Each of the three cases is explored with masterful command of both basic science and the secondary literature, although the parallels among the three cases are not always convincingly demonstrated, in my view.

Librarians may be especially interested in the section on biodiversity, with its attention to problems of creating and maintaining information in databases. Bowker believes that standards and protocols are essential, but that there is no such thing as a universal, permanent standard. The longevity of data depends on metadata and the ability to translate between disciplines. He argues for enhanced metadata that will capture the wider context in which data was created. He also makes the unpopular point—music to the ears of the library profession-that maintenance of the information infrastructure is important. In other words, more catalogers and specialists in systematics are needed. Problems in classification are explored with examples from botany, species, fossils, soils, landscape topology, and ecological communities. It is demonstrated beyond doubt that no classification system can ever be perfect, not because of human error, but because of real tensions in the definitions within the sciences themselves. Bowker cautions that to attempt to create a "global panopticon" would be misguided at best.

There has been space here to mention only a handful of the interesting ideas that can be found on every page-indeed, every paragraph—of this book. My chief criticism is that the writing is sometimes disjointed and rambling, and the many digressions and allusions to people and ideas from Plato to Proust to Derrida can be distracting. The ideal reader would need to be familiar with current theory in information science as well as postmodern theory. Nevertheless, I think that every reader will find much to ponder in this provocative exploration of the relationship of the present to the past. – Jean Alexander, Carnegie Mellon University

Foot, Mirjam M. Bookbinders at Work: Their Role and Methods. Newcastle, Del.: Oak Knoll; London: The British Library, 2006. 163 p. \$59.95 (ISBN 1584561688 [US]; 0712349014 [UK]).

Book bindings of the hand-press period (1455–1830) range in sophistication from the simple paper wrappers of a seventeenth-century child's catechism to the extraordinarily ornate gold-tooled, reddyed, goatskin covers created for the king of France. For us today, it is easy to see in the manner of binding either delight in ornament or its absence, the whim of an aristocratic collector, or the extravagance of a bookseller hoping to make a sale to a wealthy customer. To take just one example of early modern book decoration: books decorated with sprinkled or stained edges. Speckles were usually red, or mixed red and green or red and blue, or edges were stained in solid colors such as red, yellow, green, even black. Why these techniques? These colors? Were they an expression of a purchaser's or a bookbinder's mood? Were they the paints or dyes that just happened to be available at the time? Readers of Mirjam Foot's book on binding quickly learn how naïve assumptions of randomness are. Almost every aspect of a binding is suffused with meaning and historical clues, sememes waiting to be deciphered and understood by the librarian or the historian with the eyes to see. Our presumption must always be: What greater or more subtle purpose is being served by the bookbinder's choice? What traditions of the guild or of the culture have been respected and perpetuated? As Thomas Mann reflected in Doktor Faustus: "Ornament and meaning have always run alongside each other. . . . Let no one claim that nothing is being communicated."

To stay for a moment with the example at hand: we learn in Foot's book that sprinkled edges on books were not just decorative, but often helped hide the dirt on the edges; that red and green sprinkling said "French" to German readers; that sprinkling with red alone suggested elegance, but a solid red edge signaled a book that was for peasants. The message of yellow edges was "old-fashioned" (at least in Germany), while black edges were "for certain service books or for funeral sermons"—one of the few semiotic significances Foot reveals that we can relate to directly today.

We emerge at the end of reading this wonderful treatise realizing how bindings, referred to by some disparagingly as the "costume" of the text (E.Ph. Goldschmidt), or "part of the dress in which an author's words are presented" (G.T. Tanselle), are in fact integral to the historical evidence which the physical book represents. Prompted by the author, one wonders just who is paying attention to the messages bindings contain, both in their decorative and structural aspect. Foot suggests at the very beginning of her book—and cinches her argument by the end—that such individuals are far too few. She makes a strong case for the description and analysis of bindings becoming a part of the tool chest imparted not only to book historians, but also to curators of book collections and to analytic and descriptive bibliographers. But the question remains: does the binding of a book actually belong to the book? Or is it more a part of the world around it?

Part of the problem stems from the fact that for the first several hundred years after the invention of printing, bindings were rarely part of the book as purchased by readers or collectors. Edition bindings did not arise until the early 1800s, while retailers' bindings were infrequent into the seventeenth and eighteenth centuries-though documentable in Italy as early as the late fifteenth and early sixteenth. As a student, I remember reading in W.H. Bruford's Germany in the Eighteenth Century (1935) how booksellers traveling to the great fairs in Leipzig and Frankfurt transported their wares in quires-stacks of unbound printed sheets-sealed in vats. (Foot also refers to this practice.) Once books were sold, then and only then would they be sent to the

binder, since why bind a book if you're not sure you will sell it? Foot carefully analyzes illustrations of bookshops of the period, most notably comparing images in two editions of Comenius's famous Orbis pictus, one from 1659 and a second one from 1777. The first shows mainly unbound parcels of sheets on the bookshop shelves. The second one – a revised and updated version of the first-shows almost exclusively bound books. What had changed in the intervening 120 years? Well, clearly the market had changed, evolving from dependence on the scholar and connoisseur-collector to the much broader market of the educated bourgeoisie. The next historical step-that to the cheaper edition bindings of the early nineteenth century-had to await the spread of literacy to an even broader segment of society. Traditional bibliography, says Foot, tends to ignore the significance of bindings before the advent of edition bindings. She characterizes this as a grave mistake.

All of these issues, from the microprocedural to the macroeconomic, fall within the scope of this book: from recipes for paints ("Red is often made of Brazil wood, carmine or cinnabar, mixed with water and paste or with gum Arabic or gum tragacanth") to a chapter on "The Economics of the Binding Trade," in which we learn how much a binder was paid for his work, what he in turn had to pay for his materials (e.g., a large skin of vellum, enough to cover three folios, six quartos, or twelve octavos, cost 6s. 6d. in England around 1720 or 1 fl. 40 kr. in Germany around 1750), and what the equivalent costs were for beer, eggs, herring, clothing, and other essentials. A final chapter ("Image and Reality") considers the ethos and social standing of members of the profession as reflected in contemporaneous accounts and illustrations, concluding with: "Overall the binders we have encountered look cheerful, sometimes prosperous."

Bookbinders at Work is sumptuously illustrated with over sixty illustrations,

many of them in color and many full-page plates, and concludes with appendices of German and French binding terms, though (a minor quibble) retaining the often antiquated spellings of the source manuals.

One final observation: the meticulous quality of Foot's work calls to mind the microscopic attention to detail characteristic of Nicholson Baker's novels, e.g., The Mezzanine (1990), the same author's essays collected in The Size of Thoughts (1996), or of Patrick Süskind's richly imagined, yet scrupulously researched and historically accurate novel of eighteenth-century France, Perfume (1985). Certainly, authors of the increasingly popular mystery genre revolving around the often baffling ciphers and semiotics of old books and their constituent parts—in the tradition of Eco's Name of the Rose (1981) and Pérez-Reverte's Club Dumas (1993), now, of course, Dan Brown's The Da Vinci Code (2003) - could weave many wonderful tales from the arcana and minutiae Mirjam Foot has brought together in this volume. Yet the principal audience for her work remains students of history and especially students (and practitioners) of the history of the book. And to them it offers a valuable introduction, highly recommended.-Jeffrey Garrett, Northwestern University

Huber, Mary Taylor, and Pat Hutchings.

The Advancement of Learning: Building the Teaching Commons. San Francisco: Jossey-Bass, 2005. 187 p. alk. paper, \$35 (ISBN 078798115X). LC 2005-12459.

This timely publication from the Carnegie Foundation for the Advancement of Teaching reports on the state of scholarship addressing teaching and learning. Historically, the teaching of higher education has been described as a lonely profession. Committed professors, well trained in their disciplines, have had little opportunity to engage in collective inquiry into the learning process. The creation of a "teaching commons," as the authors of this volume call it, provides opportunities for educators to explore and share ideas about teaching and learning. The authors argue, quite successfully, that teaching and learning, in and of themselves, are legitimate foci of scholarship and that all disciplines will benefit from the outcomes of research in these areas.

Pedagogy and the science of learning are not new subjects to be explored by researchers. In recent years, however, great changes have occurred that call for a renewed inquiry. New generations of students, technological change, classroom renovation, and, indeed, as the authors note, "new ideas about learning itself" are changing the landscape.

The Advancement of Learning is organized into seven chapters. Chapter One provides an historical overview of the scholarship relating to teaching and learning. This chapter contains an excellent, succinct summary of significant curricular initiatives and studies undertaken throughout the twentieth century. In addition to documenting the evolution of scholarship on teaching and learning, changes in the demographic makeup of students, the rise in interdisciplinary studies, and other pertinent variables are presented.

The second chapter sets the agenda for the rest of the book. Here, the authors provide their operational definitions relating to the types of scholarship they are promoting. Taking their case beyond schools of education, where inquiry into learning and pedagogy typically reside, the authors invite all higher education faculty to join their teaching commons to share information, best practice, and collaborative research.

Chapters Three through Six look at specific examples and contexts related to the scholarship of learning. The authors draw heavily upon their experience with the Carnegie Academy for the Scholarship of Teaching (CASTL), citing numerous examples of individuals and programs supported by CASTL since its inception. CASTL's Higher Education program consists of a center for advanced study