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BOOK REVIEWS

Edmund A. Bowles. *The Timpani: A History in Pictures and Documents.* Hillsdale, NY: Pendragon Press, 2002. 570 pp.: 448 black-and-white illus. ISBN: 0-945193-85-8. \$96.00 (cloth).

Edmund Bowles's *The Timpani* had been eagerly awaited for rather a long time: following its announcement by the now-defunct publishing firm Frits Knuf I ordered my copy in 1990 (at which time it was to have been a mere 350 pages). Its new publisher, Pendragon, has produced a magnificent, indeed monumental, book. It is the first to be devoted to the timpani since Percival Kirby's slim volume *The Kettle-Drums, a Book for Composers, Conductors and Kettle-Drummers* (London: Oxford University Press, 1930). Its publication year (2002) is shared by Jeremy Montagu's *Timpani and Percussion* (New Haven: Yale University Press), a book that is complementary rather than in competition and that is reviewed elsewhere in these pages.

The Timpani is a book with a somewhat unusual structure. The text is a succinct 68-page essay on the history of the timpani. This is supplemented by 8 pages listing milestones in composition for the timpani, 262 pages of illustrations, and then 202 pages of transcriptions from documents mentioning timpani. The book is completed by a bibliography and three thoroughly prepared indexes. Whereas Montagu's is a conventional book in which a limited number of pictures have been carefully selected to illustrate the text, in *The Timpani* the pictures and documents are the *raison d'être*, with the text serving as an introduction. Bowles's purpose and achievement in publishing the pictures are comparable to Tom Naylor's in *The Trumpet and Trombone in Graphic Arts 1500–1800* (Nashville, TN: Brass Press, 1979), and indeed there is inevitably some overlap in content. *The Timpani* is not a book many would read from cover to cover, and its intended readership may not have been well-defined, but the resources it provides will be widely valued. Music students will find the text, with its liberal musical examples, an excellent overview; however, they may not be able to extract the full information value from the illustrations and documents in the absence of more detailed commentary.

The text is a model of elegance and clarity. The scope indicated by the subtitle is strictly adhered to: the text provides a historical account of

the instrument's design, repertoire, and performance context. Kettle-drum acoustics are not treated at all, although the history of "the voice of the drums" is closely bound up with other historical aspects. The physics of the timpani are as subtle as that of any instrument, and more interesting than many, since designing a percussion instrument to convey a strong sense of pitch is always a feat of auditory trickery. Closer attention to acoustics would have prevented the reference on page 64 to "harmonic overtones" (only the overtones produced by wind, bowed string, and electronic instruments are strictly harmonic). Mechanical devices for rapid retuning are particularly thoroughly covered. The account of the history of timpani beaters is very welcome: previous books, including James Blades's *Percussion Instruments and their History*, 3rd ed. (London: Faber and Faber, 1984), were inadequate on this topic despite the critical importance of beater characteristics for both the player and the listener. The details of playing technique are treated lightly; for these one should turn to Andrew Shivas's *The Art of Tympanist and Drummer*, 2nd ed. (Edinburgh: Edinburgh University Press, 1988). The absence of distracting footnotes in the text is welcome, and the musical examples are well chosen and useful. Graphical illustrations are referred to in the text but occupy a completely separate section. The list of "Representative Milestones in the Music for Timpani" over the period 1656 to 2000 is helpful in conveying how repertoire, technique, and mechanisms have changed in step with each other.

The extensive collection of illustrations is taken from sources ranging from 1237 to the 1980s and is arranged approximately in chronological order. The decision to reproduce the illustrations entirely in black-and-white was probably wise, since the few pictures that could have been printed in color would have been scattered among the others in a disturbing way. On the other hand, a book so lavish in many ways is the poorer for omitting even one picture allowing the thrilling sight of gleaming red copper kettles to convey something of the full glory of the timpani. Whereas some of the pictures act as illustrations to the text, others can only be categorized as rather raw research material. In some cases only details of original pictures are given, but often a full orchestral performance or state occasion is shown and a magnifying glass is needed to make out the timpani and timpanist in the throng. However, as a bonus, the generously assembled iconography includes images of many other instruments in performance situations—not least trumpets, thereby widening the book's usefulness.

Of the pictures, 366 are from period documents and books, or of sculpture, the latter including some real instruments incorporated into church organ cases. These are interspersed with 40 photographs of actual instruments, much to be welcomed: although many a museum shows the history of the flute or clarinet with examples of the most important and innovative designs, no museum presents the history of the timpani in more than a few examples. There is just not room to display a collection as comprehensive as we have in these pages, even if one existed. Equally welcome are the 42 photographs of orchestras, their percussion sections, or their timpanists.

The 382 “documents” have to be regarded as material for further research, or for essay writing, since they make rather indigestible reading as they stand. Some are excerpts from books, diaries, and other texts of the historical period, many in translation (presumably by Bowles himself). Others, however, are lifted verbatim from secondary publications, including some self-quotations from Bowles’s earlier writings. None is in facsimile. More commentary on these documents would have been welcome (for example, to point out that the Distin monster gong drum was not actually a kettledrum, although the word “timpani” occurs in the quoted text [Document 309]).

This grand volume has been well worth waiting for. In its stylish text and copious illustrations the author provides a rare resource for learning and research.

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Jeremy Montagu. *Timpani and Percussion*. The Yale Musical Instrument Series. New Haven: Yale University Press, 2002. xii, 268 pp.: 76 illus. [61 black-and-white photographs, 15 color photographs], 4 figs., 2 tables, 21 musical exx. ISBN: 0-300-09337-3. \$35.00 (hardcover).

This excellent book is the second published volume in the new Yale Musical Instrument Series. (The first volume, Ardal Powell’s *The Flute* [2002], was reviewed in this JOURNAL 29 [2003]: 237–44.) The choice of Jeremy Montagu to write a historical overview of timpani and percussion instruments was brilliant—he brings a unique blend of the professional performer and dedicated scholar to the task. His more than fifty years’ performance experience and his academic acumen shine forth on every

page. Montagu superbly mingles arcane bits of information with wonderful anecdotes drawn from a long professional career that included membership in the Royal Philharmonic and the BBC Symphony. His scholarly contributions encompass both Western and non-Western music and instruments, and he is currently working on an annotated catalog of his personal collection of more than 2500 instruments (the first volume, on reed instruments, was reviewed in this JOURNAL 29 [2003]: 263–66). In *Timpani and Percussion*, Montagu exhibits a polymathic command of the subject, yet his writing style is engaging and lucid. The 76 illustrations and 21 musical examples are clearly printed and unambiguously labeled.

Montagu dedicates the book to his teacher James Blades, author of the long standard *Percussion Instruments and Their History* (London: Faber and Faber, 1970; 3rd ed., 1984). He sees “no point in repeating much of what [Blades] wrote” (Introduction, p. 3), and only overlaps with and corrects Blades’s book as necessary. He also warns us that he was limited in what he could include both by length restrictions imposed by the publisher and by his own personal interests. Montagu organizes his book chronologically. The first three chapters briefly speculate on and explore the use of percussion from prehistory through the Renaissance. Chapters 4 through 8 cover the Baroque period through the twentieth century, and chapter 9 deals with “World Percussion.”

For the first three chapters, Montagu bases his conclusions mostly on surviving instruments, iconographic evidence, and historical documents. A section near the beginning of chapter 3, “The Renaissance,” illustrates Montagu’s perceptive insights. He describes the emergence in the late fifteenth century of “the military transverse flute, the fife,” in the “new mercenary armies [marching] across Europe” (p. 32). Montagu surmises that since the fife required two hands to play it, the old method of pipe and tabor playing fell from prominence. The fifer needed a separate drummer to provide “rhythmic accompaniment.” Montagu then explains how this led to changes in playing style and terminology:

The drum could then be larger than the old tabor and because a larger drum was heavier, it was better slung at the player’s side than from the arm. Hence its later name: the side drum. Since the drummer no longer had to play the pipe with one hand, he could use both hands on the drum. More elaborate rhythms immediately became possible, as did more elaborate playing techniques. It is clear that it was at this period that this elaboration occurred because whereas, in the earlier Middle Ages, drum names had always been based on the sound of separate strokes—tabor, tambour, bedon, and such like terms—suddenly we have the names *trommel*, *dromme*, *drum*, and

so forth. These names, with their rolled R, are the indications that players had begun to introduce the bouncing strokes that we use today (p. 32).

As Montagu moves into the seventeenth and eighteenth centuries, he discusses more musical and theoretical sources and surviving instruments. Chapters 4, 5, and 6 present much new and important information. One detail on the construction of timpani illustrates the depth to which Montagu often pursues a specific point. Many surviving eighteenth- and perhaps early nineteenth-century timpani have a funnel or horn (*Schalltrichter*) affixed to the air hole at the bottom of the bowl. We are only now studying the purpose of the funnel systematically.¹ Montagu has measured, or has had measured, funnels in several timpani; he notes that these and “other variables . . . are seldom if ever recorded” in museum catalogs or by scholars (p. 81). He reproduces a picture of one as illustration 19 (his own photograph of an instrument similar to one depicted in the 1979 catalog of the Germanisches Nationalmuseum in Nuremberg). He then goes on to quote from private correspondence from Cynthia Adams Hoover and Robert Sheldon to him in 1973. Sheldon restored a pair of timpani in the Smithsonian collection “which measure 23 and 22 inches in diameter . . . and reported that when the funnels were reinstalled they ‘not only make the drum sound better when struck in the center but also make it possible to use the higher drum in a range where it ought to function in relation to the other drum (a 4th or a 5th higher).’ ” Montagu then asserts:

Various authors have surmised that these funnels amplify or improve the sound, but so far as I know this is the only case where a pair of drums has been tested without and then with them and the result clearly described. Since eighteenth-century drumskins are no longer available, there must still be some slight uncertainty as to the funnels’ function, but it seems very probable that these experiments have provided the true answer. One suspects that the drum makers of the period had only a somewhat hazy idea of how these funnels worked, as of acoustics in general, for otherwise there would be much greater uniformity in size, shape, and height (I have never seen two pairs the same in these respects) (pp. 81–82).

To summarize the rest of Montagu’s argument, a pair of modern timpani has a size difference of about three inches, and teachers tell per-

1. Ben Harms, percussion instrument maker and performer, is completing an article on the *Schalltrichter* or funnels used in eighteenth-century timpani. His sources range from the early eighteenth century through the end of the nineteenth. He has carefully investigated and measured many drums and uncovered several heretofore unknown documents that discuss *Schalltrichter*.

formers to strike the head about three to four inches from the rim to get the optimum sound. Montagu suggests that if the funnels make the smaller drum sound better when tuned a 4th or 5th higher and when struck in the center, we are probably dealing with drums used in the cavalry. In such performances and with the flourishes often described, he says that “so long as one struck the drum somewhere on its head (while avoiding the horse!), everyone was happy” (p. 82). So he concludes that “if these funnels did ensure a good tone quality when the drum is struck in the centre of the head, as Dr. Sheldon has shown that they do, it would explain why they are so widely used in central Europe in the seventeenth and eighteenth centuries” (p. 82).

In the final three chapters, dealing with percussion instruments in the nineteenth and twentieth centuries and throughout the world, we enter more the world of Montagu the performer and pedagogue. These chapters are profusely illustrated, and many of the color photographs show non-Western instruments from the author’s personal collection.

The appendices are informative and delightful. In the first two, Montagu describes basic playing techniques and explains the now nearly forgotten art of lapping or tucking skin heads. Plastic heads are ubiquitous on most modern drums, and Montagu may be making a silent plea for a return to the more traditional skin heads. Indeed, many timpanists in major orchestras (besides those who perform in period instrument ensembles) are doing just that. Timpanists in the Vienna Philharmonic continue to use goatskin heads today.

In Appendix 3, “The Need to be Inventive,” Montagu recalls some of his solutions to unique musical problems. He also follows up on some intriguing comments made earlier in the text. For example, tucked away at the end of his chapter “The High Baroque” are reminiscences of when he was called upon “to characterize a larcenous spider” (p. 95). In his “Need to be Inventive” appendix he explains that he “used an Audubon Bird Call (a pewter rod twisted to and fro in a hole in a piece of wood) to represent the movements of a thievish spider” (p. 206). Just to illustrate how much fun his copious notes are, his “the kleptomaniac spider” is identified in the note as being “for a Peter Sellers film” (p. 231, n. 115).² His last appendix, addressed to “Drummers,” all too briefly wades into social and economic issues confronting musicians. Particularly useful to

2. For those who want to hear and see the spider, it was used in the 1980 film *The Fiendish Plot of Dr. Fu Manchu*, directed by Michael Anderson and starring Peters Sellers, Helen Mirren, and Sid Caesar.

researchers are Montagu's excellent notes and bibliography. He cites and documents many sources that will provide the means to pursue many of the points he makes and investigate many of the questions he asks. The more than 350 bibliographic entries are enriched by a comprehensive listing of museum catalogs, an unusually rich source for organologists.

Montagu's volume succeeds in just about every respect. Even for non-percussionists it makes for informative and enjoyable reading. As a scholar and performer Montagu takes us for a wonderful, rhythmical journey through musical time, from the perspective of one who has been there and just about done it all. He ends by saying "Still, we [drummers] do have more fun than anyone else. We create more new sounds than most people, we are more likely to do things *ad lib.*, and if the worst comes to the worst, we can always drown the rest of the orchestra" (p. 211). A reviewer of another book once wrote, "Rarely is so much learning displayed with so much grace and charm. My only regret is that the book was not twice as long."³

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Paul M. Gifford. *The Hammered Dulcimer in America: A History*. Lanham, MD, and London: Scarecrow Press, 2001. American Folk Music and Musicians 6. xxiv, 429 pp.: 32 black-and-white illus., 28 figures, 3 maps, 2 tables, 22 musical exx. ISBN: 0-8108-3943-1. \$59.00 (cloth).

Given the current popularity of the hammered dulcimer, it is difficult to remember that less than thirty years ago the instrument had all but disappeared from the American musical landscape. In this important, impeccably researched book, Paul Gifford traces the evolution and musical history of the hammered dulcimer in Europe and Asia, documents its extensive use in eighteenth-, nineteenth-, and early twentieth-century America, and charts its recent revival. By establishing links between the American dulcimer, its ancestors, and cousins, and by presenting a wealth of new material documenting the instrument's place in American musical history, Gifford has produced an indispensable reference. Since

3. Bergen Evans, from his *New York Times* book review, quoted on the back cover of C. S. Lewis, *Studies in Words*, 2nd ed. (Cambridge: Cambridge University Press, 1976).

1968, when his uncle produced an old dulcimer from a Michigan closet, Gifford has been an indefatigable researcher, performer, and exponent of hammered dulcimers, and this book reflects more than three decades of dedicated pursuit of dulcimer lore.

Gifford begins by addressing the much-debated reference to dulcimers in European translations of the Old Testament, pointing out that the direct ancestor of the modern dulcimer is difficult to recognize before the fifteenth century. Interestingly, the author takes issue with Curt Sachs's frequently quoted claim that the dulcimer originated in the Middle East and was brought to Europe in the wake of the Crusades. Instead, citing substantial iconographical and textual evidence, Gifford argues that European dulcimers such as the *Hackbrett* and *dulce melos* (probably inspired by members of the psaltery family and the string drum) developed independently in early modern Europe.

After tracing the development of these dulcimers through Renaissance Europe, the author turns his attention to the various forms of hammered dulcimers that exist outside western Europe. First, he provides an overview of the Middle Eastern *santur* in Arab, Persian, and Ottoman cultures, followed by detailed surveys of the central European *Hackbrett* and the eastern European *cimbalom*. The author enriches what might have been a relatively dry presentation of iconographical and organological references with extensive information about the dulcimer's social status—who was playing, manufacturing, and listening to these instruments in these various societies.

The author devotes three chapters to largely extinct instruments that either evolved from or are closely related to hammered dulcimers. These include the *pantaleon* (eighteenth-century Saxon inventor Pantaleon Hebenstreit's valiant if largely forgotten attempt to establish an improved dulcimer as a fixture in European art music); the *salterio* (a seventeenth-century Italian hybrid of the medieval psaltery and early dulcimer, which still enjoys some popularity in contemporary Mexico); and the French *psalterion* and *tympanon*. Throughout the European and Asian portions of the book, the author does an excellent job of organizing references by national and ethnic groups, as well as documenting when and how such dulcimer traditions established themselves in the United States.

The chapter on the Chinese form of the hammered dulcimer, the *yangqin*, initially seems out of geographical sequence until the reader realizes that the author is making a well-considered chronological statement about when the hammered dulcimer was introduced into China.

Gifford contends that the *yangqin*, now among the most popular instruments in modern China, did not appear in that region until the seventeenth century. Citing recent research, he argues that it was more likely introduced through contact with Western European traders than through Persian and Central Asian sources.

Having devoted the first half of the book to the dulcimer in continental Europe and Asia, the author next turns his attention to the dulcimer's popularity in seventeenth- and eighteenth-century Britain and its history in the United States during the colonial era. Although the first half of the book is a solid and informative survey, it is the second half, when the author turns his attention to hammered dulcimers in America, that makes this volume invaluable. The profusion of documentary evidence on players, manufacturers, regional playing styles, and recordings impressively reflects the enormous amount of research that went into the book; the author has gleaned many scraps of information from local papers, tax records, patent applications, and personal interviews. Gifford's discussion of regional dulcimer designs, based on his personal examination and measurement of more than one hundred nineteenth-century American instruments, is particularly valuable. In the midst of all this data, it is also charming to learn (p. 254) that his own great-grandfather, Augustus C. Gifford, worked in a small dulcimer manufactory in upstate New York during the 1850s.

In addition to presenting a solid history of the hammered dulcimer's rise in eighteenth- and nineteenth-century America and subsequent decline in the early twentieth century, the volume also contains a sorely needed overview of the dulcimer's revival since the 1970s. The hammered dulcimer is now once again solidly established in the world of American traditional music, and since Gifford himself has been involved with many of the concerts, conferences, publications, and projects that have reacquainted the public with the instrument, he is in an excellent position to recount its recent history.

The book is copiously footnoted and replete with documents, illustrations, figures, and musical examples. An appendix on tunings (with footnotes) should prove particularly valuable to dulcimer players. The rationale for including the second appendix, "Michigan Dulcimer Players Identified in the 1910 Census," is a bit more obscure; however, it will undoubtedly be of interest to researchers in the author's home state. A selected bibliography completes the volume. Gifford's book should become the standard one on the topic of hammered dulcimers. It is a wel-

come addition to the literature on musical instruments in general as well as to Scarecrow Press's fine series American Folk Music and Musicians.

NANCY GROCE

CENTER FOR FOLKLIFE AND CULTURAL HERITAGE
SMITHSONIAN INSTITUTION

Dennis G. Waring. *Manufacturing the Muse: Estey Organs and Consumer Culture in Victorian America*. Middletown, CT: Wesleyan University Press, 2002. 360 pp.: 125 black-and-white illus., audio CD. ISBN: 0-8195-6507-5 cloth; 0-8195-6508-3 paper. \$70.00 (cloth); \$24.95 (paper).

Check out the contents of any historical society or small town museum in America, and you'll find that even if they have no other musical instruments, they're likely to have a reed organ. And odds are fairly good that if they do have a reed organ, it will have been made by the Estey Company of Brattleboro, Vermont. After all, as America's largest producer of reed organs, the Estey Company manufactured over 500,000 instruments from its founding in 1855 until closing its doors in the 1960s. In 1987 Dennis Waring completed his doctoral dissertation, "The Estey Reed Organ: Imagination, Music, and Material Culture in Nineteenth-Century America," at Wesleyan University. Reed organ lovers have been hoping ever since that this groundbreaking study would one day be published in book form. These hopes have finally been answered in a work that is not only an important addition to the libraries of reed organ players, collectors, and restorers, but also presents a fascinating story that is relevant to anyone interested in the history of musical instrument manufacture during the nineteenth century.

The book is divided into two major parts. The first, "Reed Organ Contexts," deals primarily with the sociological issues and relationships of music, musical instruments in general, and reed organs in particular during the Victorian Age. There are many useful observations in this section, but it betrays Waring's primary outlook as an ethnomusicologist, and meanders somewhat tediously through material that deals only indirectly with the reed organ as an instrument.

Part 2, "The Estey Saga," is the meat of the book and—in the eyes of this reviewer—is far more compelling than Part 1. It provides a detailed and engaging history of reed organ making in Brattleboro, centered on Jacob Estey and his successors. The author has clearly done a great deal of research on the Estey firm; he also draws on information from the

growing number of Estey enthusiasts. Waring particularly acknowledges the painstaking research of Brattleboro resident Louise Renaud, who over a period of years apparently transcribed everything in old local newspapers relating to Estey. Research of this type is extremely time consuming, but is invaluable in reconstructing the history of a long-lived enterprise like the Estey Company. Citations from these newspapers are sprinkled liberally throughout the narrative, and greatly help in transporting the reader back to the time and place of the story. Of equal interest are the numerous vintage photographs and other illustrations. These include several depictions of the Estey factory (in various locations and stages of construction), original trade cards, and advertisements. There are, of course, also many illustrations of Estey organs, but those interested in viewing the most complete collection of such images will want to consult Robert B. Whiting's *Estey Reed Organs on Parade* (2nd ed., Vestal, N.Y.: Emprise Publishing, Inc., 1996).

Perhaps one of the most useful aspects of Waring's study is that it finally sets straight the origins of the Estey company, a tale that had "become embellished over time" (p. 93). In the presentation of that story, a good deal of useful information about other early reed organ makers in Brattleboro is revealed as well. From the town's humble beginnings in the making of reed organs, Jacob Estey and his business partners eventually created an exceptionally successful industry that took place in a state-of-the-art factory encompassing several buildings. Adjacent to the factory was an entire village called Esteyville that housed the company's employees. Unfortunately, much of the story necessarily focuses on the firm's management and major financial players, as there is little documentary information about the lives of the lowly factory workers and sales agents.

The main narrative on reed organ making is well told and interesting, and there are many delightful adjuncts to the story that reveal unique elements of nineteenth-century life in Brattleboro. For example, Jacob Estey was a progressive advocate for women's rights, frequently employing women at the factory (mostly as reed filers), and paying them the same wages as men who performed the same work. Estey showed similar open-mindedness on racial matters, as a major benefactor for the construction of a seminary building at Shaw University in Raleigh, North Carolina, an institution dedicated to the education of African Americans. One of the more sensational events in the Estey saga was a major court case involving Silas M. Waite, a local competitor with whom Estey

had fierce litigation over the rights to a particular improvement in reed organ design. The case dragged on for fourteen years, until it was settled by the Supreme Court. Although Waite was a successful banker, and deeply involved in many aspects of Brattleboro's civic affairs, it was later discovered that he had falsified bank documents, causing a loss of half a million dollars. Another enlightening digression describes how the Estey firm changed from a relatively casual day-to-day production schedule to one that was regulated by clocks and the telegraph. This same practice was adopted by many manufactories after the completion of the trans-continental railroad, as it became critical to abide by shipping schedules, which, in turn, were influenced by the country's newly-created standard time zones.

Like an increasing number of organological publications, *Manufacturing the Muse* includes a recording on compact disc. Twelve different Estey organs, made between 1860 and 1952, are demonstrated in thirty-four separate tracks, several of which are drawn from method books published by the Estey Company. It's not a recording that most of us would pop into our CD players during the drive to work, but it is a useful document of what these instruments sound like, playing the repertory written for them.

There are six appendices at the close of the book, including timelines, maps, tables, and musical scores. Two of these appendices were contributed by other authors: "Estey Reed Organ Casework and Tonal Design" (by E. A. Boadway) and "Sound Production with Free Reeds" (by Ned Phoenix). Both are useful topics to include in such a book, but Boadway's writing is less even than Waring's, and some of the information is poorly explained. For example, Boadway states, without clarification, that "Mason & Hamlin of Boston [were] the inventors of the American reed organ" (p. 222). He appears to be using the term "American reed organ," to suggest a particular type of instrument rather than a "reed organ" in general. More annoying, though, is Boadway's use of an unexplained pitch notation system when describing the range of instruments (p. 228). This notation system may well be one that is common among reed organ enthusiasts, but since it is not the Helmholtz system most frequently encountered in musical publications, some explanation would have been in order. Phoenix's essay is somewhat dry, but generally clearer, with detailed descriptions of how free reeds were manufactured for reed organs.

Waring's recounting of Estey's history is presumably accurate, but he makes a few statements about reed organs in general that seem questionable. He states that Abraham Prescott of Concord, New Hampshire, "received the first patent for an effective floor-model design," but does not indicate the date or number of that patent (p. 11). The Prescott family's earliest reed organ patent is dated 1849 (no. 6356), but James A. Bazin of Canton, Massachusetts, had patented a "floor-model design" for a reed organ in 1842 (no. 2682). It could be argued that Bazin's design was not an "effective" design, but that opinion would have been worth citing in this instance. I also contest Waring's statement that in the first half of the nineteenth century the manufacture of brass reeds for melodeons was affected by the limited availability of this "less expensive" metal in the United States, and that this same issue held back local production of brasswind instruments (p. 7). Given the widespread use of brass for furniture hardware and many other artifacts made in America during the eighteenth century, this proposition seems unfounded.

Although Waring is mostly on solid ground when discussing reed organs, his remarks about other instruments are often questionable. For example, it is puzzling why, when mentioning "popular string instruments of the day" that were in use concurrently with reed organs, he includes the "more elite harpsichord" (p. 1). It is well documented that harpsichords were all but extinct for most of the nineteenth century, especially in America. In the following paragraph, Waring states that "even into the middle of the nineteenth century, pianos' wooden frameworks withstood high-tension strings and vagaries of the American climate for only a few seasons before developing problems." This overly broad generality might be applied to imported European pianos, but the iron framing present in most American pianos by the mid-nineteenth century largely mitigated such "problems." Waring's endnote to this statement is likewise unjust in stating that the Boston piano maker Alpheus Babcock was "given credit" for casting a successful one-piece cast-iron frame in 1825. Babcock's achievements in this area are well documented, and his 1825 patent is clearly acknowledged as the first of its kind, not just something for which he was "given credit." Although these misstatements do little harm to the main strengths of Waring's book, there is also little excuse for them, given the current state of research about musical instruments.

These occasional problems aside, Waring's book is an important new addition to the growing number of studies about musical instrument making in America during the nineteenth century. The publication of

Manufacturing the Muse comes at an opportune moment, since the town of Brattleboro is in the process of developing an Estey Organ Museum (see www.esteyorganmuseum.org).

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Alfons Huber, editor. *Das Österreichische Cembalo: 600 Jahre Cembalobau in Österreich*. Tutzing: Hans Schneider, 2001. 638 pp.: 21 color illus., 110 black-and-white illus., 56 line drawings. ISBN: 3-7952-1039-9. €200 (cloth).

There is an old adage that admonishes us not to judge a book by its cover. The same may well be said of book titles, particularly in the case of this massive, sumptuously produced, and lavishly illustrated tome, bearing the prestigious imprint of Vienna's great Kunsthistorisches Museum. A review can scarcely offer more than a survey of so vast a book. One is immediately alerted not to take its title "The Austrian Harpsichord" as referring merely to present-day Austria. The endpapers are maps showing the Habsburg territories in their fullest historical extent in central and eastern Europe before their final fragmentation in 1919 into many smaller independent countries by the treaties of St. Germain and Trianon. The lands ruled by the Habsburgs for centuries covered territories now in Italy, the Czech Republic, Hungary, Slovakia, Poland, Slovenia, and Romania in addition to Austria proper. Keyboard instruments from most of these outlying countries accordingly receive their due.

The present book grew out of a symposium held at the Kunsthistorisches Museum in 1997, exactly 600 years after Hermann Poll of Vienna wrote of an instrument of his invention that he had christened *clavicembalum*. It is to his memory that this volume is dedicated. The participants in the symposium contributed expanded versions of the papers delivered there, no doubt taking full advantage of the opportunity to flesh them out with additional charts, graphs, line drawings, and photographs. It is well that these revised and expanded texts should be those of permanent record, for they fill lacunae that had remained after the history of the harpsichord in Italy, the Netherlands, France, and England had been exhaustively researched, and Iberia and Scandinavia somewhat less so. The German collective noun *Kielklaviere*, embracing harpsichords, spinets, virginals, and the stringed portion of claviorgans, cannot be rendered literally in English; all these are perforce termed harpsichords here.

The 22 chapters (15 in German, 7 in English) vary greatly in scope and degree of detail. By way of extended introduction, Herbert Haupt leads off in chapter 1 with an essay on the concept of Austrian. John Koster follows in chapter 2 with a remarkably condensed history of the earliest harpsichords, analogizing to other family trees, so to speak, even those of mammals and abstract art. Chapter 3, by Wolfgang Strohmayr, discusses the mathematical formative principles in Arnaut de Zwolle's instrument plans, an excursion that strays rather far from the central theme of the book. In a brief chapter 4 Denzil Wraight covers the development of keyboard instrument actions and scaling in the fifteenth century, essentially as disclosed by the Arnaut manuscript, which is virtually the sole source of significance for the period.

The truly Austrian core of the volume begins with chapter 5, in which Alfons Huber presents the earliest textual and iconographic evidence of harpsichord making in the Habsburg realm. In chapter 6 Huber (in 111 pages) describes in exhaustive detail the constructional features of Austrian harpsichords from the sixteenth through the eighteenth century. This chapter is exceptionally interesting, and especially notable is the section dealing with the uniquely elaborate forms of short octave (*Wiener Bassoktav*) with split keys having as many as three divisions. The use of such divided keys (*tasti spezzati*) to add notes below C, as distinguished from those providing missing accidentals, is traceable to Italian harpsichord makers in the first quarter of the seventeenth century. The Viennese short octave persisted into the time of Haydn, who wrote for it in at least two of his earliest keyboard pieces, datable to 1765 (Hoboken XVII:1 and 2). In chapter 22 Huber gives systematic descriptions and illustrations of seventeen extant harpsichords from c. 1564 to 1804 known or believed to be of Austrian origin. (Harpsichords made as late as the early nineteenth century were most likely intended for orchestral use, particularly in the opera house.) Why it was decided not to combine these two complementary chapters is a mystery. Be that as it may, they provide a fully documented study of what can now be seen as a distinct tradition of harpsichord making, one hitherto hardly explored. John Henry van der Meer sums up in chapter 7 his research of many years into the orientation and ranges of stringed instrument keyboards, in this instance as relating specifically to the instruments and musical literature of Austria.

Studies of particular instruments follow, beginning in chapter 8 with Rudolf Hopfner's essay on the claviorgan of c. 1564 from the Schloß

Ambras collection, an instrument now in Vienna's Kunsthistorisches Museum. Recent research has resulted in ascription of this oldest extant claviorgan to Servatius Rorif. The instrument's spinet at 4' pitch is barely mentioned, as the article is basically concerned with reconstructing the probable disposition of the organ. In chapter 9 Stewart Pollens anatomizes in fullest detail the claviorgan by Lorenz Hauslaib (Nuremberg, 1598) in the Metropolitan Museum of Art, New York. The organ and octave spinet each has its own keyboard, in contrast to the Rorif instrument, which has a single keyboard. Chapter 10, by Alfons Huber and Klaus Martius, is concerned with an anonymous harpsichord initialed HN and dated 1696 (Kunsthistorisches Museum, Vienna). This single-manual harpsichord, disposed 2 x 8', had already been rebuilt by 1703, and later in that century suffered further transformation into a fortepiano. This chapter perforce includes discussion of the conservation measures needed to preserve an instrument that arrived at the museum in a truly ruinous state. In chapter 11 an unsigned, undated harpsichord of late seventeenth- or early eighteenth-century date (Historisches Museum, Basel, Inv. Nr. 1877.70), identified only as from the southern portion of the German-language area, is the subject of very thorough examination by Sabine Klaus and Malcolm Rose. A single-manual instrument disposed 2 x 8', its original compass of forty-nine notes (C–c''') was enlarged to fifty-three (B–d''', e'''). The illustration shows a highly decorated instrument, but only the lid painting—on canvas and possibly replacing an earlier applied textile—is discussed, and that only briefly. Expert examination by a qualified art historian might have shed significant light on the origin and history of the instrument. Martin Pühlinger's chapter 12, quizzically entitled "A Bohemian Harpsichord in Prague?" describes an unsigned and undated single-manual, five-octave instrument with chinoiserie decoration and disposed 2 x 8' (no. 1352 E in the National Museum, Prague). A hypothetical Czech origin is supported by measurements said to be based on the Prague foot (296.416 mm), although in a number of respects the instrument resembles Viennese and Saxon harpsichords.

A brief description of the anonymous seventeenth-century harpsichord in the Courtauld Institute, London, is provided by Christopher Nobbs in chapter 13. Why this single-manual, five-octave instrument is so datable and fits into the Austrian tradition is briefly discussed. (It was at one time, incredibly, believed to be of Spanish origin!) The harpsichord is housed in an outer case, likely not the original one. The rich

decoration of the keywell and outer case, the lid and front flap paintings, ormolu hinges, and other details, altogether a bit incongruous, pose more questions than they answer. Gerhard Stradner in chapter 14 records the stringed keyboard instruments listed in Austrian inventories from the sixteenth through the eighteenth century, including a scant handful of identifiable survivors. Chapter 15, by Bohuslav Čížek, deals with stringed keyboard instruments in Bohemia and Moravia, including the three harpsichords in the National Museum, Prague. The two-manual instrument disposed 2 x 8', 4' by Johann Heinrich Gräbner (Dresden, 1722) underwent structural changes when its pitch was raised in the late nineteenth century. The unsigned and undated single-manual harpsichord with an integral stand in the form of a cupboard or commode with drawers (No. 1344 E) is dated c. 1700 both here and by Huber in chapter 6. The typical Viennese short octave (FF/C-d^{'''}) argues for Vienna as its birthplace rather than Prague.

Eva Szórádová in chapter 16 must limit her treatment of stringed keyboard instruments in Slovakia largely to eight clavichords and one curious late nineteenth-century unsigned harpsichord that is left undescribed. The history of instrument making in the region is supplemented by a biographical listing of known builders. Eszter Fontana in chapter 17 writes of clavichord and harpsichord building in Hungary, including Transylvania. The historical treatment begins in the fifteenth century. The essay also covers subsidiary topics such as pitch and the pedagogical use of the clavichord, and includes a biographical listing of makers. Chapter 18, by Darja Koter, is entitled "On the Role of the Harpsichord in the former Gorizia, Carniola, and Istria," territories lying between Italy and the Slavic lands of Slovenia and Croatia. Two fifteenth-century depictions of harpsichords are of particular interest.

In chapter 19 Denzil Wraight deals with the influence of Italian harpsichord building on Austrian instruments. (Like his equally valuable chapter 4, the text, regrettably, is in German rather than Wraight's native English.) Specific features of Italian instruments, principally as regards form and stringing, are related to corresponding traits of Viennese harpsichords. In chapter 20, "From Harpsichord to Fortepiano in Vienna," Richard Maunder draws on advertisements for harpsichords in Viennese newspapers between 1760 and 1800 to show not only how the transition to the pianoforte progressed, but also how the instruments were disposed and decorated. It is doubtful that harpsichords with six-octave keyboards were actually built, as one might assume from Maunder's text

and quotation; it is virtually certain that the sixth octave was due to a 4' stop, a comparatively rare feature of Viennese harpsichords, which were generally disposed 2 x 8'. Rudolf Hopfner's chapter 21 gives an extensive and remarkably detailed biographical listing of harpsichord makers in Austria proper. An appendix numbered 23 (for chapter 22, see above), although not a chapter properly speaking, takes in a miscellany: information on strings, descriptions of four instruments that might well have been treated in earlier chapters, the documents recording what is known of Hermann Poll's career, and the 1733 inventory of the estate of a Viennese harpsichord maker, Franz Lothar Walter, even more detailed than the well known French inventories. A brief biographical listing of the contributors and a very full bibliography, plus lists of illustrations and indices of names, places, and objects conclude the book. In sum, this volume is an indispensable and fundamental work of reference, founded on solid research, painstakingly edited by Alfons Huber, and produced to an uncommonly high standard.

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