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## Reviews

A.-P. de Mirimonde. *L'iconographie musicale sous les rois Bourbons: La musique dans les arts plastiques (XVII<sup>e</sup>–XVIII<sup>e</sup> siècles)*. 2 vols. La vie musicale en France sous les rois Bourbons, nos. 22, 25. Paris: Éditions A. et J. Picard, 1975 and 1977. Vol. 1, 202 pp.; 142 black-and-white illustrations; F95. Vol. 2, 255 pp.; 87 black-and-white illustrations; F110.

These volumes represent the product of researches begun by A.-P. de Mirimonde about 1930 and continued in earnest during the past fifteen years.<sup>1</sup> The study is an attempt to put into some systematic order the iconography of music in French art produced during two centuries especially rich in musical themes. The effort is a brave one, and it is successful. I suspect no one other than Mirimonde, who has spent so much of his life writing about European art of this period, could have done it. Given the fact that musical iconography, as a subdiscipline of historical musicology, is so new an area of serious study, this text deserves particular attention because Mirimonde's approach is one which will familiarize music historians with the methods and thematic classifications of art history. Beyond that, the book will quite thoroughly acquaint readers with many of the major pictorial themes in which music figures in Western art.

The first volume begins with individual chapters devoted to each of three broad areas: allegories—especially important are those of the liberal arts and the fine arts; subjects drawn from antiquity, in particular, mythology; and religious subjects, such as persons like David, stories from the New Testament, and the lives of saints. A fourth chapter considers music in seventeenth-century still lifes. The

1. While some portions of this study appeared earlier in articles in the *Gazette des beaux-arts: La revue du Louvre et des musées de France*, and the *Jaarboek* of the Koninklijk Museum voor Schone Kunsten, Antwerp, the bulk of it is new.

last two chapters deal with art which more directly and literally reflects musical practices. In the first Mirimonde discusses single musicians and portraits from the seventeenth century, while in the final chapter he considers the role of music in seventeenth-century society.

The second volume follows the arrangement adopted for the last three chapters of the first volume, except that here the concern is with eighteenth-century documentation. It begins with still-life pictures, continues with a chapter on single musicians and portraits, and proceeds with another on music's social role. The study concludes with chapters on exoticism—eighteenth-century French "oriental" subjects with music—and on musical parodies and satires from both the seventeenth and eighteenth centuries. The work is indexed and has a selected bibliography.

Mirimonde's scheme of classification by broad subject area, borrowed in part from the methods of art history, in part from those of music history, represents—as he explains in his introduction—an attempt "pour mettre un peu d'ordre dans ce chaos." The chaos to which he refers, of course, is that resulting from the almost unimaginable plethora of iconographical documents of musical activity in the visual arts from antiquity to the present. It ought to be said from the start that this attempt at classification represents one of Mirimonde's greatest services to students of the discipline. Along with scholars like Emanuel Winternitz and Reinhold Hammerstein, among others, Mirimonde has taken that most difficult of first steps: he has sorted out, if only tentatively, how it all seems to fit together. As Mirimonde recognizes, one needs a perception of the broad perimeters within which music as a theme functions historically in art, before one can hope to understand the information individual pieces of pictorial documentation can bring to bear in answering musicological questions.

The importance to music history of visually represented allegories and myths may, on the surface, seem slight, but in fact, as Mirimonde demonstrates, the opposite is true, because both allegories and myths reflect man's perceptions of his world and his own place in it. They reflect, for example, the moral distinction man makes between what is perceived to be good, and what evil. Music has always been

considered to fall on one side of this dichotomy or the other, and the net effect of the judgment has influenced greatly the course of music history. Studying visual art for information about such attitudes toward music can help explain music's historical social function and position. It further confirms and emphasizes that moral judgments about music—as often as not they have found its moral qualities sadly lacking—did not die with Plato, nor with the medieval church, nor with Calvin. They are still very much with us.

Moralists have often employed the visual arts to remind us of music's mundane and questionable association with carnal love, that ever popular embodiment of sin. But, at the same time, others have defended music via its membership in the quadrivium of the liberal arts—even though its place here has little to do with the pleasurable nature of music per se, but rather with its relation to Platonic conceptions of music of the spheres and the mathematical ratios governing the intervals. As a liberal art, music has been considered capable of leading man away from error and opening his soul to the truth of revelation.

In his treatment of subjects drawn—if only very loosely—from antiquity, Mirimonde demonstrates the vitality of myth in propagandistic (and musically oriented) court art, as in a *Parnasse français*, engraved by Tardieu, which pays homage to the Sun King appearing as Apollo, lyre in hand, at the top of a miniature mountain, while below him three court ladies disguised as the Graces keep him company, along with eight writers and one musician (Lully), who fulfill the role of the Muses—via sex change! (The print itself represents a model for an elaborate piece of garden sculpture which was never constructed.)

His study of seventeenth-century musical still lifes centers around depictions of the Vanities, in which music generally figures at best as a waste of time. (Mirimonde has previously devoted several important articles to this subject.) What appears here for the first time is his consideration of pictures on political themes, such as a portrait of Louis XIV in a medallion surrounded by a still life, painted by Jean Garnier. In this allegorical *hommage* to “l'abondance du royaume et l'harmonie des parfaits accords qui se rencontrent dans le gouvernement de l'État”(!), as was piously declared in 1692 during the



exhibition of the picture at the Académie, music occupies a central position. Such documents are valuable in that they clarify particular class attitudes of the period toward individual instruments and toward music itself. Here, for example, the attention lavished on the musical instruments not only generally reflects the place of honor the sonorous art enjoyed at court, but also something of the specific musical tastes of Versailles' captive audience. Thus the specific instruments depicted (guitar, viols, and violin) would surely be those in current favor, for it can be assumed that old-fashioned or otherwise ill-considered instruments would have no place in such a picture. The presence of a musette here likewise reiterates the importance of the dance, and especially the Arcadian *bergeries*, as a prime source of courtly pleasure. Eighteenth-century still lifes illustrate the general movement of the period away from viewing music with moral suspicion and toward the pure enjoyment of it. Speaking of musical still lifes by J.-B. Oudry, Mirimonde points out that "Il suffit à ce Maître de plaire aux yeux et de célébrer les agréments de l'existence. . . ." That judgment serves as a metaphor for the genre as a whole during the period.

In his chapters on single musicians and portraits in the seventeenth and eighteenth centuries, Mirimonde demonstrates that such pictures offer incomparable documentation of composers, players, instruments, and playing techniques. His discussion proceeds by the individual instruments depicted in such scenes (lutes, guitars, harps, viols and violins, hurdy-gurdies, winds, keyboard, percussion, etc.), a useful arrangement since, as he points out, "portraits allow us to follow rather exactly the evolution of public taste with regard to various instruments." His study of the survival of the viol family in the eighteenth century, and the final usurpation of its position by the violin family, is considerably detailed. The continued favor enjoyed by the bass viol in particular is documented by portraits of higher nobility playing it—probably the most famous is the posthumous portrait, painted by Nattier, of Mme Henriette, lamented daughter of Louis XV, who died in 1752 at age twenty-four. Mirimonde indicates, however, that this portrait represents the "final triumph" of the bass viol, for in the second half of the century it was gradually abandoned in favor of the violoncello.

Portraits also furnish valuable indications about variations in the use of individual instruments from one country to another, and they provide information about which instruments were played more or less exclusively by women or by men. For example, Mirimonde shows that, while there were numerous portraits of female guitarists, those of males are relatively few, Watteau's costumed *Mezetin* notwithstanding. His discussion of seventeenth-century documents of this sort concludes with a brief consideration of those fascinating prints—really visual conceits—showing musicians costumed totally with musical instruments.

In his chapters on music in French society, Mirimonde employs "occasion" as the central classification. Among the musical occasions he considers are gallant gatherings, private amateur performances, popular celebrations, military functions, popular theatrical productions, dances, and courtly ceremonials. The last is particularly fascinating, for Mirimonde brings to light pictorial documents recording specific events, such as marriages, feasts, and military victory celebrations. He speaks of allegorical spectacles staged to honor the king or his family, where, for example, specially designed parade wagons made appropriate allusions to the felicity of the regime. For a fête staged to celebrate the marriage of the dauphin to Marie-Josèphe of Saxony, one such chariot dedicated to Mars carried musicians performing "une symphonie guerrière."

The chapter on musical parodies and satires involves the consideration of one of the oldest musical subjects in art; examples exist from the cultures of ancient Sumeria and Egypt. Especially important are images of animal musicians—in particular, cats, monkeys, and birds—"aping" human activity. The typical irreverence of such art is evident in a second-century Roman mosaic, now in the Louvre, where a monkey plays a role of an otherwise noble, serious Orpheus. As for animal parodies and satires from seventeenth- and eighteenth-century France, some are generalized (e.g., *Concerts grotesques*), others are very specific. The latter are the more interesting. A fine example is a drawing by Coypel entitled *L'académie de musique en voix naturelles accompagnées d'instrumens à vent et à cordes*, where that august and serious-minded institution created by Louis XIV is "peopled" with a vocal group comprised of cats—each of which

“specializes” in a single note, and one of whom beats time—and an orchestra comprised of monkeys.

Parody music was not only a subject treated in art, it was part of theatrical burlesques performed throughout most of the seventeenth century at court as part of the ballet offerings (e.g., the *Mondé renversé* of 1624). Such pieces appealed to an audience with highly developed tastes for the ironic. In one such performance, a particular entrée of buffoons was accompanied by “les hautbois . . . mal d'accord avec les violons,” a happy noise which provided music for the *faux pas* of dancers dressed as monkeys. The burlesques were also used to ridicule the enemies of the king.

Dancers costumed as musical instruments appeared too, as documented in a drawing by Gissey for *Les festes de Bacchus*. One figure personifying music appears with his head totally encased in a gigantic lute—his face breaking through the belly.

Mirimonde's book represents a significant contribution to a fledgling area of scholarly endeavor. While it should be pointed out that he discusses far more pictures than production costs will allow to be illustrated, there is nevertheless real value here in even the briefest citations. Part of the central worth of this monumental undertaking is its usefulness as a resource tool, fulfilling much the same need as Andor Pigler's classic reference work, *Barockthemen: Eine Auswahl von Verzeichnissen zur Ikonographie des 17. und 18. Jahrhunderts* (2d ed., 1974), with the added advantage of Mirimonde's detailed description of the musical contents of individual documents. The book is handsomely executed; plate quality is good. The majority of reproductions are of drawings and engravings.

RICHARD D. LEPPERT

Laurence Picken. *Folk Musical Instruments of Turkey*. London: Oxford University Press, 1975. xl, 685 pp.; 47 plates, musical examples, drawings, charts, maps. \$108.00.

Ever since my first encounter with Laurence Picken's incisive paper on Black Sea fiddling (*Proceedings of the Royal Musical Association*

80 [1954]: 73–86), I have hoped for a follow-up. Suddenly now, after twenty years of research in Chinese, Japanese, and Central Asian musics, he bursts forth with a major contribution to organology.

Organology is a small, ill-defined branch of ethnomusicology. Many musicians and scholars never heard of the word, and you will search in vain for it in the *Oxford English Dictionary* or the *Harvard Dictionary of Music*. Picken's monumental study of Turkish folk instruments contributes significantly to the fields of Turkish studies, material folk culture, and ethnomusicology in general, but in organology it should count as the most significant work since Curt Sachs's.

Originally commissioned for the Emsheimer-Stockmann series, *Handbücher der europäischen Volksmusikinstrumente*, Picken's Turkish work outgrew the magnitude of those slim volumes (Hungary, 148 pp.; Czechoslovakia, 188 pp.) and was published separately. All books in the series follow a uniform format, including Picken's. They are essentially instrument catalogs laid out according to the Sachs-Hornbostel classification scheme—analogous, Picken reminds us, to the Dewey decimal system and classifications in the biological sciences. Thus the main divisions of the book are: "Idiophones" (56 pp.), such as spoons and clapper bells; "Membranophones" (109 pp.), such as drums and kazoos; "Chordophones" (170 pp.), such as lutes and fiddles; and "Aerophones" (212 pp.), such as flutes, reeds, and horns. A fifty-two-page postscript delves into the theoretical questions of classification, evolution, distribution, and diffusion of instruments and their related ideas. A fourteen-page bibliography is followed by indexes of authors' names, geographical names, Turkish words and phrases, and a lengthy general index. These latter niceties are consistent with aids to the reader in the front matter; many readers will appreciate the guide to Turkish pronunciation and the designation of notes.

Each entry within the four main divisions is self-contained; the casual reader can open the book at random and become immediately engrossed in the details of a single instrument. Within each entry, Picken follows the Emsheimer-Stockmann format: (I) terminology—the various names, their cognates and relations throughout geography and history; (II) ergology and technology (how it is made);

(III) playing technique and musical possibilities (with many detailed drawings and photographs); (IV) repertory (including numerous extensive transcriptions); (v) use (in ensembles, etc.); and (vi) history and distribution (where Picken is really in his element).

The thoroughness of this job is breathtaking. As soon as I received this book, I looked up a question which had long puzzled me and which Sachs had failed to answer, namely, what is the purpose of the small holes in the bell of the *zurna* shawm? Filters for high-frequency partials, says Picken; they are called “djinn holes” (*cin deliği*) or “Satan holes” (*şeytan deliği*), he says. And there are photographs of the various *zurna* bells and their typical patterns of djinn holes. Home run first time at bat.

The next thing that delighted me were the extensive acoustical discussions, unusual for an instrument catalog. On page 208 the resonance of composite chordophones with box-resonators is compared to that of a drum: “The table . . . functions as a . . . membrane constrained . . . by the sides of a stiffer box.” The next paragraph continues:

The periodically varying force applied to the bridge by a given string, when plucked or bowed . . . , is analogous to the current from an alternating-current generator (A) . . . , and the function of the resonator in the composite chordophone is analogous to an electrical circuit activated by an alternating current. The sounding lute can be represented by a circuit that includes a capacitor ( $C'$ )—analogous to the elastic properties of the table and other wooden components, an inductor ( $L'$ )—analogous to the momentum associated with motion of the table excited through contact with the bridge, a second inductor ( $L''$ )—analogous to the mass of the air in the immediate vicinity of any open soundholes and, in parallel with the last, a second capacitor ( $C''$ )—analogous to the compressibility of the air. In addition, the circuit includes various resistances representing the dissipation of energy in the system. . . .

In the case of lutes with a skin table,  $C'$  and  $L'$  will relate principally to properties of the skin. Their values may be modified by changing the position of the bridge, or by weighting the skin, for example.

Facing page 208 are plates of four X-radiographs demonstrating the comparative thicknesses of *saz* lute bodies, old and new (the two right-hand plates are inconsistently inverted though).

Picken's other careers as biologist and zoologist provide brilliant

support. He speaks precisely of the antlers of “the wild ungulate” used for *nefir* horns, the “*ulnae*” of eagles’ wings for double-reed pipes. His trained eye observes differences in grain patterns of *saz* bodies. The whole taxonomy discussion in the postscript is enlivened by frequent references to such parallels as the International Plant Index.

But is the information specific to Turkey reliable? One of the long-standing feuds in ethnomusicology pits the ethnic insider against the outsider. The perpetual argument of the insider is that the outsider didn’t grow up with it, thus he can never understand the deep feelings and the true meaning of the insider’s music. The insider finds the outsider’s basic knowledge poor and his mistakes ludicrous. To this the outsider invariably replies that the insider is so wrapped up in chauvinistic glorification of his own culture that all pretense of scientific objectivity is a sham. The insider, he says, lacks perspective. The simple resolution of this debate is to take our intellectual nourishment from both insider and outsider, savoring the respective strengths of each and reserving a healthy skepticism for their respective weaknesses.

I am an outsider to Turkish music; so is Picken. He has taken great pains to quote Turkish sources, written and verbal. Hundreds of informants aided: the small boys in the fields, the shepherds in the mountains, the musicians and craftsmen in the towns, and the scholars in the cities (such as Sadi Yaver Ataman, the dean of the Turkish musical folklorists). It was inevitable that a few sources would elude even Picken. The *Türk Musikisi Ansiklopedisi* [Encyclopedia of Turkish music] by Öztuna, the first volume of which appeared in 1969, would have been useful, as would have been *Türk Musikisi Kimindir?* [To whom does Turkish music belong?], reprinted in 1969, by the late great Turkish musicologist Saadetin Arel.

Looking at the section on the *saz* long-necked, fretted lute—rightfully allotted the largest number of pages (87)—I was delighted with the drawings of string looping, a comparison of present carvel-construction with a fourteenth-century source, and acute observations on the function of the tapering of the neck. Even to a fellow outsider, though, a few things rang false. The tuning “*misket*” (p. 231) does not derive simply from the dictionary meaning of that word, “mus-

catel grapes,” but is the title of a famous song in the mode requiring that tuning. Under playing technique, Picken spells out exactly the *saz* player’s characteristic ornaments (*çarpmalar*), but his omission of the various complex regional strumming styles, e.g., those of Ankara and Konya, is major. These are the kinds of problems facing every outsider, including me.

It is humanly impossible to include every single folk instrument in a given country at a given time. Although one of my favorites is not in Picken (the *havan* coffee mortar, beaten rhythmically at weddings), the inclusion of a luxuriant profusion of whirligigs, bull-roarers, and other homemade children’s instruments more than compensates. Probably only an outsider could have mounted such an enormous effort at this time. Yet my fondest hope now is that a Turk will be inspired enough or angry enough with this book to go out and do likewise from the insider’s viewpoint.

Since Picken and Oxford had so kindly eased the reader’s way with indexes, lists, and so forth, I felt more keenly the absence of explanation in the preface for questions I consider basic. Take the title of the book, for example. The term “folk” is controversial and begs for definition here (232 pages later it is defined obliquely). Does it include gypsy, mehter, dervish, or religious music? If not, why not? Then, what is a “musical instrument”? And does “Turkey” refer to the Republic of Turkey? At what time? Including Cyprus? The Ottoman Empire? Central Asian Turks? I would find each of these questions challenging. But these are small carpings in comparison to Picken’s great achievement; the dogs bark, but the caravan moves on.

Who will buy this book? The price, one hundred and eight dollars (at this writing), is not a misprint. Oxford University Press, in a grand manner befitting the largest publisher in the non-Communist world, seems to incline more and more to such lavish productions of scholarly works. The last such Oxford book was Eta Harich-Schneider’s *History of Japanese Music* (1973), priced at a mere seventy-five dollars. With library budgets shrinking and publications’ costs rapidly escalating, such generous reminders of the good old days seem doomed to extinction, like our American land-cruisers.

In the meanwhile, let us give one last hurrah for Oxford for taking

the financial risk of bringing us this treasure. And by all means let us thank Laurence Pickin for this immense labor of love, twenty-five years in the making, a masterpiece nonpareil. Dr. Picken, *tebrikler!*

KARL SIGNELL

*The Brussels Museum of Musical Instruments Bulletin*. Edited by René de Maeyer. Vol. 4 [Anniversary offering to the Ruckers Genootschap of Antwerp]. Buren, The Netherlands: Frits Knuf, 1974. Hfl 36.

In his introduction to the first volume (1971) of *The Brussels Museum of Musical Instruments Bulletin*, René de Maeyer stated, as the aim of the undertaking, "to account for the scientific activities of or in connection with the Museum, to discuss current problems of instrument making or musical acoustics, to report researches made in the field of folk music, to emphasize the significance of musical iconography, to contribute to ethnomusicology by the study of non-European instruments." One suspects from reading his introduction that Maeyer, who is the curator of the Brussels museum, hoped as well to achieve further awareness among the Belgian public of the existence of this marvellous collection; but it should not be inferred that the *Bulletin* is in the nature of puffery, for it has so far served as the forum for a considerable number of significant studies in organology. Except for volume 1 (volume 3 had not yet appeared at the time of this writing), each annual issue of the *Bulletin* has been turned over largely to the investigation of a single instrument: volume 2 (1972) was devoted mostly to the Jew's harp and volume 5 (1975) to the dulcimer.

Volume 4 of the *Bulletin* was published as a sort of *Festschrift* on the occasion of the fifth anniversary of the Ruckers Genootschap of Antwerp. It contains a catalogue of the exhibition put on in Antwerp by the Genootschap in the summer of 1974 (pp. 65-70), an account by its president, F. Aeby, of the achievements of the first five years of the Genootschap (pp. 11-15), appreciations by Gustav Leonhardt and Kenneth Gilbert, and an account by Hubert Bédard and Jeannine



Lambrechts-Douillez of the restorations of three harpsichords (pp. 17–32)—together with several substantial contributions to our understanding of the Ruckers family and their work. One of these is by the Administrator-Secretary of the Genootschap, Professor Lambrechts-Douillez, who has compiled a collection of archival documents relating to the Ruckers (pp. 33–54). These are presented in their original Flemish, together with substantial summaries in English. (All contributions to the *Bulletin* which are in a language other than English are summarized in English.) Some of these documents—those pertaining to the guild rolls—were published in the nineteenth century by Rombouts and Van Lerijs, but they are presented now with their original spelling and punctuation restored. Another document apparently published for the first time is the record of the marriage on 17 July 1611 of Jan Couchet's parents, Carel Couchet and Catarina Ruckers, daughter of Hans Ruckers (I).

Perhaps the most fascinating contribution to the volume is "The Numbering System of Ruckers Instruments," by G. Grant O'Brien (pp. 75–89). The author has studied the various marks and numbers to be found on the action parts of instruments built by different members of the Ruckers family (including those of Jan Couchet). These markings seem clearly to be the means by which the shop identified the parts of one instrument in order to keep them separate from the parts of another. Heretofore, no one has been able to trace any clear logic behind these markings. O'Brien begins by observing that for most of the instruments the markings consist of two parts: the first is the same for all instruments of the same type (i.e., virginals of various lengths, mother-and-child virginals, and single and double manual harpsichords), while the second is a number which differs from one instrument to another. By separating the markings by type of instrument as well as by individual maker, O'Brien has observed that the numbers fall into approximately straight-line series corresponding to known chronology.

There are several significant results of this investigation. First, it makes clear that the Ruckers' shops did use a serial system of numbering. From this it is possible to make educated guesses as to the approximate dates of certain instruments for which no date is provided explicitly by the instruments. One interesting hypothesis

regards the 1640 two-manual harpsichord in the Schloss Ahaus in Westphalia, which is signed by Joannes Ruckers. This instrument has a low "serial number" (14), which is inconsistent with the production of Hans Ruckers (II). However, when it is taken together with the two-manual harpsichord of 1646 by Jan Couchet (no. 17; this is the only instrument of Couchet investigated by O'Brien, and its serial markings just happen to be used as the subject matter for the front cover of all issues of the *Bulletin*), we find that the two numbers are consistent with a production beginning around 1627 when Couchet entered his uncle's shop as an apprentice. Although more of Couchet's instruments would need to be examined along these lines, O'Brien seems justified in tentatively concluding that Couchet began building and numbering his own instruments around the time he entered his uncle's shop, but that since he did not enter the guild as a master builder until 1642, he was unable legally to sign them with his own name; hence they were signed by his master and sported an *IR* rose as well.

Another result of O'Brien's investigations is to demonstrate that both instruments of a mother-and-child virginals were identified with the same serial number, but with the larger being prefixed with *m* (*moeder*) and the *ottavina* with *k* (*kind*). Thus, the 1628 Joannes Ruckers virginal in Brussels, "which at first sight appears to be a normal 6-foot single virginal, is revealed originally to have been a double mother and child . . . [whose] original appearance has been completely disguised" (p. 80).

O'Brien, in closing, states that his "primary philosophy has been to get as much information as possible from the instruments themselves, and to relate this wherever possible to early written works or archival findings" (p. 88). Obviously such research is possible only where the original parts of the instruments are available to look at. It is absolutely essential, therefore, when restorers find it necessary to replace original parts of an instrument, that they return the original (replaced) parts along with the restored instrument. This is precisely the procedure outlined by Bédard in his restoration reports contained elsewhere in the *Bulletin*; unfortunately, it is a practice that has not always been adhered to.

The remaining article in the *Bulletin* is "La facture de virginals à

Anvers au 16<sup>e</sup> siècle," by Nicolas Meeùs, the assistant editor of the *Bulletin* (pp. 55–64); this paper is, in fact, the only contribution from the Brussels Museum per se, an indication of just how broadly based a forum the editors hope to make of their publication. Meeùs discusses the position of the Brussels Museum's polygonal virginal by Joes Karest near the beginning of a hypothetical line of development from the *épinette* to the *muselar*. He not only describes the nature of these two types of instruments more precisely than had previously been done but also suggests some experiments which might show why the *muselar* eventually became the most prevalent form of virginal in Flanders. Meeùs's contribution is original and shows what sort of results can be obtained from creative investigation of a set of organological classifications.

All in all, *The Brussels Museum of Musical Instruments Bulletin* shows promise of providing a most valuable contribution to the budding discipline of organology. It is well printed in a generous (8½"×11") format on good-quality paper (one does wish, however, that it were bound in signatures rather than glued), and there seems to be an unlimited budget for illustration (O'Brien's article alone contains seventeen quarter-page photographs, and there is a stunning color photograph of the Hans Ruckers (I) mother-and-child virginals loaned by the Metropolitan Museum of Art for the 1974 exhibition in Antwerp). Let us wish the *Bulletin* a long life which continues to fulfill its early promise.

R. PETER WOLF

Smithsonian Institution, Division of Musical Instruments Staff. *A Checklist of Keyboard Instruments at the Smithsonian Institution*. Second Edition. Washington, D.C.: Smithsonian Institution, 1975. 82 pp.; 7 figures. \$2.00 (plus \$.45 mailing; available from the Smithsonian Bookstore, National Museum of History and Technology, Washington, D.C. 20560).

When in 1959 the directors and curators of a number of large instrument museums and divisions and some private collectors con-

vened at the Gemeentemuseum in The Hague, a list of tasks to be fulfilled on an international basis by these museums and collections was drawn up. One of the tasks, agreed upon by all present, was to be the drawing up of mimeographed checklists of the items in the museums and collections involved, which were then to be circulated so that researchers, instrument makers, and musicians would be able to ascertain with a few quick glances where there were instruments that might interest them. Very few of those present, I am afraid, indeed drew up such checklists. The reason for the nonappearance of checklists of many museums and collections was, I think, not so much laziness or lack of organization, but in most cases lack of enough qualified staff.

In 1959 the Smithsonian Institution was not represented at these meetings, as no instrument specialist had been appointed at that time. When, however, in 1961 Cynthia Adams, now Cynthia Hoover, was charged with the Division of Musical Instruments of the Institution, she saw clearly that one of the many impending tasks was to be the recataloguing of the entire collection of musical instruments (4,000 items). The recording of the keyboard collection was given priority for two reasons: for its numeric (224 items) and qualitative importance, and for its absence from the *Handbook of the Collection of Musical Instruments in the United States National Museum*, as the Smithsonian Institution was then called, published by Frances Densmore in 1927. Since a scientific catalogue of such a comparatively large number of technologically complicated objects—as keyboard instruments are—cannot be conjured into being at short notice, a checklist of the keyboards was not published until 1967.

Well-functioning museums (and the Smithsonian undoubtedly belongs to this category) are never static. New acquisitions are made; research on certain items makes former attributions and dates questionable; new publications appear; instruments are restored; more phonograph records, more technical drawings, more photographs, more radiographs are produced. Therefore, a checklist, such as the one published in 1967 of the Smithsonian keyboards, rapidly becomes obsolete.

Now a second edition of the keyboard checklist with twenty additional instruments has been published. Like the 1967 edition, it

is subdivided into pianos, "harpsichords," clavichords, organs (including free reed instruments), and miscellaneous (comprising mainly automatic instruments with keyboard and electronic organs). Precise indications are given of photographic negatives, from which prints can be acquired, technical drawings, publications concerning and recordings of the instruments in question. The only suggestion I would like to make is not to use "harpsichord" both as a generic term and as a specific one (in contrast to virginals, spinets, and clavictheria). As a generic term, "plucked (stringed) keyboard instruments" is, if more prolix, clearer.

For each instrument the maker, the catalogue number, the place of origin, the date, the type, the compass, and the negative number are listed. For harpsichords and organs the disposition is added, and for pianos data concerning the "pedals," which include hand stops and knee levers. As it does not seem etymologically correct to speak about "hand pedals" and "knee pedals," might I suggest "stops" as a generic term, to be subdivided into those actioned by hand, knee, or foot? Also it might be useful to specify the stops of each piano. In many cases their effects can be easily ascertained.

There are a few places where greater accuracy might be attained. Some examples follow here: The Jean-Louis Dulcken grand (formerly listed alphabetically under Stein, but now correctly attributed) is listed as "Munich? 1790-1800." No question mark is needed behind Munich, and the *FF-g'''* compass does not occur in Germany, as far as I know, before 1795. For the same reason the dating "between 1780 and 1800" of the Gottlob Emanuel Rűfner, Nuremberg, square piano with the same compass is slightly on the optimistic side. The Meincke and Pieter Meyer, Amsterdam, square piano with the compass *FF-f'''* is dated "between 1789 and 1806." The *terminus ante quem* is probably correct, as an instrument of these makers with the compass *FF-c''''* can be dated ca. 1808. The *terminus post quem* is, however, slightly pessimistic, as a *FF-f'''* square from their workshop dated 1786 is preserved. It is helpful that initials and incomplete Christian names of makers in signatures are completed between square brackets. For ignorant researchers—of which there is a surprising number, at least in Europe—it might be useful to complete "Stein, André" to "Stein, Mathäus Andreas." The extremely inter-

esting *spinettone* (as Cristofori terms the type in his 1700 Medici inventory), correctly termed "transverse harpsichord" in the checklist, is listed as being made by an unknown maker. It is practically identical with an instrument in private possession at Pistoia, which bears the signature of Giovanni Ferrini, a pupil of Cristofori. Therefore, it might be better to label it "probably Ferrini" rather than "possibly Cristofori."

These are a few suggestions that might be useful for the next edition. On the whole, however, this checklist is drawn up with admirable scholarship and will be extremely useful to all those interested in the field of keyboard instruments.

JOHN HENRY VAN DER MEER

Alfred J. Hipkins. *A Description and History of the Pianoforte and of the Older Keyboard Stringed Instruments*. Introduction by Edwin M. Ripin. Reprint of 3d ed., 1929. Detroit: Information Coordinators, 1975. xv, 130 pp.; 11 black-and-white plates.

Helen Rice Hollis. *The Piano: A Pictorial Account of Its Ancestry and Development*. New York: Hippocrene Books, Inc., 1975. 120 pp.; 102 plates. \$12.50.

For readers seriously interested in exploring the fundamentals of piano design and construction, no better, more concise survey can be found than Alfred James Hipkins's (1826–1903) venerable *Description and History of the Pianoforte*. In Edwin Ripin's introduction to the reprinted third edition (1929), in which he discusses the broad scope of Hipkins's pioneering studies, Ripin quite rightly calls this "one of the most extraordinary books about musical instruments ever written and a model for the lucid exposition of a complex and technical subject." It is not too much to say, humbly, that during the eighty years since this little book first appeared (1896) no individual has explained the piano's workings with greater clarity and precision. While more detail is known now of the piano's history and ancestors,

Hipkins's contributions to the subject and his knowledge of the sources—surviving instruments, written descriptions, pictures, and music—have hardly been excelled by any later writer.

Hipkins's account of the piano's evolution from around 1820 (when the iron frame, a basic element of the modern piano, finally took hold after decades of tentative experiment) to the end of the nineteenth century outlines the functions of the instrument's chief components. Hipkins directs attention mainly to important innovations in framing and action (key and hammer mechanism), but strings, wrestplank, soundboard, bridges, and pedals are also considered, and major patents are described. Twenty-one plates and illustrations show representative models and actions.

Hipkins's brief but classic definition of what a piano is and explanation of why it sounds the way it does is still entirely accurate, though recent acoustical research provides more information on the physical basis of piano timbre. Two studies that extend Hipkins's discussion may be mentioned: E. Donnell Blackham's article "The Physics of the Piano" (*Scientific American*, vol. 213, no. 6 [Dec. 1965], pp. 88–99) shows that the inharmonicity (out-of-tuneness) of the piano's strings contributes to its tonal "warmth"; Gabriel Weinreich's essay "Coupled Piano Strings," recently submitted for publication in the *Journal of the Acoustical Society of America*, explores the implications of hammer irregularities and of dynamic coupling of strings through bridge motion, relating these matters to the process of tuning.

The remainder of the book provides a historical background. Part 2 surveys earlier keyed chordophones, beginning with a study of the keyboard's origin and various forms (e.g., short octave tunings). Of course, many historic instruments referred to have since found other homes; Donald H. Boalch's *Makers of the Harpsichord and Clavichord, 1440–1840* (2d ed.; Oxford, 1974) is the best guide to their present whereabouts and to biographical information about their makers. Hipkins's firsthand observations on antique instruments are startlingly perceptive. His description of a clavicytherium in the Metropolitan Museum of Art's Crosby Brown Collection is more revealing than the museum's original catalogue description. But while the *Description and History* can still be profitably consulted

for information on specific instruments, this was not the author's main concern, and occasionally he was misled. An instance is his acceptance of the so-called "Bach disposition"—8' and 4' stops on the upper manual, 8' and 16' on the lower—of a harpsichord said to have been owned by the composer; the disposition is not authentic.

Part 3, a fourteen-page summary of the piano's history to 1820, has served as a basic source for many later writers who, as Ripin puts it, "shamelessly cribbed" from Hipkins's work. Only in 1964 did Mario Fabbri's research push back the date of Cristofori's seminal invention to the 1690's from the 1708–09 accepted by Hipkins and subsequent writers. And only recently was Hipkins's description of this piano amplified by Stewart Pollens's unpublished analysis of the Metropolitan Museum's 1720 Cristofori, the oldest of three surviving (Hipkins knew only two, this and the one now in Leipzig). While these and other recent studies by Philip Belt, Maribel Meisel, and others now make possible a fuller account of the wood-framed type of piano, a full-length publication based on modern research has not yet appeared.

Hipkins cannot be blamed for having a no-longer-fashionable Darwinian attitude toward the piano's evolution that led him perhaps to overemphasize the weaknesses of wood-framed instruments while overlooking their virtues. Indeed, one of his strengths was his awareness that an old instrument is not necessarily a good one, and that there is room for much difference in tone between one fine maker's piano and another's—*pace* the "Steinway artist." The spectrum of timbre he heard, among such distinguished makers as Bechstein, Blüthner, Bösendorfer, Broadwood, Chickering, Collard, Erard, Pleyel, and Steinway, is practically unknown to today's concert audience, and we are poorer for it. As an antidote to today's "specious uniformity" as in so many other ways, Hipkins's model study well deserves its present reprinting.

\* \* \*

Hollis's instructive "pictorial account" of the piano, intended mainly for the interested layman, is more than just an attractive complement to more technical, detailed histories. Though a natural companion to such invaluable classics as Rosamond E. M. Harding's *The Piano-*



*forte: Its History Traced to the Great Exhibition of 1851* (1933; reprinted 1973) or Hipkins's *Description and History*, Hollis's nicely balanced mix of cultural and commercial insight, anecdote and biography, technical explanation, iconographic evidence, and physical description allows her book to stand on its own merits.

Over 100 black-and-white plates of pianos, harpsichords, clavichords, and their relatives form the book's core. These include photos of about fifty different instruments, mostly from the Smithsonian Institution's magnificent collection, and reproductions of forty-odd paintings, drawings, and other art works showing keyboard instruments in a variety of social situations. Other figures explain keyboard layouts and mechanisms; these and other technical matters are lucidly dealt with. The well-chosen pictures are generally clear enough to convey information that would otherwise require pages of tedious description.

Hollis's text concentrates on elucidating these illustrations with fact-packed captions that often run several paragraphs in length. In addition each chapter is introduced by a concise discussion of the instruments' places in music and society of their periods, and of distinguishing features of construction and operation.

A survey of the piano's ancestors from the Middle Ages through the seventeenth century takes up a healthy proportion (one-third) of the book. Yet one wishes that the first chapter, "Earliest Ancestors," had been expanded to address such fundamental questions as why stringed keyboards arose when and where they did. Here, perhaps the author's choice of a basically pictorial format limits in some respects the matters she deals with.

The two chapters on clavichords and harpsichords point out their special qualities, showing that these instruments are not merely superannuated ancestors of a more perfect type. More could have been said, however, about the eighteenth-century clavichord's construction and tone, since the clavichord was a principal model for *Prellmechanik* square pianos which, in their primitive but widespread form, owe little directly to Cristofori's elaborate invention.

The gradual transition from harpsichord and clavichord to piano and the latter's development in Italy, Germany, Austria, England, and France are succinctly covered, special attention being directed to

the accomplishments of Cristofori, Gottfried Silbermann, Zumpe, J. A. Stein and his children, and Erard and Pleyel. Their products and those of other makers are illustrated with photos of characteristic forms: short and tall uprights, pyramid and giraffe styles, a grand with short-octave pedalboard, a square piano disguised as a table, and more usual squares and grands. The author considers the musical, structural, and economic challenges overcome by successful makers, and carefully distinguishes mainstream advances from tangential novelties. Player pianos, though, need not have been ignored.

The penultimate chapter, "In America," traces stringed keyboards from colonial days through the nineteenth century. From the origin of the "Boston school" of piano makers to the crowning achievement of the Steinways, American innovations led the way to the piano's modern form. The last chapter surveys piano and harpsichord making in this century. It touches upon the harpsichord's revival, mentions some statistics on distribution of pianos, and gives some thought to the piano's present and future conditions. Informative footnotes and an up-to-date bibliography will lead the interested reader further.

Most of the book's flaws result from utterly inept editing. The only two photos of clavichords (p. 24) are reversed so that the fretted and unfretted types are confused. The term *Prellmechanik*, misspelled throughout, is not well defined. Between plates 50 and 51 is another plate unnumbered. Kirkman is also spelled Kirckman without explanation, and Cristofori's first name likewise appears in two spellings. The index appalls: for example, Kirkman and other builders discussed more or less at length do not appear at all. A. J. Hipkins's book is mistitled in the bibliography.

One can also quibble over statements like "The addition of a soundboard to a harp produces a psaltery or dulcimer" (p. 11), since Western harps have soundboards, and both psalteries and dulcimers are morphologically zithers, not harps. Other statements require amplification or correction: for example, the keyboard of the Ghent altarpiece's organ owes its present appearance to a repainting (p. 27). When "mother" and "child" virginals are coupled, the smaller above the larger, they can be played simultaneously but not "with the same set of jacks" (p. 35) since *both* sets are then operated by the lower keyboard; the explanation is ambiguous. Roses in Italian

soundboards are rarely gilded and cannot be used to identify particular makers (p. 41).

Such little oversights mar the text in spots but do not destroy the book's usefulness. Hollis treats stringed keyboards in refreshingly broad perspective without sacrificing essential detail; her pictorial record is pleasant and rewarding to peruse.

LAURENCE LIBIN

Brigitte Geiser. *Studien zur Frühgeschichte der Violine*. Publikationen der Schweizerischen Musikforschenden Gesellschaft, series 2, vol. 25. Bern: Paul Haupt, 1974. 153 pp. plus 216 black-and-white illustrations. FS48.

Brigitte Geiser's *Studies on the Early History of the Violin* is a needed and conscientious summary, mainly along traditional lines, of the work others have done up until recently on a difficult topic of interest and importance to a broad readership. Four types of sources, each forming a separate study within the volume, are employed: writings on the subject from 1805 forward; organological studies of surviving instruments made by both the author and, more preponderantly, other writers; material found in music theoretical writings and tutors of the sixteenth and seventeenth centuries; and iconographical data, also mostly familiar from other publications. In addition to discussing the wide variety of body-forms found in early bowed strings, all of which Geiser seems to feel are germane to the history of the violin—except for those of the viols which she, surprisingly, virtually ignores—the author pays more than usual attention to shapes of bows and fittings, as well as ways of holding the instruments and their bows. A very extensive bibliography, a chronological table of the most important literature of violin history between 1782 and 1972, and other useful apparatus are provided. The comparatively brief and very dense text is supplied with a mind-boggling total of 945 footnotes, but these fortunately are printed on the relevant pages of text for easier access and use.

An important virtue of these studies is the clear exposition of the essential points relating to the history of the violin found in the earlier sources and in more recent historical studies, all of which Geiser has read attentively and summarized succinctly. Even more important perhaps is her eye for details of early construction, notably the fittings of instruments, such as pegs, bridges, and tailpieces, many of which are presented in neat redrawings that are placed beside illustrations of the original graphic arts and sculptures from which they are derived. Geiser's is possibly the first relatively extensive exploration of such details and her most original contribution to the literature.

Confronted with a work which clearly reflects devoted and serious inquiry by a trained musicologist, the reader may nevertheless be left with an uneasy mind after close study of Geiser's text. The author herself points to a fundamental difficulty that her study, as well as nearly every previous one of early stringed instruments, leaves unresolved. Speaking of the lack of reliable descriptions of extant instruments, she writes, "What has in part long existed for the works of graphic artists—descriptive catalogues of their works—is lacking for the study of violins, apparently because of the private interest of violin dealers. . . . A complete apparatus of sources doesn't exist, for only a few instrument collections are well catalogued. For this purpose it is possible only for experts in bowed-instrument making [i.e., dealer-experts] to recognize old violins without their appropriate labels by means of characteristic details, to fix their origin and date, and to distinguish authentic valuable violins from forgeries" (p. 36, my translation). One may place the problem in still clearer historical perspective: few musicologists have had the innate eye, the years of training, and the daily contact with authentic stringed instruments necessary to distinguish them from fakes and forgeries and to identify their makers; and conversely, few violin experts have had the innate taste for patient archival study, training in historical research, and the ability to exercise critical judgment free of commercial pressures which would lend scholarly weight to their assertions and publication.

The *Studies* suffer from other problems as well. Since they lean heavily on earlier publications, they perpetuate the often mistaken conclusions, erroneous datings or attributions, and wishful thinking

of other writers. For example, of the sixteen surviving instruments of the violin family pictured in this work, numbers II, V, VI, IX, XII, and XIV repeat highly questionable attributions from earlier publications, and numbers III, IV, V, VI, VII, IX, XI, XII, and XIV repeat questionable dates: the latter are much less likely to date from the sixteenth century than from the seventeenth century or later. Despite the very well documented importance of violas in the sixteenth century and the likelihood that fully developed violas preceded fully developed violins, no authentic viola by Gasparo da Salò, Maggini, Andrea Amati or his two sons, or the predecessors and near contemporaries of these makers is mentioned or depicted in the text, although many such exist; early cellos are not mentioned or shown at all. While Geiser concurs with the widely held opinion that the violin family developed in North Italy during the earlier sixteenth century, she does not discriminate adequately between Italian and non-Italian historical developments, and as a result she takes the statements of Agricola in 1529 and Praetorius in 1618–1619, to choose two examples among many, to have complete relevance for Italian instruments, a view I do not share. The confusion of northern and Italian sources tends to involve Geiser, as it has countless of her predecessors, in tedious discussions about nomenclature, which varies greatly among different writers, and the precise meanings in today's terms of such nomenclature. Such puzzles are probably insoluble.

While applauding Geiser's *Studies* for their sound résumé of what has been printed before, as well as for a little valuable new information, I hope that future studies of this compelling subject will address themselves to a close examination of the surprisingly large number of relevant surviving instruments (much larger than is suggested in this work), original archival research on their shadowy makers, and much fuller use of contemporary graphics. Also a *rapprochement* between the worlds of the dealer-expert and the musicologist, long separated by suspicion and mistrust, and a sharing between them of information and knowledge are urgently needed. Only in these ways can significant additional progress be made in the study of the early history of the violin.

LAURENCE C. WITTEN II

Edwin M. Ripin, ed. *Keyboard Instruments: Studies in Keyboard Organology, 1500–1800*. New York: Dover Publications, 1977. ix, 86 pp. plus 74 black-and-white illustrations. \$3.00. (Unabridged republication, with a new preface and some additions, of the collection of essays originally published in 1971 by the Edinburgh University Press.)

Wouter Scheurwater and Rob van Acht. *Oude klavecimbels: hun bouw en restauratie (Old Harpsichords: Their Construction and Restoration)*. Kijkboekjes, no. 2. The Hague: Haags Gemeentemuseum, in association with Frits Knuf, Buren, 1977. 64 pp. Hfl 30.

It is fitting that the republication of *Keyboard Instruments*, a superb collection of essays on keyboard organology, should have occurred at such a time as to permit a review to appear in the journal of this Society in whose founding Ed Ripin was so instrumental. The fact that the book was published at all attests first to the debt owed by all of us to Ed for the contributions which he made to our knowledge of “early” keyboard instruments, and second to the need for the existence of a journal such as this one, for each of the studies contained here might appropriately have been published as a journal article.

Arley Ripin notes in her preface to the Dover edition that the principal changes from the original are in the addition of six entries (three clavichords, two harpsichords, and one “variant form”) to Edmund A. Bowles’s contribution, “A Checklist of Fifteenth-Century Representations of Stringed Keyboard Instruments,” and the relocation of the plates from the back of the original volume to their appropriate places at the ends of each article in the collection. (The decision to reproduce these plates on the same rather thin paper as that used for the body of the text, rather than on the heavier, glossy paper of the original edition, has resulted in a pleasant loss of glare under fluorescent lighting, without any substantial loss in definition. Indeed the enlargement from half to three-quarter page of two of the plates—numbers 26 and 27 of Bowles’s “Checklist”—results in somewhat greater ease of study than in the original.)

The ten essays which make up this collection fall into three categories, as noted by Ripin in his original preface: (1) “specialized articles dealing with much-debated topics in the history of keyboard

instruments"; (2) descriptions of unique surviving instruments not previously described adequately; and (3) "a survey of the present state of keyboard organology." Although each of the essays maintains the high level we have come to expect of anything connected with Ed Ripin's name, three or four may be singled out even in this company for their thought-provoking qualities. One is that by John Barnes, Curator of the Raymond Russell Collection of the University of Edinburgh, on the "specious uniformity" of Italian harpsichords. Mr. Barnes comes to the conclusion, based on a study of surviving sixteenth-century Italian harpsichords, that the previously held notion of a prevailing uniformity of construction techniques used by Italian harpsichord makers of the sixteenth through the eighteenth centuries may more than anything else reflect the practice of altering earlier instruments so as to make them conform to later building methods—a practice akin to the French *ravalement* of earlier Flemish harpsichords. One of the more interesting conclusions of Mr. Barnes's study is that the scalings of at least four sixteenth-century Italian harpsichords before their alterations indicate a pitch significantly lower than modern pitch (approximately seven semitones in one instance!). Barnes has pursued this matter further in "The Stringing of Italian Harpsichords," in *Der klangliche Aspekt beim Restaurieren von Saitenklavieren: Bericht der internationalen Tagung von Restauratoren für besaitete Tasteninstrumente*, ed. Vera Schwarz (Graz: Akademische Druck- und Verlagsanstalt, 1973); some counterarguments are referred to in Arthur Mendel's recent "Pitch in Western Music since 1500—A Re-examination," in *Acta musicologica* 50 (1978): 1-93.

Ed Ripin's own contribution to the volume, "On Joes Karest's Virginal and the Origins of the Flemish Tradition," is provocative in its suggestions of a derivation of the Flemish harpsichord-making school from Germany. If this is so—and Ripin's evidence is convincing—then our view of the development of various traditions of harpsichord-making north of the Alps has also been significantly altered.

Finally, we can point to both Bowles's "Checklist" and John Henry van der Meer's "More about Flemish Two-Manual Harpsichords" as being of exceptional interest. The latter, in addition to a lucid, brief

summary of the state of our understanding of the Flemish double, provides a valuable description of a relatively early (1658), probably “contrasting” or “expressive,” double from the Ruckers workshop.

An important contribution of twentieth-century technology to the scholarship represented in *Keyboard Instruments* is in the area of instrument repair and restoration, in which not only have highly sophisticated techniques been evolved for the purposes of restoration which involves minimal alteration of the surviving evidence, but also restorers have increasingly recognized their obligations to future scholars to provide as detailed information as possible not only about their own restorative procedures, but also about whatever they might find inside a particular instrument when they have it apart.

\* \* \*

*Oude klavecimbels*, the “Kijkboekje” published by the Haags Gemeentemuseum, is essentially a bilingual (Dutch and English) description of the restoration workshop in the instrument collection of that museum. The little book begins with a brief description of the different kinds of plucked-string keyboard instruments and then moves on to the question of “why instruments are restored.” The argument presented is that “historically responsible restoration can make such an instrument sound the way it used to.” This rather idealistic—and in point of fact debatable—notion is later tempered by the remark that “if there is any doubt [as to the suitability of a particular instrument for restoration], the right decision is not to embark on restoration at all, for there can be several often widely divergent reasons for an instrument’s unsuitability for restoration.” If this comment can be accepted as indicative of an increasing wariness on the part of museum directors and their curatorial staffs of the value of restoration, it is indeed a sign of increased sophistication as well. How much better it is to preserve as faithfully as possible the remains of historically significant instruments so that they may be studied by future generations of organologists and builders. For however representative of the most responsible restoration a particular effort might be (and the three detailed in this publication seem to be exemplary in that regard), there are too many examples of technological developments which have made earlier restorative work look downright primitive for us to be sanguine about any restoration



which involves more than a minimum of repair to a surviving historical document.

This "Kijkboekje" is marvellously—indeed, lavishly—illustrated with both photographs and detailed drawings. Furthermore, the English translator, Ruth Koenig, is to be commended for the smooth, idiomatic quality of her prose. While the book is clearly directed primarily toward the nonspecialist, it does contain considerable information of value to both the organologist and the builder with regard to three specific instruments. One looks forward to future similar publications.

R. PETER WOLF

François Bédos de Celles. *The Organ-Builder*. Translated by Charles Ferguson. 2 vols. Raleigh, N.C.: The Sunbury Press, 1977. \$320.00.

Until Dom Bédos published his treatise *L'art du facteur d'orgues* (1766–1778), there was no book that explained the practical and theoretical aspects of organ building in a systematic way. Since Dom Bédos, no author has equaled his achievement, although several have given us books of similar scope. Dom Bédos must remain unique, because no other will face the challenges he did.

His shortcomings are few, but obvious in retrospect. His "Brief History of the Organ" is based on a broad humanistic and theological culture and little else: having traced the bellows organ from ninth-century Germany to Rome and thence to the rest of Europe, his essay becomes ever rougher and more fragmented as it approaches the Renaissance. Throughout *L'art du facteur*, French craftsmen and particularly the leading Paris workshops are taken as the vanguard of progress, progress being of course steady and desirable. Dom Bédos says nothing of organs abroad, except to comment on German reeds (poor) and bellows (worse). His main reference to Flanders is an admiring description of some case pipes in Béziers. If he knew the Spanish tradition, as he must have in his native Midi, he never mentions it. His only known trip abroad was a visit to the great new Gabler organ in Weingarten: the instrument was locked, and Gabler

was away. So Dom Bédos returned home with only a vision of pure tin pipe work and a puzzling stop list. For him, France was the center of the organ world. Never again would a French writer be so sure of his country's cultural leadership that he could ignore the others almost completely.

Such cultural self-assurance on the national level is redeemed, however, by Dom Bédos's honesty as craftsman and teacher. He pleads throughout for sound materials and careful workmanship as opposed to substitutes and short cuts. He argues for simplicity and ease of access in designing chests and mechanisms, logic and uniformity in designing consoles. If he follows fashion—illustrating a case design without visible pipes, “organ-izing” pianos or hurdy-gurdies, devising player mechanisms—he never loses sight of tradition and never compromises sound practice. In Dom Bédos's time there was little uniformity in measurements or materials. He was obliged to give arbitrary gauge sizes for bits, as there was no standard. The same was true for wind pressures and of course for pitches. He visited the leading workshops, noting Clicquot's reed scales and a jigsaw Lépine used for cutting out keyboards, but he recommended only those practices he judged to be the soundest. He investigated the state of the art in a time when technical information was chiefly a matter of custom, and often a secret. We are reminded again and again that standardization of pipe scales and measurements was a by-product of the industrial revolution that came to France only after the Napoleonic era.

*L'art du facteur* has been a reference for two hundred years, despite revolutions in shop practices and musical tastes. The English translation comes at a time when increasing numbers of musicians and organ builders are returning to practices of Dom Bédos's time. The translation has its own weaknesses and strengths, as I shall point out shortly. First, however, I think it appropriate to give a general description of the Sunbury Press volumes.

Like the original, *The Organ-Builder* appears in folio format. There are two volumes, one of text and one of plates, as Dom Bédos intended. The English text fills 391 pages as compared to 710 in the original; despite the condensed typography, the margins are generous and the text easy to read. The 137 pages are reproduced in the

original size, and the publisher gives the technical information necessary for using them as a source of measurements, again as Dom Bédos intended. A plastic scale is provided, marked with the *pied du Roi* and the English foot in parallel.

The text volume opens with a list of subscribers (about 345) and of "Additions & Corrections"; an errata slip is also provided for pasting in at the foot of the last column. A "Translator's Preface" presents a rapid survey of Dom Bédos, his times, and his work, places *L'art du facteur* as one of the technical treatises commissioned by the *Académie des Sciences* in response to Diderot's *Encyclopédie*, and describes the only organ known to have been designed and built by Dom Bédos. In "The Translation," Prof. Ferguson explains obsolete French weights and measures and defines his policy regarding terminology and style. His decision to label the enharmonic pitches D sharp and A sharp as E flat and B flat is inappropriate to the temperament Dom Bédos uses. Some readers may not favor Ferguson's antiquated diction (long sentences, subjunctive in *if* and *purpose* clauses, and peculiar use of the hyphen), but these affectations do not blur the sense of the text. On the other hand, all readers will enjoy the style, for example, in subsections 1233-1237 ("Maintenance") or 1262 ("Design").

The translation of *L'art du facteur* proper begins with the "Brief History of the Organ" discussed above. Parts I and II, intended for apprentices and amateurs, describe the design and construction of every part that goes to make up an organ. Part III is addressed to organists and deals with specifications and contracts, testing, tuning and maintenance, and registration. Part IV discusses organs for non-liturgical use, player organs, preparing cylinders for player organs, and building organs into pianos, harpsichords, and even hurdy-gurdies.

The plates follow the plan of the text, with few exceptions. They illustrate, among other things, the tools used in organ building, especially those peculiar to the craft; flue and reed pipes; pipe scales and instructions for deriving actual measurements from them; case design and construction; the construction and assembly of every part and pipe; cabinet organs, table organs, and barrel organs; the tools required for making pins for insertion on music cylinders and how the pins are placed in order to reproduce the interpretation of music,

including ornaments and phrasing; and the piano-organ, the harpsichord-organ (*claviorganum*), and the hurdy-gurdy-organ.

The quality of the original plates is superb, and the Sunbury Press reproductions are perfect except for a few small blemishes. Because the paper is of excellent quality, the figures and legends have excellent legibility: many plates have great decorative value quite apart from their primary function.

*The Organ-Builder* is intended to be a practical guide to design and construction, but the bulky folio volumes have been judged by some to be inconvenient for reference in the shop. The alternative—a smaller text volume accompanying folio plates, or plates reduced in scale (as in the Bärenreiter reprint) or folded smaller—would have been a much greater inconvenience, however, in the library or the shop. Persons using *The Organ-Builder* as a shop guide must be cautioned first of all to mark all the additions and corrections into the text itself. While the large number of errata is a disappointment in such an ambitious work, we must credit the publisher for listing them prominently, at the front of the text. In addition, certain pipe dimensions given for a few stops must be corrected according to data given by Christhard Mahrenholz in “Die Labialmessungen des Bédos,” *Die Berechnung der Orgelpfeifenmessungen* (Kassel: Bärenreiter, 1968). The translator has overlooked this source, which lists several errors and inconsistencies found in the scales themselves or in the tables summarizing the data on which the scales are based. Finally, if a reader were to set about building a chest according to the data given in *The Organ-Builder*, he or she would do well to check Dom Bédos’s column totals, since the original contains some errors not corrected by the translator. As Prof. Ferguson points out, the numerical data are an essential part of *L’art du facteur*. Unfortunately, they seem also to be the Achilles’ heel of the translation. Just as Dom Bédos acknowledges the help of readers in pointing out certain errors, so the Sunbury Press might well issue a definitive errata sheet someday.

Apart from these defects, *The Organ-Builder* has the unquestionable merit of opening up to a broad new readership a fundamental text in the history of organ building and a valuable source for the history of technology. Moreover, the section on “tonotechnie,” or notation on cylinders, provides an important analysis of problems of

rhythmic notation—a matter of current concern to all who perform early music. As to the section on registration of organ pieces, every organist who wishes to play early French music will find *The Organ-Builder* an important source of help. The translator and publisher are to be congratulated on this large-scale venture, and they deserve every positive contribution towards correcting the last defects in their monumental work.

I am astonished to discover that examples of this superb work are still available for purchase. The limited edition of one thousand, if it had been energetically advertised, should have been sold out in the first year.

FENNER DOUGLASS

Owen Jorgensen. *Tuning the Historical Temperaments by Ear*. Marquette: The Northern Michigan University Press, 1977. 453 pp. \$22.50.

A number of recent reviews<sup>1</sup> have already commented on the serious deficiencies of content and style in Owen Jorgensen's *Tuning the Historical Temperaments by Ear*. The present writer was no less confused, amused, and vexed by the author's curious way of assembling words and sentences, by the seemingly endless pages of mechanical duplication of text in the tuning instructions, and by the welter of undocumented and unverifiable historical statements and claims. The real problem with this book, though, is that the novice tuner will find within its pages no real help in evaluating the eighty-nine tunings and temperaments, or the methods presented, and must resort to other sources, or to trial and error.

Even for the more experienced, the barriers erected by the book's structure and language remain obstacles to the use of its content. Jorgensen himself is a skilled practitioner of the art of musical temperament, and his ideas about the historical development of the tuning of keyboard instruments are certainly thought provoking. A

1. In particular, those by Mark Lindley in *Notes* 34(1978): 616-17, and in *Early Music* 6(1978): 453.

reader will certainly feel that many years' effort and care must have gone into this book; indeed, it does contain much that is useful in the way of tuning techniques and procedures. It is all the more unfortunate, then, that users of the book will find it quite difficult to take advantage of the author's expertise.

For those interested in the fascinating and elusive history of the subject, J. Murray Barbour's *Tuning and Temperament*, upon the framework of which Jorgensen appears to have fashioned his own approach, is indispensable.<sup>2</sup> In fact, Jorgensen's book can be appreciated as a practical companion to the theoretical and descriptive Barbour text.

Despite Jorgensen's professional bias toward the tuning of pianos, his book will probably appeal most to harpsichordists, because of the relative ease of tuning the harpsichord (and clavichord), as well as the greater historical breadth of its repertoire. For the less experienced users of the book, the present writer recommends concentration on a few temperaments that will suffice for almost all early keyboard music and that will develop tuning confidence through repeated practice. These are: (1) *Pythagorean* (p. 51), for medieval music in which the major third is not treated as a consonance; no intervals are tempered in this tuning. The following *unequal temperaments*<sup>3</sup> are suitable for most eighteenth-century music: (2) *Kirnberger II* (p. 256), which has but two tempered fifths, all the rest being tuned pure; (3) *Kirnberger III* (p. 311; called Aron-Neidhardt by Jorgensen), a so-called quarter-comma temperament, in which one learns to temper four adjacent fifths; and (4) *Werckmeister III* (p. 304), a closely related temperament that string players (especially gambists) will find somewhat easier to play with than (3), as the third C-E is a bit wider

2. Readers of the Barbour book should be reminded that the author's gratuitous evaluation of each different temperament by a comparison with equal temperament can be defended neither historically nor musically.

3. Though Jorgensen suggests calling tunings of this type "well temperaments," it is to be hoped that musicians will reject this ugly solecism. It was apparently coined on the false premise that a similar phrase exists in German, though, as far as I can determine, it does not and cannot. The German phrase used, for example, by Türk (1789) and Marpurg (1790) is *ungleichschwebende Temperatur*, which renders directly into English as "unequal temperament"; it is this term that the present writer recommends for such tunings.

than *Kirnberger III*'s pure one.<sup>4</sup> In each of the last three temperaments, all keys are playable, and each affords key color, or affect.

Having acquired the ability to tune a quarter-comma temperament, one can easily proceed to the most useful of the (5) *meantone temperaments* (p. 177), suitable for a great deal of music written before—and some after—1700. Note that while the size of the tempered fifths need not be equalized with great precision in an unequal temperament, for meantone they must be as nearly equal in size as possible, since meantone is a temperament in which the intervals of any category should all sound the same. It follows from this that key color, or affect, does not exist in meantone.

Jorgensen's just interval exercises and instructions on "where to listen while tuning" (pp. 18ff.) are highly recommended, as are his suggested tuning techniques (of the rules for tuning, pp. 13–15, numbers six through eight are not applicable to the harpsichord). Though it is very helpful to count beats at first, in this writer's experience learning to reproduce the sound or "color" of the tempered interval is easier in the long run than beat counting.<sup>5</sup> In fact, tuners are well advised to develop personal methods suitable to their own ears, rather than follow slavishly a tuning scheme of the complexity and redundancy of those in Jorgensen.

The more experienced, adventuresome tuner may wish to try some other temperaments. Recommended are the one-third-comma temperaments on pages 272 and 284 and the very useful Thomas Young one-sixth-comma temperament on page 323. It is worth noting that the organ builder John Brombaugh uses with fine results an equal-beating version of *Kirnberger III* slightly different from that given by Jorgensen (p. 313). In Brombaugh's version the fourth *g-c'* and the fifth *g-d'* beat at the same speed, just as the fourth *a-d'* and the fifth *a-e'* beat at the same speed.

The handful of temperaments listed here is about all the practicing harpsichord tuner will need. Of course, the harpsichord tuner will be

4. It need hardly be added that all serious performers of early music—not keyboard players alone—will profit from a thorough understanding of historical temperaments.

5. Jorgensen's beat speeds are for modern pitch,  $a'=440$  Hz. For those using a different pitch standard, the beat speeds increase or decrease about 6 percent per semitone up or down.

asked for equal temperament. This writer's advice is to nod agreeably, and tune something like Werckmeister III or Young. It is unlikely anyone who insists on equal temperament will know the difference.

For those who have not acquired the Jorgensen book, there are several very satisfactory and less costly alternatives, of which the best is the pamphlet *Harpsichord Tuning* by G. C. Klop (Garderen, Holland: Werkplaats voor Clavecimbelbouw, 1974). (The temperament names treated as standard in this review are those used in Klop.) The article "Instructions for the Clavier Diversely Tempered" by Mark Lindley, *Early Music* 5 (1977): 18-23, is also very good, as is that by Dale Carr, "A Practical Introduction to Unequal Temperament," *The Diapason*, 65th year, no. 3 (February 1974), pp. 6-8. Historical temperaments are now an integral part of all serious study and performance of early music. May we hope that Jorgensen will publish an abridged, selectively edited handbook of tuning and temperament suitable for the practical use of the increasing number of early musicians?

DOUGLAS LEEDY

Earle L. Kent, ed. *Musical Acoustics: Piano and Wind Instruments*. Benchmark Papers in Acoustics, vol. 9. Stroudsburg, Pa.: Dowden, Hutchinson & Ross, Inc., 1977. xiii, 367 pp. \$34.00.

The affinity between science and music had its earliest recorded expression in the experiments of Pythagoras in the sixth century B.C. He demonstrated that the lengths of strings necessary to give harmonious notes could be expressed as ratios of simple integers, and he established the mathematical basis for the musical scales then in use. Since then, scientific knowledge has flourished and grown to an enormous extent, while musical instruments have evolved very slowly. Nevertheless, the scientist is still trying to identify and explain the many acoustical phenomena that the musician and the instrument maker have learned empirically to handle so skillfully.

This volume of collected papers in musical acoustics is directed to the scientist or engineer. It will be of interest also to musicians or



those for whom music is an avocation, if they have some grounding in science. It constitutes volume 9 of a series, Benchmark Papers in Acoustics, that is intended to provide a practical introduction to the literature of acoustics. Two previous books in this series by Carleen Hutchins have covered the violin family. In this work, Earle Kent, a consulting engineer with long professional experience in musical acoustics, has selected twenty-eight technical articles that represent the substantial advances in scientific understanding of the piano and wind instruments made in the past thirty years.

The book has three major parts: "Piano Acoustics," "Acoustics of Brass Instruments," and "Acoustics of Woodwinds." Each of these parts leads off with a tutorial paper reprinted from the *Scientific American*. For those who want an introduction to the subject of the acoustics of musical instruments, these introductory papers will provide a fairly deep understanding without going so far into technicalities as to discourage those without training in physics. For this purpose, however, the interested reader might better obtain the paperback book published by the *Scientific American* (*The Physics of Music* [San Francisco: W. H. Freeman and Co., 1978]), in which these three articles appear in their original (and much more legible) two-color large format. The *Scientific American* book also includes articles on stringed instruments, voice, architectural acoustics, and the physics of music in general.

The scientific papers (and one or two patents) comprising the remaining selections have been grouped together logically into sections. These are preceded by comments by the editor, who briefly abstracts the contents, gives biographical data on the authors, and sometimes describes the context in which the reported research was carried out.

The first set of papers deals with the vibrations of piano strings. The fact that the higher modes (or partials) of a freely vibrating string are not exact harmonics has long been recognized, but detailed information on this phenomenon has been elicited only in the last few decades. The influence of this inharmonicity on the manner in which pianos are tuned (Schuck and Young, Kent) will be of much more interest to the musician than the mathematical treatments which show how the inharmonicity depends on the characteristics of the

strings themselves (Fletcher, Shankland and Coltman). The second set of papers concerns the correlation of the subjective "quality" of piano tones with physically observable quantities such as the differing rates of decay of the various partials, the exactness of tuning of the unison string groups, and the structure of the soundboard. Of particular interest is the work of Fletcher, Blackham, and Stratton, who synthesized piano tones and tested the ability of listeners to distinguish them from recorded piano tones. Such studies reveal which physical aspects, such as attack times, decay rates of partials, and inharmonicity of partials, give rise to the features one recognizes as characteristic of the piano. Similar researches using synthetic string and wind instrument tones have been reported in recent society meetings. Unfortunately, this volume contains only a very little about what the listener hears, perhaps because this is a subject more often categorized as psychoacoustics and Kent has chosen to stay very close to physical acoustics.

While the mechanism of excitation in the piano is rather well described physically, the same is not true of the wind instruments. Qualitative descriptions of the feed-back mechanisms in which a puff of air is introduced into the instrument, is reflected from the far end, and in turn causes the introduction of another puff of air have been hypothesized for over a century. More specific studies are relatively recent. Martin's classic observations on lip vibrations in a cornet mouthpiece, Backus's paper on the small vibration theory of the clarinet, and Coltman's paper on the sounding mechanism of the flute and organ pipe are examples that are included in this volume. This subject, however, is still in its early stages of development. While the basic mechanisms of sustained oscillation in wind instruments seem now to be reasonably well established, the very important question of tone quality (or harmonic content) is in a relatively primitive state. Benade in his introductory paper emphasizes the importance of matching the natural vibrational modes of the air column to the harmonics that will be produced by nonlinear excitation. Toward this end, the editor has included a number of papers discussing how these natural modes are affected by the bore of the instrument. (This question also bears directly on the question of intonation in the brass instruments, whose various notes are selected from among the higher

natural modes of a long pipe.) Most of these papers are highly mathematical and would be rewarding only to the specialist. Only Neville Fletcher's paper on nonlinear interactions in organ flue pipes attacks directly the problem of a physical basis for the tone color of a wind instrument. The qualitative agreement with observation gives encouragement to the approach taken, but it is fair to state that in this area musical acousticians are still groping.

The serious student or professional in musical acoustics, and those who wish to pursue the acoustical behavior of instruments in more depth of detail than the *Scientific American* tutorial papers permit, will find Kent's volume an up-to-date account of the state of knowledge in this field. The book will also serve as a valuable reference foundation for future work.

JOHN W. COLTMAN

Bernhard Bröchle and Kurt Janetzky. *Kulturgeschichte des Horns: Ein Bildsachbuch / A Pictorial History of the Horn*. English text by Cecilia Baumann. Tutzing: Hans Schneider, 1976. 303 pp. plus 17 color and 257 black-and-white plates. DM160.

Although a lot of delightful material is offered in this book, one has trouble figuring out what it is really about. Even the title is an enigma, thanks to the many meanings of the word *horn* and the difference between the German and English renditions.

In a lengthy foreword, the authors seem to be describing their work as a history of the French horn told with instruments, works of art, documents, and quotations. The first part of the book, however, includes almost every kind of lip-vibrated animal horn, conch shell, or pottery instrument known—the horn in its broadest meaning. By the seventeenth century, instruments with fingerholes are excluded, and during the eighteenth century those not two-thirds conical are left out. By the nineteenth century, the scope of the work has narrowed to the French horn and the post horn. Although the French horn survives this thinning to reach its modern form in the final pages,

the post horn does not. No mention is made of the post horn offspring which now populate the Western world's military bands.

Not having found a good beginning for the history of the French horn, the authors have treated the common beginnings of all lip-vibrated wind instruments. Displaying a weakness for nice pictures and a good story, they have also included such distant relatives as the Scandinavian lur, the oliphant, and Russian one-note horns. The incomplete story of the post horn is another addition which adds to the book's color but not its focus.

Another promise the book fails to fulfill is the provision of comparable measurements for each illustrated instrument. I was particularly disappointed to see how seldom air column length is given (seventeen times out of a possible seventy).

Technically, the book has some unforgivable errors which must be noted. In the foreword, a fanciful account of the discovery of conch horn blowing is marred by the statement that "a sharp blast of air . . . sets the walls of the shell into rapid vibration." I suspect that even in the primeval swamp it was the air column that was set vibrating with perhaps a little sympathetic help from the walls.

Both the authors and the translator are to blame for the confusing terminology for keys and valves. Although their bibliography lists Baines's *Musical Instruments through the Ages* and R. Morley-Pegge's *The French Horn*, they obviously have never read the sections having to do with valves. I have little difficulty with "Viennese valves" although Vienna valves is customary and also shorter. I suppose it is not incorrect to call Stölzel, Berlin, and Périnet valves all piston valves, but they are easily identified and important enough historically to deserve proper identification. It is definitely incorrect and very confusing in either language to call rotary valves "cylindrical valves." Piston valves are also cylindrical. On page 197 the phrase "mit drei Klappen," referring to an *Inventionshorn*, is translated "with three stops." It is customary in English to call "Klappen" keys, as in key bugle or clarinet keys. Certainly the word *key* is overburdened with meanings in English, but if *stop* is an improvement, the translator fails to explain how.

With the few exceptions noted above, the English text is excellent. Seldom are authors blessed with such a knowledgeable and sympa-

thetic translator as Cecilia Baumann. As explained on the flyleaf, she is not only an eminent linguist but also a horn player of surprising attainments.

In spite of its minor deficiencies, the book is magnificent in its portrayal of horns and horn playing. Demonstrating that the horn has been intertwined in a large number of society's cultural, recreational, and institutional activities, it views it as an instrument that has added a spice all its own to the flavor of European culture. I regret only that another one hundred pages were not added to complete the picture—only a few more horns such as the zink, serpent, bugle, and cornet remain to fulfill the promise of the title.

ROBERT E. ELIASON

Clifford Bevan. *The Tuba Family*. New York: Charles Scribner's Sons, 1978. 303 pp. plus 26 black-and-white plates. \$27.50.

Clifford Bevan, who runs MGP, a small British publishing company that specializes in music for wind instruments, is a former orchestra manager and tuba player for the Royal Liverpool Philharmonic Orchestra. His book, *The Tuba Family*, published by Charles Scribner's Sons as one of a number of books devoted to musical instruments and questions of performance practice (Anthony Baines, Elizabeth Cowling, Robert Donington, and Harvey Turnbull are among the authors), contains a great deal of valuable information which is not otherwise readily available in English to the average low brass player.

Essentially, the book is a vast potpourri of information, ranging from the usual speculation about the supposed sixteenth-century origins of the serpent to the use of the tuba in contemporary American and British jazz circles, from a select listing of music for tubas with the current publishers' addresses to the problems of making a tuba mute, and so on.

All of this is good. It is obvious that Mr. Bevan has combined the practical knowledge which he has gained as a tuba player with a substantive knowledge of the historical development of the instru-

mental family about which he writes, and one cannot quarrel with either the breadth or the depth of that knowledge.

One can quarrel, however, with what seems to be a lack of editorial direction and supervision—and that in a book which retails for \$27.50, a less than modest sum for a book of its size (and one limited to sixteen pages of black-and-white photographs!), even in these highly inflationary times. As a result, the book, which contains so much of potential interest to low brass players unfamiliar with the history of their instrument, unfortunately remains only the “vast potpourri” which was noted earlier. The editorial direction which could have welded the information into a tightly knit, well-structured work is somehow missing, and there is no real sense of direction. For instance, after only a few introductory paragraphs, the reader is suddenly faced with a table of names of valved bugle horns which extends for eleven pages; and, instead of having a feeling of continuity as one reads, one is left with the impression of having received information in a somewhat arbitrary, disjointed manner. Unless the book was to be considered only as a reference work, the services of a skilled editor should have been employed to tie things together in a more readable fashion.

Likewise, editorial assistance should also have been available to check on details both of style and of content. The book is full, for example, of one-sentence paragraphs, a journalistic style of writing usually reserved for newspaper use. The line drawings on page 39 and pages 56–57 are little less than caricatures. There is no apparent reason for the particular selection of collections of musical instruments which are included in Appendix E. Anyone interested enough in the book to take even a cursory glance at its contents does not need to be told that there “is a *mouthpiece* forming the junction between the player and the instrument” and that “at the wide end the tube expands into a flare or *bell*.” Headings within a chapter, such as “The Players” and “The Music,” promise much, but deliver little beyond mention of circumstances in England. No date for the invention of the ophicleide is given (only the patent year, 1821), nor is the reader told where “the ophicleide’s first appearance . . . in Spontini’s *Olympie*” took place (presumably at the Paris Opera, where the work premiered on 22 December 1819). And it is difficult to know why anyone

unfamiliar with ophicleides would be helped by being told that the instrument is "bassoon shape in form."

Reading this book, as well as most of the current English-language books about musical instruments, one is reminded of a point of view recently articulated by Nicholas Tawa in *The Sonneck Society Newsletter* (Summer 1979) that musicologists are perhaps a hundred years behind the times in relation to the work of their colleagues in the humanities, have unadventurous imaginations, leave human factors unconsidered, make social context secondary, and, most unforgivably, are boring. Indeed, *The Tuba Family* contains a wealth of information. It deals with an area of interest which has long needed attention, and it certainly is recommended by this reviewer for purchase by individuals and libraries interested in the history and use of brass instruments. But even as that is said, this reviewer doubts that reading the book will excite very many brass players to take an active interest in the history and development of their instrument. This is a criticism directed not at this work alone, but at almost all of the English books about instruments (excluding those better characterized as photo essays), all of which parade their rather dreary lists of well-worn information in pedantic fashion.

One would hope that those doing research in the history of musical instruments might follow, instead, the example provided in Robert Eliason's splendid monograph, *Graves & Company: Musical Instrument Makers* (Dearborn, Mich.: Henry Ford Museum, 1975), eventually providing the kind of background information which will allow music historians of the future to add flesh to the skeletal histories of musical instruments which currently grace our shelves.

ANDRÉ P. LARSON

Monique Brandily. *Instruments de musique et musiciens instrumentistes chez les Teda du Tibesti*. Musée royal de l'Afrique centrale, Tervuren, Belgium. Annales, Série in-8°: Sciences humaines, no. 82. Tervuren: Musée royal de l'Afrique centrale, 1974. xii, 260 pp.

Mme Brandily has produced an excellent study of the musical instruments, performance practices, and the integration of music in

society of the Teda of northern Chad. The work is divided into three parts, with introductory matter, a conclusion, a bibliography, and appropriate indices. Part I (120 pages) deals with the instruments, discussing them by organological category (chordophones, membranophones, aerophones, and idiophones); part II (10 pages) is devoted to the musicians; and part III (55 pages) covers the use of musical instruments in society.

The study is based upon data gathered during two field trips to Chad in 1961 and 1965, and a follow-up trip to an adjacent area in southern Libya in 1969. It is well documented and illustrated and shows throughout a careful attention to detail and precise, clear description. Included are sixty-five excellent photographs by the author and her husband, Max-Yves Brandily; numerous tables, diagrams, sketches, and charts; textual transcriptions; and some musical notation.

The Teda inhabit a forbidding area of Africa; there is very scant rainfall, and the geography and climate do not lend themselves to commerce or bounteous agricultural production. Consequently, the Teda lead an ascetic, nomadic way of life in which virtually everything is functional, or may be so considered (in the sense that "luxury" or nonessential possessions and activities are minimal). The introductory photographs show a stark contrast between the physical environment (sheer cliffs and escarpments, the desert, and a little vegetation) and living beings (camels, a donkey, and a few inhabitants). These give a vivid presentation of the "context" in which the musical instruments are used, in a way that words could not duplicate. One's appreciation of the creative and artistic activity of the Teda is heightened by this brief introduction to their surroundings.

Parts I and III, dealing with the instruments and their use in society, present the major contributions of this work to ethnomusicological study. Constructional detail is covered precisely and appropriately illustrated. For instance, the method of attaching the neck of the *kələli* lute to the body, and of covering the body with a camel hide, is described in copious detail in the text and is clearly illustrated with eighteen photographs and four sketches. Playing technique, too, is given excellent coverage: there is, for example, a superb illustration of a leaping attack used by a drummer when playing a *digidəl* rhythm



on the naṅara drum (p. 107) as well as a seven-page textual description of the attack, which includes details of apprenticeship tutelage.

Comparisons are made of the usage of certain instruments and objects with the roles of individuals within society and with various prohibitions and permissions that concern objects of material culture. Objects associated with the forge (including the kidi drum for example) are specifically interdicted for women, as is the kiiki vielle. In fact, all musical instruments are traditionally reserved for men with the exception of the yondo, a struck idiophone played by prostitutes. Here, a parallel is drawn between the kidi drum, played only by blacksmiths, and the yondo idiophone, reserved for prostitutes.

Forty-eight pages are devoted to a discussion of the function of musical instruments. We learn, for instance, that the naṅara and kwølli drums are used both on occasions that occur cyclically and on special or exceptional occasions. An example of cyclic use is the drum signal given to announce the beginning and ending of the period for collecting dates. Special or exceptional occasions include announcing the going and returning of a war party, the beginning of a circumcision rite, and the coronation of a chief.

An important asset of the work is the author's ingenuity in designing good graphic illustrations. One (p. 193), for instance, shows two similar triangles, joined by a central axis, indicating the complex interrelationships between spoken and written language, thought, music, and figurative representation. Another (p. 216) shows four classes of people (and three subclasses), represented by two ovals superimposed upon a divided circle. The musical instruments used by these classes are indicated within the figures by different shadings and markings. The value of graphics is that they can show at a glance complex interrelationships and subdivisions that might become obscured in a textual presentation.

On balance, the work provides us with valuable insight into Teda society and shows how an ethnomusicological study can contribute to the understanding of a variety of factors within a culture. We see that the musical instruments used and the repertoire performed varies for different classes, sexes, and occupations. We see how unusual modes of performance (for instance, the frenzied playing manner used in the digidel rhythm previously referred to) violate norms of

behavior, and how functional usages of the instruments and their music are emphasized. Finally, we find plentiful data for comparison with those for neighboring peoples having similar musical instruments—for example, those in Niger and Nigeria. We must await a thorough analysis of the music, however, to see whether precise correlations can be drawn between behavior and performance on the one hand and, on the other, musical factors such as tension, melodic line, attack, and vocal mannerisms.

DARIUS L. THIEME

G. Craig Caba. *United States Military Drums, 1845–1865: A Pictorial Survey*. Harrisburg, Pa.: Civil War Antiquities Ltd., 1977. v, 145 pp. plus 194 black-and-white plates. \$7.50. (Available from the author at 2520 Lamb's Gap, Enola, Pa. 17025.)

The bulk of G. Craig Caba's *United States Military Drums* is a descriptive catalogue of seventy-six representative drums, mostly from state historical and private collections (one belongs to an AMIS member). The drums are by both unknown makers, who are assigned to regions of the country, and thirty-four identified makers (New England, eleven; New York, six; Pennsylvania, nine; Maryland, four; New Jersey, two; and Ohio and Illinois, one each). Many of the makers mentioned are familiar ones—William Hall, D. C. Hall, Thaddeus Firth, George and John Stratton, John C. Haynes, and J. W. Pepper, among others—but many unfamiliar names are also included in a ten-page, 315-entry "Directory of Drum Makers and Dealers" compiled by the author. Although such a list can never be truly complete, I can add only three names that it omits: William Schmidt (New York City), Daniel Griswold (Livingston County, New York), and the Philadelphia Klemm Brothers' Pittsburgh shop, which apparently made drums during this period. The Pepper, Christman, Pfaff, Firth & Sons, and Lyon & Healy firms also had drum shops or manufactories, although the directory lists them merely as music stores or military goods suppliers. The dates provided for the

makers are good only within the context of this book, for they terminate in 1865 and do not reflect a given firm's full history.

Interspersed among the descriptions of the drums are essays on the organization and equipping of the state militia (the substance of the United States Army until the mobilization of the 1860s), the construction of drums in the eighteenth and nineteenth centuries, and the drums of the various service organizations and of the Confederacy. These intelligently written and thoughtfully documented essays demonstrate the importance of music to the military for uplifting morale and conveying commands to soldiers in camp or in the field. In the daily routine of army life, the drum was a focal point for regimental esprit and élan, and for discipline and order.

The catalogue proper is organized by region, state, and maker. The only dimensions it gives for each drum are of diameter and height of shell. The kinds of woods and metals used are also tentatively identified. Although the colors of rims are often worthy of comment, they and the types of ropes and thugs (leather ears used for tensioning the ropes) are mentioned only if they are thought to be original or if they are particularly decorative. It is frustrating that the mechanisms for straining and tensioning the snares go unmentioned; this will disappoint any drum buff who wants to restore and play early percussion instruments.

The focus of this study is less the structure of military drums than the decoration of them for use in regiments. Simple decorations—circles, squares, or triangles—were formed by the heads of tacks used to close the seams of shells and rims. Makers employed both imaginative and idiomatic combinations of these figures and created the “tack drum.” Some drums were treated as billboards for scenic or symbolic paintings, the most common of which, the “Arms of the United States” with the central figure of an eagle, created the genre of the “eagle drum.” Most specimens in the catalogue are of this type. Caba scrutinizes each specimen's decorations for evidence of artistic skill and for license or conservatism in interpreting the “Arms.” The intensity of adjectives he uses to describe these paintings conveys well the spirit of martial patriotism they were expected to evoke from their contemporaries, and that fervor is not lost on readers today. Admittedly, when the book is read cover to cover, these adjectives begin to

pale—how many different things can be said about seventy-six nearly identical objects? This does not detract from the vividness of the entries when read a few at a time!

Indeed, the verbal descriptions are more vivid than the illustrations given of almost every entry. Reproduced in halftone, they are much less handsome than the drums they represent. The interesting photos of drums in contemporary military settings also lack the clarity of line so characteristic of early photos, tintypes, or ambrotypes.

Herein lies the dilemma facing the compiler of a catalogue, for if the descriptions are sufficiently detailed and the illustrations sufficiently elegant to satisfy the collector or curator attempting to identify or establish the authenticity of an instrument, or a craftsman making replicas of early instruments, then the cost of production will become too great. But if these things are restricted and if too little scholarly apparatus is provided, the catalogue will verge on the conversational or anecdotal. Although there is a public for both types of work, Caba addresses a readership that lies between the two groups, and therefore his work will satisfy neither.

One further problem is Caba's emphasis on decorated drums. This distorts the evidence of old photographs which suggest that decorated drums may have been in the minority. Caba himself observes that many drums "lacked any military decoration or inscription whatsoever, except for common brass tack designs traditionally mounted on drums by the manufacturer."

The book also contains two statements that are misleading. On page 1 it is said that, in comparison with common soldiers, musicians received superior rank and pay. Leaders and a few brigade bandsmen did carry the pay of lieutenants or sergeants, but most bandsmen and company musicians were ranked and paid at the level of privates. Only the pay of "African undercooks," as the regulations designated them, was lower. On page 69 the presence of metal pull-down hooks or clamps is cited as a way of assigning a drum a date from late in the war. The change to this mechanism from the holes for ropes traditionally drilled into the counterhoops (rims) was not, however, such a sudden one. Additionally, because the rims, ropes, and leather heads and ears were subject to frequent breakage or damage, the metal hooks could be added at any time repairs were made.

Overall, though, the book is a model of care in proofreading and documentation. We can only constructively urge its expansion and refinement in subsequent editions, in order to explore more fully this otherwise untouched field.

LLOYD P. FARRAR

Jean Jenkins, ed. *International Directory of Musical Instrument Collections*. Buren, The Netherlands: Frits Knuf Publishers, for the International Council of Museums, 1977. ix, 166 pp. Hfl44.

The *International Directory of Musical Instrument Collections* has a long history. I learned in 1961 that an international survey of instrument collections was planned, but a manuscript directory listing the results of that survey was not completed until 1972, and another five years were to elapse before it was finally published. Some of the information, which was undoubtedly out of date when it was assembled, is even more so now. Nevertheless the *Directory*, representing a major international cooperative effort, is a valuable source of data on 687 collections (which are defined as containing "at least twenty instruments, or, if slightly less, instruments of outstanding importance and interest") in ninety countries, plus 7 collections in Canada and 9 in the United States that were not included in the Music Library Association's *Survey of Musical Instrument Collections in the United States and Canada* (1974). It will be of value to museum curators, individual collectors, scholars, and anyone interested in musical instruments.

Jean Jenkins, Keeper of Musical Instruments at the Horniman Museum in London, offers a brief history of the ICOM (International Council of Museums) *International Directory* in her three-page introduction, but she offers no numerical analysis of data, and there is no index. I gleaned the numbers of collections and countries surveyed by doing a little counting myself, and I was interested to learn that only a single collection is reported from each of thirty-six countries, 2 collections are included from each of eleven countries, while ten more

nations are listed as having only 3 collections each. At the other end of the scale, the United Kingdom has 99 collections reported, 27 of which are privately owned; the Federal Republic of Germany is represented by 55 collections, 4 of them privately owned; and France is in third place with 48 collections, of which 17 are owned by individuals. Next come Switzerland with 35 collections, 11 of them private; Italy with 33, 1 of them private; Austria with 31, 7 of them individually owned; India with 25, 1 of them private; the Netherlands with 24, 7 of them private; Poland and Sweden, each with 21 public but no private collections; Belgium with 19, 2 of them private; Japan with 18, 4 of which belong to individuals; the U.S.S.R. with 18, 1 of them individually owned; the German Democratic Republic with 14, none of them private; and Spain with 12. Since the *MLA Survey* plus the addenda in the *International Directory* report on 557 collections in the United States, 200 of which are privately owned, and on 31 collections in Canada, including 4 that are private, it is apparent that on a worldwide basis musical instrument collections are something of an index of the degree of personal freedom as well as of economic affluence.

Arranged alphabetically by country and then by city, each entry in the *Directory* includes the name of the museum or private owner, the address, the telephone number, the hours open to the public, and a description of the collection ranging in length from one sentence to a page and a half. Museum entries include lists of services, and some give extensive lists of publications. At the back of the book are forms for sending corrections and additions to the publisher. It is to be hoped that in due time a second edition incorporating such new information will be published.

Information on European musical instrument collections is also included in the valuable series of Music Guides by Elaine Brody and Claire Brook published by Dodd, Mead & Company, New York. Checking through the four books so far available—*The Music Guide to Great Britain* and *The Music Guide to Austria and Germany* (1975), *The Music Guide to Belgium, Luxembourg, Holland, and Switzerland* (1977), and *The Music Guide to Italy* (1978)—I discovered a number of musical instrument collections that are not included in Jenkins's *International Directory*. Some of them may not

meet the ICOM criteria, while others may have been missed. Listed in alphabetical order by country and then city, they are:

Austria – *Graz*: Stadtmuseum. *Mödling*: Missionsmuseum St. Gabriel; Museum der Stadt Mödling.

Belgium – *Liège*: Jacques Bernard (Museum); Musée des Beaux-Arts de la Ville de Liège.

Federal Republic of Germany – *Cologne*: Museum für ostasiatische Kunst. *Düsseldorf*: Stadtarchiv. *Munich*: Musikantiquariat Hans Schneider.

Ireland – *Dublin*: The National Museum.

Italy – *Cremona*: Saletta dei Violini, Palazzo Comunale. *Faenza*: Biblioteca Comunale, Museo Teatrale. *Florence*: Museo di Antropologia ed Etnologia. *Livorno*: Biblioteca Comunale Labronica Francesco Domenico. *Modena*: Biblioteca Estense e Universitaria. *Ravenna*: Museo di Antichi Strumenti Musicali. *Rome*: Biblioteca Apostolica Vaticana; Museo degli Strumenti Musicali. *Venice*: Biblioteca d'Arte e Storia Veneziana del Museo Civico Correr. *Verona*: Biblioteca Capitolare; Museo del Castelvecchio.

Switzerland – *Lucerne*: Richard Wagner Museum. *Zurich*: Hug & Co.

United Kingdom – *Birmingham*: Birmingham School of Music Library. *Blair Atholl*: Blair Castle and Atholl Museum. *Bradford*: Bolling Hall. *Brecon*: The Brecknock Museum. *Bristol*: Blaise Castle House Folk Museum. *Carlisle*: Tullie House, Carlisle Museum and Art Gallery. *Edinburgh*: Scottish United Services Museum. *Glasgow*: People's Palace (Old Glasgow Museum). *London*: Kenwood House; London Museum. *Maidstone*: Chillington Manor House. *Manchester*: Henry Watson Music Library, Manchester Public Libraries. *Merthyr Tydfil*: Cyfartha Castle Art Gallery and Museum. *Norwich*: St. Peter Hungate Museum; Strangers' Hall Museum. *Rossendale*: Rawtenstall Public Libraries. *St. Albans*: St. Albans Organ Museum. *Snowhill Manor*: Snowhill Manor.

DALE HIGBEE

Anthony Baines. *The Bate Collection of Historical Wind Instruments: Catalogue of the Instruments*. Oxford: Faculty of Music, University of Oxford, December 1976. iv, 64 pp. (Available from the Curator, The Bate Collection, 32 Holywell St., Oxford OXI 3SL, England. \$6.00, including postage.)

This printed catalogue replaces a duplicated hand-list dated August 1970, at which time the Bate Collection of almost three hundred instruments was given to the University of Oxford. It was then one of the largest private collections of European wind instruments in the world, assembled for research purposes by the donor, Philip Bate, who is well known as the author of *The Flute*, *The Oboe*, and *The Trumpet and Trombone*. A founding member of The Galpin Society, he was chosen to be its president in 1977. Since 1970 the Collection has been enlarged by gifts, especially that of the Morley-Pegge Collection, and purchases. In addition, instruments acquired by Bate since his magnificent gift, as well as those belonging to the curator, Anthony Baines, are on loan to the Collection and are listed in the *Catalogue*.

Each instrument has a Collection number, but the numbering system seems unnecessarily complicated to me. The initial number indicates the type of instrument—0 for duct flutes, 1 for flutes, 2 for oboes, 3 for bassoons, etc.—but it would have been better if letters from the alphabet had been used for this purpose. Instruments on loan are distinguished by *x* and a number in italics, which would presumably have to be changed if the lender decided to give the instrument to the Collection, since there are many duplications of numbers: 0 and *x0*, 03 and *x03*, 2 and *x2*, 22 and *x22*, etc. Furthermore, the instruments are not numbered consecutively. The sequence of catalogue numbers for natural horns, for example, is as follows: 603, 64, 6, 65, *x62*, 60, 605, 61, 62, 66, 67, *x6*, 63, 604, *x60*, 69, 68. In each category instruments are arranged in alphabetical order by maker, but this system breaks down where several subtypes are included within one category, such as different sizes of flutes, oboes, clarinets, etc. It would have been simpler and clearer had consecutive catalogue numbers been used throughout, with or without a different letter of the alphabet designating instrument type, and Collection



numbers also indicated according to whatever scheme pleased the curator.

A more serious criticism of the *Catalogue* is the fact that "with a few exceptions, examples of folk and exotic instruments, and modern replicas of early types (Renaissance, etc.)" are excluded. No reason is given for this, and it seems difficult to understand, since such a curiosity as no. 790 ("Megaphone. Anon. Copper . . . Said to come from the estate of an old lady whose husband had been 'something on the boats, down Broadstairs way'") does get listed.

No statistical analysis is provided, but a little counting reveals a grand total of 553 instruments (plus one flute mouthpiece and two sets of horn valves), of which 103 are on loan. Included are 13 duct or whistle flutes; 167 flutes; 80 oboes; 54 bassoons; 1 crumhorn; 122 clarinets; 4 saxophones; 14 serpents, cornetts, and bass horns; 21 horns; 12 post horns, bugles, and keyed brass; 27 cornets, saxhorns, and tubas; 22 trumpets; 12 trombones; 1 megaphone; and 3 drums. Each instrument is briefly described, and an appendix includes bore measurements for some of the flutes, oboes, bassoons, and clarinets. There is also a useful index of names of makers, inventors, dealers, etc., represented in the Collection. Also listed at the back of the *Catalogue* is a list of instruments disposed of, presumably after the Collection was given to Oxford by Bate: four flutes, two oboes, four bassoons, two clarinets, and one valve trombone. Most collections are thinned out, as well as strengthened, from time to time. I personally was fortunate to acquire a recorder and several flutes and flageolets from Philip Bate in the early 1960s. Now I am glad to have this catalogue of his considerably expanded collection that is housed at Oxford, where it is under the wing of Anthony Baines, the world's leading authority on wind instruments. The *Catalogue* will be especially valuable to persons visiting the Bate Collection, but it is also recommended to individuals with a serious interest in historic wind instruments, and it belongs in music libraries too.

DALE HIGBEE