



Helena Ekerholm, Karl Grandin, Christer Nordlund, Pateince A. Schell, eds. *Understanding Field Science Institutions*. Sagamore Beach: Science History Publications, 2017. 358 pp. \$20.00, paper, ISBN 978-0-88135-483-6.

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Long gone are the days when the history of the field sciences languished in obscurity. While historians clearly have recognized the rise of laboratories as powerful sites for the production of knowledge in the modern world, predicated upon their constructed placelessness, we also now have a robust scholarly literature on sites in the field where the particularities of place have been integral to scientific practice. This volume represents a diverse and global menu of case studies in the history of the field sciences, with a special focus on institutions—defined broadly as including not just long-term field stations but also less permanent infrastructures of various kinds. As a sampling of recent projects, this collection of essays—eleven chapters that are specific case studies, plus introductory and concluding chapters—reveals both the strengths and weaknesses of recent historical scholarship on the field sciences.

In defining the purview of the volume as “field science institutions,” the four editors, in their introductory essay, deliberately position the volume’s case studies in the borderlands between the field and other sites of science, such as laboratories, museums, libraries, and gardens. There is an inherent fuzziness, and considerable variability, in how the various authors conceive of institutions, ranging from several chapters in the final

third of the book that examine formal field stations comprising more or less permanent buildings to other chapters in the first and middle thirds of the book, which focus on travel infrastructure (especially ships) or movement through the field to gardens or libraries. Indeed, there is an implicit shift from field science institutions as technologies of movement to the establishment of more permanent built infrastructures (as well as an explicit trajectory from the British Empire to Scandinavia, by way of the Austro-Hungarian Empire, France/Monaco, and the United States!). In addition to defining the scope of the book as broadly as possible—including “not only formalized stations but also older and less static examples of infrastructures facilitating field practices” (p. 6)—the contributors also cover a wide range of field sciences, including not just the life sciences but also the geophysical sciences, with chapters on geological surveys, glaciology, and oceanography. There is a notably social interpretation of field infrastructures throughout the book, which could be complemented with even more attention to environmental history, indigenous or other forms of local knowledge, and scaling up of epistemic claims from the local to larger scales. Undoubtedly, though, casting such a wide net does

allow for ample and generative comparison of field practices across time and space.

The first three case studies range from the early modern period to the beginning of the nineteenth century and are all focused on British natural history, especially botany, with a recurring emphasis on libraries and gardens. In her chapter on how botanical books moved between the field, library, and garden in seventeenth-century Oxford, Anna Svensson traces a seemingly paradoxical shift away from the authority of the book and toward observations of plants themselves in field and garden, yet with an enhanced role for books as “paper technologies” making that very movement itself possible. In the next chapter, Anne Marriss also centers the book in field travel, but specifically aboard ship during James Cook’s second circumnavigation from 1772 to 1775, and particularly visual images such as zoological and botanical drawings, arguing for how those books and images enabled knowledge production while on the voyage itself. Both of these case studies usefully treat books as technologies. By contrast, John McAleer’s chapter on the establishment of botanical gardens in far-flung imperial sites such as St. Helena, Ceylon, and the Cape of Good Hope places its narrative emphasis squarely on the role played by local correspondents, context, and purposes, based on records of the East India Company and the letters of Joseph Banks. It would be interesting to know even more about the specific environmental conditions and indigenous knowledge of these places, which McAleer’s decentralized approach so decisively invites.

The middle four case studies are more disparate, but retain a strong focus on movement and travel, from the middle of the nineteenth century to the early twentieth century. Patience Schell, one of the volume’s editors (and also the author of the concluding essay), follows the survey and collecting work of the often neglected Scottish naturalist James Trail in the Amazon region during the era of steam navigation, with some explicit attention

to local knowledge as well as a central focus on the travel infrastructure itself. Drawing heavily on Trail’s journals from the 1870s, Schell provides a fine-grained analysis of ground-level scientific practice and infrastructure, with comparisons not only to other scientific travelers in the Amazon but also to other eras of field science. Next, Marianne Klemun’s case study of the mid-nineteenth-century Austrian Geological Survey provides a rather different perspective on the organization of field survey science, examining the perspectives of both survey officials and local volunteers in several distinct regions mapped by the Habsburg Empire, thereby providing a useful and systematically comparative analysis of social class and power relations in field science, although with less emphasis on the varying natural environments. Next is a pair of essays on marine science that takes us into the early twentieth century, the first a fascinating and engaging study by Antony Adler of the key role in oceanography’s patronage played by Prince Albert of Monaco, through yachts, museums, and international connections, and the second a more site-based comparative study by Samantha Muka of the Marine Biological Laboratory at Woods Hole, Massachusetts, and the Dry Tortugas field station of the Carnegie Research Laboratory near the Florida Keys. By looking in detail at the place-based requirements of neurophysiology research—and medusae as model organisms—Muka contributes keenly to scholarly debates about scientific practice in the borderlands between lab and field in the life sciences.

The final four case studies continue this emphasis on field stations, focusing on Scandinavian examples in the twentieth century and beyond and spanning from field biology to glaciology. Helena Ekerholm, another of the volume’s editors, examines the Vassijaure and (later) Abisko field research stations in northern Sweden, which served a range of life and earth sciences, in the first third of the twentieth century, tracing archivally the stations’ myriad organizational and disciplinary conflicts. Sverker Sörlin investigates another

er Swedish field station, at Tarfala, but focused more narrowly on one discipline (glaciology) and how it functioned to build credibility and authority for a particular school of thought (Hans Ahlmann's) through rigorous instrument-based measurements. In deploying a "microgeographical" approach to study, the field station that is also more explicit about its connections with environmental history than most other case studies in the volume, Sörlin also connects his work to global climate change research, which raises intriguing questions for me about the scaling up of epistemic claims beyond the local site. In the final two chapters, Gro Ween considers field biology at the Kevo Subarctic Research station in Finnish Lapland, and Anna Tunlid scrutinizes ecological research at the Askö Laboratory on the Swedish coast of the Baltic Sea. In studying recent history, both Ween and Tunlid adopt a more ethnographic approach to the practices of social life and collaboration at these Scandinavian field stations, with particular emphasis on gender relations and the building of interdisciplinary connections, respectively.

When I was first working on this review, I worried that the book might no longer be available, due to the uncertain status of Science History Publications. For quite some time, there was no evident way to purchase a copy online anywhere, and precious few libraries in the world had a copy listed as available on WorldCat. I worried that my necessarily brief descriptions of the contents might be the only way most readers would be able to know what was in this edited volume. I dithered and delayed in finishing my review, hoping that it would eventually become available, so that I wouldn't bear the sole responsibility to bear witness about what was in it. Happily, the collection has now become available online again, on the publisher's website and for an unusually affordable price, especially for a scholarly edited volume of specialized case studies. For readers interested in the history of the field sciences and their practices since the early modern period, this

would be a useful, perhaps essential, acquisition, and scholarly libraries would do well to add it to their collections so that these valuable case studies are available for future historians of the field sciences.

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