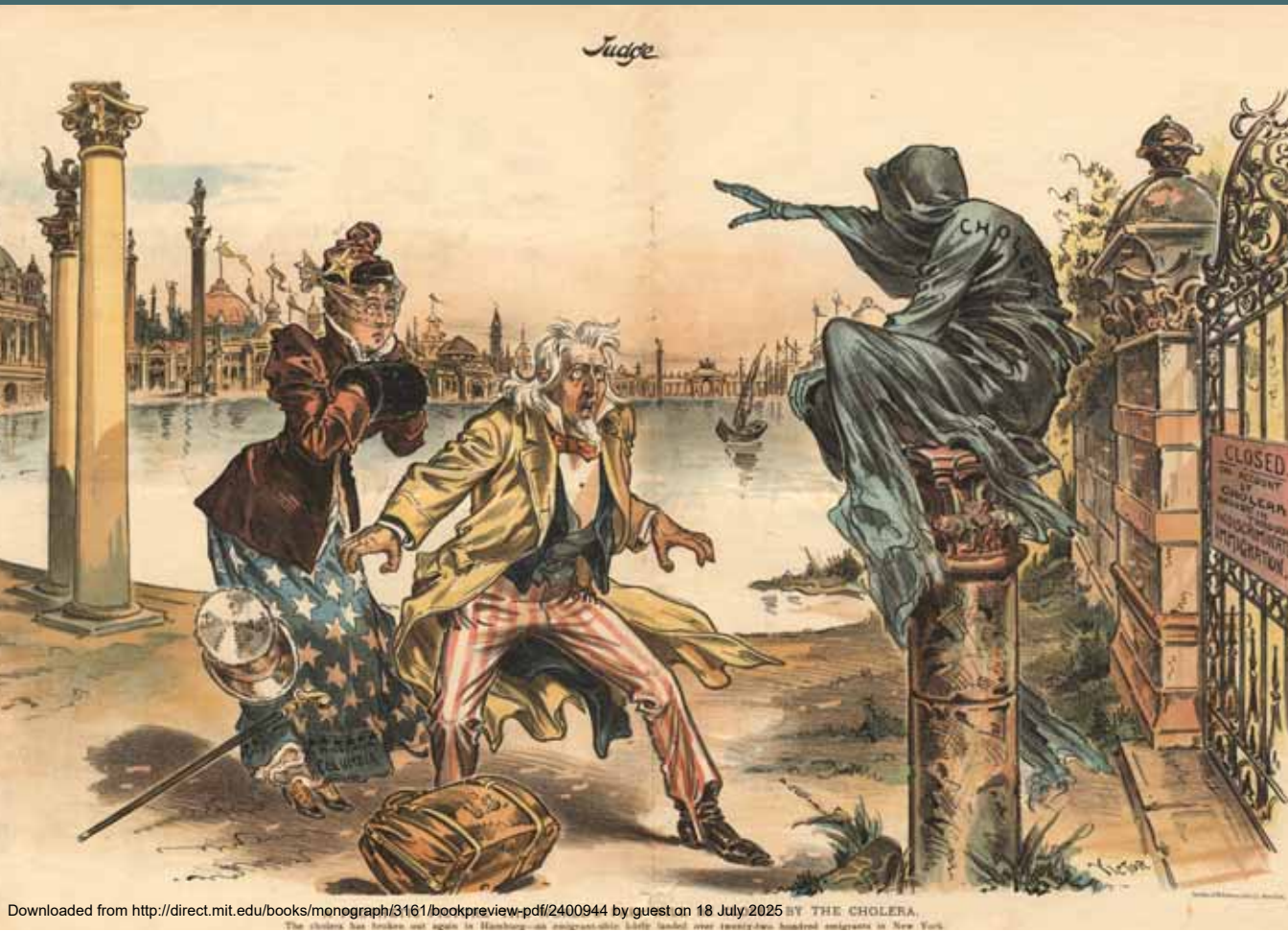
HEALTH AND MEDICINE ON DISPLAY

International Expositions in the United States, 1876–1904

JULIE K. BROWN



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The MIT Press Cambridge, Massachusetts London, England

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This book was set in Janson and Rotis Sans by Graphic Composition, Inc., Bogart, Georgia. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Brown, Julie K.
Health and medicine on display : international expositions in the United States, 1876–1904 / Julie K. Brown.
p. ; cm.
Includes bibliographical references and index.
ISBN 978-0-262-02657-4 (hardcover : alk. paper)
1. Public health—United States—History—Exhibitions. 2. Medicine—United States—History—Exhibitions. 3. Exhibitions—United States—History—19th century. 4. Exhibitions—United States—History—20th century. I. Title.
[DNLM: 1. Exhibits as Topic—United States. 2. Public Health—history—United States. 3. Communicable Disease Control—history—United States. 4. History, 19th Century—United States. 5. History, 20th Century—United States. 6. Military Medicine—history—United States. 7. Sanitation—history—United States.
WA 11 AA1 B879h 2009]
RA438.U5B76 2009
362.1—dc22
2008041725

10 9 8 7 6 5 4 3 2 1

To Margaret and Paul
whose work respectively in medicine and the visual arts
continues to inspire my own

Contents

Preface

This work has given me the opportunity to study a vast specialist literature on health and medicine and to relate it to the history of expositions. My background in visual culture, technology, and social history, and the knowledge I have acquired in writing two books on the history of exhibits at expositions, fairs, and institutions, helped me to pursue the question of what people saw and learned about health and medicine at these events. While I have collected a rich visual document of what was shown, I leave it for others to explain more fully the implications of this evidence and to use it to better understand the important cultural and social transition that occurred at the end of the nineteenth and beginning of the twentieth century. I wish to acknowledge the community of scholars in the history of medicine and science that so graciously welcomed me as a newcomer to the field. Their support is testimony to the shared goals that exist between the sciences and humanities. As an independent scholar, I have depended on the support of several institutions whose resources, both in expert staff and collections, have deeply informed this work. For their commitment and support of this kind of research scholarship, I wish to thank them both collectively and individually.

While the Smithsonian Institution's extensive "Books of the Fairs" collection has been available on microfilm since 1989, I had the opportunity to work with the original publications housed in the Dibner Library of the History of Science and Technology, thanks to a grant from the Smithsonian Institution Libraries Special Collections in 2000. Less extensive but also important are the international exposition materials in the collections of the Getty Research Institute Library, where my work on these was supported by The Getty Research Program Grant in 2002. Since the initial focus of this book was on the 1904 St. Louis exposition, it was essential to have access to the extensive archival holdings of the Missouri Historical Society, which provided a research fellowship in 2002 for this work. At the

Historical Society I was generously assisted in many ways by the staffs in the Library, Manuscripts, and Photographic collections. My introduction to the vast richness of the resources of the National Institutes of Health and the National Library of Medicine was made possible by the Stetten Museum of Medical Research with a John J. Pisano Travel Scholarship in 2002. Victoria Harden, director of the Stetten Museum, offered generous encouragement both then and afterward. Following this, my interest in exhibitions was recognized with a fellowship at the Smithsonian Center for Education and Museum Studies in 2002–2003 supported by the Smithsonian's Women's Committee. Here I benefited from participation in symposia, contact with other research fellows, and access to key resources in the Washington area. The Otis Historical Archives of the National Museum of Health and Medicine was another rich repository for research materials, and the collegiality of Jim Connor and Michael Rhode was especially important at this time and thereafter.

While the tenure of my various research grants and fellowships was always brief, my ongoing affiliation as research associate with the National Museum of American History of the Smithsonian Institution has continued and has deeply enriched my professional life and research over the years. For this I am deeply indebted to Ray Kondratus and Deborah Warner for their support, as well as Suzanne McClaughlin for making this possible. Finally, it was the National Library of Medicine Publications Grant from the National Institutes of Health in 2005–2007 that enabled me to truly have the time and resources to transform my research into publication form. Over the years that I worked in the collections of the National Library of Medicine, Elizabeth Fee, Michael Sappol, Stephen Greenberg, Paul Theerman, and other staff members of the History of Medicine Division were always helpful and encouraging. The library resources of the Elizabeth Maddux Library of Trinity University in San Antonio, of the University of Texas at San Antonio, of the Perry-Castañeda Library and Harry Ransom Humanities Research Center of the University of Texas at Austin, and of the San Antonio Public Library have all been indispensable for this work. Special thanks also to Linda Lohr of the Robert L. Brown History of Medicine Collection, University of Buffalo, and to Jean Goosebrink of the Special Collections in the St. Louis Public Library.

There are individuals as well as institutions that have made this research possible. I wish to thank Robert Rydell, Ted Brown, John Parascondola, and Roy Flukinger for their professional generosity when a grant letter was necessary. Also, I am grateful to Kirsten Gardner for my affiliation with the University of Texas at San Antonio, which in turn made possible library

privileges and access to interlibrary loan services for many years. Finally, my appreciation goes to Dr. Abraham Verghese and Dr. Marvin Forland for facilitating my ongoing affiliation as associate faculty with the Center for Medical Humanities and Ethics at the University of Texas Health Science Center at San Antonio. For the preliminary preparation of this manuscript, the assistance of John Banplied is also gratefully acknowledged. My deepest appreciation goes to Marguerite Avery of the MIT Press for her sustained commitment to this project and to Matthew Abbate who skillfully guided its transformation from manuscript to publication.

The support from friends and relatives during the past seven years of this work goes well beyond the generosity of their hospitality: to my Rochester family, Peter McGraw, Robin and Christine McGraw, and the families of my niece and nephew; to Sally Strain and Dick Walker, Isabel Scharff, Fran Keenan, Mary and Bob Stanford, Mary Anne Keyes, and Julia Ballerini. When friendship and collegiality overlap, it is a true gift and one that I have been fortunate to share with Mike Sappol, Alice Kersnowski, and Diana Kleiner, all of whom contributed in countless ways in keeping the life of the mind and spirit alive over the years of this work.

And finally, my thanks to John for sustaining me through this long process; to my daughter Margaret, for her deep friendship and wisdom on all things that truly matter, and to her husband, Travis, and my new grandson, Leo Henry Jordan; and to my son Paul, for gently sharing his extensive computer expertise and always showing what it is to be a fine human being.

Health and Medicine on Display

| 1 |
EXPOSITION INFRASTRUCTURE AND EXHIBITION DISPLAY: AN INTRODUCTION

> In its broader sense, the study of hygiene includes the examination of the conditions which affect the generation, development, growth and decay of individuals, of nations, and of races. . . . It is evident, therefore, that hygiene is not only a subject of scientific interest to the student, or to medical men, but that to the political economist and to the legislator its problems and discoveries ought to be of practical importance.
>
> *John Shaw Billings, M.D., 1879*[1]

In 1879, one of America's foremost medical thinkers, John Shaw Billings, M.D., librarian of the Army's Surgeon General, set forth a new approach to health for the last quarter of the nineteenth century. Billings challenged health professionals and society as a whole to consider health in its broadest contexts of growth and decay as it affects individuals and the nation. This was an important precedent for this period, when these ideas on what constitutes the individual's and the nation's health were being formulated, and it is a history which may seem unfamiliar to us today, given our fragmented experience of specialized medicine and privatized health services.

This book follows two aspects of this story as they played out at the period's great international expositions. One is how the expositions' infrastructures and urban settings demonstrated the advances in applied health and medical practice; the other is how their exhibits attempted to connect the public with issues directly related to modern health and medicine. Together they give a more complex picture of how expositions helped foster a public awareness of health and medicine during the critical years of 1876 to 1904, as the country moved from the excesses of the Gilded Age into the early reform years of the Progressive Era.

International expositions were transmitters of a new visual culture through their massive assembling of exhibits and public audiences. While

the literature on expositions is extensive, the story of how they served to connect the public to changing views of modern health and medicine has remained untold.[2] To construct and operate an exposition entailed providing emergency medical treatment, ensuring access to safe water, and preventing infectious disease for thousands of workers and millions of visitors. While this work had parallels to the contemporary problems facing urban health officials of the period, the experiences of exposition organizers did not have clear precedents and often involved conflicts with both municipal health officials and the existing health resources of the cities in which the expositions were set. Making exposition exhibits that represented issues of modern health and medicine was also not without its challenges. Participation by many inexperienced exposition exhibitors from state health agencies, private health associations, and health care institutions required new skills that took time to evolve. Direct competition from exhibits by well-funded government medical departments of the military services placed additional pressures on these exhibitors to create interesting and informative formats for presenting health and medical issues.

The years between 1876 and 1904 were a dynamic period that coincided with the gradual transition from the sanitarian reform movements begun in the 1850s to what was called "sanitary science," which emerged by the turn of the century. While the new applied sanitary engineering and laboratory technologies in bacteriology created significant changes in health and medicine, their effects on society were gradual and sometimes uneven. The expositions we are discussing took place against a powerful struggle between the advocates of traditional medical practice and the new professionals responsible for the nation's health.[3] Reflecting this transition was the shift in terminology from "hygiene" to "health," from "state medicine" to "public hygiene," from "sanitary movement" to "sanitary science."[4] Significant institutional changes were also being made in the care of the mentally ill and in the expanded role of hospitals and their use by the general public.[5] With the recently emerging fields of state medicine and public hygiene, the stage was set for viewing disease not just as a medical issue but as a responsibility for the whole society.

Significant social, economic, and political changes were also occurring in the United States itself during this thirty-year period. Even while extraordinary growth in urban centers was being applauded as a sign of progress, problems of sanitation, water, and sewage had begun to cause serious concern in communities large and small across the country.[6] Rapid industrialization was propelling the country forward economically, despite

recurring economic depressions, but workers' health and occupational disease still remained elusive subjects for medical professionals and were on the periphery of public consciousness.[7] Expansion of international trade activities and proliferating military interventions by the U.S. government, particularly as a result of the Spanish-American War, had serious consequences for the nation's health, with respect to both quarantine and disease. Finally, the transformations caused by massive immigration, expanded transportation, and increasing technology in communications media also had broad repercussions for the nation's health. The confluence of all these changes played out within the four international expositions discussed in this book: the 1876 Centennial Exhibition in Philadelphia, the 1893 World's Columbian Exposition in Chicago, the 1901 Pan-American Exposition in Buffalo, and the 1904 Louisiana Purchase Exposition in St. Louis.

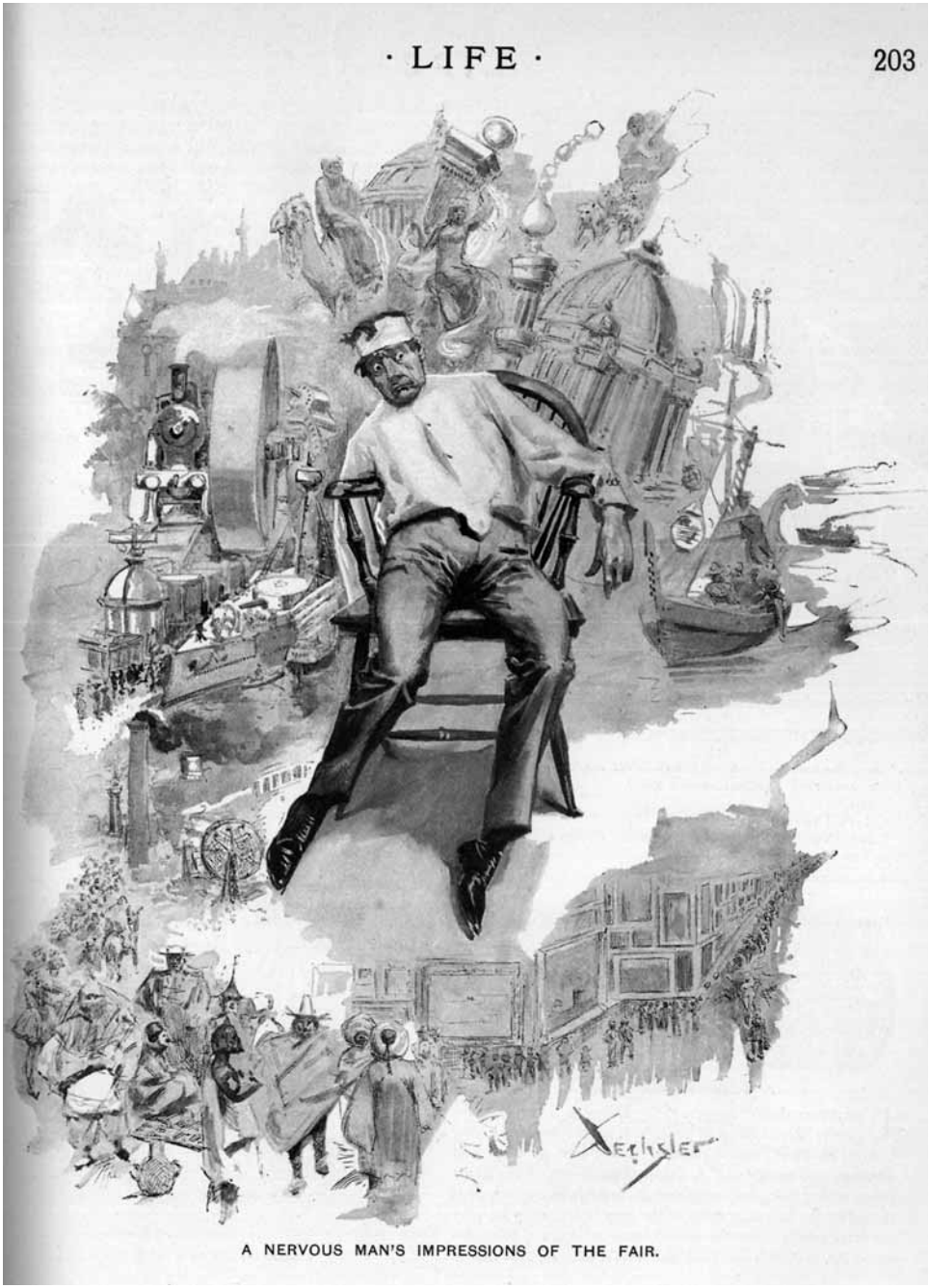
Structuring Health and Medicine in the Exposition Site

The expositions' temporary nature and improvised setting within established urban centers required coordination, if not cooperation, between municipal and exposition organizers over issues of water resources, health services, and other supportive activities. The relationships between these groups were often uneasy, and had to be negotiated anew to set up the health infrastructure and medical services for each of the four expositions under consideration. Although precedents existed in the United States for popular industrial fairs beginning in the 1840s, as well as the more recent fundraising fairs used by the U.S. Sanitary Commission during the Civil War, neither of these had to directly address current health issues in their infrastructure.[8] And unlike the 1889 Exposition Universelle, in which the city of Paris presented itself as a virtual living museum and display of technological innovation, as Miriam R. Levin has effectively argued, the situation was completely different in the United States.[9] Here the exposition did not function as a model for civil society, despite the extravagant claims to the contrary. While their European counterparts were government-sponsored, expositions in the United States were run by private corporations despite their use, in part, of public funds. As a result, the corporate agendas of exposition organizers, interested in profits and promotion, were frequently at odds with those of the current municipal health professionals. The conflicts and tensions that sometimes ensued pitted the narrower goals of municipal boosterism against the longer-term perspective of the community's health. Expositions were by necessity integrally

linked to their locations in large metropolitan centers, such as Philadelphia, Chicago, Buffalo, or St. Louis, but they were operated as a separate entity or "a city within a city," as they were sometimes referred to.

Clearly, exposition organizers had to contend with the same array of health hazards that were rampant within most nineteenth-century urban settings—infectious disease, improper sanitation, impure water, and food contamination—as well as with crime. The most precise characterization of the exposition was as "an artificial city with real problems," an observation made by Maurice Neufeld in his early study of the 1893 Chicago exposition.[10] Although disease was a more threatening specter than crime, exposition organizers exerted strict controls on the press in reporting on issues of health and safety. As working environments for thousands and as exhibition venues for their visitors, expositions held important health and safety implications for the 9.5 million people who came to Philadelphia in 1876, the 27.5 million visiting Chicago in 1893, the 8 million visiting Buffalo in 1901, and the 19.5 million visiting St. Louis in 1904. Managing huge crowds was always an issue for organizers of international expositions. French exposition organizers, for example, had a particular aversion to the hazards and potential threats of large public assemblies because of their political implications.[11] Exposition organizers in the United States, on the other hand, tended to understate their concerns publicly, but their consistent allocation of more resources to police protection than to medical services and disease prevention revealed their unstated priorities as well as their own projected fears and those of society.[12]

The first priority for organizers was completion of the exposition's construction work, leaving aside the attending issues of occupational safety and health. However, the presence and role of construction workers on exposition sites has often been erased from their histories, as Peter Hoffenberg has pointed out.[13] Exposition audiences were as yet not fully aware of the potentially harmful health effects of unrestrained noise, smoke pollution, milling crowds, physical stress, and fatigue. Sensory overload from the exposition's massive scale was even diagnosed as a health hazard for the "brain tired" or neurasthenic, and was parodied in the caricature of the "nervous man's impressions" at the 1893 Chicago exposition (fig. 1.1).[14] Nonetheless, in the extensive promotional literature produced by exposition publicity departments, there was little real information offered to the public on the nature of the exposition's health infrastructure or of its effects on the well-being of its audiences.



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This caricature of the "nervous man's impressions" at the 1893 Chicago World's Columbian Exposition represented the kinds of sensory overload experienced by exposition visitors from the city's smoke pollution, milling crowds, and the fatigue of endless walls of displays. "A Nervous Man's Impressions of the Fair," line drawing, *Life* 22 (September 28, 1893): 203.

Showcasing Health and Medicine in the Exposition Exhibits

While it may be interesting to speculate about the nature and meaning of the audience's exposition experience, the "things" that people saw in exposition exhibits are the most reliable evidence of their encounters. The exposition was "first and last of all a collection of exhibits," which were the "backbone" and drawing card for its massive audiences, observed Frederick J. V. Skiff, the experienced director of exhibits for the 1904 exposition in St. Louis.[15] With the number of exhibits estimated at 33,000 in 1876, 65,000 in 1893, 3,500 in 1901, and 70,000 in 1904, expositions presented themselves as showcases for the vast array of society's products, artifacts, resources, and services.[16]

A necessary order for these thousands and thousands of exhibits was created by the internal framework of the exposition's official classification system. The central matrix of this system assigned a particular hierarchical placement for each exhibited item, including that of health and medicine (see appendix A). The result, not surprisingly, was that exposition exhibits were often characterized as "encyclopedias of knowledge," in the words of Selim H. Peabody, chief of the Liberal Arts departments at the 1893 Chicago exposition and the 1901 Buffalo exposition. Exposition exhibits presented, in his words, "a great mosaic, each element filling a place definitely determined by its inherent relationships."[17] What people saw, however, was not a direct transcription of the world as it was, but rather, as Robert Rydell has cautioned, a highly mediated construction of reality.[18]

The construction of this comprehensive "mosaic," juxtaposing all of society's achievements, provided a unique context for exposition exhibits of health and medicine for public viewing. This contextualizing was unlike that of professional medical museum exhibits or even specialized health exhibitions, where viewers were given a more isolated view of the subjects depicted. Another distinctive feature of exposition exhibits in health and medicine was the kinds of exhibitors, including commercial, professional, and governmental participants. These were drawn from a range of divergent interests in health, with dissimilar agendas, diverse means, and often differing outcomes, with the result being a new and broader view than at previous public events.

Within this vast mosaic of exposition exhibits, exhibitors of health and medicine were sorted into three distinct but exclusive official classifications: commercial exhibitors of medical apparatus and equipment; social economy exhibitors representing issues of workers' housing, municipal/

state health boards, and health care institutions; and medical department exhibitors of the U.S. government military services (see appendix A). Noticeably absent were individual medical practitioners, at least those subscribing to the professional code of the American Medical Association (AMA), who were prohibited from any form of direct advertising and commercial promotion.[19] Some explanation of these three groupings of exhibitors will illustrate the reasons for the diversity of the exhibits on view.

Given that industry and commerce were the driving forces and dominant focus of expositions, the high profile of the first grouping (manufacturers of medical and health merchandise associated with therapeutic treatments and medical practice) is not surprising. Among these commercial exhibits, those of anatomical and medical model manufacturers consistently drew the attention not just of medical specialists but of popular audiences. At the 1867 Exposition Universelle in Paris, for example, displays that attracted special public attention included the innovative and award-winning specimen models by Ludovicus Brunetti from Padua.[20] The compelling popularity of commercial anatomical museums in the United States, about which Michael Sappol has written, provided a ready-made general audience for exposition exhibits of such commercially produced anatomical models.[21]

The second grouping of health and medicine exhibits had been created initially at Paris's Exposition Universelle of 1855 under the umbrella of "social economy." To show society's larger humanitarian aspirations on behalf of its workers (for housing and so forth) and as an expression of French social theory, social economy displays were an effort by exposition organizers to counterbalance the dominance of industrial and commercial exhibitors. At the following 1867 exposition, for example, the display of a full-scale model of workers' housing was personally sponsored by Emperor Napoleon III, and similar models became a prominent feature at subsequent French expositions in 1878, 1889, and 1900. Frédéric Le Play, social theorist and the 1867 exposition's general commissioner, wanted the display of model workers' housing to advocate for improved conditions for workers in their transition from a rural economy to an industrial one.[22] This new classification was an important step in the eventual evolution and expansion of health-related exhibits in the United States created by private and public health agencies, associations, and institutions. Eventually, this exhibit classification encompassed the newer fields of hygiene, sanitation, and public health that mirrored the developments in health and medicine taking place in this country. By the 1900 Paris exposition, social economy in

its exposition presence had come to represent what Daniel T. Rodgers has aptly characterized as "the ambulance wagon of industrial capitalism," in its efforts to come to terms with the social transformations taking place.[23]

Finally, exposition exhibits by military medical departments had the duty of conveying information about the larger health programs for service personnel as well as for the nation generally. Military medicine was focused not only on warfare, but on broader issues relating to the protection of the nation's health. These highly accessible exhibits were intended as "a report to the people of its work . . . an object-lesson, which even the least educated visitor can understand."[24] In contrast to the meager resources of exhibitors in the social economy section, government departments generally had ample funds for producing exhibits and implementing innovative display techniques, although the money was not always equally distributed between the different departments.

The organizational structure of the government's exhibitors also differed from that of commercial or social economy exhibitors in that it was the direct responsibility of a government exposition board. This board was made up of members representing the Smithsonian Institution's U.S. National Museum and each of the thirteen government departments and bureaus that included the medical departments of the Navy and Army (War Department) and the Marine Hospital Service (Treasury Department). All these government departments had directly benefited from the expertise in exhibit-making of the U.S. National Museum, whose work was an initial model and stimulus. Yet a certain tension in this relationship was alluded to by the assistant director of the U.S. National Museum, George Brown Goode, who noted that "the tendency is for them [government departments] to encroach more and more upon the field which was formerly occupied by the Institution and museum alone." Goode's view that the educational results of expositions were "chiefly incidental" in comparison to that of museums was openly countered by the rhetoric and promotional strategies of exposition officials, who extolled the educational merits of their events alongside their commercial underpinnings.[25]

Exhibit-making, even that practiced at international expositions, was not a transparent process but always involved the creation, imagining, and translating of information into a visual form. As Sharon Macdonald has described it, exhibit-making is a process deeply rooted in transactions that "always involve the culturally, socially and politically saturated business of negotiation and value-judgment."[26] Exposition exhibit-making was an essentially re-presentational process, and one that depended on the use of various visual tools that were constantly being evolved to meet the con-

ditions faced by different exhibitors. This was a period of experimentation with new and old media forms that marked an important beginning of a process of communicating directly with the public on issues relating to health and medicine.[27] The tools for translating the work of health and medicine into visual form included objects and original artifacts of medicine's physical apparatus and equipment; graphic charts, maps, and photographs for pictorial representation of facts and information; three-dimensional models and replicas for reproductions in miniature and at full size; and live demonstrations for reenactments of work processes. This was an incremental process that evolved over the thirty-year period of the four expositions covered here. Exhibitors, for example, had to see that there was a specific visual and material culture of health and medicine for this purpose. They then had to learn how to manipulate and adapt specific media forms that would best fit their purposes within the context of the exposition.[28] Differences in funding, available expertise, resources, and specific agendas gave the various exhibitors an uneven ability to harness this rich toolbox of display devices. In addition, there was always an underlying conflict in the effort to reduce the complex information on health issues into the equivalent of today's sound bites for both publication and exhibition.[29] The gap between reality and its representation was a key dilemma for all exhibitors of health and medicine at these four international expositions.

Privileging the visual over the textual was part of a deep cultural shift in this period that was recognized pedagogically as well as scientifically.[30] This choice of how to make displays visually effective spilled over into the way that exposition exhibits were made and how they were seen. As early as the Paris Exposition Universelle of 1878, the extensive use of visual graphs and diagrams caused G. Stanley Hall, psychologist and educator, to observe that "the graphic method is fast becoming the international language of science."[31] Additionally, the official advice to potential social economy exhibitors for the 1878 Paris exposition was to make displays that "speak to the eyes as well as mind."[32] Expositions, therefore, provided exhibitors, especially those of health and medicine, the opportunity to experiment with and implement a new visual form of exhibit-making.

In the following three chapters, this book explores how the infrastructures and exhibits at three international expositions brought the public into contact with changing views of modern health and medicine. These chapters are structured chronologically to illustrate what was distinctive about the 1876 Philadelphia exposition, the 1893 Chicago exposition, and the 1901 Buffalo exposition. Each exposition is examined to show the issues faced

by city health authorities and exposition organizers in creating their event, their struggles in implementing a new form of medical service and sanitation procedure, and their efforts to control infectious disease among the massive assembly of workers and visitors. These discussions are followed by a consideration of exposition exhibits on view in order to understand the changing nature of participating exhibitors, the continuing evolution of display formats, and the consistency and prominence of exhibit work by government military medical departments.

These initial three chapters serve as a prequel to the following two chapters focused on the 1904 St. Louis exposition. The chapter on the St. Louis exposition's infrastructure and medical issues offers a closer consideration of the complexities of the issues involved and their relationship to earlier expositions. Similarly, the chapter on the exhibits at the 1904 exposition provides a more detailed description of a selected group of exhibits and explains the reasons for their presence. These two chapters bring together the book's overview of the similarities, changes, and important differences in the ways the issues of modern health were represented in the exposition site and in its displays.

The role that these four expositions played in framing and shaping issues of modern health, however, went beyond merely providing a sanitary environment or exhibiting cultural and physical artifacts. These expositions provided a rich cultural context for enacting the deeper transitions in society and especially for the process that John Shaw Billings had originally envisioned in making hygiene and health an all-encompassing concept that the general public could understand and take responsibility for.[33]

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