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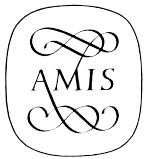

BOOK REVIEWS

John Henry van der Meer, Martin Elste, and Günther Wagner. *Kielklaviere: Cembali, Spinette, Virginale: Bestandskatalog.* With descriptions of the instruments by Horst Rase and Dagmar Droysen-Reber. Berlin: Musikinstrumenten-Museum des Staatlichen Instituts für Musikforschung Preußischer Kulturbesitz, 1991. 423 pp.; 48 color plates, 230 black-and-white illustrations. ISBN:3-922378-11-0. DM 170.

This sumptuous volume is, first of all, an eloquent testimonial to the state support of the arts and humanities in other countries. A full quarto in size, lavishly illustrated in color and black and white, with both pictures and letter-press clearly printed on the finest art stock, this catalogue ranks at the very top as a production. It is sad to recall that no catalogue of keyboard instruments in an American collection beyond a mere checklist has been published since the *Catalogue of Keyboard Instruments* (New York: Metropolitan Museum of Art, 1903) for the Crosby Brown Collection in the Metropolitan Museum of Art. The present volume embraces far more than a mere descriptive listing of those instruments in the Berlin instrument museum. Its title, the handy German word *Kielklaviere*—literally translated "quilled keyboards" and without any simple English equivalent—takes in all varieties of harpsichords, spinets, virginals, and clavicytheria.

The work of several hands, the book begins with an admirably useful survey of these instruments' history up to 1800 by Dr. John Henry van der Meer, curator emeritus of musical instruments in the Germanisches Nationalmuseum in Nuremberg. Many important historical examples that have come to light since the fundamental researches of Raymond Russell, Frank Hubbard, and Donald Boalch, as well as pivotal examples known to those pioneers, are described, placed in context, and illustrated. We are learning all the time, not only of previously unknown instruments, but also of detail differences in those from various regions and even from different workshops in the same area and period. Dr. van der Meer in just over fifty pages offers a most useful summary of the state of our knowledge as the catalogue went to press in 1991. (He confided to this reviewer in a recent telephone conversation that about one-third of his text has meanwhile had to be revised because important instruments continue to come belatedly to light.)

Next follows the description, jointly authored by restorer Horst Rase and curator Dagmar Droysen-Reber, of the collection's historical instruments datable down to 1800. These number thirty-five in all: eighteen harpsichords (one with a supplementary piano action as well), twelve virginals, four spinets, and a single clavicytherium. With minor variations the descriptive text conforms to a single scheme: regional classification, corpus, inner construction, action, finish and decoration, stand, original features and alterations, provenance, and literature. Detailed information is provided under each of these categories. Every instrument is illustrated at least once in color, generally in a three-quarter view. There are measured drawings of a plan view and of the interior construction, plus outline drawings to scale of molding profiles. Missing, however, are elevation drawings of the keyboards and, most regrettably, photographic plan views. Thus, soundboard paintings, often of more than purely decorative significance, cannot be studied from the catalogue except to the limited extent revealed in the photographs of the soundboard roses. Neither is the arrangement of the tuning pins, staggered or not as the case may be, usually visible to the reader. Pinning, like paintings, can often bear materially on attribution. Other details, including nameboard signatures, hardware, and arcades, are illustrated in black-and-white photographs. The utility of the plan view and inner construction drawings is doubtful in those instruments whose soundboard ribbing and case framing originated with modern restorers. String lengths and plucking points are given for every F and C. The degree of constructional detail in a catalogue ought, in my judgment, to bear a reasonable relationship to the relative availability of measured technical drawings or radiographs. If the Berlin museum can, in fact, furnish such material, as do, for instance, the Smithsonian, Victoria and Albert, and Nuremberg collections, then too much space in the present catalogue can fairly be said to have been devoted to incomplete data.

Attributions always provide grist for the mills of argument. Is harpsichord no. 5 really from the workshop of the Silbermanns of Saxony? If so, was Gottfried or his nephew Johann Heinrich the maker? The notorious harpsichord no. 316, long mistakenly claimed to have been the instrument of J. S. Bach, now boasts a pedigree by virtue of its recent ascription to the Harrass workshop in Großbreitenbach, Thuringia, ca. 1730. But harpsichord no. 317 is cautiously ascribed to "Gian Battista Giusti?"; as in the case of no. 5, the reasons for such an attribution are not very persuasively set forth. Candor prevails in the case of a

sixteenth-century Italian ottavina, no. 4797, much "improved" by the infamous instrument butcher, Leopoldo Franciolini. We are informed that the wrest plank, rack, soundboard, knees, jacks, keyboard, and nameboard are all of nineteenth-century date. Thus, precious little of the original instrument survives. One can only wonder why the museum bothered to purchase such a ruin in the year 1962.

Martin Elste's essay "Nostalgic Music Machines: Harpsichords in the Twentieth Century" is a most valuable contribution, a chronicle of the harpsichord revival from a German viewpoint, complementary and analogous to Larry Palmer's *The Harpsichord in America* (Bloomington: Indiana University Press, 1989) in that it treats of both the instrument and its musical employment. Curiously, there had been no such survey of twentieth-century harpsichord making in Germany, where so much of the revival took place, since Joseph Wörsching's long superseded *Die historischen Saitenklaviere und der moderne Clavichord- und Cembalo-Bau* (Mainz: Rheingold Verlag, 1946).

Elste's historical survey is reliable and accurate, altogether much superior to such a "coffee-table book" as Claude Mercier-Ythier's recent *Les Clavecins* (Paris: Éditions Vecteurs, 1990), filled with pretty pictures but marred by numerous inaccuracies. However, one notes with regret that Elste only acknowledges Frank Hubbard's research and his work while in partnership with William Dowd. Hubbard's important contributions as an individual maker after the 1958 dissolution of Hubbard & Dowd, his establishment of the keyboard restoration program at the Paris Conservatoire's museum, his development of the historically based kit harpsichord, and the fact that his workshop continues in operation to this day, seventeen years after his death, all are passed over in silence.

In any event, Elste's essay forms an appropriate preface to the succeeding section by Horst Rase, the museum's restorer; "Renaissance of the Harpsichord" describes the eleven twentieth-century instruments in its collection. The Berlin collection has assembled the most comprehensive group of revival instruments of any museum, with examples by Louis Tomasini (a unicum, it would seem), Érard, Pleyel, Dolmetsch-Gaveau, Johann George Steingraeber, Neupert, Wittmayer (a 1970 model with built-in electronic amplification), Maendler-Schramm, and, last but not least, Rase's own handsome reproduction of the two-manual Michael Mietke harpsichord. (At the collection a visitor can compare recordings of the same composition by the same player on the Mietke original and Rase's replica.) The Tomasini and earlier Érard instruments are the very ones made for the Paris Exposition of 1889, a fateful

event in the harpsichord revival. The earliest Pleyel in the collection is either the actual 1889 Exposition instrument or one identical to it.

The final substantive section is a historical survey of harpsichord playing by Günther Wagner. This is the least satisfactory portion of the volume. Ostensibly catholic in its references to Spanish, Italian, and French sources, it is flawed nonetheless by its bias toward the German ones. English historical sources on keyboard playing are ignored. This is indeed curious, for, to cite one instance of a less nationalistically skewed view of the subject, there is Eta Harich-Schneider's *Die Kunst des Cembalospiels* (Kassel: Bärenreiter, 1939), a pioneering and in most respects still exemplary work on the subject. That work seems all the more remarkable for its balanced view of the history of harpsichord playing if one recalls when it was written and published. How strange that Wagner did not profit from her example and draw on it more fully.

There follow a series of useful lists. The instruments lost in World War II are described according to Curt Sach's 1922 catalogue. Next comes a very complete, accurate, and up-to-date bibliography followed by a glossary of harpsichord terminology, listed in German alphabetical order but also giving the English translation of each term, a very useful help to the Anglophone reader. Four summary listings of the Museum's Kielklaviere come next: by maker (with biographical information); by their respective mentions in the descriptive chapters; by catalogue numbers; and, finally, by their places of origin. The next listing covers instruments not owned by the collection but mentioned in the text. Last of all come three indexes of makers, other names, and places.

Minor imperfections apart, and they are few indeed, this catalogue can serve as a model if, as one hopes, other important collections, especially in the United States, are to be presented in book form to the world at large. Even if not so lavish as the present volume, more well-illustrated and precisely described inventories of museum holdings of historical keyboard instruments should be produced. We have long awaited publication of the catalogue by John Koster of the keyboard instruments in the Museum of Fine Arts, Boston. Such catalogues are in far too short supply. One can only hope that Berlin's example, and perhaps the forthcoming third edition of Donald Boalch's catalogue raisonné by Charles Mould (announced by Oxford University Press for 1994 publication) will stimulate their production.

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David Woodrow. *The Shape of Stradivari Violins: Proportions in the Forms and Violins of Antonio Stradivari.* Technical Studies in the Arts of Musical Instrument Making. Edited by David Woodrow. Taynton, England: Taynton Press, 1991. 84 pp.; 18 figures, 28 tables, 17 graphs. ISBN: 1-870952-01-4. £22.00.

A glance at David Woodrow's latest publication might be enough to make all but the mathematically-gifted reshelve the slender volume for later reading. One is inclined to wait until there are ample uninterrupted hours in which to struggle through the complex pages of graphs and statistical analyses. This record of Woodrow's struggle to define the generative form from which Stradivari shaped his violins and how this form varied in application to each instrument clearly requires a practical knowledge of geometry and basic statistics. However, to avoid *The Shape of Stradivari Violins* until such fluency is acquired is to deprive oneself of an exciting tour through thought-provoking questions that will undoubtedly spur further Stradivari research. The author refreshingly defers laying claim to the answer in the ever-popular game of the "Secret of Stradivari." In his final paragraphs he writes: "This has been more a business of opening doors than closing them. . . . Ideas have been left as starting points for others to explore" (p. 84).

Among Woodrow's sources for measurements are the wooden forms in the Museo Civico Cremona; plans from Edward Heron-Allen's *Violin-Making, as It Was and Is* (London, 1885) and Karel Jalovec's *Italian Violin Makers* (New York: Crown, 1958); dimensions from such writings as the Hills' *Antonio Stradivari: His Life and Work, 1644–1737* (London: Macmillan, 1909; repr. New York: Dover, 1963) and Ernst Doring's *The Guadagnini Family of Violin Makers* (Chicago: William Lewis and Sons, 1949); and photographs in *The Strad*, Herbert K. Goodkind's *Violin Iconography of Antonio Stradivari* (Larchmont, NY, 1973) and sales catalogues of the major dealers. One might be skeptical about the accuracy of data drawn from such a conglomeration, but Woodrow assumes that "quantity cleans quality, that is, with many samples . . . the mean will carry the meaning better than the single example" (p. 44). It is true that we are often forced to rely on measurements taken by others, and variations in the techniques of measurement are as much a part of the package as is the distortion introduced by the photographic lens. Such procedures are less than ideal, but they are realities of today's musical instrument research.

Woodrow makes no claim about the precision of his data, and, despite his hodgepodge of measurements and the resultant generalizations, he arrives at several vital conclusions. The ratios that he produced to define the shape of each Museo Civico Cremona form were compared to the same feature on each of the other forms. Because the resultant standard deviation was so small, Woodrow decided that there was indeed a "finely controlled system for generating form outlines" (p. 13). A comparison of these ratios with the conglomeration of measurements yielded a picture of a ground plan that moved until 1706 "like the longitudinal cross section of a waisted balloon being blown steadily up" (p. 44). These variations of shape are detailed in a number of graphs and charts and are primarily of interest to luthiers involved in their own experiments and secondarily, perhaps, to dealers, restorers, conservators, and curators.

Woodrow leaves many questions unanswered. Nevertheless, they must be asked. Why did the 1706 plan remain basically unvaried for the last thirty years of Stradivari's life? Why did the variation cease when Stradivari was only 62? Had he tired of experimentation? Was he fully satisfied with this form, and, if so, are the violins made after 1706 consistent in sound quality? Does enough of Stradivari's original workmanship remain on those extant instruments to enable one to make such a determination? Is it possible that his shop workers had taken over so much of the work that an unvarying form was necessary as a type of quality control? This, of course, raises the issue of whether Stradivari employed apprentices at all, since it is apparently quite difficult to see traces of hands other than his own in the instruments.

Woodrow's study reminds us that much work remains and that many tedious details have yet to be examined. His gauntlet should not go unretrieved. Others should walk through those doors which Woodrow has opened and take up scientific Stradivari research. Woodrow's followers should make full use of these "starting points" that he has offered in such fine detail.

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Josef and Reiner Hammerl, eds. *Geigenlacke: Wissenwertes über Harze und Grundstoffe für Geigenlacke sowie Ratschläge zur Lackierung.* Fachbuchreihe *Das Musikinstrument*, no. 47. Frankfurt am Main: Edwin Bochinsky, 1988. 127 pp. ISBN: 3-923639-76-7. DM 58.

This is not just another dream discourse on the "secrets" of old Italian varnish. *Geigenlacke* discusses in a straightforward way varnishes and finishes that are available to the string instrument maker of today. The material is based on the Hammerls' formidable practical experience in this area.

Chapters one to four of the book discuss raw materials, each of which is presented under its own subheading. Altogether there are listed some five dozen substances, averaging less than one page each. There is a certain clarity in this method of organization, but the telegraphic writing style and the frequent single-sentence paragraphs hinder the flow of the text. Much of the information is important, such as the descriptions of the dissolving properties of the substances. Unfortunately, this importance is often obscured by tidbits of little practical value.

It is in the second section of the book that the authors are most at home in their presentation. The text here runs smoothly as they describe the various stages of the varnish application process, beginning with the initial treatment of the wood and ending with a discussion of polishing. An apprentice maker would do well to consult this section often; it is both informative and a pleasure for the curious browser. For those who do not already have a fair knowledge of varnishes and finishes, the many German technical terms may prove difficult.

Geigenlacke has deficiencies as a reference book; for example, the inadequate index gives the page numbers of only the book's subheadings. The large type, the relatively small number of lines per page, the subheading format, and the short paragraph length spread the text over many more pages than necessary, some ninety-seven in all. At fifty-eight deutsche Marks the book may therefore prove too expensive for many readers. There is no doubt that the authors are experts on their subject. I know of no source containing more raw data on varnishes and finishes than are presented here. How much more valuable this book would have been if the data had been more effectively transformed for reference or browsing. *Geigenlacke* has much valuable information, but the reader must work to extract it.

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***The Historical Harpsichord: A Monograph Series in Honor of Frank Hubbard.* Edited by Howard Schott. Vol. 3. Stuyvesant, NY: Pendragon Press, 1992. viii, 161 pp.; 37 black-and-white photos, 14 black-and-white figures produced in the text and separately on celluloid foil negatives. ISBN: 0-945193-26-2. $48.00.**

The first volume of this series was devoted mainly to an essay by William Dowd on the instruments of the Blanchet workshop. Volume two, by Martha Goodway and Scott Odell, dealt with the metallurgical properties of historical music wire. The present volume, consisting of two monographs—Hubert Henkel's "Bartolomeo Cristofori as Harpsichord Maker" and Denzil Wraight's "The Identification and Authentication of Italian String Keyboard Instruments"—continues to present research on the cutting edge of our knowledge of the history of the harpsichord and clavichord.

Hubert Henkel was curator of the musical instrument museum at the University of Leipzig during the years it was called Karl Marx University. Since one of the three pianos and all five of the harpsichords still extant by Cristofori are in that collection, Henkel was uniquely positioned to study what remains of the oeuvres of that Florentine genius. One of the harpsichords is unsigned and undated, but on the basis of internal evidence Henkel assigns it "at the very least to Cristofori's workshop or that of a direct follower" (p. 2). He makes the same attribution for a spinettone in the Smithsonian Institution in Washington. Eight or nine instruments are not much of a legacy from an important builder, whose lifetime output Henkel estimates at something like 170 harpsichords and 30 or so pianos. Nevertheless, even with five harpsichords to examine, one is struck by Cristofori's fecundity.

Two harpsichords (the 1722 and the undated, unsigned one) are conventional integral-case Italian instruments with cypress soundboards and $2 \times 8'$ dispositions. The third is an extraordinary symmetrically-shaped oval spinet of 1693 with the uncommon disposition of $2 \times 8'$ and a mechanism for playing either one or both sets of strings. The fourth could be described as an elongated quasi-bentside spinet. (A similar instrument was called *uno spinettone da teatro* [large spinet for the theater] in the 1700 inventory of the Medici collection of keyboard instruments.) This instrument has both $8'$ and $4'$ strings, a rare disposition for a spinet of any sort. Further, Cristofori provided a mechanism for playing either of the stops alone as well as both together.

The fifth instrument is a unique harpsichord, with string choirs of $1\times8'$, $1\times4'$, $1\times2'$. Interestingly, it does not seem possible to play all three sets of strings together. Through an ingenious combination of register extensions protruding from cheek and spine, and stop levers mounted on the wrest plank, the 8′, 8′ + 4′, 4′, 4′ + 2′, and 2′ registrations are accessible. Henkel questions the usefulness of 4′ and 2′ stops alone, but their presence indicates that the Italians may well have viewed octave stops as instruments in their own right, rather than simply as a means of enhancing 8′ tone. Accordingly, this instrument could be thought to combine a normal harpsichord with a 4′ *ottavino* and a 2′ spinet.

Aside from novel shapes and dispositions, there are other unconventional things about Cristofori's harpsichords, such as unusual registration mechanisms, independent hitch-pin rails, combined box guides and lower guides, and the simultaneous use of touch rail and head stops. Of course, his greatest invention was that most peculiar harpsichord of all, the *gravicembalo col piano e forte*. Who'd have thought it would catch on!

There are many ways by which we may attempt to assign a provenance, time, or builder to an anonymous undated instrument: scale lengths, apparent units of measurement, shape, constructional and decorative details, and the use of particular materials are some commonly used. In "The Identification and Authentication of Italian String Keyboard Instruments," Denzil Wraight convincingly rejects all of these as realistic determinants of maker or even place of origin. He even dismisses the presence of a builder's name as a means of identification, since many instruments that passed through Franciolini's shop emerged with false attributions. Instead, he proposes that, if possible at all, the identification of Italian builders must depend on the two elements unique to each craftsman: case moldings and keyfront arcades.

Wraight reports on a number of identification problems he has solved by comparing photographic negatives of some of the moldings typically found on Italian harpsichords and clavichords. In an appendix he identifies thirty-nine possible locations for moldings on these instruments. He goes into considerable detail on how to take an impression, what materials to use, and how to avoid injuring the molding. He also recounts earlier attempts to identify instruments by molding profiles, a technique he traces back to 1910.

Until the advent of modern machines, such as shapers, moldings were made either with special planes whose beds and blades mirrored the

shape of the desired molding, or scrapers called scratch stocks with molding profiles ground into them. The arcades glued to the fronts of the keys were made with a circular cutter chucked in a drill. Planes do a nice, smooth job when the grain of the wood is fairly straight or uphill; but when the grain is uneven or goes downhill, the wood tends to tear rather than plane off in thin shavings. A scratch stock scrapes rather than planes, takes longer, and does not do as smooth a job; but it does not tear out wood, no matter which direction the grain takes. Scratch stock cutters can also be sharpened more easily and accurately than molding plane blades.

Although either planes or scratch stocks could have been used to make the moldings on Italian instruments, Wraight finds little tear-out, which would be an indication of planing against the grain. Since much of his argument rests on the close replication of the molding profiles, he concludes that the scratch stock was the tool of choice. Yet, in his short article "An Attribution of an Unsigned Spinet" (*FoMRHI Quarterly* 70 [Jan. 1993]: 45–46), Wraight allows that one of the moldings on a spinet in the Shrine to Music Museum does not quite match a similar molding on another instrument and thus could have been made with a plane. Without getting into the matter too deeply, one must assert that Wraight cannot have it both ways. But this minor criticism is aimed only at his explanation in this particular instance. His methodology has been carefully thought out and his arguments are convincing. He does not often falter.

Both monographs represent significant contributions to the history of the harpsichord and continue the high standards of practical scholarship established earlier in the series. This sort of detailed investigation is not uncommon these days, but such was not always the case. When Frank Hubbard's *Three Centuries of Harpsichord Making* was published by Harvard University Press in 1967, it stood alone—both as a magnificent achievement and as an example of what could be accomplished by close examination of instruments. Ten years ago, in the introduction to the first volume of this new series, Howard Schott stated that its purpose would be "to continue and build on the research initiated by Frank Hubbard" (p. x). So far, *The Historical Harpsichord* has fulfilled that pledge.

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John Solum. *The Early Flute*. With a chapter on the Renaissance flute by Anne Smith. Early Music Series, no. 15. Oxford: Clarendon Press, 1992. xiii, 164 pp.; 35 black-and-white illustrations, 9 musical examples. ISBN: 0-10-816253-7. $59.95.

John Solum is a well-known flutist, who, while majoring in music at Princeton, studied with William Kincaid. On the opening page of this book Solum quotes from an interview in which Kincaid responded to a question about playing his antique flutes: "They lack the full sonority. Besides, they are too difficult to play. You see, I would have to practice on them. Despite the limitations of these ancient instruments, the performers of the past must have managed very well with them for lots of beautiful music was written for the flute before Boehm improved the instrument" (Rafael Kammerer in *Musical America* 80, no. 9 [August 1960]: 28). Perhaps it was this generally positive view that encouraged Solum himself to collect and learn to play early flutes.

The Early Flute is concerned with the history of the transverse flute from 1500 until the early nineteenth century. While the title is somewhat vague, the scope of the book is clearly delineated by Friedrich von Heune's fine jacket illustrations of four basic types of flutes: a Renaissance flute; a three-piece baroque flute by Jean-Jacques Rippert; a four-piece baroque flute by Carl August Grenser; and an eight-keyed classical flute by Heinrich Grenser.

The opening chapter, "Some Historical Considerations," points out that the simple-system flute never died out. It coexisted with the Boehm flute as an orchestral instrument, especially in Germany, until the early part of this century and continues in use by Irish flute bands. The revival of the *flauto traverso* began in the 1920s with Gustav Scheck, who in the 1950s made pioneering recordings on a boxwood one-keyed flute by F. G. A. Kirst. Scheck was followed by Leopold Stastny, Hans-Martin Linde, Frans Brüggen, Barthold Kuijken, and others playing on original eighteenth-century instruments. A baroque flute discography by this reviewer documents these recordings until the late 1970s (*Early Music* 7, no. 2 [April 1970], 250–53). Other aspects of the early music revival played a part in the rebirth of the *traversa* (as Handel and others called it). These include the assemblage of important collections of historic musical instruments throughout Europe and America, the appearance of English translations of the most important eighteenth-century performance treatises, scholarly practical editions, facsimiles of composers'

autographs and eighteenth-century editions, and the building of modern instruments closely based on historical models in museum collections.

Anne Smith's chapter on the Renaissance flute provides a splendid overview of the European transverse flute from 1500 to 1670. It includes information on iconography, surviving historical instruments, and common deviations from the originals in modern reproductions. Smith translates this advice from Philibert Jambe de Fer: "I want to warn you that playing [the flute] is impossible for those who have no tongue, just as speaking is, for all notes that are spoken must be led by the tongue; therefore, those of you who take pleasure in playing [the flute] should guard your tongue against mould, which is to say, drink often" (*L'Épitome musical* [Lyon, 1556]; repr. by François Lesure in *Annales musicologiques* 6 [1958–63]: 341–86). This is followed by the author's valuable comments on her source material, including the necessity of playing an octave higher than notated pitch and in mean-tone temperament. Smith also presents a discussion of music sources and recommended editions, a useful bibliography of Renaissance performance practice, and an appendix with comparative fingering charts.

The Hotteterre family has generally been credited with the "invention" of the baroque flute, but Solum's discussion of the discovery of a flute by Richard Haka suggests the possibility that the one-keyed flute may have been born in Amsterdam rather than in France. The baroque flute emerged about 1670 and went through a gradual evolution. As Solum points out, the classical flute developed in response to the changing musical styles of the late eighteenth century. The need arose to play more effectively in the second and third octaves, but power in the lowest octave was sacrificed as a result. Although one-keyed flutes continued to be made, the focus was now on the four-keyed flute, the six-keyed flute with low C and C♯, and the eight-keyed flute, which added the C key for the right index finger and the long F key. Solum advises that the early-music performer on the transverse flute needs at least three instruments: a three-piece flute of the Hotteterre type, pitched at A 392; a four-piece one-keyed flute built at A 415; and a one- to eight-keyed classical flute pitched at A 430.

Three chapters are devoted to sources. On technique there are valuable discussions of facsimile editions of eighteenth-century English tutors, as well as original French and English translations of various treatises. Finally, the author covers recommemded editions of the solo and

ensemble repertory. I would like to echo his sentiments about Handel's trio sonatas, op. 2, nos. 1 and 4, as well as the other wonderful sonatas in opp. 2 and 5. I also share Solum's enthusiasm for C. P. E. Bach's flute music and wish that he had mentioned the fine trio sonatas by that estimable composer.

All serious students will benefit from the author's advice on the purchase of a flute. He tells the reader where to find antique flutes for sale, reveals some of the problems in making replicas, and offers a knowledgeable evaluation of major makers, most of whom work in the United States. The extensive bibliography and index are both of great value, but I noticed that some items in the former did not appear in the latter. Despite small lapses in proof-reading for spelling, this is a splendid book, which every student of the flute will want to own and carefully study.

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Ralph T. Dudgeon. *The Keyed Bugle*. Metuchen, NJ: Scarecrow Press, 1993. xiv, 267 pp.; 47 black-and-white illustrations, 9 musical examples. ISBN: 0-8108-2645-3. $32.50.

Hegel's *mot* that "the owl of Minerva flies at night" applies fully to the history of musical instruments. Only with the rise of electronic instruments is the passing age of mechanically improved musical instruments falling into perspective. In that era which spans the years 1750 to 1950, every instrument except the violin was transformed according to new insights of mechanical technology. The rise and fall of the keyed bugle is a significant, but heretofore neglected, part of that story.

With this splendid little book Ralph T. Dudgeon rescues the keyed bugle from oblivion. Its lifetime was short. Keyed bugles had their brief moment between invention by an Anglo-Irish bandmaster in 1810 and the rise of piston-valved horns during the years from 1840 to 1860. The addition of keys to brass instruments represented a conservative technology borrowed from woodwinds. Piston valves, by contrast, were in step with steam-engine technology, which employed pistons with increasing sophistication. The keyed bugle was doomed almost from the time of its inception. Because of this, it has been customary to treat

keyed bugles and their deeper-voiced cousin, the ophicleide, as little more than historical curiosities. The fact that their main use was in military and brass bands rather than orchestras also helped consign keyed bugles to the status of a historical footnote.

Thanks to Dudgeon's research, begun as a doctoral dissertation, these instruments will henceforth be acknowledged as having been a central force in a distinct phase of musical history. With their mimical sound and surprising capacities, they brought about not only the creation of ensembles of a new type but the composition of a rich literature that has been undeservedly neglected until now.

Dudgeon's book treats in detail the history of keyed bugles in Western Europe and America. It provides an invaluable survey of published method books and an excellent, if frustratingly brief, essay on performance practice. Bibliographies of literature and makers round out this exemplary study. American bandsmen like Richard Willis and Francis Johnson re-emerge as artists who built their fame as virtuosos on this instrument and as composers for it. To Dudgeon, too, we owe the rediscovery of Anthony Philip Heinrich's charming, recorded concerto for keyed bugle.

In spite of Dudgeon's tenacity as a researcher, there are at least two areas in which he leaves me wishing for more. First, the study includes only a cursory treatment of the manufacturing process for keyed bugles. Robert E. Eliason touched on this matter in his pioneering survey "Brass Instrument Key and Valve Mechanisms Made in America before 1875" (D.M.A. diss., University of Missouri, 1968). Tantalizing hints abound in Dudgeon's story. Did the Boston machinist Henry Sibley or the great firms of E. G. Wright and Graves & Co. employ modern manufacturing processes, or were they essentially preindustrial craftsmen? If the latter, as seems likely, did the decline of the keyed bugle represent the victory of mass production over handwork?

Secondly, was the keyed bugle truly confined largely to military brass bands and social orchestras? Dudgeon presents convincing evidence on this point but also several intriguing hints to the contrary. It is surely significant that the fine Prussian court orchestra at Berlin and Potsdam included keyed-bugle players at the very time when several major composers were writing for that ensemble. One also wonders about the Paris Opéra orchestra, which included keyed bugles in the years when Auber was churning out one opera after another for that renowned aggregation.

All these questions are enough to send one back to the archives to check exactly what North German and French composers had in mind when they indicated "cornet" in their scores. Berlioz's oft-cited remarks on the *cornet à piston* do not suffice to read the keyed cornet out of the classical repertoire of the day. It is perhaps revealing that the Paris-trained American composer Louis Moreau Gottschalk gladly accepted keyed cornets in several of the festival orchestras he assembled in the Caribbean and South America. When Roger Norrington recorded the *Symphonie fantastique* with ophicleide rather than E-flat tubas, he startled the musical world with clear evidence that the keyed ophicleide constituted an essential ingredient of the overall sound Berlioz strove to achieve. There may be further works in the classical mainstream requiring such reassessment after the addition of keyed bugles.

Taken as a whole, Dudgeon's study represents a significant addition to the history of music. The impressive section on literature opens exciting prospects for future performers and challenges other researchers to exhume yet more compositions for keyed bugle from archives in places like Italy, Spain, and Russia. *The Keyed Bugle* will enable us to appreciate more fully that neglected period in American music between the old reed-based wind bands and the rise of all-brass ensembles. In a droll aside, the author identifies himself as the keeper of "the planet's unofficial keyed-bugle archive." This fine study more than adequately illustrates what he means.

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Communication

The following communication has been received from Kenneth Mobbs, Mobbs Keyboard Collection, Bristol, United Kingdon:

Recently, in private correspondence with an American early keyboard specialist, it became obvious that we were at variance in the terminology we used to describe the taller types of early British upright pianos. To me and, I would submit, to anyone in the early keyboard field in Britain, *upright grand* refers to an instrument of about 259 cm total height, designed similarly to the Stodart 1795 patent of "an Upright Grand in the form of a bookcase," on a separate four-legged stand, with vertical stringing commencing roughly at keyboard height (see Rosamund