

*Journal of the
American Musical
Instrument Society*

VOLUME XLII • 2016



Copyright by the [American Musical Instrument Society](#).
Content may be used in accordance with the principles of fair
use under [Section 107 of the United States Copyright Act](#).
Content may not be reproduced for commercial purposes.

BOOK REVIEWS

Jerrold Levinson, *Musical Concerns: Essays in Philosophy of Music*, Oxford: Oxford University Press, 2015. 173 pp. ISBN: 978-0-19-966966-0. \$45.

Jerrold Levinson is one of the leading philosophers of music, author of *Music, Art and Metaphysics* (Cornell University Press, 1990; reprinted Oxford University Press, 2010), *The Pleasures of Aesthetics* (Cornell University Press, 1996), *Contemplating Art* (Oxford University Press, 2006) and *Music in the Moment* (Cornell University Press, 1998)—the last highly controversial in musicological circles for its critique of architectonic theories of music appreciation. A new collection of essays by Levinson is, therefore, a publication of which musicologists will take notice.

Musical Concerns is a rather slim volume containing an introduction and twelve essays, nine of which have been previously published as journal articles. The three remaining essays published in this volume for the first time are: “The Expressive Specificity of Jazz,” “Instrumentation and Improvisation,” and “What is a Temporal Art?” (co-authored with Philip Alpers).

Although many of these essays have only indirect implications for the study of the use of instruments in making music, “Instrumentation and Improvisation” is particularly significant for organologists. In this essay, Levinson raises certain questions pertaining to the philosophical nature of musical instruments, and in doing so, engages in a dialogue with several other philosophers who have made major contributions to this field in recent years, most notably Philip Alpers and Bernard Sève.

Organologists are by and large a practical “nuts and bolts” lot, whose discipline has long remained unconcerned by metaphysical issues. Philosophers of music, on the other hand, are becoming more and more intrigued by the ontological questions raised by musical instruments. What kind of object is an instrument and what are its precise ontological boundaries? Is intentionality essential to its nature? How can we understand the complex interaction between instrument and instrumentalist?

As Levinson and Alpers observe, instruments play a fundamental role in our thinking about the art of music. One of the principal ways in which we classify musical works is by reference to the instruments used: “steel band music, wind music, keyboard music, gamelan music, big band music.” (p. 144) Virtuosity and other performance-related concepts are inseparable from instruments, and a huge swath of repertoire, namely

nineteenth- and twentieth-century symphonic music, is characterized by the composer's use of instruments, in what is known as the art of orchestration.

Levinson's "Instrumentation and Improvisation" is in part a response to Alperson's article "The Instrumentality of Music" (*Journal of Aesthetics and Art Criticism*, vol. 66, no. 1 [Winter 2008], 37–51), in which the latter argued against what he calls the "commonsense" view of musical instruments, a view that can be summarized as follows: instruments are discrete devices manufactured in order to be used by performers to make music. Alperson demonstrates what he considers to be the naiveté of this view, citing the wide range of found or "natural" objects that are then used by musicians in cultures all over the world, objects that were never intended for the sole purpose of making music. Nevertheless, as Alperson admits, it is still possible to observe human intention at work in the act of appropriating the object to make music.

The more important premise of the "commonsense" view is that instruments are discrete and autonomous objects, ontologically independent of the performer: "Musicians take these objects and, by holding them, hitting them, blowing through them, plucking and scraping them, pressing on keys, and so on, produce the sounds of music." (Alperson, "The Instrumentality of Music," p. 38). This is, according to both Alperson and Levinson, less obvious than it seems. Both authors begin their discussions by introducing the example of the vocalist, who clearly uses the body (or at least parts of it) as an instrument. Where does the singer's instrument begin and end? With the vocal chords, the mouth, the diaphragm, the chest? With the head and the entire torso?

Alperson extends this line of thinking to suggest that it also applies to conventional instruments, demonstrating that the distinction between instrument and performer is less apparent than one might think, and that instruments are "necessarily embodied entities" with an "inescapably immaterial aspect" (Alperson, "The Instrumentality of Music," p. 38). When a guitarist applies superglue to his fingernails to achieve a particular sound when plucking, where does the instrument end and the body of the instrumentalist begin? When a clarinetist shapes her embouchure and oral cavity in a specific way, where can one draw the line between instrument and player? In these and similar instances, the sound-producing mechanism is a complex one that extends in both directions, both toward the instrument and toward the player.

Levinson takes a more pragmatic approach. While admitting that “a non-protoplasmic instrument may form a bond with the protoplasm of its player,” interacting in subtle ways with “the affordances and resistances of the other” (p. 146) Levinson disagrees that the distinction between instrument and instrumentalist are as blurred as Alperson would have it. Rather, Levinson suggests that the symbiosis between musician and instrument produces “a higher-order, or perhaps *virtual*” instrument (p. 146), which consists of the physically discrete instrument plus the parts of the performer’s body that are most directly used in playing. In the case of an oboist, for example, the virtual instrument or “integrated system” (p. 147) would consist of the oboe as well as the oboist’s mouth and fingers. Levinson adds a more complex dimension to the notion by proposing that “one could think of the virtual instrument as consisting in the instrument ordinarily conceived together with various psychomotor memories, disposition, or routines whose essential reference is to that instrument.” (p. 146)

Levinson’s “virtual instrument” model calls to mind the writings of philosopher Bernard Sève, who has recently formulated similar ideas, most notably in the chapter “Les deux corps de l’instrument, les deux corps de l’instrumentiste” (“The Two Bodies of the Instrument, the Two Bodies of the Instrumentalist”) “The Two Bodies of the Instrument, the Two Bodies of the Instrumentalist” in his book *L’Instrument de musique: Une étude philosophique* (Paris: Editions du Seuil, 2013). Sève proposes that the complex interplay between musician and instrument be understood in terms of a physical instrument and a potentially “musical” instrument interacting with the physical body and the potentially “musical” body of the instrumentalist.

Levinson considers other ideas put forth by Alperson, such as the historical, cultural, and conceptual aspects to the notion of an instrument, and the possibility that composers and audiences have their own range of musical “instruments,” such as composition software and concert halls, respectively.

Musical instruments are only one of many subjects explored in *Musical Concerns*. Nevertheless, Levinson’s reflections on instruments help to provide a theoretical framework for understanding empirical observations made “in the field” by musicians: for example, the fact that the same instrument can sound radically different when played by two different musicians or that different instruments sound strikingly similar when

played by the same musician. More broadly, Levinson's philosophical interrogations call into question conventional wisdom about the separateness of musical instruments, reminding us that they are often difficult to disassociate from corporal elements that play critical roles in the production of musical sound.

ROBERT ADELSON

MUSEE DU PALAIS LASCARIS, NICE (FRANCE)

Sun Zhuo. *The Chinese Zheng Zither: Contemporary Transformations*. Farnham, England: Ashgate Publishing Ltd., 2015. 269 pp., plus preliminaries (18 pp.): 19 black-and-white illus., 54 musical exx., 2 appendices, index, bibliography, discography, and glossary. 1 DVD, with 10 music tracks and 4 video tracks. ISBN: 9781472416674. Around \$100 (cloth).

Organologists, ethnomusicologists, and followers of Chinese history and culture will welcome this timely book documenting contemporary developments in the history and performance practices of the *zheng*. Its author, Sun Zhuo, a Chinese national and conservatory-trained musician, was brought up within a society of *zheng* players. Thus, she offers unique perspectives on this, her own, instrument.

The *zheng*, like its cousin the Japanese koto, is, in her words, a “half-tube-shaped plucked zither with moveable bridges” (p. 20). Instruments of its type can be traced back in China to ca. 800–700 BCE. Evidence from the third Century CE describes the *zheng* as a wooden zither with twelve strings stretched across a convex-topped sound box, over moveable bridges. This instrument was used in folk ensembles that had one each of several different instruments, a kind of grouping that has endured to the present day. In the sixth to tenth centuries CE, the *zheng*, then with thirteen strings, contributed to both court and popular music—in ensembles as before, but also as accompaniment to singing and as a solo instrument. Though more strings were added in later centuries, so that by the Qing Dynasty (1644–1911) sixteen were common, in some areas the thirteen-string version continued to be used into the twentieth century. Sizes and shapes of *zheng* have varied somewhat over time (and in different regions of the country), as have materials used for strings. Originally made of silk, by the seventeenth century, strings of copper had become available. Since the 1950s the usual number of strings has increased to twenty-one, and these are generally made of steel. Reforms have been introduced, among them some that bolster ex-

tended techniques, many of which were inspired by western instruments, such as piano and harp, and by western musical styles and assumptions (cipher notation, for example, and new tunings).

The main focus of this book is the process of social and sonic transformations undergone by the *zheng* during the past hundred years. Though most people in China, since the 1980s (after the Cultural Revolution), consider the *zheng* an instrument of great antiquity whose traditions accordingly date back thousands of years, Sun Zhuo finds that “in fact the majority of the repertoires of the regional schools for the contemporary solo *zheng* were derived from various regional folk ensemble traditions which flourished in the early twentieth century” (p. 1). Happily, she illustrates this history in musical examples, both in written form in the body of the text, where she has transcribed a number of excerpts into western notation, and in the accompanying DVD, which contains video and audio tracks of repertoire referenced in the book. (One wishes, however, that in the list of tracks, she had included the pages of text that belong to each so one could go from track to text as well as the other way around.) In these examples we clearly see, for example, how individual playing parts for *zheng* in folk ensemble pieces were taken and modified to become pieces for solo *zheng* and thus be reborn as repertoire for conservatory-trained players. When Sun Zhuo considers the subject of modern, newly composed music for *zheng*, she illustrates her points in several videos of her own performances (all of which, recorded between 2006 and 2010, are listed in Appendix B).

The author traces the history of the *zheng* and its transformations in light of the several political upheavals in China during the twentieth century and into the twenty-first. Governmental interventions have caused profound changes in roles for the *zheng*, prompted by fluctuating thoughts about this instrument’s proper societal meanings and functions. For example, what kinds of repertoires, instructional methodologies, and performance styles are appropriate to the reigning ideology? Issues of gender and status of the *zheng*’s players have also come into play: Whereas, for millennia the *zheng* was played by males, who were classified as “folk” as opposed to “literati” musicians, within the twentieth century the instrument has come to be considered highly suited to women as well; and its adoption into conservatories has elevated the standing of those who teach the instrument (even when these teachers have learned via folk traditions) as well as of those who receive conservatory training on it.

The twentieth century was an era in which agents of change (whose biographies appear in Appendix A, including that of Sun Zhuo's own mother, also a conservatory-trained player of *zheng*) have personally witnessed as well as contributed to this history. Sun Zhuo herself represents a next generation of such agents in the present century. As readers, therefore, we are beneficiaries of her advantaged position: in her intimate knowledge of the instrument itself as well as its traditional repertoires, techniques, and performance styles; in the personal connections she has made that have propelled her fieldwork in China and abroad; and in her ability to adopt new styles and techniques as required for performances of newly-composed, modern-style music for ensembles with mixed instrumentation (both western and Chinese). This recent music consists of three types—concert music by Chinese composers who have studied with western composers and emulate some of their techniques; concert music by western composers who incorporate Chinese elements into their works; and commercial music by western composer/arrangers who need to capture “Chineseness” for movie soundtracks, stage musicals, and video games. The experiences of Sun Zhuo in these performance circumstances have become part of the fieldwork and research methodology that she documents in this excellent, broad-scoped book. It is a pleasure to read her book and to listen—and watch—her recorded performances.

BETH BULLARD
CARLISLE, PENNSYLVANIA

Patrizio Barbieri, *Physics of Wind Instruments and Organ Pipes 1100–2010. New and Extended Writings.* Latina, Italy: Il Levante Libreria, 2013. xii, 568 pp.: 38 color and 201 black and white illus. ISBN: 978-88-95203-40-9. \$41.19 (hardback).

The historical development of musical acoustics is a fascinating but often misunderstood story. The recent archaeological discovery in southern Germany of bone and ivory flutes more than 40,000 years old confirms that musical instrument manufacture is one of the oldest recorded human activities. During these forty millennia makers have experimented with many different ways of generating musical sounds, but the evolution of the highly sophisticated instrumental families which were available to musicians of the early modern period was achieved almost entirely by a process of trial and error. The first attempts to find rational explanations

for the observed musical properties of instruments seem to have been those of the Pythagorean school of Greek philosophers. The ideas attributed to Pythagoras and Aristotle were highly influential throughout the Middle Ages, and it was not until the time of Galileo and his contemporaries that a rigorous experimental approach to the study of acoustics was adopted. In the eighteenth and nineteenth centuries many eminent mathematicians and physicists grappled with the problems involved in obtaining accurate descriptions of the vibratory properties of strings, plates and air-filled tubes. The development of electronic measurement techniques in the first half of the twentieth century resulted in an acceleration in the pace of research in musical acoustics, while in the last few decades the exponential growth of computational power has dramatically expanded the possibilities for numerical simulations of many aspects of musical instrument performance.

Patrizio Barbieri is a highly respected scholar with an impressive record of publications on many aspects of organology. In this volume he has assembled a collection of articles, originally published between 2001 and 2012, which provide an absorbing and illuminating survey of the growth of understanding of wind instrument acoustics over the last millennium. Several of the articles were previously inaccessible to an English-speaking readership because they were written in Italian; these have been translated, and many of the articles have been significantly extended or rewritten. Although each chapter began life as a separate article, most of them are now prefaced by a short introduction listing the points to be explored, and ended by a section which helpfully summarises the main arguments and conclusions. This structure is a valuable unifying feature, since the different chapters inevitably retain some variety of approach.

The chapters are labelled by letters rather than numbers. Chapter A is concerned with medieval views on the relative mechanical and sonorous properties of different metals; Chapter B extends this discussion into a historical comparison of pipe construction methods in Italy and France up to the end of the nineteenth century. The treatment is dense, and the scholarship sometimes a little uncompromising; the target reader is evidently a scholar with prior expertise in medieval history, who will undoubtedly relish this invaluable literature survey. Non-specialists can however find many rewarding nuggets of information in these two chapters, and anyone with an interest in the history of organ pipe technology will find Chapter B an essential and rewarding reference text. Among the splendid illustrations is a photograph of lead pipes

in an Italian organ which have been gnawed by mice, possibly attracted by the smell of the oil in which they were cooled during manufacture.

Chapter C begins a review of the acoustics of tubes in an unusual but fruitful way, taking as an example the history of the megaphone. Barbieri points out that attempts to explain the acoustics of the speaking trumpet by Newton and other contemporary scientists were unsuccessful because they pursued an inappropriate analogy between geometrical optics and acoustics. The development of the theory of wave acoustics in the eighteenth century by Huygens, Bernoulli, and Euler eventually led to a correct description, although a full derivation of the gain in radiated sound power had to wait for the introduction of the idea of acoustic impedance by Webster in 1919. In Chapter D the analogy between the vibration behaviour of a stretched string and that of an air-filled tube is further explored, and the contributions of seventeenth-century Jesuit acousticians including Giuseppe Biancani, Ignaz-Gaston Pardies, and Claude-François Milliet de Chales are highlighted.

The following three chapters are concerned with the acoustics of the pipe organ. The history of flue organ pipe acoustics is reviewed in Chapter E. In 1747 d'Alembert found a mathematical solution for the vibration of a uniform stretched string. A little over ten years later both Lagrange and Euler published similar equations for plane waves in a cylindrical tube, explaining why a stopped pipe emits only odd harmonics. Experiments showed, however, that the sounding length of a pipe was significantly longer than its geometrical length; the explanation of this fact, and the calculation of the corresponding "end correction," remained a theoretical challenge until the work of Helmholtz and Rayleigh in the second half of the nineteenth century. The final part of Chapter E gives a clear summary of the understanding of the jet mechanism of sound production in flue pipes, while Chapter F reviews the corresponding mechanism of sound production by the vibration of a metal tongue in an organ reed pipe. In Chapter G several controversial topics related to the sound radiated by an organ pipe are summarised in a balanced and authoritative review. Barbieri presents experimental evidence demonstrating that in certain circumstances wall vibrations can disrupt the speech of an organ pipe, while accepting that in a normal flue pipe the type of metal is unlikely to have a direct influence on the radiated sound. The influence of pressure rise time on pipe speech and the possibility of exerting control on the transient timbre through touch are also reviewed.

The final four chapters follow the development of wind instrument acoustics from the late nineteenth century up to the present. In Chapter H Barbieri identifies the crucial step as the adoption by Webster in 1919 of the electro-acoustic analogy, in which musical instrument components are represented as elements of an electrical circuit. This approach has continued to be fruitful up to the present in describing the influence of bore profile and tone-hole parameters on the intonation and timbre of woodwind instruments. The modelling of mechanical and lip reeds is also explained in Chapter H. In Chapters I and J the ideas of input impedance, mode frequencies and acoustic filtering by tone holes are applied in more detail to the clarinet and the flute respectively. In Chapter K the acoustics of brass instruments is briefly but comprehensively summarised. This chapter includes a section on early brass instruments, but does not consider labrasones with side holes.

This is a book of immense and outstanding scholarship, with a bibliography containing more than 1200 references. A large number of quotes from original sources are presented with parallel translations into English. The volume is beautifully printed and bound, and the excellent illustrations are for the most part reproductions of the original diagrams from the books or papers cited. For anyone interested in the history of science, and particularly the development of scientific ideas and theories about musical instruments, this book will be an indispensable resource.

MURRAY CAMPBELL
UNIVERSITY OF EDINBURGH

Stewart Pollens, *The Manual of Musical Instrument Conservation*. Cambridge: University Printing House, 2015. ix, 448 pp. 54 black and white photographs, approximately 123 tables, bibliographical references, bibliography, index. ISBN 978-1-107-07780 – 5. \$150 (hardbound)

Most artistic and historic objects of importance have the luxury of a dedicated population of conservation professionals to see to their preservation and restoration. With graduate degrees in the science and methods of conservation and specialties in particular object types (paintings, sculpture, etc.) or material (wood, textile, paper), these practitioners number in the hundreds and can be found in larger museums and in private practice in most regions. If there are similarly trained conservators specializing in musical instruments, however, they are so rare as to be unavailable to the thousands of instruments in need of professional

care. Into that void comes this new book promising to serve as *The Manual*.

The opening sentence of the author's introduction, however, is explicit about the actual content of the book and is more telling and more accurate than the book's title. Pollens writes, "Much of the information included in this manual is derived from a shop notebook that I compiled while serving as the musical instrument conservator of the Metropolitan Museum of Art between 1976 and 2006, and it is a reflection of the range of tasks that confronted me on a day-to-day basis." In fairness, it could have been the publisher who, for marketing reasons, insisted on the immodest title with its promise of authority, comprehensiveness, balance, and grounding in the best practices of professional conservation.

Pollens does, indeed, touch on some of the tenants of conservation, concisely pointing out, for example, that "as conservators, our task is not to improve upon instruments but rather to preserve their characteristics" (p.4). He provides a rigorous agenda for treatment documentation (45–46) and a summary of ethical principles widely hailed by conservators (104), both earmarks of the conservation discipline. The book is also sprinkled with practical tips for preventive conservation, warning for example about the corrosive potential of vulcanized rubber in proximity to vulnerable materials (p. 137 and 217). However, this review will treat the book in its much more successful role as Stewart Pollens' self-described personal shop notebook.

As the author suggests in various indirect ways he is, after all, more restorer, instrument maker, and organologist than conservator, and at times reveals (p. 1, 288, 396) a skeptical attitude about today's specialized, graduate-school-trained conservators who lack grounding as instrument makers. Unfortunately, this reviewer knows of no examples of conservators with extensive training in both disciplines—at least in the USA—and as a consequence, many musical instrument players and historians will share Pollen's concern about the musical instrument credentials of formally trained conservators. The absence of conservators fully trained in both disciplines has a solution that is unaddressed in the book but will turn up repeatedly in this review. Simply put, the specialized knowledge and skills of conservators and of instrument makers are two halves of a whole, and that musical instruments will get the best care when restorers work in collaboration with knowledgeable conservators.

Taken as the shop notebook of an experienced restorer and organologist, the volume delivers a terrific selection of solid information, restoration tips, and reference material Pollens has collected over the years.

There are many entries with detailed instructions for such skills as gold leafing, French polishing, heat treating of steel edge tools, harpsichord voicing, and mold making for resin or lost-wax casting, among others. Some of the methods for investigative organology are described in detail, such as revealing latent markings on old instruments using ultraviolet and infrared imaging.

Information on specific topics would have been easier to find if they were arranged topically, putting investigative methods in their own section, for example. Because the text is arranged alphabetically, however, one must find how to examine latent pencil markings under “I” for “*Inscriptions, faded.*” Looking for restoration of harpsichords? That topic is under “S” for Stringed-keyboard restoration. *Wheat paste* has its own brief entry, but if you want to find any other adhesive, look under *Glues, pastes, and other adhesives*. Hide glue, mentioned fifty-six times in many articles throughout the book, has neither its own entry, nor a cross reference entry, nor any mention in the index.

The book is particularly generous with tables, of which there are about 123, more than double the number of photos. Of special interest to musical instrument conservators are charts of string gauges and actual stringing schedules for several instrument types. Many of the tables include arcane data, such as the speed at which sound travels through twenty different materials, including helium, brick, and diamond. Some readers will appreciate not having to go online for tables relating to general shop practice, such as screw sizes, tap drill bit sizes, taper reamer sizes, melting points of various solders, drill bit sizes (nine pages), and two full pages of abrasive grit sizes. A voluminous thirty pages are devoted to a frequency chart for equal temperament giving the pitch in hertz—to five decimal places—for every note from octave zero to octave seven at one-cent intervals.

Anyone who has followed Pollens’ career will know what strengths are to be found in his shop notebook. The word “violin” appears 539 times under numerous subject entries, and “piano” appears 357 times—reflective of his personal interests and expertise. On the other hand, “clarinet” appears only nineteen times and “French horn” is not mentioned at all. The entry on *historical metrology* (“the study of the units of measurement that were used in various locales prior to and including the introduction of the metric system”) is surprisingly detailed, filling twenty-four pages, while the very next article on one of the most important subjects in conservation, *humidity control*, receives less than one page. Only under the pretense of the book’s title is this balance of

subject matter problematic. For readers interested in best practices in musical instrument conservation, consider the Pollens book as a musical instrument supplement to a more complete and authoritative conservation text, such as *Conservation of Furniture* by Shayne Rivers and Nick Umney, Butterworth-Heinemann (2003).

Pollens does include a great deal of specific treatment advice, but it is here that the book can mislead. A central tenant of conservation goes virtually unsaid in the book: *most conservation treatment methods are situation-specific*. As any conservator's notebook would have, this one has rules of thumb for treating particular condition issues. It is between that starting point and any final decision about how to proceed in any particular case that the expertise of trained conservators come to bear, since any final treatment necessarily considers other materials and variables in the context. The entry on stain removal on page 285, for example, lists ten types of stain, along with a chemical for removing each. There can be no doubt that Stewart Pollens in his post at the Metropolitan Museum would either have been familiar with the science or sought advice from conservation specialists if he did not, in order to progress from his notebook's rule of thumb to a safe treatment in the current situation. Yet, in the stain removal entry, no mention is made about how the recommended solvents, bleaches, acids, and soaps could damage or otherwise interact with all the possible substrates and coatings that might be present in the same spot.

The best treatment plans can come from a co-equal collaboration between instrument maker/restorer and conservation specialists, regardless of who ultimately conducts the treatment. This book will help each understand the other, and so should be on the shelf of every musical instrument collector, restorer, and conservator who might be called upon to plan or participate in conservation interventions.

In short, this book is analogous to a pharmacology primer in which many types of medications and their dosages are given without noting possible side effects and without designating which are "over the counter" and which are "prescription." Ask your conservator what's right for you.

JOHN K. WATSON
COLONIAL WILLIAMSBURG

Alberto Cuéllar et al. *La Escuela Granadina de Guitarreros = The Granada School of Guitar-Makers*, ed. John Ray, [Granada]: Diputación de Granada, 2014. 305 pp., many color illus., Spanish/English edition. ISBN 978-84-7807-537-9. €40 (hardbound).

This study of the Granada school of guitar makers is a much awaited and appropriate addition to the literature on Spanish lutherie. Other schools are well documented, notably those of Madrid, Málaga, and Cádiz, all of which are quite distinct from one another. However, although it is known that there were many guitar makers in and around Granada, it is not immediately apparent that they formed their own school, especially since an unusually high proportion of the makers, compared to other schools, were not originally from Granada. The Catalan composer and guitarist Fernando Sor, for example, recommends many makers representing prominent schools in his 1831 *Méthode pour la Guitare*, and is careful not to omit any Spanish ones, but he names no Granada makers. When I received this book I was already aware of the early Granada luthiers such as Agustín Caro and José Pernas, but I was not at all sure how to place them in terms of influences they received or that they exerted. Furthermore, it was not clear to me how their guitars were distinct from other schools. The arrival of this study made me eager to find out more.

The Granada School seems to be a very welcoming one, for it hosts many foreign nationals including John Ray (Canada), René Baarslag (Holland), Thomas Holt (Denmark), Matteo Vaghi (Italy), Stephen Hill (England), and at least three German nationals. Their craft is sincere, and apart from one relapse (Beneto Ferrer, see below) they have not sold out by importing factory-made guitars from Alicante and planting their own labels inside as “tourist” models – a disreputable and surely an illegal practice which has endured for too long. (Today, some of these guitars are even made in China.)

La Escuela Granadina de Guitarreros is a collaborative work, edited by John Ray, with contributions from Alberto Cuéllar, David Gansz, Aarón García, Angelo Gilardino, and Javier Molina. The opening chapter by Gilardino (pp. 9–25), though succinct, is beautifully written with quotations from Debussy and Lorca among others. It seems that Cádiz, Seville, and Málaga were the dominant Andalusian centers of lutherie in the eighteenth-century. Was there no demand in Granada? Even the Granadino José Contreras made his six-course “vihuelas” in Madrid. This is surprising, considering that Granada was apparently a thriving centre for craftsmen and has been so for many centuries. Aarón García begins (pp. 231–249) the work of defining important and diagnostic aspects of Granada work. He cites an 1803 Agustín Caro guitar in his chapter as one of the earliest six-single-string guitars, carefully mentioning the earlier Italian efforts (he omits the contemporaneous London-made

“Spanish” guitars by J. Longman) and he observes that Caro’s guitars were the first with raised fingerboards extending to the soundhole. José Pernas was perhaps the earliest established *guitarreo de Granadina*, with Beneto Ferrer and later the Casa Ferrer to follow. At their lowest point, they sourced some of their guitars from other workshops, but Eduardo Ferrer, José’s nephew, later apprenticed some of the Yamaha makers. Eduardo is now considered to be the founder of the modern Granada group of makers, both for the esteem in which his guitars are held and his work in training many of the next generation. Some of their guitars were based upon the Ramirez pattern, which once again raises the question of whether we are dealing with a *school*.

Apparently the oldest extant Granada-made instrument of the guitar family is by Rafael Vallejo (actually made in Baza, a province of Granada), and is in storage at the Victoria & Albert Museum, London. Aarón García, in his section, describes this instrument as a guitar-psaltery (Engel likens it to a *chitarra-salterio*). Gilardino, wisely avoids calling Vallejo a guitar-maker or the earliest known *Guitarrero de Granadina*. Indeed, Vallejo was almost certainly primarily a furniture-maker. At present, the V&A has no real interest in its musical instruments and it would be fitting if it were to donate this instrument to an appropriate museum in Granada (or even Baza), where it could be justly venerated.

The heart of the book is undoubtedly the comprehensive catalog of the current guitar-makers (pp. 153–227). This contains a brief biographical description of each one, accompanied by a photograph of them in their workshop, a sample guitar, with a brief description including the bracing lay-out. It is pleasing to see a female *guitarrera* amongst the members of this male dominated occupation. Until very recently, I was not aware of a single female guitar maker in history, although many wives of guitar-makers probably assisted their husbands but were never recognized; others who worked in the Mirecourt cottage industry and in the 1890s Samuel Edmund Potts employed “several young women” in his London workshop. (Alas, his intentions must be doubted, for he was imprisoned after an incident with one of his workers.) Today, the handful of female makers includes two very prominent craftswomen, namely, Amalia Ramírez (Madrid) and Kathrin Hauser (near Munich). The catalog is preceded by Alberto Cuéllar’s in-depth account, of Granada making (pp. 27–151).

David Gansz’s writing (pp. 251–288), in places, is fluid and compelling, and he makes one of the most important points admirably well,

namely, that the Granada makers have exported the Andalusian (mainly Torres) and the Madrid (mainly smaller versions of Ramirez and Barbero) designs, probably more than any other Spanish group of luthiers. Javier Molina completes (pp. 289–299) the group of essays with a survey of the makers, past and present in Baza.

The book would lead us to believe that the Granada makers are traditionalists. This, however, is not entirely correct given that there is some “double-top” experimentation and perhaps some carbon-fibre lattice-brace models. Looking through the catalogue, the designs of the *guitarreros* seem to be fairly independent of one another, still leaving me wondering what the defining characteristic(s) of the *escuela Granadina* are. Is it that their guitars, on average, are smaller than those of today?

The photography throughout is of consistent quality, although the printing is a little dark, and the diminutive catalogue representations leaves little to refer to. Despite my reservations, I commend the authors and wholly recommend their book; it is an excellent read. The various essays, although occasionally repetitive (excusable in a collaborative work like this) are sewn together in an excellent manner. I am left with the impression that the *Granadina guitarreros* are harmonious and happy to share their knowledge and experience, through their warmth and generosity. Perhaps that is what makes the Granada “school.”

JAMES WESTBROOK
BRIGHTON & CAMBRIDGE, ENGLAND

Whitney, Quincy. *American Luthier: Carleen Hutchins—the Art & Science of the Violin*. Lebanon, NH: ForeEdge Books, 2016. 312 pp., 16 illus. \$35.00 hardcover ISBN 978-1-61168-592-3; \$34.99 Ebook ISBN 978-1-61168-927-3.

Agree or disagree with her ideas, appreciate her instruments or think they are just interesting experiments, Carleen Hutchins (1911–2009) was a force to be reckoned with, and her work in violin acoustics and lutherie were important features of the twentieth-century violin world. Spurred on by a fascination with stories in which science and art overlap, Quincy Whitney documented the life story of Hutchins, the scientist-cum-chamber music aficionado caught in the June Cleaver world of mid-twentieth-century America. *American Luthier* is the result of nearly two decades of work for Whitney, a journalist who bravely took on the interdisciplinarity necessary in order to write about Hutchins. Carleen

Hutchins was a grade school science teacher who took up viola so she could play chamber music with fellow teachers, and there was not much chamber music written that included the instrument she already played—bugle. To occupy herself while pregnant with her first child, Hutchins built a viola. She was not satisfied with the sound and began exploring how to improve its tone and power. Led to the challenge of creating a set of violins that spanned the entire range of the piano, Hutchins taught herself physics, acoustics, and lutherie to finally build the first violin octet ranging from an eleven-inch treble violin to a seven-foot contrabass violin: the New Violin Family.

Any discussion of Carleen Hutchins requires exploration of physics, acoustics, wood and woodworking, musicology, and the larger violin world—performers, conductors, dealers, luthiers, curators, and conservators. This is surely a daunting task, and Whitney is to be congratulated for traversing terrain that ranges from intellectually complex to politically loaded with the finesse she has achieved. Not unexpectedly, Whitney is not always completely successful in managing the nuances of a given discipline. As a musicologist, I found myself wincing a number of times at musicological statements I would have told my students were in the “kind of, but not exactly” category of interpretation. For example, it is mildly misleading to say, “However, during the Dark Ages, musical practice remained distinctly separate from the idea of music. Under the auspices of Pope Gregory I...the only music in the early church was unaccompanied plainchant . . .” (p. 25) Well, yes, under Pope Gregory I this is true. But “Dark Ages” misnomer aside, medieval church music did, in fact, include early polyphony. Slightly more egregious while still being understandable is to use “minstrel” and “troubadour” synonymously (p. 26)—they were two distinct classes of musician—and to assign the demise of the troubadour solely to Church condemnation (p. 27) rather than recognize that the end of the troubadour likely had as much to do with the knightly classes that comprised the troubadours and trouvères being killed off in the Crusades as with being condemned by the Church. Further, to argue that Monteverdi’s *Orfeo* ensemble was a “model for all orchestras that followed” (p. 57) is just incorrect, gleaned—according to the citation—from a delightful, quasi-scholarly but non-musicological source. These are picky points related to contextual commentary and not to the central areas of concern; yet when one observes “kind of, but not exactly” information in one’s own discipline, one is more inclined to wonder if the same “kind of, but not exactly” also

applies in the other disciplines discussed. All of that said, however, this is the minefield of interdisciplinary research, and if these are the most serious misunderstandings, the general readership is still in marvelous shape and the scholar can shrug and move on.

This may, in fact, be the crux of the issue: Whitney's tome suffers a bit of an identity crisis through no real fault of its own. Is *American Luthier* a scholarly monograph or a popular book? A quick scan of sites like GoodReads and LibraryThing shows that it is certainly getting picked up by the general public—and that is likely the primary audience Whitney had in mind. On the other hand, because it is the first Hutchins biography and the first extensive writing about her work, scholars are picking it up, too. The scholars are looking for different things than the general public, though, and will need to manage either their expectations or their reading process—perhaps both. The book is a treasure trove of colorful characters, and many times one feels as though he is reading the libretto for a Mozart opera. It gets wildly difficult to keep track of who is who and to know which names to truly pay attention to because that character will soon be particularly noteworthy. I cannot count how many times I checked the index or flipped back page by page to find the first mention of names because I found myself realizing the significance of the people pages or chapters later and could no longer remember who they were or what they did. Instead of a family tree, a “network tree” or a graphically-organized table of connections would aid the reader looking to recognize and retain that massive network of connections that ran through Carleen Hutchins' life. Along the same lines, an opus list of her instruments with their current locations and a bibliography of her writing would be tremendously helpful to the scholar interested in following up on any of the myriad fascinating details Whitney describes about Hutchins and her work. Such tables and bibliographies would also help with a certain amount of confusion caused by the topical organization of the book. While organization by topic rather than by chronology makes perfect sense, the occasional need to mention something before it has actually been discussed sometimes requires the reader to hang on to confusion momentarily and know that all will become clear in due course. For example, in “Fiddles in the Conservatory” (p. 179), Whitney mentions the second concert of the Russian octet—when was the first concert? When did an octet go to Russia? Some forty pages later we arrive at the “Fiddles in the Palace” chapter and by page 217 read about the arrival of the octet in Russia and the subsequent concert series. On

page 212 in the “Fiddles on Exhibit” chapter, Whitney writes about signing the incorporation papers for the New Violin Family Association in the musical instrument storage room at the Metropolitan Museum of Art—but not until page 225 in the “Fiddling with Time” chapter do we find discussion of Hutchins’ separation from the Catgut Acoustical Society and formation of the New Violin Family Association.

Whitney is remarkably objective in her understanding of Hutchins’ professional greatness in relation to her personal weaknesses. She paints a clear picture of a woman venturing into male territories on multiple fronts—physics, lutherie, even any kind of a career at all—while first having acquiesced to societal expectations of a woman’s place in the home and family. Hutchins essentially abdicated the latter in favor of the former, and while she is rightly heralded as a pioneer among women in science and lutherie, she was in no way an Everywoman model for balancing the two lives. Whitney shows time and again how Hutchins was treated by male colleagues—including being forced to sneak in the back entrance in order to work with Sacconi at Wurlitzer’s—and how she managed being a female in a male’s domain (largely by refusing to recognize it as a male domain). Despite all this, Hutchins was the editor of two volumes of papers in violin acoustics, recipient of four grants from the Martha Baird Rockefeller Fund for Music, two Guggenheim Fellowships, and an Honorary Fellowship from the Acoustical Society of America in addition to four honorary doctorates. These are astounding accomplishments. Full stop. Yet the publisher’s headline at the top of the dust jacket back cover highlights “The *female* pioneer who revolutionized violin acoustics and built the first violin octet” [*italics mine*—as if her gender is somehow so important to these accomplishments that it needs to be mentioned in large font. Whitney is clear that while Hutchins definitely struggled with gender role issues, her work stands on its own merit, gender aside.

A risk when one’s research requires substantial time to complete is that information may no longer be accurate by publication date. Indeed, a few details might have been updated prior to publication—such as noting the fact that the violins mentioned in Cremonese Collezione Civica in the Palazzo Comunale have been housed in the Museo del Violino for several years now, or noting whether or not Pio Montanari ever finished his violin octet that, as of 2004, was half complete.

Whitney’s book is an excellent opening salvo into Hutchins research, laying solid groundwork for future work. The lay reader will thoroughly

enjoy the colorful characters, the interlacing storylines, and the amazing serendipity that so often seemed to come to Hutchins—and that she grabbed with both hands. Scholars and luthiers will be fascinated with the tale of a lifetime's achievements in violin acoustics, and—it is hoped—their remaining scholarly and scientific questions will lead them into the next phase of research into the work of Carleen Hutchins, the pioneer who revolutionized violin acoustics and built the first violin octet.

ALLISON A. ALCORN
ILLINOIS STATE UNIVERSITY