Philosophy of Science* 22 (1991) 174–92.

⁷ Secord, Halifax keynote address, 660 and 664. See also S. Sivasundaram, Focus: global histories of science, *Isis* 101 (2010) 95–158.

⁸ H. Tilley, Global histories, vernacular science, and African genealogies; or, is the history of science ready for the world?, *Isis* 101 (2010) 114.

⁹ L. Cameron and D. Matless, Translocal ecologies: the Norfolk broads, the 'natural,' and the international phytogeographical excursion, 1911, *Journal of the History of Biology* 44 (2011) 15–41.

¹⁰ D. Livingstone, *Landscapes of knowledge*, in: P. Meusburger, D. Livingstone and H. Jöns (Eds.), *Geographies of Science, Knowledge and Space* 3, Dordrecht, 2010, 3–22.

¹¹ I borrow the title phrase 'itinerary' from N. Safier, Global knowledge on the move: itineraries, Amerindian narratives, and deep histories of science, *Isis* 101 (2010) 133–145.

Originally structured in an egalitarian research network the Forest Branch's process of knowledge translation came to involve what many laypeople take to be the hallmarks of scientific authority (standardization and quantification). These are in fact symptoms of a weak scientific discipline under epistemological attack. Public criticism gave rise to controversies which hastened a bureaucratic transformation by which expertise coalesced around dedicated researchers, unburdened by administrative demands. Province-wide field plots were abandoned in favour of limited sites and a call for experiment stations, creating a geography of knowledge production that would persist until late in the twentieth century.

An itinerary of localized European forestry ideals¹¹

My research on British Columbia confirms observations regarding the spread of nineteenth-century environmental concerns, but contradicts the assumption that 'by the end of the nineteenth century, German forestry science was hegemonic.'¹² While the specifics of German forest science were not transferred to British Columbia, the reductionist epistemologies that attend the western scientific tradition and its management regimes travelled intact to the west coast of North America.¹³

At the global margins of eighteenth- and nineteenth-century empires, administrators, natural historians and indigenous observers noted the European colonial projects' destructive impacts including deforestation, soil erosion, and desertification. Fears that these impacts encouraged climatic change and disease transmission inspired analytical thinking about the processes driving them. Those observing human-induced environmental impacts advocated conservation schemes to mitigate the problems they saw unfolding, and colonial states were receptive to these suggestions. Governments found the conservationist messages to their economic advantage because such management promised stable predictability, and the structures of forest protection were potentially useful in controlling those they viewed as unruly subjects.¹⁴

With a set of management problems identified, forest conservation advocates pointed to an already existing body of practice as the solution: *Forstwissenschaft*, or continental European forestry, the mathematically-based management of timberlands to provide a consistent, yearly maximized harvest of lumber. Until the end of the nineteenth century, Germany and France provided the models for national efforts in forest management. These ideas travelled first to India, and historians generally understand that this administrative prototype subsequently spread to the rest of the British Empire and the United States.¹⁵ Colonial botanists and bureaucrats did diffuse

¹² J. Scott, *Seeing Like A State: How Certain Schemes to Improve the Human Condition Have Failed*, New Haven, 1998, 19; 'The setting up of forest departments in different parts of the [British] empire however resulted in the creation of a homogeneous and assertive pan-colonial community of foresters.' S. Rajan, *Modernizing Nature: Forestry and Imperial Eco-Development 1800–1950*, Oxford, 2006, 13; 'Clearly, the forest bureaucracy and provincial government were in the powerful position of articulating a dominant vision ... Through all of these channels [public education campaigns and forest experiment stations] a hegemonic understanding of B.C.'s forested spaces was put in place.' D. Rossiter, *The Normal Forest: Producing British Columbia, 1859–1945*, unpublished PhD Thesis, Dept of Geography, York University, Toronto, 2005, 113.

¹³ I am indebted to an anonymous reviewer for this important distinction.

¹⁴ R. Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and The Origins Of Environmentalism, 1600–1860*, Cambridge, 1995, 7, 11 and 15. See also R. Judd 'A wonderful order and balance': natural history and the beginnings of forest conservation in America, 1730–1830, *Environmental History* 11 (2006) 8–36.

¹⁵ H. Lowood, The calculating forester: quantification, cameral science, and the emergence of scientific forestry management in Germany, in: T. Frängsmyr, J. Heilbron and R. Rider (Eds.), *The Quantifying Spirit in the 18th Century*, Berkeley, 1990, 315–342; G. Barton, *Empire Forestry and the Origins of Environmentalism*, Cambridge 2002, 65; S. Rajan, *Modernizing Nature*, 11.

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