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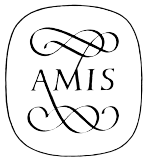

in instrument design that did not find lasting approval. It is known today because its maker was America's first genre painter of international renown, who had a special gift for portraying scenes of everyday life on rural Long Island, including some sympathetic depictions of blacks. Mount also played flute and violin and is important for his collection of fiddle tunes, the value of which was first recognized by Alan Buechner, who began the organization of Mount's musical material at the Museums at Stony Brook. Various aspects of Mount's life and career are discussed in the essays on "Music and William Sidney Mount" by Martha V. Pike, "Micah Hawkins and William Sidney Mount in New York City" by Peter G. Buckley, and "Music and Dance on Long Island, 1800–1870" by M. Hunt Hessler. This book will be of great interest to anyone wanting to learn more about amateur and professional music-making and theatre in the New York area in the first two-thirds of the nineteenth century.

DALE HIGBEE

Victor-Charles Mahillon. *Éléments d'acoustique musicale et instrumentale: Comprenant l'examen de la construction théorique de tous les instruments de musique en usage dans l'orchestre moderne.* 2d ed. Brussels: Les Amis de la musique (avenue des Staphylins 17, 1170 Brussels), 1984. Many black-and-white drawings and diagrams. 1150 FB.

Among the contributors to our knowledge of musical instruments past and present, Victor-Charles Mahillon occupies a pre-eminent position. Any of his major works (particularly the catalog of the museum of the Brussels Conservatoire,[1] of which museum he was the founder, curator, and major builder) are of importance to those interested in musical instruments. The appearance of the present volume, a completely revised edition of the work he first published in 1874 at the age of thirty-three, is due to a "happy chance." In 1969 there was discovered in the home of his granddaughter, Marthe, the nearly completed manuscript of a new and entirely reworked edition of the *Éléments* that he had prepared at St-Jean-Cap-Ferrat in 1916. Apparently, the war and the difficult times following had prevented him from publishing the work prior to his death in 1924, and even the existence of the work had been forgotten. His family, eager to see the project that he

1. Victor-Charles Mahillon, *Catalogue descriptif et analytique du Musée instrumental du Conservatoire royal de musique de Bruxelles,* 5 vols. (Ghent, 1880–1922), reprint ed. (Brussels: Les Amis de la musique, 1978).

had nearly finished in the last years of his life realized, arranged to have the work published by Les Amis de musique in Brussels.

One of Mahillon's aims in writing the *Éléments* was to set down, in easily understood language, the physical principles underlying the behavior of musical instruments and, in those cases where the theory was not well developed, to describe in rational and quantitative terms what the important variables are and what they do as revealed by experiment. In this he was highly successful. He lived during a time of great progress in the application of science to technology, and in a period when the spirit of invention and technological change was very much alive. A large part of the transformation of musical instruments from their earlier forms to those of the present day took place during his lifetime, and Mahillon himself not only recorded and rationalized this process, but contributed to it also. In contrast to those like Theobald Boehm, who worked essentially with a single instrument, Mahillon took a lively interest in all of the varieties; his own contributions and experiments, however, were largely associated with winds, and the book reflects this emphasis to some extent.

This is not the text one would turn to today to obtain a grounding in the physical principles underlying the behavior of musical instruments. Much has been learned since that time, and many of the facts that Mahillon presents simply as empirical observations have since been explained and, as a result, better organized into a theoretical structure that enhances their understandability. He was not trained as a scientist and availed himself but sparingly of the theoretical knowledge that became available (Lord Rayleigh's monumental *The Theory of Sound*[2] was published in 1877–78) after the first edition of the *Éléments d'acoustique musicale* appeared in 1874. Nevertheless, Mahillon was rarely wrong and usually was quite clear about the limitations of his statements, both theoretical and empirical. Only in a few cases would an uninitiated reader be led astray, and never in matters of fundamental importance.

The subtitle of the book reads: "comprising the examination of the theoretical construction of all the musical instruments of the modern orchestra." If the reader thinks this covers only what we see conventionally in use today, he is in for a surprise. Mahillon completely ignored this self-imposed limitation. Indeed, it is in the remarkable variety of instruments treated that this volume gains interest to the lover of musical instruments.

2. John William Strutt, third Baron Rayleigh, *The Theory of Sound*, 2 vols. (London, 1877–78), 2d ed. (London, 1894–96), reprint ed. of 2d ed. (New York: Dover Publications, 1945).

Hundreds of instruments are described in accordance with a classification scheme that not only divides the instruments into winds, strings, percussion, etc., but also into subcategories according to the nature of the vibrating body and the method of excitation. While the subtitle says "orchestra," Mahillon also discusses instruments that belong to what we would call bands and other musical groupings; in addition he includes instruments now in disuse, as well as their historical forebears and some of their relatives in the non-Western world. The descriptions of most of these are brief and concern mainly their acoustical aspects, e.g., how the various notes they produce relate to the vibrational modes, and the means used to alter the length of the vibrating member. There is little history; for this the author makes liberal reference to his catalogue of the museum of the Brussels Conservatoire. Taken together, these two works of Mahillon provide a rich source of information on a wide variety of instruments.

The text is occasionally enlivened by commentary and anecdote such as the following discussion of a widespread error—the belief that the material of which a wind instrument is made has a profound influence on its tone qualities (pp. 61–62; translation mine):

> Who does not know the brilliant sound of the cavalry trumpet? It would seem that if this same brilliance were produced by the same instrument totally constructed of wood, the error would disappear forever. Nothing of the sort. Over the years we have had the occasion to make heard almost every day, before a considerable number of instrumentalists, a trumpet of acacia wood constructed by C. Mahillon to demonstrate the absurdity of an idea of which he was one of the leading adversaries. This instrument, constructed with the exact proportions of the cavalry trumpet, gives exactly the same brilliance as its equal in brass, to the degree that it is impossible to distinguish one from the other.
>
> Is this believed? We have surprised almost everybody, but have convinced nobody! Faced with the truth, many artists have not wanted to believe their ears. One consents with difficulty to renounce, in effect, in one instant, an opinion formed and professed over long years; to confess that one's experiences, one's studies, one's trials, one's fancies have led one astray. Also, with what coldness and indifference does one reject all innovation that attacks preconceived ideas!
>
> What troubles would professors spare their students, however, if, themselves instructed in that which progress reveals, they informed their pupils of the true principles of the instrument, abandoning the thousand prejudices that encumber the studies, waste precious time, and finally erect an almost impenetrable barrier to serious progress.
>
> The sole reasons for the difference in timbre of the wind instruments are due to the proportions of the tubes, and thus of the shape of the vibrating body, which is none other than the *air,* and the manner in which this column of air is excited.

Mahillon would doubtless be disappointed, but not surprised, to find that seventy years later few musicians are willing to admit to the truth of the matter, in spite of several forceful demonstrations of its validity. His analysis was quite as perspicacious with regard to human nature as it was to acoustics!

Reading this work, one is reminded of the spirit of innovation and acceptance of change in musical instrument design that was alive in the nineteenth century. The conservativeness of classical musicians today, and their unwillingness to accept anything but the most incremental changes in the instruments they employ, stands in contrast. Perhaps we must look to the world of electronic supplementation, computers, and synthesizers to point the directions for the future.

JOHN W. COLTMAN

Edwin M. Good. *Giraffes, Black Dragons, and Other Pianos.* Stanford: Stanford University Press, 1982. xvii, 305 pp.; 62 black-and-white plates, many drawings. $29.50.

Organology students and professionals greet each new addition to the plethora of volumes on the history of the piano with hope. A strikingly bold point of view, a wealth of comparative documentation, penetrating technical analysis, and an illuminating musical perspective are all pressing current needs in the field of the history of hammered keyboard instruments.

Despite its drugstore-novel title, *Giraffes* is an important step in a total reconsideration of the history of the piano (a project that would undoubtedly require an encyclopedia of the piano, as Good himself suggests). The pianos themselves are the primary sources of information for a history such as this one, as the author tells us, and it is clear that he has inspected many of them.

The difference between invention and acceptance, commonly noted in histories of technology but seldom given attention in histories of the piano, is a major theme of Good's work. He describes his book as a history of change, noting that change is not synonymous with improvement or progress (though he does not replace the idea of evolutionary progress with another developed point of view). He is also willing to tackle the myth of the modern piano: "I admire what Steinway did, but I am not ready to suppose that where others did something else, they were misguided or out of touch with reality," he remarks (p. ix).

At many points in the book, Good describes problems of the modern piano: for example, he notes that though felt is now universally used for