Robert Bigio. Rudall, Rose & Carte: The Art of the Flute in Britain. London: Tony Bingham, 2011. xvii, 316 pp.; 330 color illustrations, 30 black-and-white illustrations. ISBN: 978-0-946113-09-5. £75.00 (cloth).

A unique product, this book is extremely informative in an innovative way, where extremely clear and detailed photography of a unique set of specimens, supporting documents, and other period evidence advance the author's points without much need for extra text. The book gives the reader the combined advantages of reading a history book recounting the spell-binding details of fine flute making chockfull of interesting new research and viewing an artistic pictorial essay on the development of the flute by a single company. Robert Bigio is the photographic artist responsible for the overwhelming majority of hundreds of beautiful photographs, as well as being the book's author, designer, and typesetter—he raises our expectations of what a flute history should be. No one going forward will ever want to write about antique flutes without having such beautiful photographs to complement the words.

The photographs are so appealing that they could well attract those who might not otherwise wish to do any reading. Their quantity exceeds the number of pages in the book. Indeed, there are almost twice as many photos as illustrations, since a majority of the illustrations contain from two to four different photo views of a single flute. Furthermore, most illustrations of primary source materials such as documents, fingering charts, and company price lists consist of color photographs of originals, qualifying them as resized facsimiles.

In a one hundred page photo gallery 130 Rudall Carte flutes (aka Rudall & Rose or Rudall, Rose & Carte) are showcased, showing the company's contributions from 1822–1936. The gallery is organized by mechanical systems: simple-system (34), advanced simple-system (12), Boehm system with ring keys (17), modern style Boehm system (30), Carte 1851 (7), Carte 1867 (18), Radcliff system (6), and unusual flutes (9). Instruments are placed vertically on the pages and all regular C flutes are presented at the same scale as smaller flutes so that comparisons are easy to make. That is, smaller instruments are made larger, while larger ones are made smaller. Each flute is captioned with pertinent identifiers: date, markings on the flute including company name, serial number, location in the company's stock records when possible, special features of the flute, as well as the current location of the instrument except when the owner's anonymity is protected. The best part of Bigio's choice of instruments is they are new and unknown to most readers; only twenty of the 130 flutes included are presently part of prominent public collections. The overwhelming majority are from well-dispersed and unavailable private sources.

The book begins with nine chapters of luxuriously illustrated text. Three chapters are full of new and well-researched biographical information—one each on George Rudall, John Rose, and Richard Carte. Carte's chapter contains information on his two sons: Henry, who ran the business from 1883–95, and Richard D'Oyly, who brokered concerts and operas under the Rudall Carte aegis before going out on his own. Additional chapters give a thorough and clear re-sorting of the pivotal roles played by the Rudall Carte company in a detailed examination of each mechanical system, variants in materials, bore changes, inventions, and innovations leading up to the eventual standardization of the Boehm instrument. Bigio capably assesses the importance of this firm, noting its

successes and failures, and compares the flutes produced by competitors in Europe and within Great Britain. In so doing, he includes beautiful photos and some close-ups of flutes by Badger, Boehm, Boehm & Mendler, Boosey & Co., Card, Clinton, Collard, Fentum, Gerock, Godfrey, Greve, Hill-Monzani, Hudson, Koch, Laurent, Lot, Milhouse, Potter, Prowse, Siccama, Ward, Willis, Willis and Goodlad, Wood, and Wylde. Bigio is fair in his assessments and does not simply glorify the work and words of Richard Carte. In an effort to resolve a few of the nineteenth-century controversies and of some that have surfaced more recently, he researches every conceivable angle. He cites the flutes' mechanism, bore, or even the screws—the bits of proof he needs to make his points. It is as though the old flutes themselves end up speaking directly to him. Bigio includes a few opinionated remarks and repeats some of the colorful social history and period lore controversies. There are also references to nineteenth-century source materials he compiled in *Readings in the History of the Flute* (London: T. Bingham, 2006), and it is useful to keep this book close as a companion reference.

There are five appendixes: 1) dates for the various shop addresses and firm names of Rudall & Rose (1822–1852), Rudall, Rose & Carte (1852–57), and Rudall, Carte & Company (1872–1958); statistics about each of the main partners, Rudall, Rose, and Carte; serial number dating information; 2) historical photos of Rudall Carte workshops and workmen; 3) photos isolating design features such as, tenons, sockets, thinned head joints, and the Rockstro and Brossa F sharps; 4) a selection of historical company price lists, and 5) fingering charts for the various systems.

Of particular value to collectors, dealers, and curators is Bigio's guide to serial numbers by year, from 1869 to 1939 in Appendix I. Bigio deciphers incomplete and unclear company stock records, suggesting a good basis for further research that can be amplified easily as instruments, yet unconsidered, contribute more precise detail. Other challenges connected to dating the firm's flutes are because each type of instrument had its own sequence of numbers. The Radcliff model sequence lasted from approximately from 1870 to 1923, when suddenly they were numbered along with "Modern Flutes;" an enigmatic lettering system corresponding to a number code assigned to letters from the word, "MUSICTRADE" was used for gold and silver flutes from c. 1860-1886, and "modern piccolos" were numbered with various small flutes of differing pitches and systems until Bigio created a separate cohesive list. However, not all extant flutes from this company are accounted for. Simple-system "band flutes," a voluminous number of instruments sold primarily for military, town, and flute bands throughout the British Isles, have been eliminated entirely. Furthermore, Bigio cautions that company serial numbers were not consecutive and cannot be taken as a guide to the number of instruments made.

Even though this book is of the highest order, a few technical problems crept in. For example, cross-references are missing between photographs of flutes in the gallery and close-ups of their details earlier in the book. Perhaps each photograph and multiple-view grouping should have been numbered, not just in the first nine chapters. Bigio's photos arc wonderful, and each richly deserves its own identity. Also, the index is a little too skimpy, making it difficult to locate some items quickly. At times, some unnecessary redundancy—especially in the photos— seems to have occurred because of these oversights. Bigio's photographs of flutes by other flute making firms are occasionally given very limited identification. More information such as serial numbers, maker's marks,

and collection numbers, if part of a public collection, would authenticate Bigio's work better.

However, this is a book of great intrinsic value, a lavish and expensive production, which shows years of painstaking research, devotion, and intensive labor, not to mention a deep knowledge of flute making and talent with a camera. Besides the author, we have also to thank Tony Bingham for commissioning and publishing such high-quality work.

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