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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.

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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.

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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.