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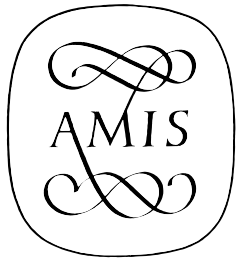

BOOK REVIEWS

Hugh de Ferranti. *Japanese Musical Instruments.* Oxford: Oxford University Press, 2000. viii, 104 pp.: 29 color plates, 23 black-and-white photos. ISBN: 18-590500-8. $13.95 (hardbound).

Alan R. Thrasher. *Chinese Musical Instruments.* Oxford: Oxford University Press, 2000. x, 98 pp.: 24 color plates, 20 black-and-white figures, map (on end papers). ISBN: 19-590777-9. $17.95 (hardbound).

These two books on musical instruments, each written by a respected authority in the field, are among the recent additions to the "Images of Asia" series, whose volumes cover various aspects of East Asian life and culture. Published for a non-specialist readership, these volumes all conform to the same small size, with pages measuring $7\,^{5}/_{8}$ by $5\,^{1}/_{16}$ inches, and have a generous number of illustrations. The books reviewed here follow Keith Howard's *Korean Musical Instruments* (1995) and Eric Taylor's *Musical Instruments of South-East Asia* (1989), as well as the second edition of Jennifer Lindsay's *Javanese Gamelan: Traditional Orchestra of Indonesia* (1992), the first edition of which (published under different auspices) was reviewed in this Journal 9 (1983): 122–124.

Hugh de Ferranti begins with an excellent twenty-three-page chapter, "Music in Japanese History," that encompasses all periods: the prehistoric (though only the unearthed instruments, not the music played on them, are now known); the ancient/classical (from which some seventh-century repertory of both the Buddhist and aristocratic court-music traditions is still regularly performed); the medieval/feudal (including narratives of battles of the warrior clans sung self-accompanied on the *biwa*, and the *nō* drama that was synthesized and refined from various archaic traditions by the *samurai* who, by the twelfth century, had wrested political control from the nobility); the early modern or Edo period, extending from 1603 to 1867 (including the *kabuki* and *bunraku* theaters that developed to appeal to the urban merchant class that rose to power in Edo, the city now called Tokyo); and the modern age (beginning with the imperial restoration in 1868, during which so much Western music was introduced to Japan). He traces the roles of various musical genres of both indigenous and foreign origin—the foreign introduced mostly from or through China or Korea—in Japanese society, from the time in which they first flourished up through their survival to the present.

Then, because descriptions of the playing of musical instruments are prominent in Japanese literature and folklore, he devotes a chapter to these accounts, providing examples from poetry, prose, and drama (some in romanized Japanese with English translation, some only in translation).

For the description and discussion of Japanese musical instruments, Ferranti groups them as in western practice, i.e., percussion, wind, and string. This makes it easy for the intended non-Japanese readership to understand the basic features of the various instrument types and to appreciate the distinctive variant forms that developed for different genres. It also allows inclusion of virtually all Japanese musical instruments (though not every small difference in the folk instruments of the many regions of central Japan), even a few that many people quite well versed in Japanese music may never have seen, though they may have heard them played by the off-stage ensemble in certain *kabuki* plays. Ferranti includes the instruments of Japan's two principal minorities, the Ainu of Japan's northern island, Hokkaido, and the Okinawans of Japan's southern Ryūkyū islands. For the latter, however, he is inconsistent in giving the Okinawan pronunciation/spelling—what Okinawans consider the "name"—of only some of their traditional instruments. For example, instead of the Okinawan name for drum, *dēku,* he uses the standard central-Japanese designation, *taiko;* he also refers to the Okinawan bowed lute, *kūchō,* as the "Okinawan *kokyū*," though he correctly states that it is structurally different from the *kokyū* of central Japan (p. 91).

Visual illustrations, an important feature of the "Images of Asia" series, include many fine photographs (especially those provided by the Museum of Musical Instruments of Osaka College) and a few inferior ones, from various other sources, that hardly do justice to their subjects. Ferranti's special interest and expertise in the *biwa* (a plucked lute that came to Japan from China) results in an overemphasis on its place in today's musical milieu, mostly at the expense of the *koto* (a thirteen-string plucked zither) that is far more frequently played, either as a solo instrument, in self-accompaniment to singing, or in various ensembles, and in a greater variety of performance contexts. Nevertheless, this generally excellent little book will be desirable reading for many AMIS members —and convenient to take along on a trip to Japan.

Alan Thrasher, in contrast to Ferranti, tends to follow the practice of indigenous scholars in selection, organization, and emphasis, and he provides many notes documenting or commenting on the sources of his data. In such a small book, it is inevitable that he excludes the instru-

ments of China's more than fifty ethnic minority peoples, reserving his focus for those of the Han people who are both by far the majority of China's population and the dominant ethnic group—in fact, the people that most non-Chinese think of as "the Chinese."

The book opens with a fine twenty-three-page chapter on the ancient heritage that extends back as far as c. 5000 B.C.E. and includes the Zhou dynasty (eleventh to third centuries B.C.E.), during which the Chinese created the world's first system for classifying musical instruments, based on eight materials used to make them, i.e., metal, stone, clay, skin, silk, wood, gourd, and bamboo. The culture of this period is of great significance to the way the Chinese—especially Chinese scholars—view their own identity, even though only three of the indigenous instrument types from that period—*xiao* (a vertical flute), *sheng* (a mouth organ with multiple single-reed pipes), and *zheng* (a multi-stringed zither with a bridge under each string that defines its pitch)—became widespread in use. As discussed in the second chapter, however, the literati class placed an extremely high value on another of these indigenous instruments, the *qin* (a seven-string zither without pitch-defining bridges for individual strings). This most prestigious instrument continues to be played by some musician-scholars and is being studied by a growing number of talented amateurs in Hong Kong, San Francisco, and elsewhere, as well as by students in major Chinese music conservatories. If, as proposed by some of its enthusiasts, UNESCO designates the *qin* as a "Masterpiece of the Oral and Intangible Heritage of Humanity," a much broader spectrum of music lovers throughout the world will become acquainted with this instrument and its aesthetically refined repertory.

Continuing with the historical orientation, the third chapter discusses instruments that were brought into China along trade routes from South and West Asia beginning sometime during the Han dynasty (202 B.C.E.–220 C.E. [incorrectly shown on page 38 as beginning in 206 B.C.E.]) and continuing for eight or more centuries. Ironically, in spite of their acknowledged foreign origin, it is these instruments that constitute the majority of what are now thought of as "traditional Chinese instruments," not only by most people in China but also throughout the world.

In the following two chapters, Thrasher describes two types of instrument-only ensembles, referring to them broadly as *sizhu* (literally, 'silk-bamboo') and *chuida* (literally, 'blowing-hitting'), though regional variants of each type have their own names. *Sizhu* ensembles, which developed primarily in southern China for playing refined chamber music,

feature stringed instruments (lutes, fiddles, zithers) and bamboo flutes; though not indicated in the name they also include a few small percussion instruments. *Chuida* ensembles, which developed primarily in northern China for ritual use in funerals and ceremonies of the traditional Chinese calendar, feature louder wind instruments and percussion. Discussing instruments within genres (or, as here, within broad-based genre types) is advantageous since it highlights the Chinese aesthetic taste for combining different types of sounds, in contrast to that for a unified blend as in a western string quartet. In following this format, however, Thrasher omits a discussion of differences among instruments of the same broad type (e.g., two-string fiddles) that are significant to the different traditional genres in which they are played. In a short postscript he mentions some modern developments stimulated by contact with western (including Russian) music. These include using equal temperament, expanding the pitch range (e.g., by adding more strings to the *zheng*), and creating families of instruments, such as two-string fiddles, of different size and pitch range.

Some readers may be disappointed that there is no mention of which instruments (e.g., the *zheng*) have significant solo repertoire, though it was primarily the demands of composers and solo performers that led to new designs that enlarged the instrument's sound-producing and expressive capacities, in much the same way that the demands of European composers and pianists prompted changes in Cristofori's piano that gradually led to the modern Steinway. Some other readers are likely to be disappointed that there is no discussion of the instrumental ensemble of Chinese opera (though instruments similar to those used for opera are discussed and illustrated), since this genre is relatively frequently performed in English-speaking countries, whether in full stage productions or only musical excerpts. For these readers, a desirable supplement to Thrasher's book may be another volume in the "Images of Asia" series—Colin Mackerras' *Peking Opera* (1997), which has a good, if short, section on music and instruments, including six photos showing the playing position of some of the principal instruments.

With its visual illustrations that reinforce the historical focus by featuring reproductions of line drawings of instruments in old books, *Chinese Musical Instruments* offers a valuable window through which to view one of the major non-Western traditions of musical scholarship. For some readers unacquainted with how China's long history contributes to its perspective on culture, however, the emphasis on the great age of many

instrument types may lead them to presume that the music played on them is also old. Actually, most of the repertoire considered "traditional" today, in spite of some of it having roots in an early dynasty, came into being only after the instruments became popular among the "common people" during the Ming dynasty (1368–1644). In the case of *sizhu* in Shanghai and cities near it, the repertoire as played today developed even later than that—primarily from the mid-nineteenth through the early twentieth centuries. In fact, in contrast to Japan and to a considerable extent also to Korea, where older traditions continue to survive while new genres flourish in newly emerging social contexts, in China the music of one period has tended to supplant that of previous periods.

The two books reviewed here are valuable not only for readers interested in the world's musical instruments but also for those interested in the many facets of Asian culture. One hopes that more volumes focusing on musical instruments will soon be forthcoming in the "Images of Asia" series.

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Albert Glinsky. *Theremin: Ether Music and Espionage.* Foreword by Robert Moog. Urbana and Chicago: University of Illinois Press, 2000. xvi, 403 pp: 72 black-and-white photos, drawings, playbills, and cartoons. ISBN 0-252-02582-2. $34.95 (cloth).

Although the American Musical Instrument Society's stated purpose is "to promote the study of the history, design, and use of musical instruments in all cultures and from all periods," electronic musical instruments have been almost entirely absent from the society's consideration. The use of a complex technology to produce the sound, and the fact that much of today's electronic music indistinguishably blends recorded sounds and computer-generated rhythm with individual artistry, seems somehow to set this class of instruments apart.

Readers of Albert Glinsky's *Theremin: Ether Music and Espionage* may well obtain a quite different perspective on the manner in which electronic instruments fit into the musical picture. Some may have been under the impression that the theremin had a short life and was soon forgotten as a passing fancy. On the contrary, Glinsky's history shows that it was the first successful electronic musical instrument, attracting much attention from composers of rank and from prominent symphony

conductors. It was the direct ancestor of the many forms of synthesizers that are current today, both in the music industry and in the home. The instrument in essentially its original form still exists, as do a number of theremin enthusiasts.

The book treats concurrently two distinct histories. The first concerns the development of the instrument and its infusion into the music of the twentieth century; the second relates the strange life of its inventor, Leon Theremin. Born in an aristocratic Russian family, well educated and possessed of an inventive genius and creativity, Theremin became inextricably involved in the Bolshevik revolution and the darkest days of the Soviet empire. Both stories are treated in substantial detail, drawing on a great many sources and describing vividly the tumultuous historical events of the twentieth century that surrounded the life of the inventor and of his invention.

The instrument, originally called the "Etherophon" by its inventor, produced sound by using a "heterodyne" principle. This phenomenon is familiar to musicians as the production of beats. When two simple waves of different frequency are combined, a beat note is produced, having a frequency equal to the difference in the frequencies of the two tones. Musicians use these beats in tuning: when the two tones are adjusted to the same frequency, the beats disappear. In piano tuning, a specified beat frequency between harmonics is used in tempering the scale. In the theremin, the two original tones, far above the range of audibility, are produced by radio-frequency oscillators. One of these oscillators is fixed, the other is connected to an antenna in the form of a vertical rod atop the instrument. An object coming near this antenna will change the effective capacitance in the circuit, altering its frequency and producing a beat note in the audible range. The player need only approach the antenna with one hand to create notes varying in pitch as the distance to the rod is varied. A second variable oscillator, connected to a horizontal loop on the left of the instrument, causes the volume to change with left-hand distance. Thus the performer does not touch anything, but waves his or her hands as if conducting an orchestra, apparently drawing the music out of the air. In 1921, just a few months after commercial radio broadcasting began, this seemed like magic, greatly impressing early audiences.

Leon Theremin had been engaged for several years in the development of secret devices for the Bolshevik Physico-Technical Institute

when he invented the Etherophon, which was an outgrowth of his work on a proximity detector using radio waves. A personal demonstration of his instrument to Lenin, the father of the Communist revolution, resulted in the Party's decision to use the instrument as evidence of the Soviets' newly-growing technical prowess. Theremin was instructed to tour the Soviet Union, conducting "agit-prop" concerts and demonstrations, at the same time continuing his development of secret items for military applications. The highly successful tours were extended to Europe, Great Britain, and eventually to the United States, creating a sensation wherever he and his instrument appeared. All during this time Theremin was also gathering as much information as possible concerning technical developments in other countries, and transmitting the information back to the Soviet secret police.

Arriving in New York in 1927, accompanied by a great deal of publicity, Theremin not only gave many concerts, but also began to develop improvements and variations on the instrument, contracted with RCA to produce a commercial model, and established a studio to teach others the art of playing it. Reception of these efforts was mixed. Some music critics hailed the new device as the beginning of a revolution in music, allowing infinite gradations of pitch, timbres of sound never before attainable, and volumes capable of dominating symphony orchestras. Others complained of its lack of staccato and dismissed its sound as the mere squealing of a mis-tuned radio. The performance of Joseph Schillinger's *First Airphonic Suite* by the Cleveland Orchestra in New York's Carnegie Hall, with Leon Theremin as soloist, brought substantial recognition. Stokowski and the Philadelphia Orchestra commissioned some new and altered instruments from Theremin. A few radio stations scheduled regular programs of theremin music.

Aided by society matron Lucie Rosen, one of his pupils, who allowed him the use of one of the wealthy Rosens' town houses as a studio and laboratory, Theremin settled in to life in the United States. He tried to capitalize on his inventions by forming several small companies, producing a variety of products such as gun detectors and altimeters for aircraft. But the depression had begun, and in spite of vigorous nation-wide promotional efforts, RCA produced and sold only some five hundred instruments. Theremin's many attempts to capitalize on his inventions resulted only in his piling up of debts. In 1938 he suddenly departed for Russia, listed as a crewman on a Russian freighter, leaving behind with

no explanation the African-American wife, twenty years his junior, whom he had secretly married only a few months before.

On his return to his homeland, Theremin was almost immediately placed under arrest, accused, and convicted on the trumped-up charges common in Stalin's reign of terror, in which some three million Soviet citizens were arrested or disappeared. Glinsky draws on Solzhenitsyn's *The Gulag Archipelago,* as well as Theremin's own account, to describe the horrifying conditions in the Siberian gold mine camp to which he was sentenced. Few survived the cruelty of the guards, the extreme cold, and the exhausting labor for more than two years. Fortunately for Theremin, after nine months of laboring in the mines he was brought back to Moscow to join a group of scientists and engineers working on experimental aircraft—still prisoners confined to a fenced-in building, but treated with a modicum of respect and given tolerable living conditions. His work on aircraft and on radio technology persisted throughout the Second World War and into the Cold War. His most notable achievement of this period was an ingenious microwave listening device concealed in an ornamental plaque placed in the U.S. ambassador's office. It operated undetected for seven years, allowing the Soviet secret police to monitor every word spoken there.

After Theremin's furtive departure from the U.S., Clara Rockmore, his most talented pupil, and Lucie Rosen continued their efforts to bring the theremin to an acknowledged place in classical music, eliciting compositions from such composers as Bohuslav Martinů and Percy Grainger. Leopold Stokowski commissioned theremin concertos for the Philadelphia Orchestra. Clara Rockmore performed some seventy concerts on tours with Paul Robeson. The voice of the theremin began to be heard more and more often in special effects for motion picture scores and radio programs, prominently in Hitchcock's *Spellbound* and as the theme music for *The Green Hornet.* It was adopted by many of the popular music bands of the day.

In 1951 the theremin caught the attention of a fifteen-year-old boy, Robert Moog, who proceeded to build his own instrument and to devise more modern circuitry for other amateurs to copy. An avid interest in the possibilities of electronic music led him to devise what is now known as the synthesizer. This was an electronic instrument capable of variable attack, decay, timbre, and automatic rhythm—the prototype of the many varieties of machines that brought electronic music-making into the home and which today pervade the entire popular-music industry.

Leon Theremin was officially pardoned by the Soviets in 1957, but he continued to work for the KGB until 1964. Even then his reemergence from obscurity proceeded slowly, and the Western world still thought him long since deceased. Only gradually did recognition return to him, first in Russia, then in Europe. In 1991, at the age of ninety-five, he was brought back by some of his early friends to a triumphant concert in New York City, celebrating electronic and computer music.

Glinsky's thoroughly researched treatise covers in minute detail (perhaps too much in some areas) the history of the theremin, not omitting the many other electronic instruments that appeared—and disappeared—in this period. The treatment is authoritative, being replete with identified quotations from contemporary news sources, interviews, and communications from persons directly involved. Technical details of the mechanisms are sparse, though the descriptions are in most cases adequate for understanding the general ideas without any dependence on a knowledge of electronics. (Those who are familiar with electronics can get a more detailed picture from Theremin's U.S. patent 1,661,058, downloadable from Internet site www.uspto.gov.) Many photographs and illustrations of personalities, instruments, playbills, and news articles enliven the text. Robert Moog, the father of the synthesizer, which is basic to most electronic instruments today, tells in his foreword how Leon Theremin and his instrument influenced his own career.

Readers whose interests have been preoccupied with the study of more conventional historical instruments will be enlightened by this narration of the reception of the theremin in the musical world and its profound influence on much of what we hear today in film and television scores and modern popular music. They can hardly help being fascinated with the tale of the strange and intriguing life of its inventor.

The "classic" theremin is by no means dead. Instruments can still be purchased, recordings of virtuoso performances are available. One of them, *The Art of the Theremin* (Delos DE1014), contains performances by Clara Rockmore together with a twelve-page booklet that gives a quite complete description of the instrument, its history, and that of the artist. A small but enthusiastic group of admirers is still much engaged with the theremin, as can be seen by visiting the Internet site www.bigbriar.com.

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Darcy Kuronen. *Dangerous Curves: The Art of the Guitar.* Boston: MFA Publications, 2000. 224 pp.: 180 color photographs. ISBN: 0-87846-478-6 cloth; 0-87846-485-9 paper. $45.00 cloth; $29.95 paper.

The design of the guitar has always been one of great beauty and dignity, not only in recent years, but throughout the life of the instrument. Furthermore, not only can a fine guitar produce exquisite sounds, but the idea of creating music and visual art simultaneously has prompted guitar builders and craftsmen to take the instrument to higher levels of artistic expression. By looking at the guitar and its ever-changing face, one can sense a musical history unfolding—in some way, etched into the grain of the wood are years of personality, desire, and soul from builders, players, and listeners. As author Darcy Kuronen states in his preface: "it has been interpreted with extraordinary variety of form and decoration, always reflecting the aesthetics of the time. . . . It is specifically because the guitar has avoided strict association with classical music and the concert hall that luthiers have been free to adopt such a wide variety of shapes and decorative schemes for the instrument's construction" (p. 11). *Dangerous Curves* offers a beautifully illustrated and extremely intelligent look at the art of the guitar over the past four hundred years. The book was written in conjunction with an exhibit of the same name, held at the Museum of Fine Arts, Boston, from November 5, 2000, to February 25, 2001. Collaborating with various private collectors, working musicians, and other museums, Kuronen and others at the Museum planned and created an extraordinary and unique exhibit —devoted solely to the guitar, illuminating the length and breadth of the instrument's long life.

Although not all the instruments included in the exhibit are pictured in the book, 110 important specimens are included. The volume opens with a short statement from Malcolm Rogers, Ann and Graham Gund Director of the Museum, followed by acknowledgments and a preface by Mr. Kuronen. In the acknowledgments, Kuronen recognizes the many people who helped create the exhibit, including the collectors, scholars, performers, and makers who contributed instruments and provided information about them. Following the preface is a foreword by rock guitarist, writer, and teacher Lenny Kaye, who played and toured with Patti Smith for many years. His essay is a loosely constructed history of the guitar from a performer's point of view—written in a rapid-fire, hip style

that conveys his passion for the instrument along with his knowledge of its many forms.

Kuronen's approach to the book's organization is easily understandable for all types of readers. Proceeding in a broadly chronological order, the book opens with chapters organized by type of guitar, each of which consists of an introductory section relating developments in the design and building of guitars, followed by photographs and descriptions of individual instruments. The first chapter covers Baroque guitars, light and delicate instruments with four or five pairs of gut strings; in chapter two Kuronen describes the transition to six-string guitars in the late eighteenth century. Succeeding chapters cover lyre guitars and other hybrids, classical and flamenco, harp, flat-top, arch-top, Hawaiian, resonator, and lap steel guitars. Then follow chapters covering the decades from the 1950s through the 1990s, each of which opens with a short but well-researched synopsis of the period and the events that inspired the guitar designs—modern electric, modern acoustic, and other hybrid and custom-made instruments. In the 1980s chapter, for example, Kuronen notes the dominance of the solid-body electric guitar, as heavy-metal music gained popularity and synthesized British pop music took over the airwaves.

Each guitar is represented by one or two color photographs: in addition to a full-length shot, many are also shown in a close-up that accents a special feature of the instrument. (Some of these close-ups are enlarged to the full ten-inch-square page size, providing a spectacularly detailed view.) It would be impossible to include every significant guitar in one book, but this volume does a superb job of presenting a majority of the most important designs in the history of the instrument. Almost every commercially successful guitar maker of the twentieth century is represented in some way. Following the photographs and descriptions of instruments, the book concludes with a glossary of terms relating to the guitar, a checklist of the instruments, and a brief bibliography. The checklist includes more detailed information on each instrument (such as materials used, measurements, and current owner) than is given in the narrative sections.

Because of the emphasis on photographs, one might at first glance judge this to be a coffee table book or a novelty piece for guitarists, but Kuronen's masterfully written text—composed with insight, precision, and wit—along with his careful choice of instruments to include, make

this a valuable study. For the general reader it offers the basics of guitar history in an easy-to-understand manner; for the guitar enthusiast, it offers a wealth of unusual instruments and well-researched information.

To many guitarists in the world, the guitar symbolizes freedom and creativity. For years it has been the instrument of the common people, and it has often been scorned for attracting non-professional and dilettante players. For some, the guitar is a loud, screeching extension of a yell or cry; for others, it is an instrument of grace and beauty. Whether played by Jimi Hendrix or Andres Segovia, the guitar will always be a powerful tool of human expression. Kuronen's book effectively documents this expression.

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Rudolf Hopfner. ***Streichbogen: Katalog; Sammlung alter Musikinstrumente und Sammlungen der Gesellschaft der Musikfreunde in Wien [im Kunsthistorischen Museum Wien].*** **Tutzing: Hans Schneider, 1998. 257 pp.: 134 black-and-white illustrations, 58 charts. 21 full-size drawings in separate portfolio. ISBN: 0-8108-3448-0. €126.80 (cloth).**

John Huber. ***The Development of the Modern Violin, 1775–1825: The Rise of the French School.*** **Stockholms universitet: Studier i musikvetenskap / Studies in Musicology 6. Frankfurt am Main: Erwin Bochinsky, 1998. vi, 315 pp.: 57 charts. ISBN: 3-923639-21-X. €39.00 (paper).**

Josef Focht. ***Der Wiener Kontrabass: Spieltechnik und Aufführungspraxis, Musik und Instrumente.*** **Tübinger Beiträge zur Musikwissenschaft 20. Tutzing: Hans Schneider, 1999. 338 pp.: 67 music exx. ISBN: 3-7952-0990-0. €67.50 (cloth).**

Considering the importance of the violin family in Western music, it is surprising how few and far between are scholarly treatments of topics relating to the history of bowed strings. A variety of factors have contributed to this. In contrast to other instrument families, violins and their relatives have been much more susceptible to periodic "modernization," which not only limits the number of first-rate examples that survive in or near their original condition, but also can make it difficult to discern what is original. Because of their mutability, most extant old violins are still in use, dispersed around the world, in private hands, which

makes them difficult to access. Historically, those who have the best access to large numbers of old violins—and who are thus able to develop real expertise—have been associated with large violin shops, where it is not always in their financial best interest to be forthcoming with their findings. For centuries the violin trade has been cloaked in a veil of secrecy, so that even with publications from this quarter it can be difficult for the uninitiated to untangle fact from myth. The three books reviewed here, written by researchers with no commercial interest in their topic, therefore make a most welcome contribution to the literature.

Rudolf Hopfner, who is a violinist and the director of the instrument collections of the Kunsthistorisches Museum in Vienna, is to be commended for his excellent catalog of the museum's bows. In his *Streichbogen: Katalog* Hopfner has intelligently classified the bows into four levels of importance: as objects of outstanding significance, objects of moderate significance, objects of little significance, or objects of the lowest quality. He provides documentation accordingly: bows at the highest level receive detailed descriptions and measurements, including charts and tables giving the stick's diameter, measured both horizontally and vertically, at two-centimeter intervals; black-and-white photographs of the head and frog, with separate pictures of the screw and x-rays of the frog where these merit it; and a full-sized plan of the bow in the supplemental portfolio that accompanies the book. Included in the measurements is the balance point, as well as the numeric rating of the stick's elasticity made using an ultrasonic "Elasticity Tester" designed by Giovanni Lucchi of Cremona. The criteria used in the catalog, along with the special terminology employed, are clearly explained early on (pp. 15–22), so that readers without previous experience in looking closely at bows can make sense of all the numbers. The photographs are well lit and cleanly reproduced, maximizing the information that can be gleaned from them, though it must be added that views of the heads taken from different angles could have been helpful. I am also mildly disappointed that Hopfner, in unquestioningly repeating the date of ca. 1785 for François Tourte's introduction of the "modern" bow, perpetuates the debatable idea that from this date forward Tourte ceased making other bow types and that other bow makers across Europe rapidly followed his lead. The catalog is valuable for the detailed analysis of the bows, the quality of the presentation, and the rarity of many of the bows.

The collections he discusses contain bows from the sixteenth through the twentieth centuries, but are particularly notable for the number and quality of early bows, including eleven dating from the sixteenth century.[1] Hopfner has wisely chosen not to try to indicate the specific instruments for which these earliest bows were intended. The materials used for the bow sticks range from palm wood (on bows where the hair is simply tied to the stick at the tip) through European hardwoods to extra-European (presumably tropical) hardwoods. All these earliest bows have clip-in frogs, though in several cases the frogs currently with the bows are later replacements of undetermined date. Double bass bows and eighteenth-century English bows are well represented in the collections. A particular highlight is a highly ornamented violin bow made by Wenzel Kowansky in Vienna before 1749 (SAM 638). This bow, which has a stick decorated in ivory and tortoise shell (according to the catalog, completely unaltered from its original condition), has a head carved in the form of a fabulous animal's head and an intricately carved ivory frog with an original eyelet and tightening screw.

Hopfner's book, with its extensive measurements, detailed descriptions, and full-sized drawings, should prove an invaluable resource for bow makers and for players interested in historical bows. The information in this catalog has already been used to produce at least one musically successful reproduction, a copy of one of the bows originally from the Este collection (SAM 82), made by Richard Riggall of Philadelphia. Additionally, this catalog could serve as a useful model for other important collections (such as the Janos Scholz collection in the Smithsonian Institution), most of which have yet to issue a catalog.

John Huber's book on *The Development of the Modern Violin* is a published version of his doctoral dissertation *The Modern Violin* (University of Stockholm). The dissertation, however, could have benefitted from more careful revision, both to improve some of the arguments it makes and to correct numerous infelicitous typographical errors and other flaws in the presentation.

1. These bows were originally in the Este collection, previously housed in the Catajo Castle near Padua where the Holy Roman Emperor Ferdinand I lived with his retinue, or in the Kunstkammer of Archduke Ferdinand II, previously housed in Ambras Castle, Tyrol. Both collections joined the museum in Vienna in 1916.

The basic premise of Huber's work is sound, if perhaps not thoroughly groundbreaking. He uses various criteria to define what constitutes a "modern" violin. The most important factors are the neck angle, whether or not the neck is mortised into the top block, and the degree of arching in the top and back plates. He rightly posits that French makers were in the forefront of modernizing older instruments and in building original instruments to more modern specification in the late eighteenth and early nineteenth centuries. He makes a good case for the spearheading role of the French by showing, through extant instruments, just how conservative the Italians and Germans could still be in the early part of the nineteenth century. None of the above points, however, represents particularly new thinking; rather, they seem to be ideas that have been circulating over the past two decades among violin restorers and players interested in historical set-ups—people for whom practical application in usable instruments, rather than publication, is often of primary importance. Neither the date that the dissertation was submitted nor any information about the period of time during which it was researched and written is included in this book, so one rather suspects that Huber, who has by now produced several other books about the violin and the guitar (e.g., *Geigen, Bestimmung der Preise: Geigen und Bogen, was bestimmt ihren Wert?/Violin, Price Determination: Violins and Bows, What Determines Their Value?* [Frankfurt/M: Bochinsky, 1988] and *The Development of the Modern Guitar* [Westport, CT: Bold Strummer, 1991]), is not here putting forth his most recent effort. The concentration of items in the bibliography from the 1970s and early 1980s and the paucity of more recent items also suggest that the majority of research for this book may have been carried out more than fifteen years before its publication.

Huber does have something original to say about changing tastes in violin arching in the nineteenth century. By measuring the height of the arching at regular intervals on the tops and backs of many violins, he is able to statistically document the shift away from higher arched models to flatter ones, as well as the French school's early move in this direction. Unfortunately, the presentation of his findings—through over fifty bar graphs, each outlining the arching profile of a different violin—is flawed, first because of his failure to adequately articulate why he chose these particular violins, and more seriously by his not sticking to a single scale so that the graphs could be meaningfully compared to each other.

Additionally, Huber fails to document some of his assertions, for example, that the general lengthening of "the fingerboard of (especially French) violins" occurred ca. 1800 (p. 55); and he repeats often-stated but inadequately documented ideas, for example, that Giovanni Battista Viotti (1755–1824) used a "modern" bow[2] and "that he obviously did not in any way sound baroque" (p. 119).

Huber is at his most interesting when speaking about specific French violin makers, especially Jean Gabriel Koliker (pp. 197–98), whom he credits with being the real innovator with regard to neck modernization. However, it seems difficult to determine to just what extent Koliker would have been modifying necks, since extremely few of his instruments survive.[3]

Josef Focht's book, *Der Wiener Kontrabass*, originally submitted as a doctoral dissertation (University of Tübingen, 1994) is an up-to-date, thorough treatment of its subject, the five-stringed double bass. The instrument is typically tuned FF–AA–D–F♯–a, but as Focht makes clear, it is the tuning of the upper four strings that is characteristic of the Viennese instrument, while the tuning of lowest string is variable: FF, EE, or DD. Like Alfred Planyavsky (*The Baroque Double Bass Violone* [Lanham, MD: Scarecrow Press, 1998]), Focht sifts through copious source material, but does so dispassionately, while Planyavsky seems determined to read every source as evidence of his pet theories.[4] Focht has effectively put together a high-quality *vademecum* for the Viennese double bass. While he draws on the solid work of Adolf Meier—perhaps best known in this field for *Konzertante Musik für Kontrabaß in der Wiener Klassik*, Schriften zur Musik 4 (Giebing, 1969, 2nd ed. 1979) and "Der Wiener Kontrabaß und seine Spieltechnik in der Zeit der Wiener Klassik," in *Kontrabaß und Baßfunktion*, Innsbrucker Beiträge zur Musikwissenschaft 12, ed. Walter Salmen (Innsbruck, 1986), 97–108—he has clearly reevaluated the sources and has brought additional sources into consideration, benefit-

2. For evidence against this theory, see the portrait included at Viotti's entry in *The New Grove Dictionary of Music and Musicians*, second edition (New York: Macmillan, 2001), 26:767.

3. According to Huber, even the Parisian expert Étienne Vatelot remembers having seen only one instrument by Koliker. With so few extant instruments it is hard to see how we can be sure of the way he might have set up instruments.

4. See reviews of Planyavsky's book by Shanon P. Zusman in this Journal 26 (2000): 238–242, and by Gregory Barnett in the *Journal of the Viola da Gamba Society of America* 36 (1999): 69–74.

ting, no doubt, from the guidance of his *Doktorvater* Manfred Hermann Schmid, author of "Der Violone in der italienischen Instrumentalmusik des 17. Jahrhunderts," in *Studia organologica* (Festschrift John Henry van der Meer), ed. Friedemann Hellwig (Tutzing: Schneider, 1987), 407–436.

In addition to providing a single place where one can learn just about everything that is to be known about the Viennese double bass, Focht's study is valuable particularly for his annotated catalog of music for the instrument (pp. 87–150) and his encyclopedic coverage of players and construction of the instrument (pp. 165–221 and 224–247). Here are found a wide range of obscure composers such as Josef Axmann, Antonio Capuzzi, Johann Georg Hindle (who was also a double bassist and a violin maker), Joseph Mannl, and Leopold Pfeiffer—though it must be said that when it comes to some of the more mainstream repertoire Focht's coverage is not always as impressive. For example his arguments as to why the first edition of Schubert's "Trout" Quintet contains notated low Cs in the "violone" part are not fully convincing (pp. 131– 32), if in fact Schubert had the Viennese double bass in mind for this part.

Occasionally Focht seems too eager to prove his point, sometimes drawing conclusions that are not adequately supported by the evidence he presents. For example, he argues that Vienna was unique in losing the G violone by 1700, citing Johann Jacob Prinner's *Musicalischer Schlissl* (1677) as the latest regional source to mention the use of this instrument (pp. 26–28), but he neglects to cite a wealth of later sources from other areas that do mention it, nor does he specify any later sources from around Vienna that could have, but conspicuously do not, mention it. Sometimes he fails to cite a source, for example where he shows typical bowings for minuets and marches (p. 71), or where he shows a bowing in modern down- and up-bow signs over an example from a cassation by Mannl (p. 71) without specifying the particular source for this bowing. I have not previously seen original modern down- and up-bow signs in music this old, so I would like to know exactly how the bowing was indicated in the source and what the source is. On the whole, however, this book can be recommended as a reliable resource on the Viennese double bass, an instrument that deserves more attention in modern-day, period-instrument performances of Viennese music.

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David Rattray. *Masterpieces of Italian Violin Making (1620–1850): Important Stringed Instruments from the Collection at the Royal Academy of Music.* Second edition. Lanham, Maryland: The Scarecrow Press, Inc., 2000. 192 pp.: 230 color photographs, 4 black-and-white photographs, 1 map, 1 table. ISBN: 0-8108-3976-8. $125.00 (cloth).

This second and substantially revised edition of *Masterpieces of Italian Violin Making* provides information on a further fifteen instruments from the Royal Academy's collections in addition to those shown in the 1991 first edition. Detailed color photographs in place of the original black-and-white ones, and a revised text that reflects some advances in violin research during the last decade, mean that this edition is decidedly more valuable to the scholar of the violin than its precursor.

In order to convey the importance of this publication, it is relevant first of all to describe exactly what it is not. The title and presentation of David Rattray's book gives the sense of a museum or exhibition catalog; indeed, by the time this review is published, some of the instruments included will be forming a part of the Academy's new museum in London. The format has obvious influences from recent exhibition catalogs, particularly those of the 1987 Stradivari Exhibition in Cremona and the Guarneri Exhibition published in 1998, and is virtually identical to that used in the catalog of *The British Violin* exhibition also published in 2000. Yet this is not a catalog, since it does not list the entire holdings of Italian "masterpieces" owned by the Royal Academy. Instruments have been selected for the book because of their fine preservation or remarkable characteristics of the maker that they illustrate. (From the Academy's multi-national collection of about two hundred stringed instruments, forty-one by Italian makers—thirty violins, six violas, and five cellos—were chosen.) Notable omissions include the Academy's "Segelman" Stradivari cello of 1692, and a number of early specimens of the Brescian School.

Neither does the book serve as an overview of the great Italian violin makers. Although the collection includes many important and celebrated instruments, few can be described as definitive examples. The most obvious example of this is in the representation of Antonio Stradivari's work. More than a dozen examples are owned by the Academy (and twelve are featured in the book), but perhaps only the "Archinto" viola of 1696 and the "Habeneck" violin of ca. 1743 can rub shoulders with the likes of "The Messiah" of 1716 and the "Lady Blunt" of 1721.

Even more importantly, the work of numerous important and familiar makers is not represented in the Academy's collection, and so does not find a place within this book: among others, Giuseppe Guarneri del Gesù and Domenico Montagnana are conspicuous by their absence.

If we conclude that this volume is lacking as an overview and as a catalog, does this mean relegation to the stacks of works that substitute gloss and expense for scholarship, an affliction of the violin world? The answer is a resounding "No"—for the combination of abundant illustration and well-written narrative makes this a valuable study. Every instrument is represented by at least five photographs—front, back, and scroll, with enlarged full-page reproductions of the back and belly. Occasionally a scroll of particular note is given a full two pages of photographs at actual scale. The photographs are of very fine quality, and have all been taken under the same conditions, thus providing excellent consistency. (The one frustration is that only six instruments are illustrated in profile, although a great deal of useful information can be learned from this angle.) Rattray examines each instrument individually, providing a biographical and technical narrative based on his long experience, including more than twelve years as custodian of the collection. His text guides the reader through the complexities of violin connoisseurship, as he points out the "awkward proportions" of one violin scroll or the "shallow edge fluting" that characterizes another maker. The commentary on each violin is backed up with a biographical and historical background that provides an effortless and lucid narrative. However, the real beauty of *Masterpieces of Italian Violin Making* is found as the author invites cross-referencing between the different instruments, and so describes the influences of one maker on another. When Rattray writes, for example, that a violin by Rugeri of 1705 has little influence from Stradivari, the reader can turn the pages to examine examples of Stradivari's work of the same period. When he adds that the flowing outline is similar to the "Grand Amati" pattern, there is a photograph for comparison. Rattray's deep knowledge of the instruments in his charge provides the sorts of insights into the instruments that are rarely found elsewhere. The serious reader will find it well worthwhile to work through the enormous maze of cross-references between text and photographs, as Rattray compares technical features of one violin against another.

Masterpieces of Italian Violin Making represents an important contribution to violin scholarship, and this second edition, providing outstanding photographic reproductions, is a significant step forward. No other

book provides such technical assistance to readers who wish to learn about the evolution of craftsmanship in the art of violin making during the seventeenth, eighteenth, and early nineteenth centuries. Rattray discusses the instruments that he knows best, not to show off the prodigious talents of a group of violin makers, but rather to allow the reader to follow the thoughts of a connoisseur as he examines a group of instruments by makers whose ideas developed over generations. He has provided an invaluable aid to the scholar or dilettante of this field.

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Edwin M. Good. *Giraffes, Black Dragons, and Other Pianos: A Technological History from Cristofori to the Modern Concert Grand.* Second ed. Stanford: Stanford University Press, 2001. xxv, 369 pp.: 64 black-and-white illustrations, 21 line drawings. ISBN: 0-8047-3316-3. $145.00 (cloth).

There has been an explosion of information dealing with early pianos since 1982, when Edwin M. Good first published his book on the history of the technology of the instrument. This second edition brings his work up to date. It is also a nicer-looking volume: the format is a little larger, the paper a better quality, and the type a bit more readable (although, inexplicably, the photos seem muddier). The bibliography has doubled in size, from eight to fifteen pages. References to recordings are now to CDs, rather than LPs. The material on Cristofori-action pianos has been removed from the original chapter two ("The Classic Piano"), expanded, and along with information on other pianos of the early eighteenth century, put in a new chapter two, entitled "The Earliest Pianos." The old chapter two has become chapter three, expanded to include new information on the grands and squares of the classical era; and since the instrument is still changing, the final chapter ("The Modern Piano") has also been augmented. Many emendations, additions, and changes were made in the intervening chapters, but there has been little substantive rewriting. Rather than a criticism, this comment should be taken as a compliment: the earlier version was so well done that most of this nicely-illustrated book needed little other than occasional factual revision.

A detailed re-review of the major portion of its contents would make little sense. Suffice it to say that *Giraffes* is a fascinating account of the

interplay between the piano as a music-making machine and the changing technology of its design, materials, and manufacture. In contrast to most writers on the instrument, Good does not believe that the modern instrument is the result of a Darwinian survival of the fittest, a linear evolution from the "primitive" constructions of Cristofori to the triumphant splendor of the nine-foot Steinway grand (which is, by the way, the *Black Dragon* of the book's title). "But change is not synonymous with improvement or with progress. . . . That the piano has been improved in certain objective ways I do not doubt. . . . But I am unwilling to conclude that for certain musical purposes—such as playing music by Mozart, Beethoven, Schubert, Schumann, Chopin, perhaps even Brahms—the modern piano is in all respects better than older ones. It is different from them" writes Good (p. xxi). To which I respond: "Bravo."

Another of the author's prime tenets regards the slow acceptance of what are generally considered to be technological "advances" in piano construction. The double-escapement (repetition) action, for example, invented by Sébastien Erard and his nephew Pierre, was patented in 1833. Yet by the 1880s it had still not been adopted by many French makers; German and Austrian pianos still used Viennese actions, and English instruments were content with the venerable English action known to (but scarcely appreciated by) Beethoven. It was not until the late nineteenth century that today's standard repetition action was universally adopted (although Viennese actions continued to be made until well into the twentieth century). A similar story is told about the acceptance of the cast-iron frame, invented for square pianos by Alpheus Babcock in Philadelphia in 1825, adopted for grand pianos by Jonas Chickering in Boston in 1840, but ignored—one might almost say rejected—by Continental builders for years. The slow acceptance of cross stringing provides yet another example of the inherent conservatism of piano manufacturers. The photos allow us to compare a Steinway grand of 1867 (p. 210) with double-escapement action, over dampers, cast-iron frame, and cross stringing, to a ca. 1894 Erard (p. 252) which, although it does have a double-escapement action, also has under dampers, six bolted-on tension bars, and straight stringing. Yet, Good would say, this is not an indication that the Erard was any less viable a musical instrument. Its values were different, and those differences were appreciated.

A thorough description of the work and influence of Bartolomeo Cristofori forms the core of the new chapter two. Cristofori's amazingly

well thought-out action had far more influence than was believed twenty years ago: not only is it found in the work of his Florentine student Giovanni Ferrini, but also in the earliest pianos of Spain (Francisco Pérez Mirabal), Portugal (Henri van Casteel and Manuel and Joachim Jozé Antunes), and Germany (Gottfried Silbermann).[1] The fruitless efforts of Jean Marius and Christoph Gottlieb Schröter, both of whom developed designs for actions different from Cristofori's, but neither of whom ever produced a piano, are not forgotten. Attention is given to the *pantalon*, an enormous dulcimer played with mallets, invented around the turn of the eighteenth century by its greatest practitioner, Pantaleon Hebenstreit. Good calls him a "superstar" who gained his virtuoso status by "back-breaking practice" (p. 45). Hebenstreit, he notes, "could play both softly and loudly, and the undamped shimmer that he threw over series of arpeggios on his unwieldy monster cast audiences into spasms of ecstasy" (p. 45). He is probably not exaggerating: Hebenstreit, who named his instrument after himself in 1704 at the suggestion of Louis XIV, created a sensation wherever he appeared. In 1731 the otherwise obscure Leipzig builder Wahl Friedrich Fickern (or Ficker) invented his *Cymbal-Clavier*, a harpsichord-shaped keyed pantalon with a down-striking action. This and other shapes were built, but the most common was that of the square piano. Distinctions between that instrument and the keyed pantalon quickly became blurred, but (at least in theory) it was the instrument with bare wooden hammers and no dampers that bore Hebenstreit's name. Its action was rudimentary, designed to impart nothing more than a less-than-subtle blow to the strings. Mutation stops were provided if softer sounds were desired—an important distinction from the piano proper, where dynamics were controlled by the fingers. Such stops became an important feature of later German pianos, appearing as bassoon stops, moderators, buff stops, and the infamous Janissary stop.

The final chapter ("The Modern Piano") brings the history of the instrument up to date. The electronic piano based on sampling algorithms —the present-day "keyboard"—is dealt with at some length, even though Good at first refuses to admit it to membership in the club. Still, eventually, he has to concede, "if it has a keyboard like a piano, sounds like a piano, and is played like a piano, then in some sense, and with all the

1. And France. Surprisingly, Good neglects to mention the 1781 Cristofori-action piano by the Marseillais Louis Bas (Vermillion, Shrine to Music Museum).

modifying qualifiers in full play, it *is* a piano" (p. 296), and he even likens the keyboard to the early square in shape, size, and function. New piano companies that have arisen since the first edition, such as Falcone of Massachusetts, Fazioli of Italy, and Daewoo and Handok of Korea, are given their due, and the dizzying fortunes and setbacks of more established firms such as Steinway and Baldwin are examined. Good is particularly taken (as are others in the piano world) with the patented action of Darrell Fandrich of Seattle, Washington, which, for the first time, provides upright pianos with both the feel and the quick repetition of the grand's double escapement. This, he believes, could possibly "revolutionize the market for upright pianos" (p. 308).

While Good's knowledge of the piano appears to be encyclopedic, his grasp of some of the more esoteric elements of keyboard instruments is not nearly as secure. A reference to Irish clavichords (p. 55) is puzzling, since none are known from that region. Also puzzling is his statement that the English were devoted to the virginal in the eighteenth century (p. 63); surely he means the bentside spinet. He repeats the utterly false notion that on a fretted clavichord "one cannot play the adjacent notes rapidly in succession, and a trill between the two keys on the same strings is quite impossible" (p. 61). The remark that "spruce has been the material for soundboards since there have been makers of stringed keyboard instruments" (p. 14) needs some amplification, since fir, pine, cypress, and maple have all been used as soundboard woods, some of them extensively. His claim that the rim of the piano must be made of hard wood to better reflect back the vibrating energy of the soundboard (p. 4) is misleading. There are too many other variables involved in the complex issue of boundary conditions, a point implied by Good himself, who, in his next sentence, notes that the rims of Bösendorfer pianos are made of spruce, a much softer wood than those commonly used.[2] He notes that the presence of trichord stringing in the late eighteenth-century English grand is the reason its tone was stronger than the

2. Despite Good's claim that, compared to its other parts, little is known about the acoustics of the piano soundboard (p. 15), there is a large and ever-growing literature dealing with soundboard behavior. One thorough discussion of this topic is found in Klaus Wogram, "The Strings and the Soundboard," in *Five Lectures on the Acoustics of the Piano,* ed. by Anders Askenfelt (Stockholm: Royal Swedish Academy of Music, 1990), 83–98. With articles dealing with piano design factors, touch, the relationship between hammer and string, and modal analyses of soundboard motion, this volume belongs on the shelf of anyone interested in the acoustics of the piano.

double-strung German and Austrian pianos (p. 70); but the differences in the distance of the hammer throw, hammer weight, and leverage are at least as significant, and he fails to note the important effect the third string has on the sustaining quality of the sound—that singing tone that Beethoven loved.[3] He refers to a 1795 Könnicke piano with a six-octave compass and six keyboards (p. 98), but that instrument has a *five*-octave range, and six *rows* of keys.[4] There is some confusion in his discussion of historical temperaments (which he calls "tuning systems," p. 98). Good mentions a "just" tuning (although he appears to be describing quarter-comma meantone temperament) as common for late eighteenth-century pianos, but it was the revolving or modified meantone temperaments that were in use then, permitting the use of all keys, with the simpler ones more consonant in sound.

Nevertheless, *Giraffes* is not about acoustics, clavichords, temperaments, and keyboards with thirty-one notes per octave, and it almost seems petty to cavil its minor flaws, as annoying as they are. This second edition makes it an even more valuable reference work, but it is also a book that can be read for sheer pleasure. We know the outcome of the story of the piano—but what a labyrinthian journey it was to get here!

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Phillipe Lescat and Jean Saint-Arroman, editors. *Clarinette: Méthodes et Traités, Dictionnaires* (Méthodes et Traités vol. 6, Série I, France 1600–1800). Courlay: J. M. Fuzeau, 2000. 303 pp. ISMN: M 2306-5802-7. €59.81 (cloth).

Publisher J. M. Fuzeau has embarked on a series of volumes presenting facsimiles of French method books and theoretical works, each volume being devoted to a particular instrument. The volumes in series I, edited

3. A classic article dealing with this effect is Gabriel Weinreich, "The Coupled Motion of Piano Strings," in *Five Lectures*, 73–81.

4. This piano's keyboard is discussed and pictured in Alfons Huber, "Der Österreichische Klavierbau im 18. Jahrhundert," in *Das Klangwelt Mozarts* (Vienna: Kunsthistorisches Museum, 1991), 47–72, photographs on pp. 54 and 116. The keyboard is similar to that of Vito Trasuntino's 1606 *Clavemusicum omnitonum* (Bologna, Museo Civico) with thirty-one notes to the octave.

by Phillipe Lescat and Jean Saint-Arroman, cover the viola da gamba, cello, viola and pardessus de viole, oboe, bassoon, clarinet, and pianoforte. The editors' accomplishment is laudable; the volumes are useful for the organologist, music historian, performer on historical instruments, and general musician.

The clarinet volume includes fifteen sources ranging from a one-page fingering chart to eighteen pages of advice for composers writing for the clarinet. It comprises fingering charts for the four-key clarinet by Valentin Roeser and Abraham [no known first name]; four-key clarinet fingering charts from flute methods by Michel Corrette and Jacques-Martin Hotteterre; method books with fingering charts for the five-key clarinet by Amand Vanderhagen, Frédéric Blasius, and Michel Yost; excerpts from treatises on instrumentation by Roeser, Louis-Joseph Francoeur, and Othon-Joseph Vandenbroeck; and encyclopedia entries by François-Alexandre-Pierre de Garsault, Jean-Benjamin de La Borde, and Nicolas Etienne Framery and Pierre-Louis Ginguené. The facsimile reproductions are clearly printed and are reproduced on opaque paper with a minimum of words or notes showing through from the verso of each page. Four sources were slightly reduced in size in order to print two original pages on one of the book's quarto-sized pages.

The sources were identified as a result of Lescat's work on his book *Méthodes et Traités Musicaux en France 1600–1800* (Paris: L'institut de pédagogie musicale et chorégraphique, 1991). For this study, he used a series of method books reprinted by the Minkoff firm in Geneva and the list of printed works from *Écrits imprimés concernant la musique*, edited by François Lesure (*RISM* B/VI/1–2, Munich: G. Henle, 1971).

Lescat and Saint-Arroman have included facsimiles of very important documents in their clarinet volume, but it is a pity that they did not check the source texts and descriptions more carefully and consult research published in English. Three sources are misidentified and/or misdated (Roeser, pp. 5–11; Abraham, p. 43; Anonymous, pp. 67–70), one is incomplete (Garsault, p. 12), and another is a conflation of two sources published as one (Framery and Ginguené, p. 65). The comments that follow offer some corrections, based on my own research, along with additional observations and suggestions for further reading.

The first source in the book, "Principes de clarinette avec la tablature des meilleurs mtres. pour cet instrument et plusieur duo pour cet instrument," is attributed to Valentin Roeser, ca. 1760. Consisting of a fingering chart with four duos arranged from popular opera arias, it should

not be attributed to Roeser and it should be dated ca. 1775.[1] A surviving example is in the Newberry Library, Chicago.

The second source is a one-page description of a two-key clarinet in F by Garsault from his encyclopedia *Notionnaire ou mémorial raisonné,* published in 1761. It includes an engraving of a two-key clarinet from the lower half of plate XXXI in the encyclopedia, but without the corresponding scale—an 8 centimeter line equivalent to two feet (2 pieds). According to Garsault's text and the corresponding scale, this clarinet is nineteen inches in length and pitched in high F.[2]

The eighth source presented—a fingering chart for four-key clarinet by Abraham entitled "Principes de clarinette suivis de pas redoubles et de marches les plus a la mode"—can be more exactly dated as ca. 1782 (rather than the ca. 1780 date given by Lescat and Arroman).[3] The chart was bound with some duos as the first installment of a series of thirty-two volumes totaling 661 duets arranged by Abraham and published in Paris by Frère from about 1777 to 1785. The entire series of duets is held by the Bibliothèque Municipale in Dijon.

The tenth source in the book is a misidentified conflation of two sources published some twenty years apart. Labeled as an extract from *Encyclopédie méthodique,* dated 1788, the text should be identified as being from *Encyclopédie méthodique: Musique,* vol. 1, edited by Framery and Ginguené and published in 1791.[4] The facsimile page also includes en-

1. Although the title page does not include the name of a publisher, its exact title is listed in the *Almanach musicale,* vol. 1 (1775; reprint ed., Geneva: Minkoff, 1972), p. 95, as published by Girard. David Randall reproduced the fingering chart and briefly discussed the duos in "A Comprehensive Performance Project in Clarinet Literature with an Essay on the Clarinet Duet from ca. 1715 to ca. 1825" (D.M.A. thesis, University of Iowa, 1970), 28–33. For discussion of the source, its fingerings, and the type of four-key clarinet it was written for, see Albert R. Rice, "Clarinet Fingering Charts, 1732–1816," *Galpin Society Journal* 37 (1984): 17–18, 23–24.

2. Note that although this source is correctly dated in the table of contents, the heading on the facsimile page erroneously shows a date of 1767. The engraving with the scale and a translation and commentary of Garsault's entry on the clarinet is given in Albert R. Rice, "Garsault on the Clarinet," *Galpin Society Journal* 32 (1979): 99–103.

3. A publishing privilege was granted for this title in 1782. See Michel Brenet, "La Librairie musicale en France de 1653 à 1790 d'après des registres de privileges," *Sammelbände der Internationalen Musikgesellschaft* 8 (1906–07): 464. The existence of Abraham's *Principes* was initially mentioned by Joseph James Estock in "A Biographical Dictionary of Clarinetists Born before 1800" (Ph.D. diss., University of Iowa, 1972), 26. For identification of Abraham's fingering chart as a copy of a chart in Corrette's *Méthode de la flute traversiere* (ca. 1773), see Rice, "Clarinet Fingering Charts," 24.

4. The *Encyclopédie méthodique* included excerpts from the *Encyclopédie* (1751–1765), the *Supplément à l'Encyclopédie* (1776–1780), and several other French sources. It was organized by subject and published in Paris by Panckoucke from 1782 to 1832. The

gravings of a two-key clarinet which are from the volumes of illustrations (*Recueil de planches*) that accompanied the first edition of the *Encyclopédie* (edited by Diderot and d'Alembert and published in Paris starting in 1751); the volume from which these engravings are drawn was published in 1767. A better text to combine with these illustrations would have been the short text from the original *Encyclopédie.* A more important source, not included by Lescat and Saint-Arroman, is the clarinet article written by Frédéric Adolphe Maximilian Gustav de Castillon for the second volume of the supplement to the *Encyclopédie* (1776) and the corresponding engravings of a four-key clarinet in the *Suite du Recueil de Planches* of 1777.[5] Had the editors compared all these sources, they would have seen that Framery and Ginguené included Castillon's text (with a correction of one word)—though not the engravings from the *Encyclopédie* supplement. Furthermore, Framery and Ginguené republished a portion of La Borde's article on the clarinet from his *Essai sur la musique* (1780), and it is this portion that Lescat and Saint-Arroman reprinted on page 65. (La Borde's entire article on the clarinet from his *Essai* is printed by Lescat and Saint-Arroman on pages 39–42.)

The eleventh source is presented as an anonymous *Gamme de la clarinette,* ca. 1790. Consisting of a fingering chart for a four-key clarinet and eleven duos, it is identical to Valentin's Roeser's *Gamme de la clarinette avec six duos* (ca. 1769) discovered by this reviewer bound in a volume of Corrette's *Méthode de flute* (ca. 1735) in the Library of Congress.[6] Roeser's *Gamme* is the earliest fingering chart for the French four-key clarinet and includes the earliest music directly associated with this type of clarinet.[7]

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two volumes on music, entitled "Art du faiseur d'instruments de musique et Lutherie," were published as volumes 185 and 186 in 1791 and 1818. The article on the clarinet is in vol. 185, pp. 118–120, and a definition appears on page 157. See John Lough, *The Encyclopédie* (New York: McKay, 1971), 81; and "Appendix C: Dictionaries and encyclopedias of music" in *The New Grove Dictionary of Music and Musicians,* second ed. (New York: Macmillan, 2001), 28:113.

5. See F. A. M. G. de Castillon, "Clarinette," in *Supplément à l'Encyclopédie, ou Dictionnaire Raisonné des Sciences, des Arts et des Métiers,* ed. by J. B. Robinet (Amsterdam: M. M. Rey, 1776–1777), 2:450–451; and J. B. Robinet, ed., *Suite du Recueil de Planches* (Paris: Panckoucke, Stoupe, Brunet, 1777), 144, pl. 4. For a translation of the text with commentary see Eric Halfpenny, "Castillon on the Clarinet," *Music & Letters* 35 (1954): 332–38. For comments on the fingering and the engraving of the clarinet see Rice, "Clarinet Fingering Charts," 24.

6. Rice, "Clarinet Fingering Charts," 23–24, plate V.

7. Randall, 19–21, discusses the *Gamme de la clarinette* and its duos. For identification of this publication as an altered later printing of the title page of Roeser's *Gamme de la clarinette* (ca. 1769) see Rice, "Clarinet Fingering Charts," 24.

Finally, the *Nouvelle méthode de clarinette* by Blasius (pp. 81–196) and the *Nouvelle méthode de clarinette* (*1re partie*) by Vanderhagen (pp. 197–274) should be dated ca. 1796 and ca. 1798, based on the plate numbers. More exact dates are not available.

Despite the untidy research and dating, this clarinet volume is important for the facsimile reproduction of several significant historical sources. It is recommended for purchase by libraries and individuals. With the increasing popularity of early music and the performance of music on original instruments, original sources are in greater demand. The most useful texts for today's performers are the fingering charts and comments for the five-key clarinets in the method books by Vanderhagen, Blasius, and Yost.

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Jim Berrow, editor. *Towards the Conservation and Restoration of Historic Organs: A Record of the Liverpool Conference, 23–26 August 1999.* London: Church House Publishing, 2000. xvi, 182 pp.: 11 black-and-white figures. ISBN: 0-7151-7568-6. £9.95 (paper).

Within recent years there has been a growing concern among players, makers, and historians regarding the proper treatment of historic instruments. Nowhere has this been more fraught with differences of opinion than in the area of keyboard instruments, and most particularly with regard to organs. As has been the case with other instruments, differences in philosophy, leading at times to polarization, have inevitably occurred among those most closely involved. The Liverpool Conference, jointly sponsored by the British Institute of Organ Studies, the Council for the Care of Churches, and the Institute of British Organ Building, with the support of the Conservation Centre of Liverpool, may be seen as a major step in encouraging dialogue and cooperation between those of differing disciplines and viewpoints in the organ world.

The era is largely past when it was considered quite acceptable to significantly alter and/or augment historic organs, even those in substantially original condition, and when little thought was given to the proper treatment of those that had been previously altered. This former acceptance of an organ as a perpetual work in progress arose probably because

a large proportion of organs regarded as "historic" have remained—unlike many other types of instrument—"working organs," in regular use for church services and recitals. Spurred by the growing recognition of the value of such organs as a key to the interpretation and performance practice of music of various periods, a change in attitude has given rise to the recent phenomenon of "re-restoring" organs altered in the middle decades of the twentieth century (and earlier) in an effort to return them to their more authentic musical voice. Often, considerable research and scholarship has joined with craftsmanship in projects such as the re-restoration of the monumental Baroque organs of the Bavokerk in Haarlem and the Jakobikirche in Hamburg.

And, as might be expected, the excesses of the mid-twentieth century have also engendered a certain amount of conservative backlash. This has ranged from concern over the alteration or replacement of some of the most mediocre and undistinguished work from even fairly recent times, to a "look but don't touch" museum approach to more historically significant examples. The greatest polarization has arisen between those who favor this latter approach, with its concomitant emphasis on preserving unplayable or damaged instruments "as is" for their possible future study value, and those who believe that a historic instrument's value is severely lessened if it cannot contribute aurally to the understanding of its unique music.

The 1999 Liverpool Conference was thus a landmark event in the ongoing dialogue and sharing of insights into these and other matters of concern. Although all but four of the twenty-four speakers and session chairs were British, together they represented a wide spectrum of disciplines—historians, academics, builders and restorers, advisors, musicians, and museum personnel. The papers reproduced in this volume (including presentations by the two American and the two Swedish speakers) represent a cross-section of much of the best contemporary thought on the title topic; together and individually they offer valuable insight into its many ramifications. Opinions on certain aspects are well-stated but not necessarily unanimous, although unanimity of concern is expressed in a statement endorsed by all participants regarding "the continued depletion of [the U.K.'s] stock of historic instruments," lack of funding for repair and conservation, and the need to list, document, and protect all those remaining.

Historian David Knight's opening paper spells out his considered answer to the question, "What is a historic organ?" by exploring implications

of various pronouncements and observations on the subject. In the process he raises further questions for discussion: Is everything historical until proven otherwise? and What is the relative value of organs—especially twentieth-century ones—with no unique repertoire? Barrie Clark, of English Heritage Historic Buildings, explores the disparity between England and certain Continental countries where significant organs are protected as historic monuments. Jonathan Ambrosino cites case studies from North America (albeit with a heavy twentieth-century bias), while Axel Unnerbäck and Göran Grahn, both connected with the Göteborg Organ Art Center, give their perspectives on the preservation and restoration of historic organs in Sweden. Grahn also provides some thoughtful options for the treatment of "working organs."

In consecutive papers, restorers Dominic Gwynn and Martin Goetze, with historian David Wickens, explore the matter of old material in newer or rebuilt organs, and the importance of "archaeological research" relative to material in such organs as well as in historic organ fragments, with Goetze providing some splendid detail drawings. John Watson, of Colonial Williamsburg, outlines the "museum standard" approach to documenting and analyzing rare instruments, with reference to the conservation/restoration dichotomy; and he expresses hope for a more collaborative relationship between holders of the two viewpoints.

Organ builder John Mander and historian Christopher Kent discuss two critical educational needs, Mander making the case for better training in restoration procedures for organ builders, and Kent addressing the need for organ advisors with a sounder background in historical issues. The British system of diocesan and denominational organ advisors is further elucidated by John Norman of the Association of Independent Organ Advisors, who also contributes thoughts on the ongoing monitoring of conservation work. Organists Gordon Stewart and John Kitchen put forth some of the views of performers with regard to matters of musical usage and attitudes toward preservation and alteration, while historian Nicholas Thistlethwaite expands on the topic of concert organs (particularly Britain's fabled "Town Hall" organs) and the political and musical ramifications of their preservation. Finally, consultant John Clare provides some succinct advice on the planning of a conservation project.

Clearly, these papers provide much considered food for thought from a group of highly experienced, concerned, and perceptive individuals. The nine appendices are also of substantial value. Appendix 1 gives a de-

scriptive list of relevant organizations—primarily those in the United Kingdom, but including the Organ Historical Society (U.S.), and the Organ Historical Trust of Australia (the most influential societies in those countries). Nos. 2 through 6 reproduce full texts of the preservation and restoration guidelines of the (Australian) Burra Charter for Places of Cultural Significance (based on standards set by the International Council on Monuments and Sites), the Organ Historical Trust of Australia, the Organ Historical Society, and the British Institute of Organ Studies; while nos. 7 and 8 reprint documents of the Council for the Care of Churches. These are greatly worthy of study by all who undertake organ preservation projects. Collected footnotes and an index complete this volume, which deserves a place on the bookshelf of anyone involved with or concerned about organs of historic significance.

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Claire Chevallier, Jos van Immerseel, et al., editors. *'Matière et Musique': The Cluny Encounter (Proceedings of the European Encounter on Instrument Making and Restoration)*. Antwerp: Labo 19, 2000. 392 pp., 9 tables, 16 charts, 34 black-and-white photographs, 48 drawings. ISBN 90-6853-143-3 (paper). €41.89.

In 1999 the noted Belgian keyboardists Jos van Immerseel and Claire Chevallier founded Labo 19, a non-profit "laboratory" dedicated to investigating and promoting nineteenth-century performance practices. Through workshops, master classes, publications, and encouragement of research and performance, Labo 19 intends to make its presence felt internationally. A useful step toward this goal is the volume under review, which initiates Labo 19's proposed publication series. Produced in conjunction with the Belgian foundation Alamire, it documents part of a multifaceted "encounter" organized by Facture Instrumental (an association of instrument makers in Burgundy), with support from French agencies and the Council of Europe, and held 16–19 September 1999 in Cluny. This event, aimed at stimulating the region's economic development, included concerts, an exhibition of locally made instruments, visits to workshops, and a conference involving instrument makers, organologists, curators, and others. The conference report contains texts of

thirteen papers and a roundtable discussion exploring relationships between "materials"—that is, instruments—and music.

Introducing these proceedings, Thomas Steiner outlines the ambitious but diffuse theme of the conference. Not limited to nineteenth-century concerns, it considered raw materials and manufactured components; processes of design, construction, and restoration; responses of musicians; and instrument collecting. Within these topics coverage was highly selective, no doubt reflecting the personal interests of the organizers. Stringed keyboards received the most attention; brass, reed, and percussion instruments, harps, organs, and many other types were not discussed, nor were performance issues.

Readers interested in the history of instrument studies and museum collections will appreciate Florence Gétreau's overview of eighteenth- and nineteenth-century French organology and Klaus Gernhardt's survey of the development of the great collection at the University of Leipzig. However, the book, like the conference, lacks a deeper, philosophical underpinning that might relate such disparate topics as Jean Tournay's largely metaphysical "Essai sur l'imaginaire du clavicorde" (expanding his ruminations about the clavichord's origin, symbolism, acoustics, and mechanics previously presented in the journal *Clavichord International* and elsewhere) and Marc Rosenstiel's two-page account of restoring an 1841 violin by Auguste Sébastien Bernardel. Focusing further on craft, Philippe Bolton shows how he turns a block of wood into a baroque-style recorder, and Joël Dugot explains why and how he made a new top for an archlute by Christoph Koch (Venice, 1654). These insights on instrument making and restoring, though photographically illustrated, are insufficiently detailed to be of much value in print. Sylvain Mathieu's less pedestrian essay on curly maple describes properties that suit this wood particularly to string instrument making; his bibliography will interest woodworkers.

The contributions mentioned above, along with one other by Antonello Palazzolo entitled "Le pianoforte de Cristofori et quelques musiciens" (a superficial report offering no surprises), appear in French and Dutch without English translation. Fortunately for anglophones, the weightiest articles are in English with Dutch translation. Kerstin Schwarz's essay, "The Late Cristofori: Creativity with a Common Base," demonstrates structural parallels between Cristofori's three extant pianos and two late harpsichords. Schwarz, who has investigated these instruments closely and who successfully copied the 1726 piano, gives

fresh views of Cristofori's work that balance narrower studies emphasizing his innovative hammer actions. Comparative data on the designs and stringings of these instruments lead Schwarz to conclude that "In the fundamental principles of their construction, Cristofori's pianos were not different from his harpsichords of the same period" (p. 72). In particular, she notes that "the strings of the Cristofori piano can be put under the same tension as a harpsichord" (not greater, as is often believed), since "the idea of hitting the strings with heavier hammers to produce a louder sound was not yet born" (p. 71).

Two well-written articles by Paul Poletti discuss later piano topics. His first essay proposes that nineteenth-century German wire gauging systems were less precise and standardized than modern researchers tend to believe. In his view, rather than defining absolute diameters, the numbers marked on old slip gauges (commonly used to sort wire before widespread employment of micrometers) merely indicate "series of decreasing [wire] diameters with basically logarythmic [*sic*] proportions." This observation accords with evidence from wire samples and with J. F. Bleyer's and Julius Blüthner's quoted remarks on the annoying variability of wire diameters of specified gauges. Poletti does not mention that old wire sometimes displays irregular cross-sections, so the same sample gauged from different directions can yield inconsistent diameters; therefore reported differences of hundredths of a millimeter may not be meaningful.

More provocatively, in "Steinway and the Invention of the Overstrung Grand Piano Frame" Poletti examines "pervasive" but unspecified claims that Henry Steinway intended overstrung grand framing to accommodate longer bass strings and to permit bridges to be moved nearer the center of the soundboard, giving a better tone. In fact, neither Steinway's 1859 patent nor any careful student of piano technology maintains that Steinway intended his overstrung frame to hold longer bass strings than those in straight-strung grands; no such statement occurs, for example, in Sandra Rosenblum's article "Overstrung" in the popular *Encyclopedia of Keyboard Instruments.*[1] Regarding bridge positioning, Poletti notes that Steinway's patent does not claim specific tonal benefits; on the contrary, Rosenblum and others have already noted that placing the bass bridge closer to the "resonant center" of the soundboard—this was

1. In volume 1, *The Piano,* edited by Robert Palmieri (New York: Garland, 1994), 256.

done principally by widening the soundboard at the tail, not relocating the bridge—could contribute to a less clear, if louder, bass than straight-strung pianos have.[2] Poletti observes that a more credible but debatable justification for overstrung frames in grands is that they better withstand the tension of heavier and longer strings across the entire compass—although this is not necessarily true, since straight-strung frames can be (and were, for example, in pianos by Blüthner and Chickering) engineered to provide adequate strength. Finally, Poletti asserts that simply because overstrung framing has become the norm "does not necessarily indicate technological or aesthetic superiority, though it may have something to do with production costs and efficiency." Rather, he inclines to the belief that Steinway's aggressive marketing, in an era enthralled by scientific progress, created a "self-propagating definition of a 'good' piano" that made straight-strung models seem obsolete regardless of merit. Although Poletti's observations would not startle many Steinway technicians, and he skirts the issue of audible differences between straight- and overstrung Steinways, it is refreshing to find American instruments discussed seriously in Europe.

Stephen Birkett and William Jurgenson's joint contribution, "Geometrical Methods in Stringed Keyboard Instrument Design and Construction," recapitulates Birkett's oral presentation at the 1999 AMIS annual meeting.[3] With particular reference to five-octave Viennese grand pianos from 1780 to about 1800, the authors ingeniously demonstrate how different case designs can be efficiently, consistently, and accurately laid out by simple geometric means based on a single reference dimension or module, without laboriously transferring measurements from a master reference design. Calling into question conclusions based on proportional analyses and assumptions about the primacy of local units of measure, Birkett and Jurgenson reconstruct two geometric techniques they believe were used by Johann Andreas Stein. Their resulting layouts agree so closely with outlines of actual Stein piano cases that their theory, which conforms with practices in other craft traditions,

2. Poletti states that the design of the Smithsonian's 1892 Steinway "is essentially identical to a modern Model D, with the exception of the omission of the middle strut," but the duplex scaling and treble hitchpin placement also differ. When comparing straight and overstrung plans, Poletti does not discuss differences in afterlength, the string segment between rear bridge pins and hitchpins.

3. The authors carry their ideas further in their article "Why Didn't Historical Makers Need Drawings? Part 1: Practical Geometry and Proportion," *Galpin Society Journal* 54 (May 2001): 242–284.

must be taken seriously. On the other hand, extant measured drawings (for example, the so-called Tannenberg clavichord drawing[4]) provide clear evidence of master reference designs, so eighteenth-century builders doubtless employed various constructional methods, depending, say, on whether they approached clavier making from the standpoint of organ building or of lutherie, and whether they sought to develop new designs or simply replicated existing ones.

In the last essay, "The Whole Truth?," Jurgenson questions the heuristic value of certain measurements conventionally taken today of historical keyboard instruments, such as the *Stichmaß* or three-octave span. Jurgenson considers octave spacing at the back of the keyboard, not at the playing end, to be significant, since it was normally based on a nominal one-half-inch string-band or action spacing derived in turn from the total keyboard compass. He feels that the resulting *Stichmaß* was incidental and that this dimension conveys little information about how instruments were designed. Looking more closely at keyboard layouts and organ pipe scalings, Jurgenson emphasizes the importance of the ratio 1:2 (hard to argue with this!) and of the half inch as a basic module. As he points out, understanding how such principles were employed is essential to recreating a historical context, without which restorers and builders of copies operate in the dark; he uses the term "self-delusion" to describe blind replication of measurements or components without comprehending their function.

The concluding roundtable, convened to discuss proportional schemes in instrument making, evoked remarks (occupying twenty-eight pages, the longest section in the book) on various issues by the lecturers and other participants, who included Michèle Castellengo, Christopher Clarke, and Michael Latcham. A tighter focus, better proofreading, and an index would have improved the conference report, but its timely appearance in a handsome format marks a promising debut for Labo 19's publication project. We can only wish the encounter's sponsors good luck in their effort to encourage instrument making in Burgundy.

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4. See Thomas McGeary's article "David Tannenberg and the Clavichord in Eighteenth-Century America," *Organ Yearbook* 13 (1982): 94–106.