

Introduction

Carin Berkowitz and Bernard Lightman

Up through the eighteenth century, private collectors amassed collections that included natural objects like rocks, taxidermied animals, handmade artifacts such as tools, and cultural objects from far-off places.¹ Collections, sometimes literal cabinets of curiosities and sometimes whole rooms or houses full of artifacts, were navigated with the help of their owner-collectors. By the early part of the twentieth century, most collections were instead housed in imposing stone structures—public museums devoted to sorting and describing collections in such a way that a visitor could make his or her way through without accompaniment. If this account is one painted with a broad brush, the shift was nonetheless dramatic. And to a very great extent, it took place over the nineteenth century, a period during which exhibitions of collections became public and their purposes were separated into distinct categories.

This volume promises to address and contribute to an evolving scholarship on museums, their exhibitions, their personnel, and their publics by looking at precisely that dynamic period. It does so by building upon themes present elsewhere in the historiography, both by blurring the lines that have been defined by contemporary museums and reified by previous historians and also by drawing out new connections between museums and cultural, social, and political institutions and trends. One line that emerges in this edited volume as particularly porous is the attempt to distinguish between museum and exhibition. By treating museums as permanent exhibitions we have found connections to other forms of display and entertainment simultaneously, making them much more than the history of stately buildings called museums with their purposeful scientific holdings. The constraining focus of this volume, the nineteenth-century English-speaking world, frames these connections.

The nineteenth century saw the museum as we know it, an institution of expert knowledge built to inform a lay public, emerge from a much broader mix of places, objects, and performers on which it drew. The juxtaposition of Britain and the United States—between an old world and a new one, an established empire and an emerging one, a country where social stratifications were treated as transparent, native, and accepted and one in which social stratifications were obscured or denied—allows us to examine the ways in which nationalism, politics, and social structures were embodied in attempts to display natural knowledge. We see the comparison of related but distinct national trajectories of these two countries as providing a context in which relationships of museums and exhibitions to broader social and political worlds can be explored. Chapters like those by Iwan Morus, Caroline Cornish, Pamela Henson, and Carin Berkowitz, for instance, all describe the ways in which ideals of nationalism or empire, class politics, or democracy permeated the museum's walls.

This collection is not exhaustive or even systematic but, rather, suggestive, providing examinations of idiosyncratic institutions and figures in an attempt to sketch out a broader trajectory. While this collection is organized thematically as one means of highlighting important ideas shared by different chapters, in this introduction we suggest additional possibilities for connection—and other arguments and contributions to be found across the chapters. We hope that readers will bring all of these connections, as well as their own, to the pieces contained here.

Museums in the History of Science

Until recently, the scholarship on scientific exhibitions and museums followed two separate tracks. One of the most influential books on exhibitions was published almost forty years ago: Richard Altick's *Shows of London* (1978) dealt with public nontheatrical entertainments or "exhibitions." He defined exhibitions as "displays of pictures, objects, or living creatures, including human beings, that people as a rule paid to see." Altick's book is a gold mine of information on waxworks, wondrous machines, panoramas, dioramas, and freak shows. Although Altick limited his analysis to London, he claimed that Londoners' tastes in exhibitions were similar to those of people living in the provinces.² He also argued that mass taste remained remarkably constant from about 1600 to the mid-nineteenth century, but that in the second half of the century the public became interested in drama and new forms of stage entertainment such as the music hall. Many earlier kinds of spectac-

ular entertainment surviving only on the periphery of London as vestiges of an outdated popular culture were being replaced by a more staid museum culture devoted to rational recreation. "As the focal point of London shows symbolically moved from Leicester Square to South Kensington," Altick declared, "the age of exhibitions was succeeded by the age of public museums."³ For Altick, the age of spectacle reached its climax at the Great Exhibition of 1851. Subsequent scholars working on nineteenth-century exhibitions agreed that the Great Exhibition was significant.⁴ But they have also explored the successor to the Great Exhibition, which reopened at Sydenham in 1854, as well as the series of international fairs that followed, including the Paris Exposition Universelle (1889), the World's Columbian Exposition in Chicago (1893), and the Louisiana Purchase Exposition held in St. Louis (1904).⁵

Recent scholars have also investigated broader facets of scientific exhibitions, including less well-known sites, displays of living humans, and the role of performativity. In the edited volume *Popular Exhibitions, Science and Showmanship* the contributors move away from major museums and international exhibitions to focus on regional, smaller, and often obscure venues. Like Altick, they deal with magic lantern shows, lectures, electrical experiments, panoramas, spiritualist séances, freak shows, demonstrations of natural magic, the *conversazioni* of scientific societies, and Egyptian mummy un wrappings. However, instead of insisting on Altick's concept of a widely shared mass taste, the contributors point toward the uniqueness of each site. "Each of them had its own particular space, strategy and language of display," the editors insist, "as well as drawing on and being contextualized by the showmanship of other forms of popular entertainment."⁶

A more usual approach for historians of science has been to focus not on the popular tastes and crowds studied by Altick but on aspects of the large, well-known natural history museums such as the British Museum and the Smithsonian Institution.⁷ Here the emphasis is often on significant nineteenth-century museum curators such as Louis Agassiz and Richard Owen. Mary Winsor, for instance, suggests that Agassiz's Museum of Comparative Zoology at Harvard, founded in 1859, was designed by Agassiz to be a fortress against evolution, illustrating patterns of organic similarity as shown by morphology, embryology, palaeontology, and geographic distribution. This arrangement was intended to lead the visitor to admire the Creator. This was different from the plan of many other natural history museums, which also displayed collections in accordance with the beliefs of their main curators, often guarding

against evolution by exhibiting the delicate beauty of a butterfly's wings or other illustrations of design in accordance with Oxbridge natural theology.⁸ Owen was the curator of the museum at the Royal College of Surgeons, superintendent of the Department of Natural History at the British Museum, and founder of the Museum of Natural History. For him, in contrast to Agassiz, museums were meant to illustrate the principles of Oxford natural theology and German idealism. Nicolaas Rupke argues that Owen's career, which lasted from 1827 to 1883, coincided with the "age of museums," the period in which most of Britain's great museums were founded.⁹

It should be noted that Rupke's periodization differs significantly from Altick's contention that the age of exhibitions gave way to the age of museums in the middle of the nineteenth century. The chapters in this collection are more in line with Rupke's periodization, which suggests that museums and exhibitions flourished at the same time, shaping each other in the process. Stately public museums and their experts emerged out of this period of coexistence, becoming standard only at the end of the nineteenth century and in the early twentieth century. As Samuel Alberti has recently pointed out, while museums were founded in the middle decades of the nineteenth century, their architectural history and the history of their audiences suggests that building expansion coincident with an uptick in visitors and, relatedly, increasingly frequent exhibitions and fairs, all came later, during the period of 1880–1930.¹⁰ The age of museums (if we take their periodization in the broadest way possible and include the period 1850–1930) was also an age of great change in science, of course. Darwinism helped to justify long-held taxonomies of species. Railroads brought natural specimens across vast distances. Industry changed the way humans interacted with the natural world. All of these changes were embodied and displayed in exhibitions and museums.

More recent studies have shifted attention away from individuals and single institutions toward the materiality of museums (whether in the collections or the buildings in which those collections are housed), the invisible technicians who worked alongside the eminent scientists, and the role of museums in the pursuit of international status and in the construction of national and regional identity. Steven Conn has detailed the ways in which the most famous American museums, built in the second half of the nineteenth century, attempted to describe and categorize the entire world, looking to the objects themselves as a source of knowledge, and in the process helping to shape American intellectual

history.¹¹ Alberti has pointed to what we can learn from examining the trajectories, or biographies, of common specimens and “the relationships they form with people and other objects.”¹² Both Sophie Forgan and Carla Yanni have argued persuasively that if we take into account the architecture of museums we can discover how ideologies are encoded into their structure.¹³ The chapters by Cornish and Henson in this collection both contribute to this literature by analyzing the ideological function of museum displays, while Alberti’s study of the Manchester Museum attends to the museum’s invisible technicians.¹⁴

The national and international dimensions of museums have also been explored in recent scholarship. Science museums can be dynamic forces for promoting national self-consciousness. Kohlstedt insists that in its first fifty years the Smithsonian Institution drew on the scientific exploration of the American West to establish its reputation as a leading natural history museum while at the same time contributing to the formation of the American identity.¹⁵ And elsewhere, Kohlstedt has shown how a new breed of professional museum administrators recognized the importance of collaboration with their counterparts across the Atlantic. She analyzes the 1889 tour of major museums in Britain and northern Europe made by Otis T. Mason, curator of anthropology at the US National Museum.¹⁶ The collection of essays in this volume builds on this scholarship and explores national and international themes by examining both North American and British museums and by investigating how displays of nature were entangled with issues of national identity, empire, and imperialism.

Alberti locates the origins of this new scholarship in the emerging field of museum studies in the 1990s, when earlier progressive historiographic accounts were replaced by investigations of the multiple genealogies of collecting and collections, variously informed by structuralism, poststructuralism, and postcolonialism: “Museums were cast as political instruments, machines for making meaning and imposing particular behaviours on their visitors. These approaches have been developed and refined by art historians, cultural theorists, and anthropologists and historians of science.”¹⁷ In adopting these approaches, historians have treated museums as sites for the production of knowledge similar to laboratories, lecture halls, and the field and as locations for the consumption of knowledge similar to the theatre, the concert hall, the garden, and mass media.

But perhaps the most important development in recent scholarship has been the study of science museums and science exhibitions in rela-

tion to each other, which has made possible the approach we are following in this volume. Important in this context is Tony Bennett's *The Birth of the Museum*, a good example of the new scholarship of the 1990s. Here he extends Foucault's reflections on the panopticon to public institutions of display. We are, however, more interested in Bennett's concept of the "exhibitionary complex," which encouraged scholars to think of museums and exhibitions as part of a larger entity sharing similar characteristics. He explicitly grouped the British Museum, as well as other museums, together with more temporary and dramatic exhibitions, such as the Great Exhibition and Wylde's Great Globe.¹⁸ At one point he refers to *Shows of London*, and remarks that the shift of emphasis from surveillance to spectacle evident in the Great Exhibition and museums of the period could be detected easily with only "a cursory glance" at all of the exhibitions dealt with by Altick.¹⁹

Whatever may be said of Bennett's Foucauldian analysis of the museum (a theoretical approach we do not adopt here), the advantage of his concept of the museum complex is clear: it deals with both museums and exhibitions as sites of scientific display that developed simultaneously. This means following objects, exhibitors, and theories both within the walls of museums and beyond them, considering not only static displays but, crucially, the performances and theatrical settings that brought knowledge to life. Physics and chemistry, while at times represented in natural history museums, relied centrally on performances to reach wide audiences. In his contribution to *Science in the Marketplace*, Morus has argued that "performances—making science and its products visible, pulling in the crowds and amazing them with nature's wonders—were part and parcel of the business of making science and its products real to their audiences."²⁰ Morus examines the technologies of display used most widely in scientific performances, such as oxyhydrogen microscopes and gigantic electrical machines. These technologies not only produced spectacular effects, they also generated authority for those scientists who could control them with skill.²¹

In her *Peoples on Parade*, Sadiya Qureshi has drawn our attention to exhibitions of living foreign humans, often colonized peoples who were imported to perform songs, dances, and other ceremonies supposedly in the service of anthropological science. Qureshi argues that the staged quality of these performances turned "natives" into "professional savages."²² These human displays were at their most popular following the Great Exhibition. By the 1880s foreign peoples were displayed by the hundreds, housed on-site in supposedly authentic native villages.

In order to track the development of this form of cheap mass entertainment, Qureshi “visits” a variety of exhibition venues and international fairs.²³ Likewise, in her contribution to the volume on *Evolution and Victorian Culture*, Qureshi has taken her argument a step further. She discusses how world’s fairs were instrumental in publicly exhibiting evolutionary theories.²⁴ Evolutionary narratives and exhibits of people from far-off lands may have provided entertainment, but they also helped to create a sense of hierarchies of civilization and to legitimate imperialism of the sort that was on display at the Smithsonian or at Kew Gardens (as discussed in this collection). Anthropological and ethnological museum collections, whether the National Museum in Washington or the Pitt-Rivers in Oxford, likewise realized many of the messages of these sensational exhibitions in a permanent form. If the museum can be grouped with these variable sites of production, performance, and consumption of science and entertainment, including the “Shows of London” (and of New York, Philadelphia, and other cities), it is a relatively small step to include exhibitions with these diverse scientific places and spaces.

Although Alberti asserts that museums reached their apogee in status as a site for the production and consumption of natural knowledge from the 1850s to about 1930, museums were important scientific sites even before the middle of the nineteenth century.²⁵ Both the already mentioned collections—*Popular Exhibitions, Science and Showmanship* and *Science in the Marketplace*—treat museums and exhibitions as members of the same family of institutions.²⁶ The authors provided new insights into such themes as performativity and the experiences of audiences in both types of institutions. In this volume we begin to explore more deliberately what museums and exhibitions shared in common. So, for example, take the issue of their proprietary status. In his piece on the spectrum of modes of ownership adopted by British museums in the nineteenth century, Alberti has shown that the categories “public” and “private” were fluid and contingent.²⁷ Can the same be said about “public” and “private” exhibitions? In fact, comparative studies of museums and exhibitions open up a wide range of important questions, many of which we have tried to address in this book.

Organizing Our Collection

The volume opens with a section on “Sites of Miscellaneity,” with pieces by Bernard Lightman and Katherine Pandora on museums as just one space within which the miscellany of science was being presented to popular audiences. In fact, this volume demonstrates that miscellany,

rather than being an analyst's catch-all category for the ill defined, was instead an early nineteenth-century genre, and one that characterized museums, exhibitions, and literature. Lightman's chapter on the Colosseum in London traces the Regent's Park institution from its opening in 1829 through to its close almost fifty years later, chronicling its several incarnations and various exhibits that ranged from an aviary to a model Swiss cottage and from natural history specimens to panoramas. Lightman makes clear that while the Colosseum contained what we might recognize as scientific displays, those displays were not treated by the museum's proprietors or audience as categorically different from other sorts of exhibits that also presented the arts and sciences side by side. Katherine Pandora's "The Permissive Precincts of Barnum's and Goodrich's Museums of Miscellaneity" describes the even more wide-ranging variety of subjects that made up P. T. Barnum's American Museum and Samuel Griswold Goodrich's books, both of which embraced the possible as much as the real but also provided access to fossil specimens and early accounts of theories of evolution. Pandora argues that the genre of miscellany encompassed literature in ways that paralleled museums, helping to redefine the scope of museum studies to include collections and showcases of the textual variety. Together, these two pieces help to expand and blur historiographical categories and to argue for the connectedness of scientific knowledge and scientific museums to other forms of knowledge and display.

Although miscellany characterized displays for the public, those exhibits existed alongside much more specialized institutions built to collect and showcase natural knowledge for experts. The section "Display and Expertise" reveals the ambiguity and complexity of public venues. The museum was very much a category still in flux, and a range of institutions guided its ultimate trajectory. Samuel Alberti's chapter on the Royal College of Surgeons makes the argument that the interior and exterior architecture of the museum changed along with the purpose and scope of the museum, embodying shifts in the discipline of surgery and its associated fields of anatomy and physiology. Like Alberti's chapter, Iwan Morus's "Sight and Sites: The National Repository and the Politics of Seeing in Early Nineteenth-Century England" focuses on a particular place whose elements are recognizable as a museum. The National Repository housed scientific inventions, and although it clearly focused on collections demonstrating expertise, Morus describes how its displays also raised the question of whose expertise was on show, by whom, and for whom, questions that became central.

Questions of expertise that plagued Morus's actors were also at play in less august spaces. In the section on "The Scientist-Showman," Jeremy Brooker and Lukas Rieppel describe the encounters of establishment science with science at the margins, science performed by men who attempted to craft identities as scientist-showmen and maintain the legitimacy of their knowledge at the same time that they profited from it. Brooker's central figures, Henry Morton, John Tyndall, and John Henry Pepper, all magic lantern operators, together form a sort of spectrum of personas available to the scientific lecturer. Morton provided an example for the second two, with Pepper having adopted the showman's personality and Tyndall becoming recognized as among the scientific establishment's more powerful figures. Rieppel's sea monster discoverer, Albert Koch, similarly put on shows for paying audiences, in his case made up of fossils that were treated by some naturalists as legitimate scientific discoveries, by some as the naïve work of a collector but not a scientist, and by some as a fraud. Both Koch and Morton provide excellent examples of the ways in which nineteenth-century showmen and men of science fashioned public personas, self-consciously creating identities and sometimes drawing on the examples of others. The lines delineating science from spectacle had not been indelibly drawn, so personas were often mixed, and the questions of how to display and how and whether to profit from scientific work were, as yet, unsettled.

Scientific expertise and profit from scientific work were core issues within state-sponsored museums, which showcased a nation's science for its citizens. Scientific work displayed for the good of the nation and its industries forms a common thread linking Pamela Henson's and Caroline Cornish's chapters, which form a section on "The National Museum." Henson's chapter on G. Brown Goode and the early years of the Smithsonian Institution's museum makes clear some of the tensions between comprehensive collecting and an ordered, comprehensible museum—miscellany might have provided interest for a lay audience but it did not necessarily lend itself to depicting nature and her experts as rational. Curators at the Smithsonian did their best to organize the millions of specimens that inundated them, using labeling, storylines, and relationships between raw material and commercial products to tame the overabundance in ways that still allowed them to insist that theirs was an American museum for a democracy. Cornish's account of Kew Gardens demonstrates that the British were using similar techniques—labeling, functional groupings, illustrated series—to display the potential and the fruits of empire. Displays of economic botany were craft-

ed by a scientific elite but geared toward merchants and artisans. In both cases, the emphasis was on creating an exhibition framework that was deliberately related to scientific insights even as it demonstrated the order of nature.

While Cornish and Henson describe large, comprehensive, institutional collections, “The Research Museum” section’s chapters by Carin Berkowitz and Sally Gregory Kohlstedt explore the history of museums in which collection and research, rather than display to a broad public, were central. Berkowitz’s account of the networks of collaboration and the sharing of specimens among naturalists at private and public natural history museums makes a case for the emergence of a moral economy of mutuality that flourished in the absence of scarcity. This cooperation allowed for the building of American scientific institutions and a network of emerging professionals. Kohlstedt also discusses how museums promoted American science and science education through her account of museums in collegiate settings, moving from private colleges to universities in the Midwest. Demonstrating the link between state-funded surveys and academic disciplinary development, her chapter emphasizes simultaneously the emerging nineteenth-century links between field naturalists and museum professionals working in the laboratory. Both papers reveal the inevitability of dedicated scientific curators needing to shape exhibition materials for a larger, interested public.

Together, then, this collection spans the Atlantic, encompassing private and public museums. It examines both short- and long-term exhibitions, as well as museums built for entertainment, for education, and for research. The contributors demonstrate the amorphousness of now-familiar categories in the nineteenth century and reflect the then-undetermined meaning of “museum.”