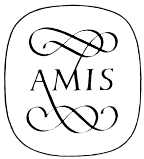
Journal of the American Musical Instrument Society

VOLUME XXI • 1995



BOOK REVIEWS

William Waterhouse, *The New Langwill Index: A Dictionary of Musical Wind-Instrument Makers and Inventors*. London: Tony Bingham, 1993, xxxvii, 518 pp. ISBN: 0-946113-04-1; cloth. £64.00 (UK); £66.00 (Europe and sea-mail worldwide).

It is a rare occasion when one reviews a landmark in the field of organology. *The New Langwill Index (NLI)* is without doubt the most fundamental and important book concerning the subject of musical wind-instrument makers and inventors published since the sixth edition of Lyndesay Langwill's *Index of Musical Wind-Instrument Makers* of 1980. Although Waterhouse has honored his friend Langwill in the title, this is a completely rewritten book containing an enormous amount of new information based on Waterhouse's research and contributions from dozens of scholars, curators, and collectors around the world.

The book begins with a preface which explains its scope: a listing and brief accounting of the careers and achievements of all wind instrument makers and inventors active before the middle of the twentieth century. Its main value is the identification, dating, and discussion of the instruments. The preface is followed by a short essay entitled "Langwill and his Index," a revision of Waterhouse's article of the same title in the *Galpin Society Journal* 39 (1986). Waterhouse provides a glimpse into the interesting life of Lyndesay Langwill and gives the history of Langwill's ground-breaking publication *An Index of Musical Wind-Instrument Makers*. It is noted that the *NLI* includes entries for about 6400 makers compared to Langwill's approximately 4000. Next is a detailed and important fifteen-page essay entitled "Makers' Marks on Wind Instruments" by Herbert Heyde, written in 1991 and translated from the German text by Waterhouse. Heyde's expertise and erudition in the field of organology is well known, and his important essay explores this subject in its many facets, relying on evidence primarily concerning German makers. This essay is followed by four pages devoted to "Methods and Principles," explaining thoroughly the organization and content of the entries.

Unlike Langwill, Waterhouse includes listings for instrument makers taken from archives and directories even when examples of their work have not been found. Each entry provides the name of the maker; where

and when each was born and died; and a brief biography, when information is known. The following separate headings are included when information is available: the maker's mark, sometimes including a transcription or rubbing from an instrument (MARK); selected serial number and dates (SERIAL NUMBERS); the addresses of the maker or firm (ADDRESS); inventions attributed to the individual maker or firm (INVENTION); selected patents of the maker or inventor (PATENT); exhibitions at which instruments were shown (EXHIBITION); published and unpublished writings by the maker concerning wind instruments (WRITINGS); price lists and catalogues (CATALOGUE); the location of selected instruments dated before 1850 (LOCATION); and a list of sources used for the maker (BIBLIOGRAPHY). This is followed by a page and a half of acknowledgments and a page of abbreviations.

The alphabetically arranged text is printed in two columns on each page. There follows an extremely useful eight-page "Index of Makers' Workplaces." Next is a large section entitled "Cited Collections and Libraries"; this is divided into public collections, which are listed alphabetically by country and followed by the cited libraries; private collections; former collections, including inventories and sale catalogues; and other collections (with auction lists and information from the dealer Tony Bingham). An excellent glossary of terms comes next, divided into technical and foreign terms and musical instruments; then an impressively large bibliography (pp. 503–515); listings for private communications; unpublished communications; and biographical abbreviations. In addition, on the end sheets of the inside front and back covers is a fascinating historical map of central Europe indicating the workplaces of seventeenth-, eighteenth- and nineteenth-century wind instrument makers, with an enlargement of one particularly active area in Germany.

This volume is a great achievement for William Waterhouse and establishes a new landmark in the continual investigation concerning wind-instrument makers and inventors. His diligent work over a period of fourteen years is evident in the mass of detail found in the entries. The inclusion of dozens of maker's marks is particularly useful, as well as the listing of many families of makers who were hitherto obscure or unknown. When a family was involved in making instruments for many generations, a separate listing and explanation of their relationships are given under the surname, followed by separate indented entries for each member of the family when information is known. One of the great advantages of this book is the inclusion of many family trees which

clarify the relationships of these individuals. Excluded from the *NLI* are makers of folk instruments, such as the alphorn, the modern bagpipe, and the mouth-organ (harmonica), as well as makers of reeds, keys, and valves of brass instruments. Makers of brass-instrument mouthpieces are included.

By perusing this book, one can encounter much new information. For instance, in 1795 Anton Stadler commissioned a maker by the name of Tietzel in Bremen to build a "neue Art Clarinette d'amour" (new clarinet d'amore). Was this instrument a clarinet d'amore in A or A-flat with a bulbous bell, or was it a basset clarinet in A with a chromatic extension of low notes from e♭ down to c? At this time, we can only speculate on an answer. It is interesting to note that the eighteenth- and nineteenth-century Sattler family of Leipzig includes nine different members, several of which were makers. The earliest listed woodwind instrument maker, Jacob Pfeiffenmacher of Nuremberg in 1467, was preceded by Pierre De Prost (probably a dealer), who supplied five woodwind instruments ("tant bombardes comme chalemies") in 1413 to the Court of Aragon. Several of the makers listed were also makers of pianos, or stringed or percussion instruments. This volume is particularly useful in documenting the varied nature of these makers' activities. In addition, Waterhouse carefully refers to Phillip T. Young's recent publication *4900 Historical Woodwind Instruments: An Inventory of 200 Makers in International Collections* (London: Tony Bingham, 1993) in the bibliography for each of the 204 makers he lists. (What appears to be our biggest lacuna is a similarly detailed reference work for makers of percussion instruments.)

As Waterhouse notes in the preface, by its very nature this book will constantly call for revision. Dozens of dealers and makers and their catalogues will undoubtedly be added to the next edition as people write to Waterhouse. In any detailed reference book typographical errors will be found; however, none seriously detract from the usefulness of this book. I include a few examples: The date of the earliest documentation of the clarinet under the entry for I. Denner should be 1710 rather than 1711. Antoine César Janssen's invention of key rollers actually occurred in 1821, as reported by Louis Benjamin Francoeur in 1822;[1] the refer-

1. "Rapport fait par M. Francoeur, au nom du Comité des arts méchaniques, sur une nouvelle clarinette présentée à la Société par M. Janssen, rue l'Évêque no. 14, butte des

ence should be to Louis Benjamin Francoeur. The address of Rudall Carte & Co. is given as 23 Berners Street, London, from 1911 to after 1950. Yet, the Fiske Museum of Musical Instruments holds an important flute, made for Leonardo De Lorenzo by this company in 1905, with addresses at 23 Berners Street and Oxford Street.[2]

There are two typographical errors in Heyde's outstanding essay: in xviii, at the end of note 17, the reference should be to note 8; in xix, at the end of note 18, the reference should be to note 8. As talented a German translator as Waterhouse is, he leaves a few awkward places. A question of proper form versus space saving occurs in the bibliographical listings, which are abbreviated to exclude the dates of articles and to provide only the first page of each one, such as, *ZfI* 25.892 and Ventzke in *MI* 12.762. This makes life annoying for the serious scholar, who would like to order copies of these articles, but is handicapped by the lack of publication dates (which most of the time may be estimated from the date of the first volume) and complete page references. Another occasional problem is the lack of a date for the *Allgemeine musikaliche Zeitung* (*AMZ*) volume in which an *Intelligenz-Blatt* or advertisement appears. For example, Bormann should read: *AMZ* 10 (1808), *Intelligenz-Blatt* V; Grenser should read: *AMZ* 2 (1800), *Intelligenz-Blatt* XI. It is also confusing when a former collection is cited in the bibliography as a source. Perhaps these references should have been interleaved within the bibliography; this would have been more convenient for the reader.

These rather minor criticisms should not detract from the author's achievement in producing this important and definitive contribution. Waterhouse and his publisher Tony Bingham are to be congratulated on the publication of a beautifully produced volume. I look forward to seeing and using the *NLI* on CD-ROM and CD-I (interactive), with photographs of selected instruments.

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Moulines, à Paris," *Bulletin de la Société d'encouragement pour l'industrie nationale* 212 (1822): 40–45.

2. The instrument was originally sold to De Lorenzo in 1905, according to the sales ledger of Rudall, Carte & Co.

Phillip T. Young. *4900 Historical Woodwind Instruments: An Inventory of 200 Makers in International Collections*. London: Tony Bingham, 1993. xxxiii, 268 pp. ISBN: 0-946113-03-3. £66.00 (Europe and sea-mail worldwide. £80.00 air mail outside Europe).

In 1989 I had the special pleasure of being chair of the AMIS Curt Sachs Award Committee. When the members met to discuss possible candidates, it took no time at all for us to agree on Phillip Young as our choice. The award (printed in this JOURNAL, 15 [1989]: 145) recognizes Young's achievements as "scholar, exhibitor, collector, educator, and Governor of The American Musical Instrument Society." It goes on to acknowledge that his writings "have increased awareness of and interest in the study of historical musical instruments." Since then Young has become President of AMIS and now has published this book, which is his magnum opus.

In brief, *4900 Historical Woodwind Instruments* is a *catalogue raisonné* of the most distinguished woodwind makers who lived between the fifteenth and nineteenth centuries; it is an inventory of instruments by 204 makers, including 66 recorder makers. Young's earlier book *2500 Historical Woodwind Instruments* included data on 122 makers, of whom 42 made recorders. This new volume includes information from over 700 collections throughout the world, an alphabetical list of museums and private collectors, a list of cited photo sources, a general bibliography, pictorial representations of common key-flap designs, and an appendix which cross-references types of instruments and makers. In his preface Young states that there is some evidence that his first edition (*2500*) has given impetus to the publication of catalogs of collections. Perhaps even more important, it "is a great deterrent to theft and to under-the-table buying and selling." This new book should be even more valuable in that regard.

4900 is organized alphabetically by maker's last name, then according to type of instrument. Young has kept the same numbers for instruments as in *2500* except in the case of recorders, where the headings have been further broken down by voice type. Under Johannes Maria Anciuti, for example, soprano recorder no. 1 in *2500* is now listed as no. 1 under sopranino recorders. Where it was found that a certain instrument never existed or belongs in another category, the number has been retired. Instruments which did exist but are no longer extant are listed. Approximate pitch is given and is "sometimes the museum's or

collector's designation." One practice that I find especially sensible in the case of flute pitch is the use of a capital letter to designate the instrument's relative pitch, followed by the lowest attainable pitch in parentheses, such as C(d^1) for the standard one-key flute.

There are some instruments for which multiple terms have been used by organologists. In *2500* Young used the category "double flutes (*flutes d'accord*)," but in *4900* he decided on *double recorder* for this type of instrument because he now believes that it "reflects both a clarity of nomenclature and an attempt to convey the nature of the instrument (p. ix)." However, it seems to me that the term *recorder* should be reserved for a specific type of instrument. Some of the instruments Young places under the *double recorder* label are in fact double French flageolets, such as those made by Joseph Baumann. Young includes *duct flute* as a subspecies under the general category "Recorder-Type." I would suggest the term *double duct flute* in place of *double recorder*, as it clearly describes the nature of the instruments included and is a more general, or generic, term. Incidentally, the only duct flute (by Thomas Collier) listed in the appendix is called a recorder in the main section of the book; only the headjoint survives, and its length would suggest that it was part of a soprano recorder.

Since my special interest is recorders, I naturally examined those entries more carefully than others. I was glad to note Young's much increased differentiation of sub-types and sizes, but I would like to add *fourth flute* (soprano recorder in $b\flat^1$), *sixth flute* (soprano recorder in d^2), alto recorder in g^1 (in addition to the standard size in f^1), and tenor recorder in $b\flat$. The Bressan soprano recorder in the Bate Collection (ex-Hunt) is indicated in $b\flat$ with all joints marked *4*. Soprano recorders no. 5 by Richard Haka and no. 4 by Stanesby Jr. (marked *Stanesby / Iunior / 4*), are also clearly fourth flutes. Soprano recorder no. 1 by Steenbergen is also listed as pitched at $B\flat$, while no. 3 (which is slightly longer than the Bressan) is given as being in C.

Looking for sixth flutes (soprano recorders in d^2), I noticed instruments by Willem Beukers Sr. & Jr., no. 3; Stanesby Sr., no. 1; Stanesby Jr., no. 3 (marked *Stanesby / Iunior / 6*); Haka, no. 1 (pitch is given as $E\flat$, but its length corresponds to others in d^2); Lorenz Walch II, no. 1 and no. 4; and Paul Walch, no. 1. Alto recorders in g^1 include instruments by Bradbury, no. 1; Thomas Cahusac, no. 1 and no. 2; J. C. Denner, no. 1, no. 3, and no. 8; Gahn, no. 4 and no. 5; Goulding & Co., no. 1 and no. 2 (judging from their length, or possibly in f^1 at a higher pitch standard);

Johann Wilhelm Oberlender I, no. 13, no. 18, no. 25, and no. 26; Schuechbaur, no. 1 and no. 2; Steenbergen, no. 1; I. G. Walch, "soprano" recorder, no. 1; Lorenz Walch I, no. 1; and Wyne, no. 1. Alto recorder no. 11 under Jacob Denner (headjoint only, with main joint by Rykel, no. 3, and footjoint by Haka, no. 3) is listed as pitched in g^1, but its length suggests f^1.

The appendix lists voice flutes by Bressan, Cahusac, Stanesby Sr., and Stanesby Jr.; but no such instrument by Stanesby Jr. is listed in the main catalog. Alto recorder no. 3 by Willem Beukers Sr. & Jr. is listed as pitched in d^1; therefore, it may be a voice flute. Other makers with voice flutes not given in the appendix include Bradbury, no. 1; J. C. Denner, tenor recorders no. 2 and no. 4, both identified as voice flutes in the column of "additional details"; Rippert, tenor recorder no. 3, also described as a voice flute; G. A. Rottenburgh, tenor recorder no. 1, which may be either a small tenor in *Chorton* or a voice flute; J. H. Rottenburgh I & II, tenor recorder no. 1, pitched in D and the length of a voice flute; and Schuechbaur, tenor recorder no. 1, pitched in D.

Tenor recorders in b♭ (an octave lower than the fourth flute) are by Stanesby Jr., no. 1 (which bears the mark of *dolphin / Stanesby / Iunior / 4*) and no. 3; and Georg Walch, no. 1, no. 2, and no. 3. Without offering any statistical data, I think it worth mentioning that a remarkable number of bass recorders from the baroque period have survived. Perhaps their more exotic shape made them collector's items.

Where approximate pitch is specified for various instruments in this book, it is unclear for the earlier specimens what the pitch standards were. Soprano, alto, and tenor recorders by Kynseker in the Germanisches Nationalmuseum in Nuremberg, for example, are listed as being in C, F, and C, whereas similar instruments in the New York Metropolitan Museum collection (these may or may not be modern copies) are listed as being in C♯, F♯, and C♯. A rare exception is the soprano recorder by Lissieu in an anonymous American collection; its A is listed as pitched at 415 Hz. Flutes and recorders by the Rafi family are listed at various pitches, including A 370, A 385, A 410, A 420, A 435, and A 440.

Young is like the explorers of an earlier age; they set out to discover what the world is really like. He did not discover the Fountain of Youth or find the Magic Flute, but he did return with a planeload of data which greatly enrich our understanding of the history of woodwind instruments. He acknowledges in his preface that "the selection of makers surveyed was my random, personal choice" and that "there are others I

now wish I had included." I think his choices were judicious and include the major names and many lesser-known ones. The publisher notes that provision was made for the computer-aided retrieval of data from a CD-ROM. This should also ease the task of future corrections and additions.

This book is a landmark publication. Together with William Waterhouse's *New Langwill Index* it belongs in every music library and in the personal library of everyone with an interest in wind instruments.

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Marianne Betz. *Der Csakan und seine Musik: Wiener Musikleben im frühen 19. Jahrhundert, dargestellt am Beispiel einer Spazierstockblockflöte.* Tutzing: Hans Schneider, 1992. xii, 294 pp.; 18 black-and-white photographs, 17 black-and-white facsimiles, 18 musical examples (some in facsimile), 3 tables. ISBN 3-7952-0730-4. DM 110.00.

The elegant walking sticks sported by fashionable ladies and gentlemen in the late eighteenth and early nineteenth centuries frequently concealed implements designed for practical use (umbrellas, daggers, pistols, drinking flasks, razors, toothbrushes, folding stools, etc.), although the prevailing taste for dilettante pleasures found particularly apt expression in built-in items that provided amusement and entertainment. Walking-stick musical instruments were especially popular, ranging in variety from flutes and trumpets to violins and zithers, many of them ingeniously adapted to the requisite long, slender shape. Among these, the *csakan*, a fipple flute that enjoyed a certain vogue in central Europe during the first half of the nineteenth century, was practically unique in not having had an autonomous origin independent from the utilitarian stick used for walking or other purposes. Similar to the historical recorder but not derived directly from it, the csakan from the very beginning had the shape of the Hungarian *csákány* (or *csákányfokos*), a traditional weapon with both practical and symbolic functions. It consisted of a long stick with an iron head, usually with a hatchetlike blade on one side and a curved, tapering hook on the other. Nineteenth-century csakans were produced in several designs, from keyless or one-key models

made in forms representing stylized versions of the traditional weapon and intended for the amateur market, all the way to "complicated" models for advanced players, boasting more extensive keywork and fashioned in shapes that abandoned the dilettante's walking stick in favor of profiles resembling the oboe or clarinet. The standard csakan was pitched in A♭, sounding a minor sixth higher than the written notation, which extended from c^1 up to c^3 and beyond. Although the csakan and the flute were designated as alternates in some of the unaccompanied instrumental music of the early nineteenth century, a sizeable repertory of original compositions and arrangements of popular operatic excerpts was produced specifically for the csakan and brought out chiefly by Viennese publishers.

Often identified generically in English-language publications as a walking-stick fipple flute or even somewhat incorrectly as a walking-stick recorder or flageolet, the csakan deserves to be recognized as a distinct instrument with its own name, its own music, however derivative, and its own history, however brief. Marianne Betz has done great service to this cause by amassing a significant amount of information in the present study, her Ph.D. dissertation in musicology at the Ruprecht-Karl University of Heidelberg. She organizes her presentation of "The Csakan and Its Music: Viennese Musical Life in the Early Nineteenth Century as Exemplified by a [Type of] Walking-Stick Fipple Flute" in four chapters supplemented by appendixes that list surviving instruments, musical works, tutors, and fingering charts.

The first chapter treats the historical background of walking sticks, specifically those incorporating musical instruments, which Betz traces back to a reference to ten (transverse) flutes in the form of pilgrim staves in the sixteenth-century inventory of Henry VIII's collection. She proceeds to an account of a *musikalische Akademie* presented by the versatile Anton Heberle in Pest in 1807. The Akademie featured a sextet of Heberle's own composition, including "a Hungarian *Tsákány*, an instrument that deserves particular attention because of its lovely tone"—the earliest known appearance of the csakan in a concert performance. (Heberle made a career of playing a variety of flute types and was heralded in a concert advertisement in 1815 as the inventor of the csakan.) Next follows a general description of different csakan models as reported by the Viennese oboist Ernest Krähmer in his *Csakan-Schule* of 1821 and illustrated by several representative instruments of the period. The chapter concludes with an extensive discourse on the etymology

and application of the name of the instrument, extending to its use in connection with twentieth-century German school instruments.

Chapter two covers csakan makers and dealers, including relatively minor figures such as August Bleszner and the Placht brothers of Pest, Franz Muss and Anton Schulz of Vienna, and Johann Andreas Mollenhauer of Fulda (whose *Wanderbuch*, chronicling his years of apprenticeship, is examined), as well as makers of real significance. The latter include Stephan Koch and Johann Ziegler of Vienna and the firm of Franz Schöllnast of Pressburg (Bratislava), which receives extensive treatment. Drawing on her study of surviving records, Betz documents this company's production of woodwind instruments during the period 1816–1837 (including 979 flutes, 1,637 csakans, and 2,001 clarinets, the bulk of them sold in the first decade), the kinds of csakans they made (mostly the simple model with one key), and the prices they charged for them. This leads to a revealing evaluation of contemporary makers' prices for woodwind instruments compared with average earnings and costs for purchased goods and services in Vienna.

Matters related to csakan instruction, performance, and repertory are covered in the third chapter, which begins with a description of published tutors and fingering charts. Stylistic techniques displayed in representative works for csakan are next given lengthy examination—perhaps more than is necessary, since the standard contemporary methods employed in creating such solo variations, etudes, and other pieces were hardly unique to this particular instrument. Of more pertinence is the information Betz gives on the careers of notable csakan composers and performers, including Anton Heberle, Wilhelm Klingenbrunner, Ernest Krähmer, Anton Diabelli, Joseph Gebauer, Anton Stadler, and Johann Kaiser.

The short fourth chapter, really an epilogue, expands themes already touched on: the popularity of instrumental music in Vienna during the Biedermeier period, the social and artistic phenomenon of dilettantism, and the role played by the csakan in this context.

Marianne Betz has founded her study on a wealth of primary and secondary literature, although she seems to have missed the article "Csákán" in the *Österreichische National-Encyklopädie* (Vienna, 1835). It is relevant because of its early date and because, as she comments (p. 31), the generic designation *Stockflöte* prevails in most German-language lexica of the time. While Betz's book gives a thorough account of the history and use of the csakan, detailed descriptions of the instruments themselves

—of particular interest to readers of this JOURNAL—are lacking, and her checklist of ninety-two examples in European and American collections (including four now lost) provides only basic information. Moreover (as she reports on p. 211), it is only the listings of instruments in "the most important" central European collections that are based on her personal examination, and this has resulted in errors, such as her description of two csakans (nos. 89.4.928 and 89.4.930) in the Metropolitan Museum of Art, New York, as each having a *Knauf* (knob) on top, rather than the correct *Krücke* (elongated handle). Other blemishes and inconsistencies deter the reader, particularly in the figures and examples: they are not all cited at the appropriate places in the text; their captions are incomplete, and their sources are identified only in a final list; and fig. 22 is incorrectly numbered. Mistakes also crop up in the index and especially in the list of csakan music, tutors, and fingering charts.[1] The latter, although remarkable in its breadth (over 450 titles are listed), is also marred by the use of disparate abbreviations for libraries, while the consistent and universally understood system of RISM sigla would have been a better choice.

The above mentioned reservations do not greatly diminish the obvious value of *Der Csakan und seine Musik* as a historical, musical, and cultural study of this fascinating subject. Although more research remains to be done on the acoustical design of the csakan and its relationship to the recorder and flageolet, this book is now established as the standard work, to which all subsequent studies must refer.

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1. Mostly incorrect libraries' catalog, publishers' plate, and composers' opus numbers; these errors are not listed here because of space limitations and the fact that they will prove only a minor impediment to the few scholars who will need to consult the sources in question. Since a larger number of readers may wish to acquire some of the modern editions of csakan music, it may be appropriate to set Betz's record straight on two publications—of which she was informed—edited by the author of this review and published in 1988 by the Loux Music Publishing Co. of Hannacroix, N.Y.: Philipp Fahrbach, "'Arm in Arm mit dir' Waltzes," and Ernest Krähmer, "18 Studies from the *Neuste theoretisch practische Csakan-Schule*." Betz reports an incorrect publisher and date for the first edition and omits the second one altogether.

***Microsoft Musical Instruments*. Microsoft Corporation and Dorling Kindersley, 1993. CD-ROM, in Windows and Macintosh versions. $59.95.**

There have been six major developments in genus Homo's ways of learning about things not directly before our eyes; speech, image-making, writing, printing, and electronic transmission came to us, always with shorter time spans from one to the next. Telegraph and telephone came into being before any present lifetimes, but it is our privilege to be present at the latest revolution, the interactive phase of electronic information technology, manifested most notably in the computer user's acquisition of material from online sources and from CD-ROMs. Although the CD-ROM has been around for several years, its explosive proliferation came precisely in 1993.

The CD-ROMs that I most admire offer their content in almost perfect plasticity: the recipient chooses, puts in order, browses, skims, skips, lingers, ponders, broadens, or narrows the context. At every point of repose the user can choose among a few or many directions in which to proceed, including retracing one or more steps. The result is an acquisition of information that is different in kind from that offered by all the old technologies, notably in being shaped by the recipient. The effect is maybe a little like immediate experience of the matter but most closely resembles primal human learning, in which the bodily present teacher talks, demonstrates, answers questions, and perfects the learner's understanding.

Among the very best CD-ROM issues to date, *Microsoft Musical Instruments* strikes me as an almost perfect realization of the potential of this brave (like Miranda, I mean no irony) new world. It is easy to use, fast, and packed with information. *Musical Instruments* opens with a title screen; the speakers present a bit of a percussion flourish, followed by twenty seconds of Weber's Clarinet Concerto No. 1, at the end of which the four-part Contents screen is displayed: "Families of Instruments," "Instruments of the World," "Musical Ensembles," "A–Z of Instruments." One simply clicks on the appropriate heading or picture, and the next screen appears.

"Families of Instruments" is divided into Brass, Strings, Woodwind, Keyboard, and Percussion. Selecting, for example, the "Brass" family brings up a screen with a little text and five pictures of basic types, from which one may make the next selection. Similarly, the other families are

represented by from four to thirteen subtypes; selecting any of these leads to still further subdivisions.

Choosing "Instruments of the World" brings up a map of the world; clicking on any of nine regions brings up an enlarged map with pictures of all the folk or traditional instruments that are covered in that area; one may select a sound sample or go to the screen for any instrument depicted. "Musical Ensembles" focuses on several standard ensemble categories and their subtypes; all are Western except the gamelan. A recorded example of each can be called up. "A–Z of Instruments" invites you to click on a letter of the alphabet and then choose from small photos of instruments whose names begin with that letter. The "Index" button brings you a space to type anything you are looking for and alternatively a list from which you may select: instrument names and other terms, ensembles, composers of the examples, instrument families. At the top of all screens is a row of buttons that offer further opportunities for choice: Contents, Index, Back, Next, and Random, the last of which jumps among instruments, automatically playing an example of the sound of each.

Any of the four Contents categories leads quickly to the heart of *Musical Instruments*, the presentations of some two hundred instrument types. When the display for any instrument has been called up, one may click on an icon for the pronunciation of its name, one to play a usually fifteen-second recorded example, one for additional facts, one for Types that goes back to the broader family; sometimes there are points on which to click for facts about parts of the instrument. The Facts box gives additional brief text and often more icons, for example, for a recorded demonstration of the complete range. There is sometimes a Sound Box, with which you can choose to hear any note of a scale as played by the instrument and even play a tune, if you're adept with the mouse.

In comparison with other CD-ROMs, *Microsoft Musical Instruments* is more than user-friendly. Interactions and cross-references are remarkably rich; moving around is extremely easy. The speed of responses to the user's commands is impressive; the longer musical examples take three or four seconds to begin, but all other responses are satisfactorily close to instantaneous.

The color photos are of excellent quality. As adjuncts to the main photos, there are quite a few small photos and drawings—players,

instrument varieties, old depictions. Any screen can be printed. The results on a black-and-white laser printer are usable, but not elegant: the text as well as the pictures are reproduced in a rather coarse-screened halftone. A good color printer probably produces very satisfactory results. The recorded examples appear to be mono, but the quality is good. Most of those of specific instruments were recorded especially for the CD-ROM. Credits can be called up with "About Musical Instruments" on the Apple menu (in the Macintosh version).

Most of the staff writers are not known to me as organologists, but Jeremy Montagu and Peter Cooke are listed as the consultants. The research has been carried out with care, so that it is difficult to find anything to quibble about. The spoken pronunciations of instrument names are occasionally the standard mispronunciations, e.g., of tabla, sarangi, celesta. The Jew's harp, long recognized as an aerophone, is classified as an idiophone and even more contrarily as a percussion instrument. The African linguaphone is called *mbira*, only one of its many names. About the only thing that might have been added to good effect would be some short motion pictures to demonstrate such sequences as playing techniques and keyboard and valve actions.

Those of us for whom the book is the model for information sources might be taken aback by one aspect of *Musical Instruments*: the number of words about each instrument or ensemble is very small, corresponding in toto perhaps to half a column in the *New Grove Dictionary of Musical Instruments*. But to complain about the brevity of text would be like asking a peacock to be a parrot. What this CD-ROM offers is quite marvelous in its own way; if one wants more words, one can open a book.

Who might benefit from working with *Microsoft Musical Instruments*? Recognizing what it omits (ancient and medieval instruments, and many types of folk and non-Western instruments), I still feel it to be an almost ideal text for classroom or self-instruction, above all for the attractiveness of its presentation and its ready accommodation of the user's preferred paths of exploration. Most musicians experienced in the Western musical world will not learn much that is new to them about the standard instruments; most persons knowledgeable about world music will be familiar with the ethnic instruments. But anyone at all will enjoy spending some time with *Musical Instruments*.

Most recently purchased multimedia or audiovisual computers will accept *Musical Instruments*. The Windows version requires a multimedia

compliant 386 or higher, four megabytes of RAM, a hard drive, an audio board, headphones or speakers, a VGA display, and either Windows or DOS 3.1 or higher. The Macintosh version requires a color monitor, System 6.0.7 or later, four megabytes of RAM, and a hard drive. Both versions require a CD-ROM drive and a mouse. The lucky buyer may find a discount price as low as $36.95.

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