

Acknowledgments



PUBLICATION OF THESE DRAWINGS HAS BEEN A LONG TIME COMING. In 1981, Bruce Moseley, a former member of the Sheldon Museum staff, identified Markham's sketch of the Boston Manufacturing Co. mills at Waltham, MA, and word was sent out on the industrial archaeology grapevine that related textile machine drawings may also exist. When the late Michael Brewster Folsom first identified the drawings, he circulated them to a number of scholars (Richard Candee, Larry Gross, Steven Lubar, Pat Malone, Gail Fowler Mohanty, Ted Penn, Merritt Roe Smith, Robert Vogel, and David Jeremy). These individuals provided initial assessments of the drawings' significance. So too did Helena Wright, Curator of Graphic Arts at the Smithsonian Institution, who has consistently and generously provided advice during each phase of the project.

Over the years the staff of the Sheldon Museum Research Center, which holds the Markham papers, along with an outstanding collection of manuscripts and printed material documenting the local area, has also been remarkably generous. Scott Morrison made note of every textile reference he found as he identified and organized the manuscript collection and shared his extensive knowledge of Middlebury during Markham's lifetime; Wiz Dow compiled all those references into a database; Jane Ploughman did the initial measurements and descriptions of the drawings; and Orson Kingsley, while still new to the institution, responded immediately to all requests, as did Collections Manager Mary Towle-Hilt.

Middlebury College's Special Collections & Archives, headed by Andrew Wentink, scanned the Markham drawings. Danielle Rougeau, Assistant Curator, and Amanda Gustin were unfailingly helpful. During the last stage of the project we also appreciated the encouragement of current Sheldon Museum director, Dr. Jan Albers, and the map-making abilities of Middlebury College student Ted Kwasnik.

Martha Hill, of Orwell, Vermont, and Charlottesville, Virginia, and the late Deborah Clifford improved the biography of Markham through their comments on the manuscript. Martha also cheerfully provided practical assistance with the final descriptions of the drawings. Willie Jansen provided considerable personal support and encouragement throughout.

The work in manuscript form has been read by three referees to whom the authors are indebted. One anonymous referee called for an expansion of the work into "a study of technological knowledge, its acquisition and transmission." This prompted the primary author to research and write the introductory section on visual knowledge. The other referees, Dr. Carolyn C. Cooper of Yale University and Professor Laurence Gross of the University of Massachusetts, Lowell, made suggestions that helped to reshape the overall structure of the work. In addition, parts of the book have been read by Helena Wright, Dr. Ben Thomas of the University of Kent, and by Professor Geoffrey Tweedale of Manchester Metropolitan University Business School, and Dr. Francis Goodall. Robert M. Vogel, formerly of the Smithsonian Institution, gave encouragement in the early stages of the project. When the manuscript was in the final draft, Merritt Roe Smith, Everett and William Cutten Professor of the History of Technology at the Massachusetts Institute of Technology, kindly went through Part I, making very useful observations on structure and sources. The positive comments of all these readers are much appreciated.

The primary author could not have developed the knowledge context to Markham's drawings without assistance from many directions. The staff and library resources of the Manchester Central Reference Library, the John Rylands University Library, and the Manchester Metropolitan University Library enabled him to read most of the scarce works cited, many of them in electronic form. The British Library in London, the Brotherton Library at the University of Leeds, Chetham's Library in Manchester, the Sydney Jones Library at the University of Liverpool, and Cambridge University Library provided the rest.

Professor Robert D. Arner of the University of Cincinnati, in generously providing details of the publishing history of Rees's *Cyclopaedia*, has helped to establish with hitherto unrealized precision the remarkable speed of the transatlantic transfer of published information about Britain's new textile technology. Tony Woolrich advised about some of the mechanic literature of the early industrial period. Dr. Ben Thomas gave valuable pointers to the literature on the history of engravings. Lucy Salt and Matt Edwards of the City of Derby Museum and Art Gallery were helpful in providing information and images of the Joseph Wright portrait of Sir Richard Arkwright. Hugh Alexander of the Image Library at the National Archives in London has facilitated the filming and reproduction of the British patent drawings presented here for the first time in their original form; whereas Jessamy Sykes, in the Advice and Records Knowledge section of the National Archives, located a miscatalogued patent drawing. Marie E. Lamoureux of the American Antiquarian Society and Jean McDonald of Paisley Central Library supplied professional help. Mark H. Jones, Connecticut State Archivist, measured the Scholfield billy drawings. Clare Sheridan, Librarian of the American Textile History Museum at Lowell, Massachusetts, aided in securing images of early textile machinery and in unfailingly answering queries from the unique resources of the ATHM.

On the drawings themselves, Dr. R. Hugh Gong, Reader in Textile Technology, School of Materials, at the University of Manchester clarified roving-frame mechanisms. Ian Birtles, loom tackler of Quarrybank Mill Museum at Styal, Cheshire, explained the finer technicalities of power-loom weaving. Dr. Richard Potton, Physics Discipline, School of Computing, Science and Engineering, University of Salford, analyzed Markham's batten motion. Three practicing engineers, with mechanical training and experience, gave technical and computing assistance: Peter Farrant, MBCS CITP; Michael Middleton, CEng; and Peter Nicoll, CEng. Richard Rigby, BSc, also supplied useful comments. Professor Mark Mon-Williams of Leeds University offered advice on cognitive psychology.

The primary author, in retirement, is very grateful for much personal support. Breaks with his daughters, Joanna and Rebecca, and their families, gave time (usually when walking over hills in the English Lakes or the Yorkshire Dales) to reflect on Markham from a distance; Helen and Paul Evans kindly provided hospitality in London. So, in Cambridge, did Margaret and Richard Potton. Jean Jeremy has shown more than a passing interest in the completion of the work and was first to spot what happened behind Arkwright's left arm.

At the American Philosophical Society, the editor, Mary McDonald, has overseen the production of the book. To her and to her editorial committee we are most grateful for their faith in the Markham project in what turned out to be an extremely adverse economic climate. And to Pamela Lankas and her colleagues at IGS, we are grateful for their superb skills in book production.

We are very grateful to all the above for their good will and encouragement, and most of all to our spouses for their tolerance, patience, and love. What remains is of course our own responsibility.

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