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PERCUSSION INSTRUMENTS IN GRAPHIC ARTS IN SIXTEENTH-  
AND SEVENTEENTH-CENTURY WESTERN EUROPE

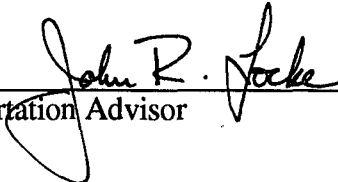
by

Douglas Roy Overmier

A Dissertation Submitted to  
the Faculty of the Graduate School at  
The University of North Carolina at Greensboro  
in Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Musical Arts

Greensboro  
1996

Approved by

  
Dissertation Advisor

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APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at The University of North Carolina at Greensboro.

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Date of Final Oral Examination

OVERMIER, DOUGLAS ROY, D.M.A. Percussion Instruments in Graphic Arts in Sixteenth- and Seventeenth-Century Western Europe. (1996)  
Directed by Dr. John R. Locke. 382 pp.

The purpose of this study was to present plates depicting percussion instruments from the sixteenth and seventeenth centuries in selected Western European sources. A secondary focus of the study was to present musical applications of and pertinent information relative to each percussion instrument.

The important extant sixteenth- and seventeenth-century percussion instrument sources meeting the criteria for this study were collected and examined. These sources included: Musica getutscht (1511) by Sebastian Virdung, Musica instrumentalis deutsch (1528) by Martin Agricola, Orchesographie (1585) by Thoinot Arbeau [Jehan Tabourot], Syntagma musicum (1615) by Michael Praetorius, Harmonie universelle (1636) by Marin Mersenne, Musurgia universalis (1650) by Athanasius Kircher, and Gambinetto armonico (1716) by Filippo Bonanni.

The various percussion subjects for this study were reproduced from the graphics in the extant sources. Each instrument was described by its application to traditional musical functions, established practice, or customary traditions. The applied musical functions of percussion instruments included, but were not limited to, martial music, orchestral music, theatrical productions, folk music, and university traditions. Established practices such as guild traditions, royal musicians, and ceremonial functions of church or state also are listed where applicable. Customary traditions included festival performances, folk instrument developments, and musical practices associated with secular music. Instruments traditionally categorized as string, brass, or woodwind, yet played in a percussive manner, were omitted from the study. Contraptions traditionally placed in the modern percussion section such as whistles, bird calls, sound effects, and various horns also have been omitted.

The collection of Western European percussion iconography from extant sources provided the basis for visual evaluation, establishes a sense of prominence relating to the frequency of the subjects in art, provides information on the use of the instruments, and furnishes insight into pedagogical traditions. Most important, this document illuminated the need for additional musicological studies on percussion from this era.



## ACKNOWLEDGMENTS

The author wishes to thank the following publishers for permission to quote copyrighted materials:

Cambridge University Press, New York, for the illustrations in Musica getutscht by Sebastian Virdung, edited by Beth Bullard, on pages 110, 114, and 118, copyright 1993.

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Kluwer Academic Publications, The Netherlands, for the illustrations in Harmonie universelle by Marin Mersenne, translated by Roger Chapman, on pages 505, 506, 523, 540, 546, 547, 548, 550, 552, and 553, copyright Nijhoff 1957; copyright assigned to Kluwer Academic Publishers, 1995.

Oxford University Press, London, for the illustrations in Syntagma musicum by Michael Praetorius, translated by David Crookes, on plates 9, 22, 23, 29, 30, 31, 33, 40, 41, and 42, copyright 1986.

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## CHAPTER I

### INTRODUCTION

Sixteenth- and seventeenth-century Western European sources that include percussion instruments are distinct in comparison to previous and subsequent centuries. With the exception of a few sixteenth- and seventeenth-century extant documents, military treatises, and court records regarding martial percussion, no other written information exists. Descriptions concerning the use of percussion instruments during the sixteenth and first half of the seventeenth century are not found in written documentation. During the same period, however, the frequency of percussion instruments depicted in icons steadily increased. This phenomenon resulted in a span of one and one-half centuries during which relatively few written percussive documents were produced. At the same time, however, there was an increase in the use of percussion subjects in visual art. Because of scant sixteenth and seventeenth-century written documentation, percussion instrumental research has been dependent primarily upon icons.<sup>1</sup>

Musical iconography is an area of research with its own principles, methodologies, and literature. Iconographic research is an investigation into visual representation of musical subjects. The iconographic study of musical instruments has resulted in increased information on performance practices, idiomatic instrumental performance techniques, pedagogical developments, traditional instrumental groupings in various performance settings, physical relationships of performers, performance environments, and staging practices.<sup>2</sup>

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<sup>1</sup> Ed Gangware, "The History and Use of Percussion Instruments in Orchestration." (Ph. D. diss., Northwestern University, 1962), 70.

<sup>2</sup> Don Randal, ed., "Iconography of Music," The New Harvard Dictionary of Music (Cambridge, Massachusetts: Belknap Press, 1986), 388.

The iconographic documents published within the last thirty-five years have provided valuable information about instruments, pedagogical traditions, and instrument histories. Percussion instruments in general, however, have been omitted from such studies. These studies include “The Iconography of the Piano in Nineteenth-Century Art” by Anne Plante,<sup>3</sup> “Chinese Musical Iconography: A Study of Musical Instruments Depicted in Chinese Works of Art in Twenty Western Museums” by Helene Bodman,<sup>4</sup> “The History and Use of Percussion Instruments in Orchestration,” by Edgar Gangware,<sup>5</sup> and “Musical Iconography in the Sacred Cantatas of Johann Sebastian Bach” by Carl Simon.<sup>6</sup> Although musical iconographic studies exist, none has been specifically devoted to percussion instruments from sixteenth- and seventeenth-century Western Europe.

#### Purpose of the Study

The purpose of this study was to present plates depicting percussion instruments from the sixteenth and seventeenth centuries in selected Western European sources. A secondary focus of the study was to present musical applications of and pertinent information relative to each percussion instrument.

The important extant sixteenth- and seventeenth-century percussion instrument sources meeting the criteria for this study have been collected and examined. The sources for this study were the following: Musica getuscht (1511) by Sebastian Virdung,<sup>7</sup> Musica

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<sup>3</sup> Anne Plante, “The Iconography of the Piano in Nineteenth-Century Art” (D. Mus. diss., Indiana University, 1984).

<sup>4</sup> Helene Bodman, “Chinese Musical Iconography: A Study of Musical Instruments Depicted in Chinese Works of Art in Twenty Western Museums” (MA thesis, The American University, 1983).

<sup>5</sup> Gangware.

<sup>6</sup> Carl Simon, “Musical Iconography in the Sacred Cantatas of Johann Sebastian Bach” (DMA diss., Peabody Institute of the John Hopkins University, 1980).

<sup>7</sup> Sebastian Virdung, Musica getuscht, [1511] with a Foreword and trans. by Beth Bullard (reprint Cambridge: Cambridge University Press, 1993).

instrumentalis deudsch (1528) by Martin Agricola,<sup>8</sup> Orchesographie (1585) by Thoinot Arbeau [Jehan Tabourot],<sup>9</sup> Syntagma musicum (1615) by Michael Praetorius,<sup>10</sup> Harmonie universelle (1636) by Marin Mersenne,<sup>11</sup> Musurgia universalis (1650) by Athanasius Kircher, and Gambinetto armonico (1716) by Filippo Bonanni.<sup>12</sup> Detailed descriptions of these extant documents are found in the “Status of Related Research” section.

The various percussion instruments for this study are reproduced from the graphics in the extant sources. Each instrument is described by its application to traditional musical functions, established practice, or customary traditions. The applied musical functions of percussion instruments include, but are not limited to, martial music, orchestral music, theatrical productions, folk music, and university traditions. Established practices such as guild traditions, royal musicians, and ceremonial functions of church or state also are listed where applicable. Customary traditions include festival performances, folk instrument developments, and musical practices associated with secular music. Instruments traditionally categorized as string, brass, or woodwind, yet played in a percussive manner, are omitted from the study. Contraptions traditionally placed in the modern percussion section such as whistles, bird calls, sound effects, and various horns also have been omitted.

The plates for this study are limited to line-drawn illustrations, engravings, and woodcuts contained in the extant sources drawn by the extant author or the author’s designate. This study excludes percussive subjects in paintings, reproductions of

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<sup>8</sup> Martin Agricola, Musica instrumentalis deudsch, [Germany 1529]; (reprint trans. William Hettrick, Cambridge: Cambridge University Press, 1994).

<sup>9</sup> Thoinot Arbeau, Orchesographie, [Longres: Johann des Preyz, 1589]; (reprint trans. Mary Stewart Evans, New York: Dover Press, 1967).

<sup>10</sup> Michael Praetorius, Syntagma musicum, [Wolfenbuttle 1619]; (reprint trans. David Crookes, Oxford: Clarendon Press, 1986).

<sup>11</sup> Martin Mersenne, Harmonie universelle, [1636]; (reprint trans. Roger Chapman The Hague, Netherland: Nijhoff, 1957).

<sup>12</sup> Filippo Bonanni, Antique Musical Instruments and Their Players, with a Foreword by Frank L. Harrison, (New York: Dover, 1964).

paintings, colored illustrations, photographs from reprinted editions, tapestries, murals, bas-reliefs, or sculptures. Sources containing collections of instrumental works of art under a nonmusical topic or thematic collection also have been omitted from consideration.

### Procedures

One process for this study involves a review and comparison of the published forms of the extant sources. The extant sixteenth- and seventeenth-century sources for this document are available in reproductions, microfilms, facsimiles, and translated editions. Whenever possible, a facsimile version has been obtained. A complete list of these sources is found in the Chapter II and the Bibliography of this document.

Because the extant sources fail to provide complete and comprehensive information detailing the use of each instrument, secondary sources have been employed. Secondary sources and editorial notes from translated editions have been used to amplify the historical development of percussion instruments, provide details regarding traditional uses of the percussion instruments, and present peripheral information unavailable from the extant sources. In addition, secondary sources have been consulted to augment information resulting from the examination of the plates from the primary sources and serve as a basis for comparison. Period histories, instrumental development studies, and encyclopedic resources also enhance the study. Descriptions of these documents are found in the “Status of Related Research” section.

Percussion instrument graphics from the extant sixteenth- and seventeenth-century sources have been examined. Equivalent information has been provided for each graphic. The examination involved recording corresponding observations and evaluations relative to size, construction, striking implements, obvious uses, and apparent function such as musical, social, martial, etc. Additional citations include artist, country of origin, type of graphic, title of the graphic, and date of the graphic if different from the date of publication.

Information provided by an artist, editor, or publisher is included with the plate. Plates containing subjects derived from an artistic concept, as opposed to an actual representation, are identified accordingly. References regarding these plates are the collective result of visual examination and the correlation of information from secondary sources.

Plates of sixteenth- and seventeenth-century percussion instruments from the extant sources have been reproduced through a number of means and used within the body of the document. Every attempt to accurately reproduce the extant graphic has been observed. Off-set printers have been used to reproduce photostatic plates received from publishers. All other plates have been reproduced through a high-quality xeroxing process. Some subjects in graphic depictions are enlarged to enhance details. Permission to reproduce these items has been obtained from all publishers.

#### Organization of the Document

The document is organized into four chapters. The first chapter of the study includes the introduction, purpose, and procedures of the study. The second chapter is the “Status of Related Research.”

The third chapter comprises the text with plates, organized into eleven subheadings. Conclusive theories regarding each instrumental category and those instruments used in sixteenth- and seventeenth-century Western Europe are included. Primary and secondary sources are cited in support of each theory. The supporting citations include speculative assessments of the icons from primary sources, quotations from primary authors, and secondary references relevant to the use of percussion instruments from this era. Relevant plates have been inserted within the accompanying text. A detailed description is found in the “Organization of the Text” section.

The fourth chapter contains the summary of the purpose, deductions, and conclusions from the study. Trends, performance characteristics, and other tendencies

have been cited. Collectively, this information provides the basis for evaluative observations, establishes a proper perspective regarding percussion from this era, and most important, provides information on the use of the instruments. In addition, the fourth chapter contains suggestions for additional study.

Correspondence and letters granting permission for the reprint of materials have been located in the appendix. Lists of sources and compilations are found in the "Status of Related Research" section of this document.

### Organization of the Text

The body of this document consists of text regarding sixteenth- and seventeenth-century percussion instruments with the accompanying plates from extant sources. The text, in turn, is divided into eleven categorical classifications. Justification for each particular grouping precedes each classification. The text includes historical data, information from primary and secondary sources, with inserted reproductions of the corresponding plates.

Additional details inherent to a particular plate, but not substantial enough to be included in the text, have been listed as a citation in each plate. The citation includes material pertaining to the title of the plate, idiomatic characteristics of the graphic, or artistic practices effecting the production of the instrumental depiction.

The eleven categories within the text have been labeled under the subheadings "Bells," "Castanets and Clappers," "Cymbals and Gongs," "Drums and Tabors," "Friction Drums," "Rattles," "Snare Drums," "Tambourines," "Timpani," "Triangles and Sistrums," and "Xylophones." In addition to the eleven categories, percussion instruments have been further identified as belonging to one of two main classifications: membranophones or idiophones. The criteria for establishing various categories and classifications include

performance technique, similarities in instrument construction, instrument origin, colloquial or generic label, and tone production.

Percussion instruments producing sound through a vibrating membrane or an attached resonating parchment are classified as membranophones. Tone production and performance techniques have been diminished as a consideration effecting the qualification of percussion instruments for this classification. Idiophones are naturally sonorous items such as wood, metal, or glass, that generate sound as the result of scraping, striking, friction, or shaking. Each category has been prefaced with the characteristics that qualify the specific entries for the particular group. The following descriptions are the basic premise by which the categories have been determined.

Membranophones constitute the largest category in this study. The membranophone category receives additional delineation resulting in subclassifications. This subclassification is due, in part, to the universal abundance of membranophonic percussion instruments in Western Europe during this era. Cylindrical membranophones with at least one parchment-covered end have been located within "Drums and Tabors." Those parchment-covered cylinders with attached jingles, snares, or sound-effecting devices, however, have been included in other subcaptions. The "Snare Drum" caption contains instruments meeting the criteria of (1) cylinders with parchment-covered ends, (2) a snare device activated through sympathetic vibration, and (3) two striking implements activating the tone production. Those instruments also consisting of a parchment-covered wooden cylinder, but with a parchment tacked directly to the shell, and having jingles set within the cylinders opening are classified as "Tambourines". The main delineation between a tambourine and tabor involves head-tensioning methodology. Instruments included under the "Timpani" heading are membranophones with kettle-shaped shells. Because of the variation in timpani performance technique from region to region,

construction is the only criterion effecting the classification of this instrument. Although only one depiction exists in the extant sources, “Friction Drums” remains a separate category. This parchment-covered cylindrical percussion instrument possesses enough unique characteristics to prevent an inclusion into any of the other categories.

Indefinite-pitched idiophones constitute four sections of the total entries. The four sections are composed of metallophones, wooden instruments, bone instruments, and rattling instruments. Those indefinite-pitched idiophones constructed of metal or brass have been further labeled as metallophones. The “bones” category, listed among “Castanets and Clappers,” includes instruments considered precursors to the modern clave, ratchet, slapstick, or cricket. Castanets, however, are distinct from bones and receive separate identification. Unlike the previous generalized category, castanets are a wooden percussion instrument in a mature and distinguishable form during this era. Non-metallic instruments that produce an indefinite pitch when shaken or turned have been included in “Rattles”. Concave disk-like metallophones constructed without an attached clapper are included within the “Cymbals and Gongs” section. The term *bells* has been generically applied to definite- and indefinite-pitched metallophones reliant on a rattle or clapper to initiate resonance. These instruments are located in the “Bells” section. Metallophones consisting of a steel rod bent into an open-ended equilateral triangle are among “Triangles and Sistrums.”

Definite-pitched idiophones, regardless of range, are classified as “Xylophones.” The generic application of the term *xylophone* provides for the inclusion of wooden, stone, and definite-pitched metallic percussion instruments. While bells also fit these basic criteria, the shape, method of tone production, and performance techniques affirm the distinction in the previously described category.



Common articles, naturally sonorous items, and nontraditional percussion instruments without modern descendants also are classified in the above captions. The significance of these items lies in the diversity of percussion instruments as subjects in extant graphics. This category includes percussion instruments in extant graphics of antiquated, ethnic, colloquial, extinct, or other nontraditional instruments frequently played in a percussive manner. The presence of these depictions as subjects in extant sources supports a universal acceptance theory and have a direct bearing to all percussive uses.

## CHAPTER II

### STATUS OF RELATED RESEARCH

Beginning in 1937 with George Kinsky's Geschichte der Musik in Bildern, musical iconography has become an area of research with its own principles, methodologies, and literature.<sup>13</sup> The available materials incorporating musical iconography, however, are broad in scope as relative to thematic material in music, historical periods, civic events, and theatrical productions. Few are dedicated to instrumental studies. As a result, specific instrumental depictions are spread through numerous iconographic collections of many related subjects. This document can not include every text, anthology, and publication containing pictures of musical instruments. Instead, the primary focus is on publications using iconography as a foundation of study or the subject of the contents. The following survey of the status of research in the area of sixteenth- and seventeenth-century musical instrument iconography affords some sense of the amount of available material.

#### Anthologies

Several anthologies highlight the field of musical iconography. The first such work is the series Musikgeschichte in Bildern,<sup>14</sup> a multi-volume collection of musical period histories containing plates, commentary, bibliography, chronologies, and indices. The Katalog zu den Sammlungen des Händel-Haus in Halle is a series of catalogues containing Handel's keyboard music, artifacts, German songs, plates, and icons from the nineteenth century.<sup>15</sup> Robert Cohen's Les gravures musicales dans L'illustration 1843-1899 includes

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<sup>13</sup> George Kinsky, A History of Music in Pictures (New York: EP Dutton, 1929; reprint New York: Dover, 1951).

<sup>14</sup> Heinrich Bessler and Max Schneider, eds., Musikgeschichte in Bildern (Leipzig: Deutscher Verlag für Musik, 1961).

<sup>15</sup> Händel-Haus, Katalog zu den Sammlungen des Händel-Haus in Halle (Halle: Händel-Haus, 1961).

over 3,360 reproduced engravings from the nineteenth-century French periodical *L'Illustration*.<sup>16</sup> Published monthly, *L'illustration* contained numerous illustrations, paintings, and other icons from the nineteenth century. The significance of the source is in its function as a primary reference to the nineteenth century. Duckles credits this source as a “treasury of nineteenth-century French Musical life.”<sup>17</sup>

### Bibliographical Materials

Although many bibliographical resources include iconographic sections, those exclusively dedicated to the field of iconography are limited. The book Musical Iconography: A Manual for Cataloging Musical Subjects in Western Art Before 1800 is a useful bibliographical tool.<sup>18</sup> This source presents significant guidelines for formatting iconographic plates, locating additional information, and cataloging research. Another bibliographic resource is A Bibliography of the Iconography of Music.<sup>19</sup> Although the contents are primarily references to secondary sources, the indices provide topical cross-referencing capable of augmenting iconographical research.

### Illustrated Histories

Illustrated histories of music comprise a large portion of iconographic research. A History of Music in Pictures by George Kinsky is the first published source credited with pioneering the field of iconography.<sup>20</sup> Kinsky's work includes musical history periods arranged in chronological order. Each period is accompanied with biographies of

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<sup>16</sup> Robert Cohen, Les gravures musicales dans L'illustration 1843-1899 (Québec: Presses de l'Université Laval, 1983).

<sup>17</sup> Vincent Duckles and Michael Keller, Music Reference and Research Materials, 4th ed., (New York: Schirmer Books, 1988), 113.

<sup>18</sup> Howard Brown and Joan Lascelle, Musical Iconography: A Manual for Cataloguing Musical Subjects in Western Art Before 1800 (Cambridge: Harvard University Press, 1972).

<sup>19</sup> Frederick Crane, A Bibliography of the Iconography of Music (Iowa City: The University of Iowa, 1971).

<sup>20</sup> Kinsky.

musicians, depictions of instruments of the era, facsimiles of music, and theoretical writings. Pictures of birth places, composers, and select churches have been included with the appropriate text. Also included with the publication are reproductions of paintings, sculptures, illustrations by artists from the era, an index of instruments, and the names and locations of each piece. Other sources following in Kinsky's example were published in the early 1960s. Paul Collaer and Albert Van der Linden's Historical Atlas of Music is an illustrated music history full of maps, plates, and numerous illustrations.<sup>21</sup> The original publication, Atlas historique de la musique, was in French and formatted as a survey of music history.<sup>22</sup> A Pictorial History of Music by Paul Lang and Otto Bettman illustrates also the historical periods of music from ancient and medieval practices to the twentieth century.<sup>23</sup> A Pictorial History of Music provides lengthy descriptions of each plate, illustration, and depiction. The quality of the reproductions, however, makes extracting specific details difficult. The bibliography contains numerous references to other iconographic sources including Kinsky. Pincherle's An Illustrated History of Music contains scholarly work, but omits a bibliography.<sup>24</sup> The author's introduction describes the text as an introduction to music, including period histories from ancient to modern, and a comparison of compositional techniques of music to the visual art of the era. The book includes 243 accompanying illustrations that are clearly reproduced.

A text combining the style period approach through a particular theme is Karl Geiringer's Instruments in the History of Western Music.<sup>25</sup> Geiringer uses iconography to trace the development of instrumental music from medieval Western Europe to the colonies

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<sup>21</sup> Paul Collaer and Albert Van der Linden, Historical Atlas of Music (Paris: Elsevier, 1960; reprint trans. Allan Miller, Cleveland: World Publishing Company, 1968).

<sup>22</sup> Atlas historique de la musique. (Paris: Elsevier, 1960).

<sup>23</sup> Paul Lang and Otto Bettman, A Pictorial History of Music (New York: Norton, 1960).

<sup>24</sup> Marc Pincherle, An Illustrated History of Music (Paris: Gallimard, 1959; reprint translated by Rollo Myers, New York: Macmillan, 1962).

<sup>25</sup> Karl Geiringer, Instruments in the History of Western Music (Boston: George Allen and Unwin, 1978).

of the new world. This text is one of the few resources available dealing specifically with instrumental iconography.

Books dedicated to a particular theme in iconography include Richard Leppert's The Theme of Music in Flemish Painting of the Seventeenth Century, II.<sup>26</sup> Written as a catalog, Leppert examines seventeenth-century Flemish paintings, bas-reliefs, and etchings. The index includes instrumental and thematic cross-references. Painting locations also are included. Music in Prints is a catalog of the New York Public Library's holdings of musical subjects in art.<sup>27</sup> Most of the holdings have been reproduced with credits to the artist and date or origin of the work. Historian Edmond Bowles' Musical Ensembles in Festivals: 1500-1800 contains reproductions of title pages, paintings, wood carvings, bas-reliefs, and etchings of royal festivals in the sixteenth and seventeenth centuries.<sup>28</sup> Bowles includes descriptive essays of the events surrounding the reproductions and adds a citation to each of the entries. A slightly differing approach to the above is Die Musik in Fünf Jahrhunderten Der Europäischen Malerei: Etwa 1450 bis etwa 1850 by Max Sauerlandt.<sup>29</sup> While this text maintains a focused theme of European music, Sauerlandt incorporates historical perspectives.

Music and Art in Society by Francois Lesure uses a comparative arts approach.<sup>30</sup> Lesure is consistently examining the similarity between musical line and its representation in various art forms. The reproductions are clear, but do not contain ample citation for determining the origin or date of the art work. Another work of the same genre is Music:

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<sup>26</sup> Richard Leppert, The Theme of Music in Flemish Paintings of the 17th Century, II, 2nd ed., (Salzburg: Musik Emil Katzwichler, 1977).

<sup>27</sup> Sydney Beck and Elizabeth Roth, Music in Prints (New York: New York Public Library, 1965).

<sup>28</sup> Edmond A. Bowles, Musical Ensembles in Festivals: 1500-1800 (Ann Arbor, Michigan: University of Michigan Research Press, 1989).

<sup>29</sup> Max Sauerlandt, Die Musik in Fünf Jahrhunderten der Europäischen Malerei: Etwa 1450 bis etwa 1850 (Leipzig: Konigstein, 1922).

<sup>30</sup> Francois Lesure, Music and Art in Society (London: Pennsylvania State University Press, 1968).

Mirror of the Arts by Alan Rich.<sup>31</sup> Although similar in approach to Lesure, Rich examines Western art and European music to illustrate the similarities between music and society.

French music historian Albert de Mirimonde published several texts on the subject of musical themes in art. L'Iconographie Musicale Saus Les Rois Bourbons,<sup>32</sup> L'Iconographie Musicale Saus Les Rois Bourbons, 2nd ed.,<sup>33</sup> and Saint Cecile Metamorphoses d'un Theme Musical<sup>34</sup> all contain graphic depictions of Western European instrumental ensembles from the fourteenth through seventeenth centuries. The second edition of the L'Iconographie Musicale Saus Les Rois Bourbons is an expanded collection of de Mirimonde's L'Iconographie Musicale Saus Les Rois Bourbons. While de Mirimonde did not simply reprint the first edition with extra reproductions, some repetition exists. Like Bowles, de Mirimonde provides descriptive text to accompany the plates. De Mirimonde's Saint Cecile Metamorphoses d'un Theme Musical contains a multitude of sacred works on the patron saint of music, Saint Cecile. Reproductions of paintings, etchings, and title pages from cathedrals and holy documents comprises the majority of this collection.

Two sources specifically dedicated to percussion instruments are by percussion historians James Blades and Gordon Peters. Percussion Instruments and Their History by Blades is one of the most comprehensive texts detailing the history of percussion instruments in Western music.<sup>35</sup> Blades' research also comprises the majority of percussion-related entries in the New Grove Dictionary of Music and Musicians.<sup>36</sup> As the

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<sup>31</sup> Alan Rich, Music: Mirror of the Arts (New York: Praeger, 1969).

<sup>32</sup> Albert de Mirimonde, L'Iconographie Musicale Saus Les Rois Bourbons (Geneve, France: Editions Minkoff, 1975).

<sup>33</sup> Albert de Mirimonde, L'Iconographie Musicale Saus Les Rois Bourbons, 2nd ed (Geneve, France: Editions Minkoff, 1977).

<sup>34</sup> Albert de Mirimonde, Saint Cecile Metamorphoses d'un Theme Musical (Geneve, France: Editions Minkoff, 1974).

<sup>35</sup> James Blades, Percussion Instruments and Their History (New York: Praeger, 1970).

<sup>36</sup> Stanley Sadie, ed., The New Grove Dictionary of Music and Musicians, 20 vols. (London, England: MacMillan, 1980), 18:266-269.

first book on percussion instruments and their history, Blades is considered to be one of the most scholarly sources on percussion instrumental history. Blades' text includes 193 plates and sixty-eight figures to accompany textural descriptions. Detailed indices provide ample cross-references to Baroque, Classical, Romantic, and twentieth-century orchestral titles. In addition, the names of all Western percussion instruments are listed in French, Italian, German, and English. The Drummer: Man by Gordon Peters gives a brief history of select Western and non-Western percussion instruments from antiquity to modern times.<sup>37</sup> Although not as comprehensive as Blades, this monograph does have a wider scope and contains one picture with no illustrations. Peters' book, however, does contain numerous descriptions of sixteenth- and seventeenth-century Western European percussion instruments. Both texts cite works of art as the primary informational source on sixteenth- and seventeenth-century percussion.

At present, Tom Naylor's The Trumpet and Trombone in Graphic Arts, 1500-1800 is the only iconographic monograph devoted to a specific genre of musical instruments.<sup>38</sup> Rewritten from his dissertation on the same subject, Naylor includes etchings, woodcuts, paintings, and other icons containing trumpets and trombones. The primary subjects in the plates are usually royal festivals, functions of the church, or events including the trombone or trumpet in the background. Frequently, strings and percussion instruments are included in the same art sample. As a result of the background detail, Naylor includes magnified details of the reproductions isolating the subjects of his text.

These, as well as other contemporary texts, reflect the effects of limited sixteenth- and seventeenth-century written percussion documents. Modern percussion resources Percussion Instruments and Their History by James Blades, Ancient Percussion

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<sup>37</sup> Gordon Peters, The Drummer: Man (Wilmette, Illinois: Kemper-Peters Publications, 1975).

<sup>38</sup> Tom Naylor, The Trumpet and Trombone in Graphic Arts, 1500-1800 (Nashville, Tennessee: The Brass Press, 1979).

Instruments and Their Players by Jeremy Montague, and Teaching Percussion by Gary Cook include martial music.<sup>39</sup> References to other sixteenth- and seventeenth-century percussion instrument uses, however, are omitted. “The History and Use of Percussion Instruments in Orchestration” by Ed Gangware, Early Percussion Instruments: From the Middle Ages to The Baroque by James Blades, Orchestral Percussion Technique, by James Blades and Jeremy Montague, and The History of Musical Instruments by Curt Sachs briefly refer to the use of percussion in the sixteenth and seventeenth centuries.<sup>40</sup> Each of the authors cites works of art as the basis for their information. Blades’ Percussion Instruments and Their History includes 193 plates of artwork used in formulating observations regarding a particular technique or instrument. Sachs frequently cites carvings in Worcester Cathedral, Praetorius’ writings, and Mersenne’s work to support his statements in his book regarding early percussion instrumental history.

#### Unpublished Sources

Sixteen dissertations and one thesis are devoted to the subject of musical iconography. Of these, eight examine images and attempt to explain their meaning in the context of art history; three dissertations approach the subjects through a comparative arts perspective to combine art history, philosophy, and music; one of the sixteen dissertations is devoted to musical aspects of cinema, more specifically those musicals directed by

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<sup>39</sup> Blades, xix; Jeremy Montague, Making Early Percussion Instruments (London: Oxford University Press, 1976); Gary Cook, Teaching Percussion (New York: Schirmer Books, 1988). These documents are frequently cited in percussion research. While each author includes percussion from the seventeenth century, the information is scant. For example, James Blades is the most widely published percussion historian. Blades, however, omits the seventeenth century entirely in his book.

<sup>40</sup> Gangware; James Blades & Jeremy Montague, Early Percussion Instruments from the Middle Ages to the Baroque (London: Oxford University Press, 1976); Curt Sachs, The History of Musical Instruments (New York: W. W. Norton, 1940). When citing the development of percussion in Europe, these authors cite illustrations, carvings, and other icons to support ideas and theories. The above sources quote icons for the majority of their commentary on instruments from this era. Gangware, especially, cites the basis for his dissertation as being works of visual art from this era.



Vincente Minnelli. Of the sixteen, the six dissertations listed below specifically mentioned music or musical instruments in art and iconography as the subject of study. As a result, these six appear to be directly related to this study. In comparison to the various other topics of dissertations in music, iconography appears to be the youngest field, the area with the fewest titles, and potentially, the area with the greatest need of instrumental research.

Those dissertations most applicable to this study are “Music and its Symbolism in Seventeenth-Century Dutch Painting” by Ignacio Moreno,<sup>41</sup> “Performance Aspects of Selected Violoncello Concerti From the Period 1700-1820” by Kathryn Reiswig,<sup>42</sup> “The Iconography of the Piano in Nineteenth-Century Art” by Anne Plante,<sup>43</sup> “Chinese Musical Iconography: A Study of Musical Instruments Depicted in Chinese Works of Art in Twenty Western Museums” by Helene Bodman,<sup>44</sup> “The History and Use of Percussion Instruments in Orchestration,” by Edgar Gangware,<sup>45</sup> and “Musical Iconography in the Sacred Cantatas of Johann Sebastian Bach” by Carl Simon.<sup>46</sup> Bodman’s study contains excellent narratives with the instrumental depictions, omitting, however, information pertaining to the functions of these instruments in society. Plante’s dissertation is most significant in the focus on the iconography of a single musical instrument within a specific era. Plante also provides another reference for formatting this type of research. Gangware is most significant in its consistent references to sixteenth and seventeenth-century icons. Although omitting plates and art reproductions, Gangware’s dissertation does list artist, source, and descriptions of the subject matter.

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<sup>41</sup> Ignacio Moreno, “Music and its Symbolism in Seventeenth Century Dutch Painting” (Ph.D. diss., University of Maryland at College Park, 1990).

<sup>42</sup> Kathryn Reiswig, “Performance Aspects of Selected Violoncello Concerti From the Period 1700-1820” (DMA diss., University of Missouri at Kansas City, 1985).

<sup>43</sup> Plante.

<sup>44</sup> Bodman.

<sup>45</sup> Gangware.

<sup>46</sup> Simon.

### Journals

Journals and bulletins devoted to iconographic topics are limited to association journals. The Répertoire Internationale d'Iconography Musicale (RIIdIM) is an international organization devoted to all aspects of musical iconography. Centered in the Graduate Center of the City University of New York, RIIdIM has established itself as a headquarters for communicating issues related to iconographic research. Their publication, Newsletter, regularly contains organizational activities, academic endeavors within the field, and current scholarly projects.<sup>47</sup>

The Percussive Arts Society's (PAS) Percussive Notes magazine and the National Association of College Wind and Percussion Instructors (NACWPI) NACWPI Journal are scholarly publications specifically devoted to percussion instruments and their research.<sup>48</sup> Both the Percussive Notes and NACWPI Journal include historical perspectives on percussion instruments, and less frequently, illustrations or other graphic depictions enhancing the articles. While other journals may include percussive icons, no domestic journal has established this area of study as a regular column. As a result, the following journal articles support the information pertaining to the use of sixteenth- and seventeenth-century percussion instruments as opposed to their consideration as a source of icons.

Journal articles regarding the use of sixteenth- and seventeenth-century percussion instruments other than timpani are rare. Articles, however, on timpani performance, tuning innovations, orchestral composition experiments, and construction from this era are readily available. "English Court Music Records, 1660-1714" by Andrew Ashbee is an extremely useful article on references to percussion instruments in various court records from the

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<sup>47</sup> Duckles and Keller, 111. RIIdIM: Répertoire Internationale d'Iconography Musicale/International Repertory of Musical Iconography, Research Center for Musical Iconography, City University of New York, B. B. Brook, ed. (New York, 1975/76) O. [in English].

<sup>48</sup> Percussive Notes The Percussive Arts Society (Terre Haute, Indiana, 1962-); NACWPI Journal, National Association of College Wind and Percussion Instructors, Northwest Missouri State University, Division of Fine Arts, (Kirksville, Missouri, 1952-).

seventeenth century.<sup>49</sup> “The Double, Double, Double Beat of the Thundering Drum: The Timpani in Early Music” by Edmond Bowles is a lengthy article discussing the mechanics, performance techniques, and methods of performing on sixteenth-century timpani.<sup>50</sup> Scholarly in his approach, Bowles is thorough in comparison to related materials and makes frequent references to previous publications detailing this research in iconography. “The Changing Function of the Timpani in the Baroque” by John Cooper provides a detailed explanation of the various functions of the timpani throughout Europe.<sup>51</sup> “Military Drumming in the British Isles: 1450-1900” by David Gilbert presents insight into British military drumming and its influences.<sup>52</sup> “The Development of the Timpani Through the Baroque Era” by James Lambert provides a historical background on the timpani from the guilds to the first orchestrations.<sup>53</sup> “Baroque Court and Military Trumpets and Kettledrums: Technique and Music” by Caldwell Titcomb discusses performance techniques as they apply to the Baroque era.<sup>54</sup>

Journal materials dealing with other sixteenth- and seventeenth-century percussion instruments in general are limited. These articles, however, do provide supplemental information on the use of sixteenth- and seventeenth-century percussion instruments. These articles include “Teaching Seventeenth-Century Concepts of Musical Form and Expression: An Aspect of Baroque Music” by George Buelow,<sup>55</sup> “Consort Playing in the

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<sup>49</sup> Andrew Ashbee, “English Court Music Records, 1660-1714,” The Musical Times (February 1987): 83-85.

<sup>50</sup> Edmond Bowles, “The Double, Double, Double Beat of the Thundering Drum: The Timpani in Early Music,” Early Music 19 (August 1991): 421-431.

<sup>51</sup> John Cooper, “The Changing Function of the Timpani in the Baroque,” Percussive Notes 24/5 (Winter 1985) 42-46.

<sup>52</sup> David Gilbert, “Military Drumming in the British Isles: 1450-1900,” Percussionist 8/1 (1970): 4-8.

<sup>53</sup> James Lambert, “The Development of the Timpani Through the Baroque Era,” Percussionist 10/1 (1972): 42-46.

<sup>54</sup> Caldwell Titcomb, “Baroque Court and Military Trumpets and Kettledrums: Technique and Music,” Galpin Society Journal 9 (June 1956): 56-81.

<sup>55</sup> George Buelow, “Teaching Seventeenth-Century Concepts of Musical Form and Expression: An Aspect of Baroque Music,” The College Music Symposium 27 (1977): 1-13.

Mid-Seventeenth -Century Worcester” by John Irving,<sup>56</sup> “The Baroque Suite” by Michael Ramey,<sup>57</sup> and “The Wind Band of Louis XIV’s Court” by James Thompson.<sup>58</sup>

### Dictionaries and Encyclopedias

Encyclopedic resources have provided additional insight. Significant contributions include “The Snare Drum,” by James Blades providing a brief overview of the development of the snare drum.<sup>59</sup> Charles Hind’s “Military Band” is a short article discussing the development of military music from early European armies beginning in 1400 to present day.<sup>60</sup> “Military Calls,” by Ed Tarr presents a commentary regarding the function of the trumpet and kettledrummers from the beginnings of the Imperial Trumpeter’s and Kettledrummer’s Guild [1623] until the nineteenth-century orchestrations.<sup>61</sup> Christoph Wolff’s “Germany: Art Music of the 17th Century”<sup>62</sup> and Percy Young’s “Collegium Musicum”<sup>63</sup> briefly discuss functions of sixteenth- and seventeenth-century percussion instruments.

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<sup>56</sup> John Irving, “Consort Playing in the Mid-Seventeenth-Century Worcester,” Early Music 12: (1984): 337-345.

<sup>57</sup> Michael Ramey, “The Baroque Suite,” Journal of Band Research 18 (1981): :36-47.

<sup>58</sup> James Thompson, “The Wind Band of Louis XIV’s Court,” Early Music 5 (1977): 26-29.

<sup>59</sup> Stanley Sadie, ed. The New Grove Dictionary of Music and Musicians 20 vols. (London, England: Macmillan, 1980), 18:266-269. s.v. “The Snare Drum,” by James Blades.

<sup>60</sup> Stanley Sadie, ed. The New Grove Dictionary of Music and Musicians 20 vols. (London, England: Macmillan, 1980), 12:310-316. s.v. “Military Band,” by Charles Hind.

<sup>61</sup> Stanley Sadie, ed. The New Grove Dictionary of Music and Musicians 20 vols. (London, England: Macmillan, 1980), 12:316-319. s.v. “Military Calls,” by Ed Tarr.

<sup>62</sup> Stanley Sadie, ed. The New Grove Dictionary of Music and Musicians 20 vols. (London, England: Macmillan, 1980), 7:270-272. s.v. “Germany: Art Music of the 17th Century,” by Christoph Wolff.

<sup>63</sup> Stanley Sadie, ed. The New Grove Dictionary of Music and Musicians 20 vols. (London, England: Macmillan, 1980), 4: 559-561. s.v. “Collegium Musicum,” by Percy Young.

### Sixteenth- and Seventeenth-Century Extant Sources

Primary extant sources containing sixteenth and seventeenth-century icons are essential to this study. These sources include Sebastian Virdung's Musica getutscht [1511],<sup>64</sup> Martin Agricola's Musica instrumentalis deudsch [1528],<sup>65</sup> Thoinot Arbeau's [Jehan Tabourot] Orchesographie [1585],<sup>66</sup> Michael Praetorius' Syntagma musicium [1615],<sup>67</sup> Marin Mersenne's Harmonie universelle [1636],<sup>68</sup> Athanasius Kircher's Musurgia universalis [1650],<sup>69</sup> and Fillipp Bonanni's Gambinetto armonico [1716].<sup>70</sup>

Sebastian Virdung (1465-c. 1520) wrote one of the first significant illustrated treatises on the importance of musical instruments and their history. His work, Musica getutscht und auszgezogen durch Sebastian Virdung, Priesters von Amberg, und alles Gesang ausz den Noten in die Tabulaturen diser benannten dryer Instrumenten, der Orgeln, der Lauten und der Flöten transferieren zu lernen gemacht [also known as Musica getutscht] was first produced in Basil in 1511.<sup>71</sup> The editions, reprints, and dissemination of the text support its significance as an extant source from sixteenth-century Western Europe. A second edition of Musica getutscht was printed in Augsburg before 1521. Twin translations appeared in Netherlandic and French ca. 1528 and 1568.<sup>72</sup> A Latin edition by Othmar Luscinius was published in Straasburg in 1536 and again in 1542. Martin Agricola edited Virdung's material and later expanded the contents in his Musica instrumentalis deudsch in 1545.<sup>73</sup> Modern facsimiles were printed in Eitner's Publikationen

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<sup>64</sup> Virdung.

<sup>65</sup> Agricola.

<sup>66</sup> Arbeau.

<sup>67</sup> Praetorius.

<sup>68</sup> Mersenne.

<sup>69</sup> Kircher.

<sup>70</sup> Bonanni.

<sup>71</sup> Nicholas Slonimsky, ed. The Concise Baker's Biographical Dictionary of Musicians (New York: Schirmer Books, 1988), 1308. s.v. "Sebastian Virdung."

<sup>72</sup> Virdung, 196. According to Beth Bullard, "surviving copies date from 1554 and 1568. Both were published by Jan van Ghelen the younger." Facsimile editions of the 1568 print, John Henry van Meer, ed., appeared in volume IX of Early Music Theory in the Low Countries (Amsterdam, 1973).

<sup>73</sup> Agricola.

älterer praktischer und theoretischer Musikwerke.<sup>74</sup> Beth Bullard's foreword to her 1993 translation supports the importance of Virdung's work by commenting that, "It contains a remarkable portion appearing in print for the first time. By virtue of its anteriority [Musica getutscht] acted as a major generative force in a proliferation of instrumental tutors during the sixteenth century."<sup>75</sup>

Musica getutscht is written as a dialogue between Virdung and a friend, Andreas Silvanus, attempting to gain knowledge of music through the study of musical instruments. Virdung's text is written in German and not the customary Latin. This purpose appears to be a pre-Reformation attempt at bringing music study to the general population by using a common vernacular. The contents provide insight into the instrumentation of the time and some idea of how the instruments appeared, including illustrations of musical instruments of the era grouped homogeneously, German keyboard tablature, German lute tablature, recorder fingering charts, and performance technique. The abundance of pictures and diagrams are intended to inform readers of the basic principles regarding the understanding and performance of instrumental music. Virdung encouraged principles of self-teaching by providing an illustration, digression to opening chapters, and suggesting an order of three instruments in progressive study.

One primary significance is the focus of Virdung's treatise relative to percussion instruments. Virdung clearly categorized some percussion instruments and provided justification for the omission of others. This focus allows some insight into the formation of serious music study and prominence of amateur instrumentalists. This omission was noted by Beth Bullard.

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<sup>74</sup> Robert Eitner, Publikationen älterer praktischer und theoretischer Musikwerke [1882] Volume 11, (reprint trans. L. Schrade, Berlin: Kassel, 1931; reprint trans. K.W. Meimöller, Berlin: Kassel, 1970).

<sup>75</sup> Virdung, 3.

The author makes a deliberate omission from his list [of instruments] the allegorical ‘instruments of Jerome,’ ancient instruments that had been previously mentioned by writers of classic antiquity, and contemporary instruments that were being used for playful purposes or for other functions not worthy of the high art of Music, for example whistles, drums, and hunting horns. Virdung thus accepts for consideration in the treatise only recognizable instruments – those ‘that any peasant might know of and call by name’ – that were actually in the cultural milieu at the time (in his words, *bei uns*) and that ‘serve sweet melody.’<sup>76</sup>

Virdung’s list of percussion instruments includes an anvil and hammers, chime bells, clapper bells, military kettledrums, drums, small drums, xylophones, and cymbalum [cymbals]. A total of thirteen illustrations are devoted to percussion. All of the above are illustrated with the exception of the xylophone. Virdung grouped the xylophone with various contraptions considered “tomfoolery” (*gölkel spill*) [literally “juggler’s play] and claims “it bothers [him] to even name them.”<sup>77</sup>

Little is known about Virdung’s life. Sebastian Virdung was presumed to have been born in Amberg in 1465, a date which is postulated on the basis of his appointment in April 1489 to a position reserved for clergymen past the age of twenty-four.<sup>78</sup> Previously, records of purchases, bills, and court records provide evidence to Virdung’s study at Heidelberg, positions as a priest in Eichstätt, and as a member of the court chapel in Heidelberg.<sup>79</sup> After the publication of the treatise in 1511, determining whether Virdung was living or dead is difficult. The second printing of *Musica getutscht* [1521] implies Virdung was present in Augsburg, but fails to give any definitive record.<sup>80</sup>

Martin Agricola was an important music theorist and prolific composer. Born in Schwiebus [Brandenburg] on January 6, 1486, Agricola is credited with being the first to propose leaving traditional tablature styles of notation for a modern notational system. The

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<sup>76</sup> *Ibid.*, 4.

<sup>77</sup> Virdung, 119.

<sup>78</sup> *Ibid.*, 25.

<sup>79</sup> Slonimsky, 1308.

<sup>80</sup> Virdung, 35.

birth name, Sore, was abandoned for the Latin “Agricola” to indicate a peasant origin. Agricola held positions as a private music teacher (1519) and later as cantor of the First Lutheran Church in Magdeburg (1525). Agricola held these positions until his death on June 10, 1556.<sup>81</sup> Agricola’s numerous publications on theory, history, and the instruments of music have been sources for musicological research in the sixteenth century.

Agricola’s Musica instrumentalis deutsch was first printed in 1528, revised and expanded in 1545, and later reprinted in its current edition by Leipzig in 1896.<sup>82</sup> Musica instrumentalis deutsch is patterned after Virdung’s Musica getutscht (1511) in its illustrations and descriptions of musical instruments. Percussion historian Gordon Peters described Agricola’s work as “containing new material and is written as couplet verse in the German vernacular.”<sup>83</sup>

Another source regarding sixteenth-century percussion was written by Jehan Tabourot (1519-1595) under the pseudonym Thoinot Arbeau. Arbeau’s Orchesographie (1585) is written in the form of an imaginary dialogue between the author and a pupil (Capriol) about dancing.<sup>84</sup> The first English translation was published by Cyril W. Beaumont in London in 1925.

Set in two parts, Arbeau’s Orchesographie includes references to snare drums, snare drum notation, dance techniques, and dance performance technique. The first section deals primarily with notation and proper performance of dance music. Here Arbeau included etchings of drums, players, and the proper execution of musical figures. The second part contains directions for performing proper dance figures, musical notation, and choreography. Drawings and sketched illustrations also are included in the first-half of the

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<sup>81</sup> Ibid, 8.

<sup>82</sup> Agricola.

<sup>83</sup> Peters, 23.

<sup>84</sup> Arbeau, i. The Dover edition lists the date as 1589. The 1925 edition, however, lists the date as 1585. Thoinot Arbeau, Orchesographie. (Longres: Johann des Preyz, 1589; reprint trans. Cyril W. Beaumont, London: Cyril W. Beaumont, 1925), i.



book. Percussion historian James Blades described the illustrated contents of Arbeau's text:

Arbeau's Orchesographie (1588) gives a clear description and detailed drawings of the pipe and tabor, deep side drum, tambourine, German calvary timpani with rope tensioning and a trapezoid triangle.<sup>85</sup>

Percussion references are frequent in Arbeau's text. Rattles, castanets, pipe and tabor, deep side drum [snare drum], small drum, and tambourines are mentioned in the text. Illustrations depict, however, only the pipe and tabor, deep side drum, and German calvary timpani. Directions for discerning tempos are listed with martial traditions and specific rhythms are given in accordance with related dances.

Arbeau, Cantor of Langres, was born in Dijon on March 17, 1520, and died in Langres on July 23, 1595.<sup>86</sup> Aside from positions as cantor with the Roman Catholic Church, little is known about Arbeau other than a talent as a dance-master. The reprint of Orchesographie contains Laure Fonta's account of sixty-nine-year-old Arbeau demonstrating liturgical dances to the Church of France in 1589.<sup>87</sup>

Michael Praetorius contributed illustrated writings, musical compositions, and detailed descriptions of musical instruments in Syntagma musicium (1615).<sup>88</sup> Born in Kreuzberg, Thuringia on February 15, 1571 as Michael Schulthesis, Praetorius' name was Latinized while attending the Latin school of Torgau. Praetorius studied organ in Frankfurt, and by 1612, was in the service of the Duke of Braunheim. In 1612, Praetorius was appointed Kapelmeister in Wolfenbüttel and remained in this position until his death on

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<sup>85</sup> Blades, 189.

<sup>86</sup> Arbeau's birth and death dates are given as March 17, 1520 - July 29, 1595 in the preface to the first edition by Julia Sutton, and based upon Pierre Perrenet's Etienne Tabourot, sa famille et son temps (Dijon: n. p. 1926).

<sup>87</sup> Arbeau, 5-6.

<sup>88</sup> Praetorius.

February 15, 1621. As a prolific composer and writer, Praetorius' most significant contribution was between 1614 and 1620 in his Syntagma musicium.<sup>89</sup>

The Syntagma musicium contains the most accurate depictions of percussion instruments from the seventeenth century. A complete edition of Praetorius' work is issued in twenty-one volumes and is edited by Friedrich Blume. Percussion historian James Blades explained the importance of Praetorius' work because of the inclusion of a scale:

Praetorius heads his class of percussion with drums (kettledrums and tabors) and includes triangles, bells, xylophones, tambourines, pairs of military kettledrums (German with screw tensioning), two side drums (with snares), and an anvil. He also includes a scale (Brunswick foot) in all of his drawings.<sup>90</sup>

The significance of this same work also was summarized by Nicholas Slonimsky:

Syntagma musicium, [Praetorius'] major work, printed in three volumes: Volume I, part I (Wolfenbüttel, 1614) is a historical and descriptive treatise in Latin on ancient and ecclesiastical music, and ancient secular instruments. Volume II (Wolfenbüttel 1618; Appendix 1620) written in German in five parts and an Appendix, is the most important extant source of information on musical instruments of the period, describing their form, compass, tone quality, etc., . . . the Appendix contains forty-two woodcuts of the principal instruments enumerated.<sup>91</sup>

The title page to the second volume inventories its contents by scope, format, and limitations of his treatise. Praetorius' homogeneous classification of instruments is through the performance technique or "sound generation." The result is two instrumental classes each with two subclassifications: wind and non-wind. The classes, in turn, are divided

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<sup>89</sup> *Ibid.*, v.

<sup>90</sup> *Ibid.* Praetorius includes the Brunswick Foot with each of the illustrations. According to Francis Galpin in the notes accompanying Nicholas Bessarhoff's Ancient European Musical Instruments (New York: October House, 1964), p. 353, One Brunswick foot equals 11.235 inches or 285.36 millimeters. A Brunswick inch (one-twelfth of a Brunswick foot) is equal to .93625 English inch or 23.78 millimeters.

<sup>91</sup> Slonimsky, 992.

into specific subcaptions. These captions include wind instruments blown either with a special mouthpiece, bellows, or reed and stringed instruments strung either with gut or type of metal. Praetorius also distinguished between haut and bas [loud and soft, respectively] instrumental groupings and suggests instrumentation for a proper consort.<sup>92</sup>

Percussion instruments are itemized in section eleven of the first part. The instruments are classified in the second band under nonwind, nonstringed instruments. This section is further divided into those instruments struck with iron or wood, and those in the shape of a bowl. Instruments beaten with an iron or wooden striking implement include *Tympanum* (timpano or kettledrums), *Crepitaculum* (triangle), and *Clavitympanum* (“straw fiddle”) [xylophone]. Those described as in the shape of a bowl are *Campanae* (bells), *Tintinnabula* (bell-chimes), *Cymbala* (cymbals), *Sistra* (rattles), and *Nolae* (jingles).<sup>93</sup> Each of these instruments is illustrated to scale.

The encyclopedia Harmonie universelle (1636) was written by French theorist Martin Mersenne.<sup>94</sup> Born in La Soutlière on September 8, 1588, Mersenne died in Paris on September 1, 1648. Harmonie universelle includes graphic illustrations of percussion instruments but with no scale. The significance of this treatise is marked by the expansion of Praetorius’ illustrated subjects to include castanets, triangles with rings, two ancient cup-cymbals, a pair of large cymbals, Egyptian kettledrums, braced side drums, and a tambourine with jingles.<sup>95</sup> Equally significant is the over seventy pages of information Mersenne has devoted to the subject of percussion.

The Harmonie universelle contains seventeen books. Seven of these books are concerned with musical instruments. From these seven, four books are devoted to strings, one to wind instruments, one to the organ, and the last pertains to percussion instruments.

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<sup>92</sup> Praetorius, 28-29.

<sup>93</sup> Ibid., 23.

<sup>94</sup> Mersenne.

<sup>95</sup> Blades, 189.

Mersenne's treatise, however, separates xylophones for inclusion with harps and keyboard instruments. Roger Chapman's introductory notes explain the reasoning behind this alternate classification is "because of the rudimentary keyboard which strikes one xylophone and [versus] the hammering of the other."<sup>96</sup>

The "Seventh Book on Percussion Instruments" begins with a list of thirty-one propositions. Twenty-nine of these are actually devoted to percussion instruments. While some description of drums, castanets, and cymbals is included, the majority of the chapter is devoted to the specifics of church bells. In the subsequent pages, each proposition is restated and followed by supporting paragraphs. The first proposition and paragraphs contain an evaluation placing church bells as the "best percussion instrument because it is the most pleasing to the ear."<sup>97</sup> The next twenty propositions are devoted to the composition, size, and functions of church bells. The remaining seven discuss castanets, cymbals, Jew's Harps, drums, drum sizes, drum notation and the methods of beating, and construction, respectively. The final two propositions discuss other musical treatises and give "eulogies of men illustrious in theory and the practice of music."<sup>98</sup> Sixteen illustrations, four musical examples, twelve tables, and two measured drawings accompany the text.

Athanasius Kircher's Musurgia universalis sive ars magna consoni et dissoni (Musica universalis, 1650) contains illustrations of tabors, cymbals, and triangles.<sup>99</sup>

Kircher's other musical treatises Oedipus aegyptiacus and De arte magnetica concern music

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<sup>96</sup> Mersenne, 1.

<sup>97</sup> Ibid., 500.

<sup>98</sup> Ibid., 557-68.

<sup>99</sup> Athanasius Kircher, Musurgia universalis sive ars magna consoni et dissoni (Rome: n.p., 1650).

hieroglyphics and musical treatments to cure tarantism.<sup>100</sup> Musica universalis is the only one of Kircher's three music treatises containing illustrations of musical instruments.

Kircher, a Jesuit scholar, was born near Fulda, Germany on May 2, 1601 and died in Rome on November 27, 1680. Kircher attended Jesuit seminary in Fulda (1612-18), was ordained in Paderborn, and studied philosophy and theology in Cologne (1622), Koblenz (1623), and Mainz (1624-28). Kircher held teaching positions in theology at the University of Würzburg, Lyons, Avignon, and Rome. Principal works include the Latin compendium Musica universalis.<sup>101</sup> Even though this treatise did not share the same popularity as Praetorius or Mersenne, Kircher's writing did serve as reference for subsequent works by other authors.

Jesuit priest Filippo Bonanni, born in Rome in 1658, succeeded Athanasius Kircher as curator of a collection of writings, icons, and other artifacts of music belonging to the Jesuit College. The collection, named after its originator Athanasius Kircher, contains the two volume Musica universalis (1650). Bonanni was believed to have been inspired by the engravings and other items in this book to develop a comprehensive list of the Kircher collection which he named Gabinetto armonico.<sup>102</sup>

The Gabinetto armonico was first printed in 1716 and was published in a "final form" in 1723. Revised and annotated in French in 1776, the latter includes the original version of the Bonanni commentary. Often Bonanni made reference to the Harmonie universelle (1636) by Mersenne in describing ethnic instruments or performance practices of uncommon instruments.<sup>103</sup> The Syntagma musicum (1619) by Michael Praetorius

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<sup>100</sup> Athanasius Kircher, Oedipus aegyptiacus (Rome: n. p., 1652 -54); Kircher, Manges, sive De arte magnetica (Rome: n. p., 1641). Tarantism is a nervous disorder presumed to have been caused by the bite of a tarantula. Supposedly the performing of various tunes calmed the victim, and arrested the problems of the disease.

<sup>101</sup> Slonimsky, 655.

<sup>102</sup> Bonanni, v.

<sup>103</sup> Mersenne.

(1571-1621) is not referred to, even though Praetorius' writing would have been a valuable resource to the compilation of his project.<sup>104</sup>

Each instrument appears with a human figure in an attempt to display performance technique. Because no scale is included with the subjects, the representation appears to have focused on simply recording an impression of the instruments as a concept without concern for detail. Discerning the actual size and performance technique is difficult because of the variance between figure and instrument and between different depictions of the same instrument. As a result, observational reliance regarding sizes, shapes, and instrumental performance techniques is problematic.

The importance of Bonanni's work is in the plethora of instruments contained in the pages of the Gabinetto armonico. Bonanni's work is the most comprehensive of its time with over seventy-eight wood prints depicting twenty different kinds of percussion instruments. European, African, and Asian instruments of both art and folk music are included.

### Summary

The available materials incorporating musical iconography are broad in scope. Few are dedicated to instrumental studies. As a result, specific instrumental depictions are spread through numerous iconographic collections in as many related subjects. The sources including information on percussion instruments cite written documents and tend to neglect works of visual art. Those documents specifically devoted to iconography focus on themes other than specific instrumental histories. Any study devoted to a particular instrumental history in graphic art is reliant on the examination of a number of resources.

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<sup>104</sup> Bonanni., v.

Specifically, written information regarding the use of sixteenth and seventeenth-century percussion is not as abundant as information concerning percussion in previous or subsequent centuries. This study augments existing information by examining sixteenth and seventeenth-century Western European extant sources and secondary sources containing percussive icons. This information has been synthesized and presented in descriptive text pertaining to the accompanying plates. The results of the examinations enhance the perspectives regarding early percussion performance techniques, established a sense of prominence relating to the frequency of the percussive subjects in art, and most important, provide essential information on the use of the sixteenth- and seventeenth-century percussion instruments.

CHAPTER III  
SIXTEENTH- AND SEVENTEENTH CENTURY WESTERN EUROPEAN  
PERCUSSION INSTRUMENTS IN GRAPHIC ARTS

Bells

The word *bell* is a generic term universally applied to instruments capable of producing a naturally sonorous sound or resonance. The general application of the term “bells” is associated with various types of wooden idiophones as well as large definite-pitched carillons, metallophones, and church bells. As a result, numerous instruments capable of resonance are identified as “bells.”<sup>105</sup> Music historian Percival Price provided a commentary regarding the development of the designation.

While the word “bell” is often loosely applied to any device that produces a metallic sound of gradual decay, a true bell is not so long in relation to its diameter as to be considered a tube closed at one end (tubular bells or chimes), nor so short as to form a shallow pan (cymbals and gongs). The term “bells” often refers to the *glockenspiel* because of its bell-like timbre; this usage originated in the USA and has become universally recognized though it has led to confusion with orchestral bells.<sup>106</sup>

The liberal application of this term makes identification of a single precursor to the bell extremely difficult. For the purposes of this study, the entries for this section are limited to instruments possessing the following: (1) the characteristics of a hollow metallophone emitting sound as a result of being struck,<sup>107</sup> (2) the form of the instrument appearing as a cup or hollow spherical shape, and, (3) those instrument types contained in

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<sup>105</sup> Blades, 118.

<sup>106</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).1: 203-204. s.v. “Bell,” by Percival Price and James Blades.

<sup>107</sup> *Ibid.*, 203.



the extant sources for this study. Instruments identified in secondary sources as a precursor to a type of bell are included in text. Sources containing precursorial instruments and those that have since been considered obsolete also are included. Metallophones recognized as contributing to the development of both the bells and cymbals are omitted from this section.

Additional features distinguish the bell from gongs, cymbals and other metallophones. Bells transfer vibration from the center to the rim while gongs yield maximum vibration at the center. Gongs are mounted at the rim contrary to bells which are mounted at a central nodal point. Additional information related to the delineating characteristics is located in the “Cymbals and Gongs” section of this document.

Historically, as a result of the generic application of vocabulary, the identification of a single precursor to the bells is difficult to establish. The Roman and Greek cupped-shaped varieties of bells were distinguished as *tintinnabulum*. Tintinnabulum is an onomatopoeic Latin term for “tinkling bells.”<sup>108</sup> The moniker, however, also is evidenced with bells from the sixteenth and seventeenth centuries. Winternitz states that bells described as tintinnabula or cymbala played a large role in the medieval instrumentarium.<sup>109</sup> *Eschelle* is another term typically applied to small circular bells from the medieval period.<sup>110</sup> The word “cymbal” is found in association with metallophones from this era. Blades affirmed that “where today we use the word cymbal for a metal disc with a hollow center, the old name for chime bell was cymbal. In medieval Latin, a shallow-cupped bell was defined [as] *cymbalum*.”<sup>111</sup> Virdung and Agricola describe an illustration of ten bells as

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<sup>108</sup> Arthur Bigelow, *Carillon* (Princeton, New Jersey: Princeton University Press, 1948), 28.

<sup>109</sup> Emanuel Winternitz, *Musical Instruments and Their Symbolism in Western Art* (New Haven, Connecticut: Yale University Press, 1979), 135.

<sup>110</sup> Francis Galpin, *A Textbook of European Musical Instruments* (Westport, Connecticut: Greenwood Press, 1956), 43.

<sup>111</sup> Blades, 200.

*glocken oder zimbeln* [bells or antique cymbals].<sup>112</sup> Similarly, Mersenne identifies a keyboard-activated carillon as *clavicymbalum*.<sup>113</sup> According to Blades' Percussion Instruments and Their History, Praetorius identified an organ stop producing a bell sound as *zimbel*.<sup>114</sup>

An interesting correlation exists between the word "cymbala" and the modern instrument identified as chimes. The sixteenth-century term refers to bells from this era that are assembled in similar fashion as modern chimes. Price stated the instrument was employed in melodies "adding brilliance to concerted music" as early as the tenth century.<sup>115</sup> The Western European cymbala consisted of four to twelve bells mounted on a frame and struck with hammers. Large wooden keys were adapted to the twelfth-century cymbala to alleviate fatigue associated with playing the larger bells. This type of mechanism was adopted for tower bells to consequently form modern carillons.<sup>116</sup>

The musical absence of chime-bells after the fourteenth century is well documented. While a popular subject in medieval visual art, chimes and bells almost disappear from writings and icons of the subsequent centuries. Ed Gangware remarked on this occurrence.

Although there are many instances of chime-bells in Medieval art, the actual use of this instrument is difficult to ascertain. There seem to be no reference to this instrument being used in a musical manner and, with the exception of early illustrations with King David, they do not appear in any group pictures of musicians of the Renaissance and Baroque periods. As if to verify this fact, the

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<sup>112</sup> Agricola, 59, sig., H3.

<sup>113</sup> Mersenne, 540. Price contends in the article in Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).1: 352 that the growth of the organ made the clavicymbala obsolete and the name was applied to another instrument presumed to have bell-like qualities: the harpsichord. Thus the origin of the Italian and Latin names for the instrument "clavicembalo" and "cembalo," respectively.

<sup>114</sup> Blades, 200.

<sup>115</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).1: 352. s.v. "Chimes," by Percival Price.

<sup>116</sup> *Ibid.*

mention of chimes is almost nonexistent after the fourteenth and fifteenth centuries. It is important to realize that the large church bells were more popular than ever during this period, with all the new cathedrals and large churches considering them standard equipment and using them for the many reasons that have already been mentioned.<sup>117</sup>

The carillon, however, has been documented in Western Europe since the sixteenth century. “In both its hand-played and its automatic forms, the carillon evolved from the chime in the Low Countries in the sixteenth and early seventeenth centuries.”<sup>118</sup> Bigelow concurred in citing the application of tower bells chiming the hour as the largest contribution leading to the development of the carillon.

While the chiming of simple melodies on a few small bells might have led eventually to the playing of airs from the belfry, it is doubtful if the art of the carillon would have evolved as soon as it did if bells had not been greatly influenced by the tower clocks appearing in more progressive communities.<sup>119</sup>

Bigelow contended that all Western European countries had tower clocks that chimed the hour by the year 1400. “In the seventeenth and eighteenth centuries about one hundred fifty carillons were made; about one hundred twenty were installed in the Low Countries and the rest in territories from Portugal to Russia.”<sup>120</sup> Similar to the church bells, Bigelow and Price indicated the carillon was used in festivals, celebrations, and for the expression of civic pride.

The keyboard mechanism subsequently applied to the carillon had originated with a device for activating the bells of the tower clocks in the thirteenth century. Sachs stated the mechanism was a “cogwheel in the works caused the hammers to strike the tuned bells in a

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<sup>117</sup> Gangware, 124.

<sup>118</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984), 1: 308. s.v. “Carillon,” by Percival Price.

<sup>119</sup> Bigelow, 41.

<sup>120</sup> Stanley Sadie, ed., *The New Grove*: 1: 308. s.v. “Carillon,” by Percival Price.

prescribed melodic sequence.”<sup>121</sup> Clock towers in northern Europe display evidence of experimentation with the machinery to develop a pinned wheel for activating the hammers comparable to the spiked barrel of a music box. “After 1500, if not earlier, these carillons could be disconnected from the clock and the rotating cylinder and played by hand from a keyboard, and, after 1600, even by foot.”<sup>122</sup>

Music historians Price, Sachs, Harrison, and Bigelow offer insight regarding the development of the bells. The musical development of the instruments identified as Western European bells may have originated from rattles and similar noise-makers. Price claimed dried pods and loosely hung clusters of sonorous items in combination with devices associated with animals developed an interest in the items as musical instruments.<sup>123</sup>

The bell’s cultivation as a musical instrument developed from its having been worn by people and shaken as a rhythm instrument to emphasize body movements in temple dances. Later it was hung on a frame singly or in small groups and used as a tone-color instrument in court orchestras and was played by striking; from this it developed into an instrument of fixed scale comprising bells in a tuned series.<sup>124</sup>

The open bell was first spread by Celtic missionaries who from the fifth century to the ninth placed handbells, mostly forged of iron, in religious houses across central and northern Europe from Germany to Iceland. Cast bells began to be manufactured by the Benedictines in Italy by the end of the sixth century, and their use, first in handbell size but then larger, spread north and west across Roman Catholic Europe.<sup>125</sup>

Sachs provides additional information into the development and adaptation of the bells.

The [early European] bell with a clapper was shaped like a beehive, similar to Chinese bells; it was small and thin with a weak, whimpering tone. The modern

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<sup>121</sup> Curt Sachs, *The History of Musical Instruments*. (New York: W. W. Norton, 1940), 378.

<sup>122</sup> *Ibid.*

<sup>123</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).1: 209. s.v. “Bell,” by Percival Price and James Blades.

<sup>124</sup> *Ibid.*

<sup>125</sup> *Ibid.*, 212.

tulip form was introduced about 1200. A certain quantity of the early bells are preserved; the oldest dates seem to be 1098 from Drohndorf in Germany, 1106 from Pisa, 1202 from Frontenailles in Normandy. From that time on, the size increased continuously up to the fifteenth century.<sup>126</sup>

Bigelow suggested the bell was perfected in size and tone by a series of founders during the fifteenth century. This refinement of bell-founding is concurrent with the development of the carillon.<sup>127</sup> Harrison indicated the art of bell-founding was active in thirteenth-century England based on a quotation from the Calendar of Patent Rolls (1317-21): “In the following year a grant of 1284 by Bishop Qivil to a bell-founder for making bells and repairing the organ and the clock was confirmed by Royal Patent.”<sup>128</sup>

A depiction of a carillon is contained in “Proposition XXI,” (PLATE 1.1) of Harmonie universelle (1636) by Marin Mersenne (1588-1648). The representation is identified by Mersenne as the “Carillon of the tower of the Church of Notre Dame at Anvers.”<sup>129</sup> The depiction is of a figure seated at a mechanism resembling a loom. Sixteen parallel boards are portrayed in a keyboard fashion above ten visible footboards that are arranged in similar order. Each of the boards appears to be connected to a rope or cord which, in turn, connects to one of thirty-three bell clappers. The bells are graduated in size relative to each other. The absence of a scale inhibits an exact account of the dimensions of the instrument, apparatus, or location.

The performance technique of this instrument consists of the player depressing one of the hand or foot boards. This action moves the rope to draw the clapper to the edge of the bell. Mersenne suggested the employment of wooden clapper or the application of pieces of cloth to adjust the timbrel qualities of the instrument.

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<sup>126</sup> Sachs, 279.

<sup>127</sup> Bigelow, 46.

<sup>128</sup> Frank Harrison, Music in Medieval Britain (London: Routledge and Kegan Paul, 1958), 206.

<sup>129</sup> Mersenne, 540.

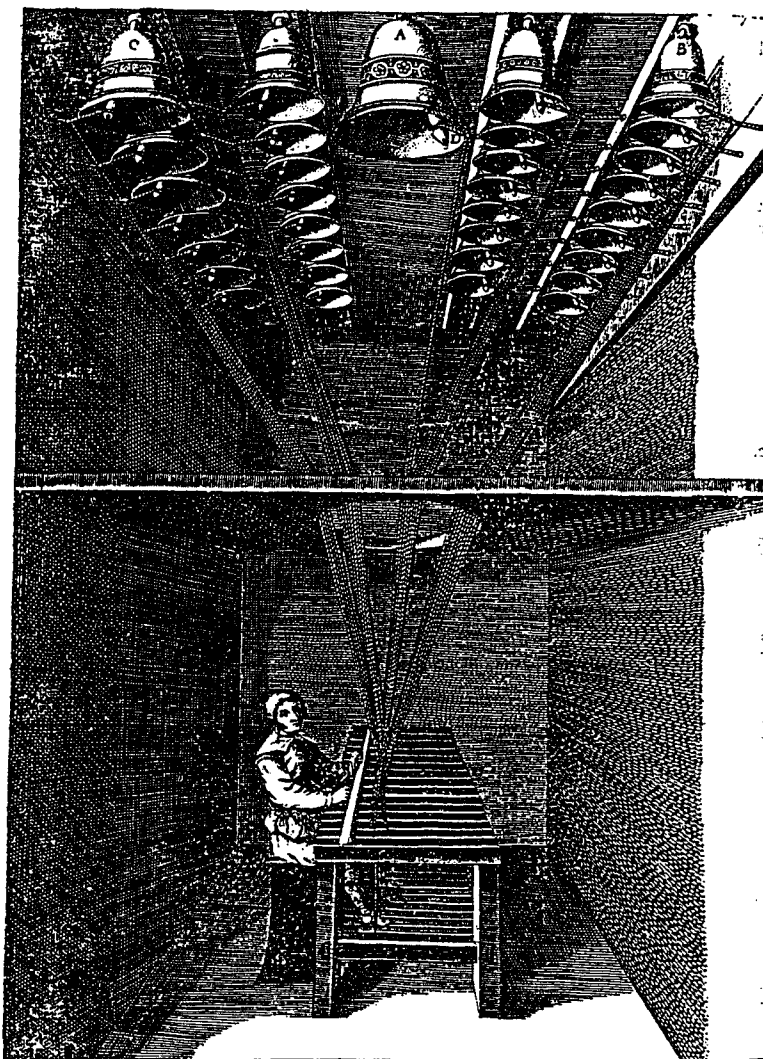


PLATE 1.1 **Carillon** Mersenne, 1635. This is Mersenne's representation of the carillon at the Church of Notre Dame at Anvers.

Reprinted by Permission from Kluwer Academic Publishers.  
Mersenne, Martin. *Harmonie universelle*. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 106.

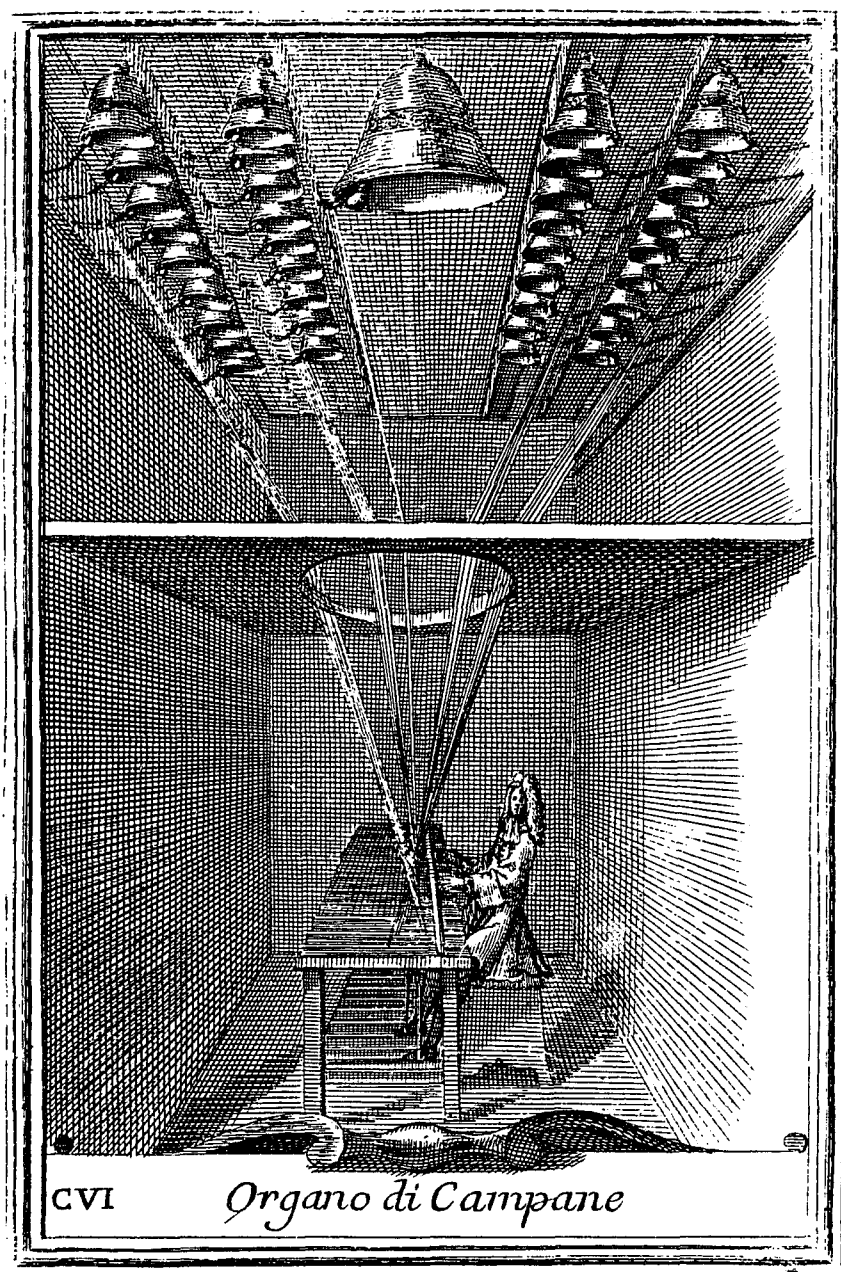


PLATE 1.2 **Organo di Campana** Bonanni, 1716. A portrayal of a carillon. Pedalboards were a late seventeenth-century adaptation to the instrument.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 106.

The musical application of the carillon is certain. As previously stated, the carillon is capable of performing melodies in a homophonic texture. While monophony was possible, Mersenne inferred a harmonic accompaniment by delineating those bells that produce darker timbres and lower pitches. “[The labels] ‘ABC’ show the greatest bells which make the lowest tones, according to their size.”<sup>130</sup> This type of recognition is supported with a subsequent statement that the performer “makes the bells sound for producing whatever melody or music that pleases him.”<sup>131</sup> The passage supports a monophonic texture by Mersenne’s identification of the singular “melody.” In addition, no source gives credence to the idea that sixteenth-century authors had a universally developed vocabulary specific enough to communicate the delineation of textures beyond Mersenne’s “melody” and “music.”

Bonanni’s Gabinetto armonico (1716) contains a representation that bears a striking resemblance to Mersenne’s PLATE 1.1. Bonanni’s “Organo di Campane,” or “keyboard bells”<sup>132</sup> is located in PLATE 1.2.<sup>133</sup> The representation appears to be a direct reversal of the Mersenne woodcut; closer examination, however, proves otherwise. The Bonanni exceptions are the detail of the figure, the cord configuration, and the presence of thirty-seven bells instead of the thirty-three as exhibited in Mersenne. Comparable to Mersenne, Bonanni displays a figure seated at a mechanism resembling a loom. An indistinguishable number of parallel boards are portrayed in a keyboard fashion above nine visible footboards that are arranged in similar order. Again, each of the boards appears to be connected to a rope or cord. Each cord, in turn, is connected to one of thirty-seven bell clappers. The bells are graduated in size relative to each other. As with Mersenne, the

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<sup>130</sup> Ibid., 539.

<sup>131</sup> Ibid.

<sup>132</sup> Lang, 18.

<sup>133</sup> Bonanni, 106.



absence of a scale inhibits an exact account of the dimensions of the instrument, apparatus, or location.

The musical applications and performance techniques appear to be consistent with the information previously listed. Specifically, the figure depresses one of the hand or foot boards. This action moves the rope to draw the clapper to the edge of the bell resulting in a tone. The absence of any information, visible or explained in the accompanying text, suggests the instrument was employed in a manner consistent with the other sources.

The general function and musical application of bells have changed in conjunction with the development of the instrument. Galpin suggested small bells were relegated to ornamenting clothing. Larger bells, however, were said to have been brought from “Nearer Asia and used in worship traditions associated with Celtic traditions.”<sup>134</sup> Price suggested the “primary development of the bell in Europe was as a signaling device [for battle and worship].”<sup>135</sup> In addition, Price suggested the bells replaced the “semantron” as a call to worship. Subsequent applications include chiming of the hour, incipits of chant lines, and eventually, the introduction of the carillon.<sup>136</sup> Gangware reported the large church bells functioned as signals for mass, public celebration, mourning of a death, and curfews. Other types of bells were used on ships, announced meals, and occasionally were intended to frighten away evil spirits.<sup>137</sup>

The early associations of rattles, semantrons, and other sonorous items with religious worship may have contributed to the acceptance of the mature form of the bell as an instrument for religious purposes. Sachs credited the use of clappers and wooden “semanterions” [semantron] as a primitive signal for persons wishing to enter a church

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<sup>134</sup> Galpin, 43.

<sup>135</sup> Stanley Sadie, ed., *The New Grove*: 1: 212. s.v. “Bell,” by Percival Price and James Blades.

<sup>136</sup> *Ibid.* The semantron is a wooden board knocked at the door of a monk to call for worship. An illustration is included below among the Bonanni collection.

<sup>137</sup> Gangware, 120.

gate.<sup>138</sup> Price cited the use of a semantron in eastern European churches as a signal or call to worship. The transfer from signaling on wood to bells also is addressed by Price. “As they were gradually adopted, however, the custom of ‘knocking’ was transferred to them [bells] by fastening the bell stationary and pulling the clapper to strike it.”<sup>139</sup>

Bonanni included five depictions of semantrons in Gambinetto armonico with PLATES 1.3, 1.4, 1.5, 1.6, and 1.7. PLATE 1.3, titled “Campana delli Greci,” displays a long wooden plank resting on the shoulder of a figure. The plank is held into position by a string clutched between the teeth of the figure. Two hammers are visible, one in each hand, on either side of the plank. The accompanying citation states that the instrument was employed in the early Western Church before the eleventh century. The instrument is described as a wooden plank “which was struck with two mallets in such a way as to give distinct musical sounds.”<sup>140</sup>

Various sized bells are documented in the subsequent plates of Gambinetto armonico. A smaller version of the semantron is illustrated in Bonanni’s PLATE 1.4. Identified as a “small semanterion,” the instrument in this plate produces sound through the same principles as previously described. The representation depicts a figure suspending the instrument by a rope in the left hand while striking with a hammer in the right hand. Harrison described the composition of the subjects as a wooden plank struck with “an iron hammer.”<sup>141</sup> Although relatively smaller than the previous depiction, the absence of a scale constrains efforts to provide exact dimensions.

A relatively longer semantron is presented in PLATE 1.5 of Bonanni’s collection. This depiction includes a figure supporting a long wooden plank by a centrally positioned handle grasped in the left hand. A spherical-headed mallet, similar to the implement

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<sup>138</sup> Sachs, 278.

<sup>139</sup> Stanley Sadie, ed., The New Grove: 1: 213. s.v. “Bell,” by Percival Price.

<sup>140</sup> Bonanni, 109.

<sup>141</sup> *Ibid.*, 110.



PLATE 1.3 **Campana delli Greci** Bonanni, 1716. An etching depicting a wooden idiophone substitute for metal bells called a semanterion.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 109.

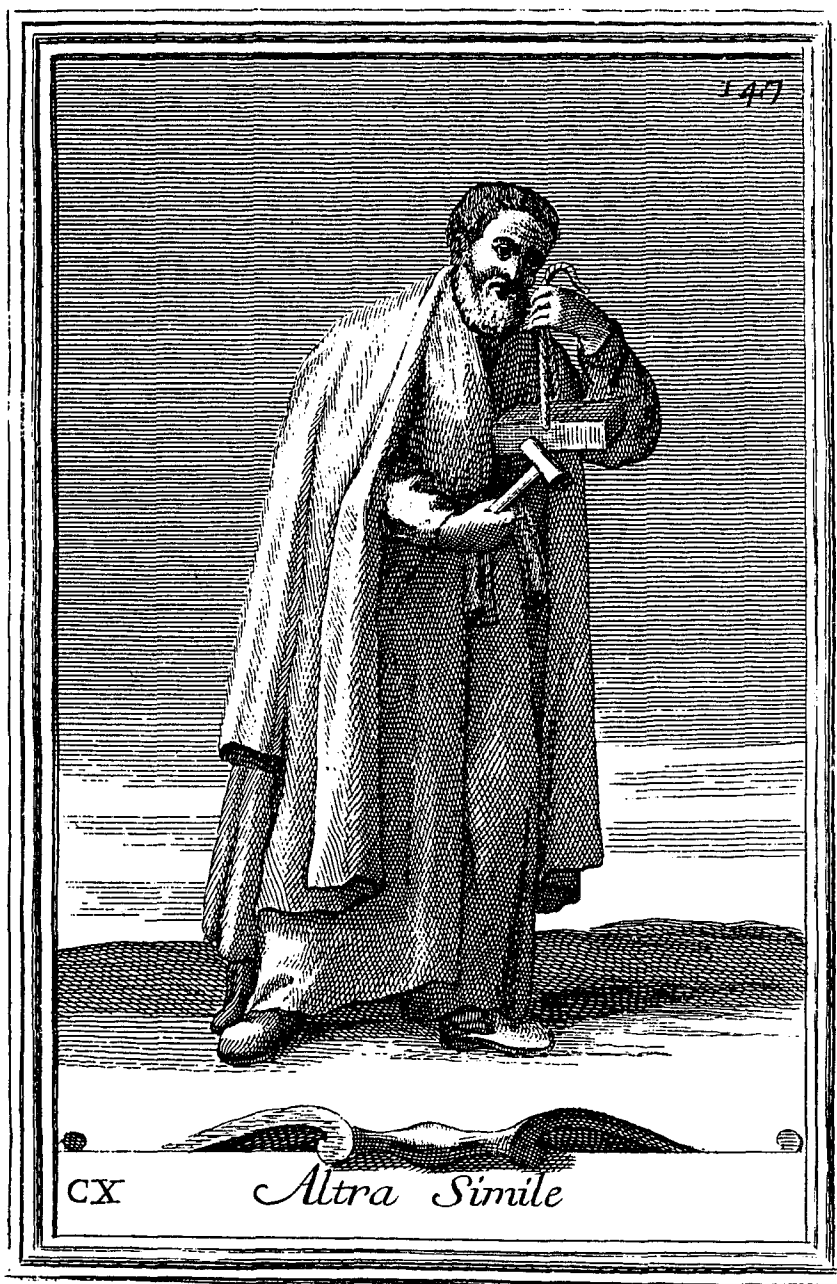


PLATE 1.4 **Altra Simile** Bonanni, 1716. A depiction of a smaller wooden idiophone substitute for metal bells called a semanterion.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 110.

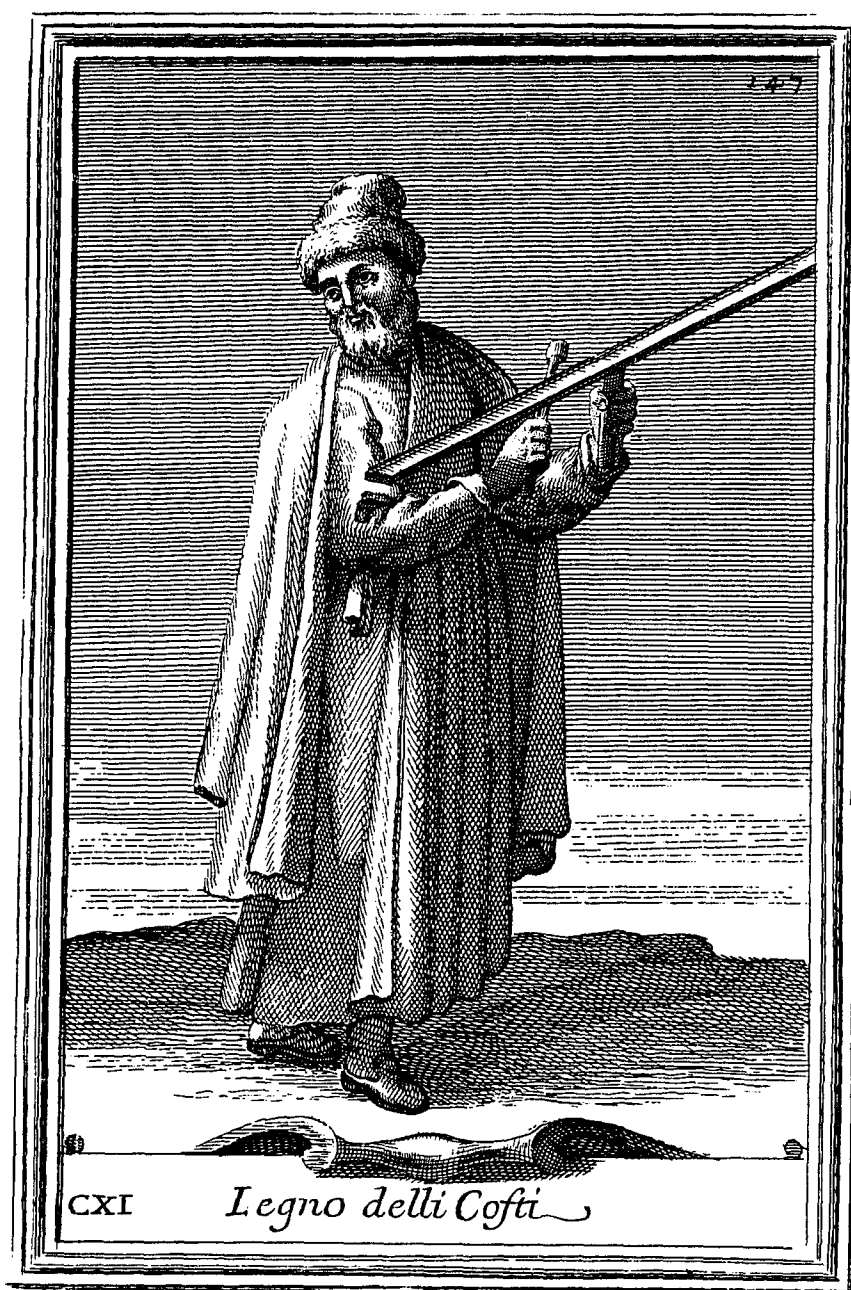


PLATE 1.5 *Legno delli Cofiti* Bonanni, 1716. A plate illustrating another variety of a wooden semanterion.

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described in PLATE 1.3, is included. Harrison credited the Coptic Church with the application of this instrument as a signal for worship.<sup>142</sup>

The precursor to the long plank-style semantron is depicted in Bonanni's PLATE 1.6. The illustration presents a monk striking a door with a long broom-like item. Identified as a "Religious signal," the instrument consists of a wooden dowel with multiple cuts extending two-thirds of the entire length. A bristle-like effect is the result of the numerous incisions that produce a rattling timbre when struck against another object. In addition to the employment as an alarm, this device has been associated as a signal for various hours of religious services.<sup>143</sup>

Another form of the semantron is a wooden plaque beaten with a stick or bone. The instrument was suspended by ropes on a wall and beaten as an hourly signal. Harrison attributed the use of the wooden block-style semantron as a percussive summons for impoverished persons to partake in meals provided by Capuchin monks.<sup>144</sup> A primitive form of this type of semantron is illustrated in Bonanni's PLATE 1.7.<sup>145</sup>

Originally, small bells were not considered musical instruments. Smaller bells were decorative and often attached to robes and the clothes of dancers. Cowland stated that, in the fourteenth century, miniature bells were frequently used in place of the larger church bells. In addition, Cowland presented the plausibility that the miniatures were a preferred sound to the larger church bells.<sup>146</sup> Sachs stated, "Except for the chime, medieval idiophones served several practical purposes rather than musical ones."<sup>147</sup> The list of such items includes chains, wooden boards, and later, jingles consisting of spherical bells.

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<sup>142</sup> Ibid., 111.

<sup>143</sup> Ibid., 129.

<sup>144</sup> A monk belonging to the Order of Friars Minor Capuchin, an independent order of Franciscans founded in Italy in 1525-1528 and dedicated to preaching and missionary work.

<sup>145</sup> Ibid., 130.

<sup>146</sup> F.M. Cowland, "Legends of Ancient Bells," *Etude* 71:62 (June, 1953), 62.

<sup>147</sup> Sachs, 278.



PLATE 1.6 **Religioso Svegliatore** Bonanni, 1716. A depiction of a rattling device consisting of a piece of wood cut into thin strips at one end. This representation is a monk beating a signal against a cell door.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 129.

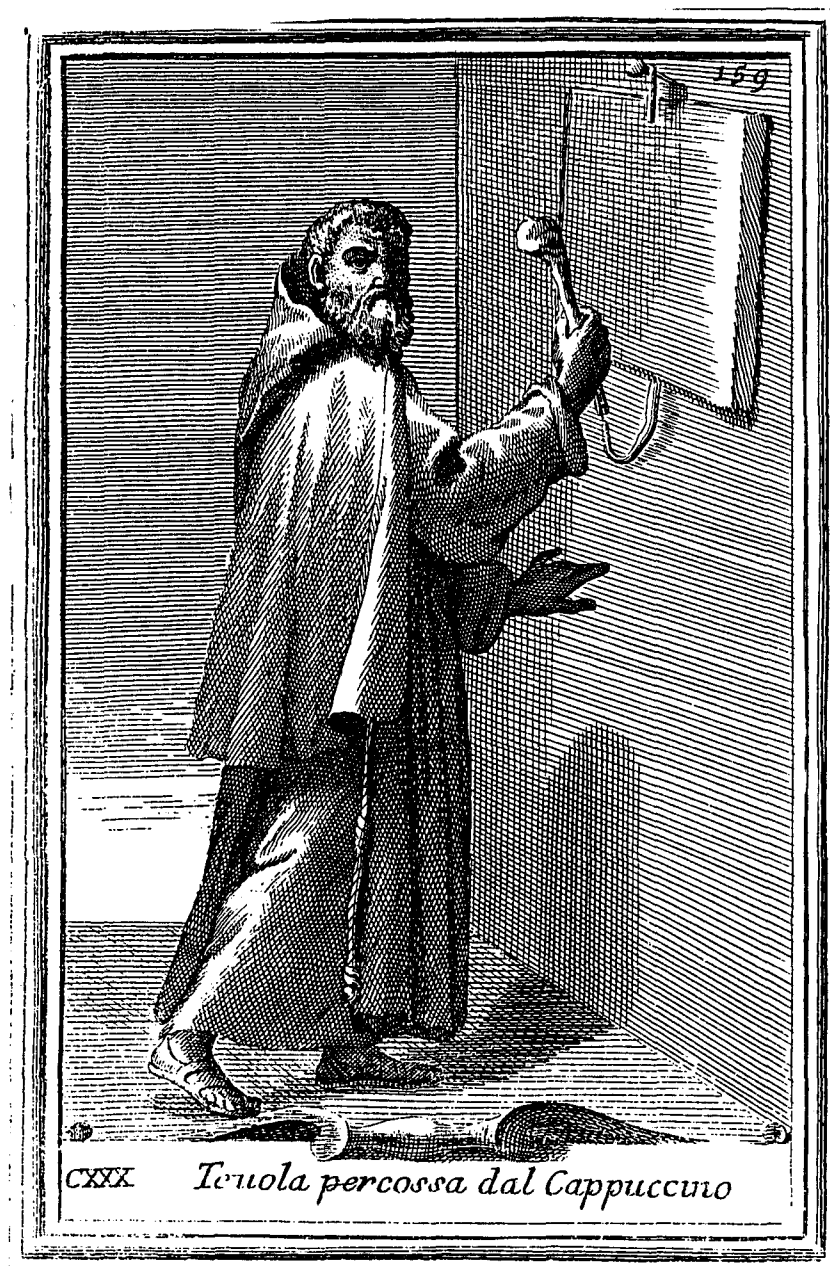


PLATE 1.7 **Tevola percossa dal Cappuccino** Bonanni, 1716. A wooden sounding board used by Capuchin monks.

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Historically, bells have long been in evidence among European icons. The fourth-century Viennese Biblical book of Genesis contains illustrations of a woman striking four cup-shaped instruments suspended on a stand.<sup>148</sup> Bells are exhibited among manuscripts by Gregory of Tours [approximately 538-594] from the sixth century. St. Blaise is credited with identifying bells among the instruments included with writings presumed to be from the ninth century.<sup>149</sup> Reese included eleventh- and twelfth-century icons of the Biblical King David depicted as the subject with bells in connection to celebratory dances.<sup>150</sup> Gangware observed that King David “was the favorite instrumental executant of medieval artists.”<sup>151</sup>

Illustrations of King David [playing the bells] are located in Kinsky, McKinney and Anderson, Reese, and Geiringer, and in almost every instance he is either playing the chime bells, bells, or glockenspiel, as this instrument is variously named, or else he is playing a string instrument and surrounded by a group of instruments among which were the bells. The dates of these illustrations extend from the eleventh through the thirteenth centuries, with the number of bells varying from only two or three to as many as fifteen, being played by one or two persons each with one or two hammers. The oldest illustration, from a codex in St. John’s College, Cambridge, dates from the eleventh century and can be located in Kinsky.<sup>152</sup>

The Beauchamp Chapel contains a fifteenth-century stained-glass depiction of an angel playing a set of eight bells. *Practica Musicae* (1492) by Franchimus Gaford [also known as Franchimus Gaffurius, 1451-1522] displays six bells with six goblets filled with water to various levels suggesting pitch relationship.<sup>153</sup>

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<sup>148</sup> Blades, 199. Blades also noted that historians disagree as to whether the instruments are actually bells or a type of kettledrum.

<sup>149</sup> *Ibid.*, 198.

<sup>150</sup> Gustave Reese, *Music in the Middle Ages* (New York: W. W. Norton and Co., 1940), 62.

<sup>151</sup> Gangware, 122.

<sup>152</sup> *Ibid.* The reference is regarding George Kinsky, *A History of Music in Pictures* (New York: E. P. Dutton, 1929; reprint New York: Dover, 1951), 39, No. 1.

<sup>153</sup> Blades, 199-200.

The bell appears to be a popular subject in the sixteenth-century extant sources. Each of the sources, besides Arbeau, includes numerous depictions of bells. Bonanni alone includes fourteen representations of the various types of bells. The extant sources devote over one hundred pages of text to the various instruments, the majority of which are a contribution from Mersenne.

Musica getuscht (1511) by Sebastian Virdung (c. 1465-1520) is the first important work on musical instruments containing illustrations of bells. Virdung includes two plates containing five different examples of these instruments. The first example, PLATE 1.8 contains (from left to right) an anvil and hammers, ten graduated cup-shaped bells on what appears to represent a frame, a hollow spherical-shaped bell, and a large cup-shaped bell. Virdung identified the instruments as *Ampos und hemmer*, *Zymeln*, and *Glocken* respectively.<sup>154</sup> The second illustration, PLATE 1.9 includes two examples of spherical bells and a small cowbell labeled as *Schellen* and *Küschellen*. The absence of additional subjects or scale hinders efforts to ascertain the size or the possible musical applications.

The text accompanying the illustrations in Virdung's treatise contains scant information on bell-like instruments. Virdung referred to these instruments as "little bells" and "chime bells" without qualifying the terms. The casual reference to the instruments suggests the bells were a universally accepted instrument that lacked novelty. In addition, the generalization of percussion instruments as being "for playful purposes and not worthy of the high art of Music"<sup>155</sup> implies a distasteful familiarity. In his treatise, Virdung stated the subjects of the treatise were the recognizable instruments "that any peasant would know."<sup>156</sup> This statement supports the theory that an incomplete description would provide ample information to the readers of this period. The precise account, obviously, has been

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<sup>154</sup> Virdung, 110. The translation, provided by Beth Bullard, reads, "Anvil and Hammers, Chime bells to be struck with a hammer and crotale-shaped sectioned bells, and Clapper bells."

<sup>155</sup> *Ibid.*, 119-120.

<sup>156</sup> *Ibid.*, 118.

## Ampos vnd hemmer



## Zymeln vnd Glocken

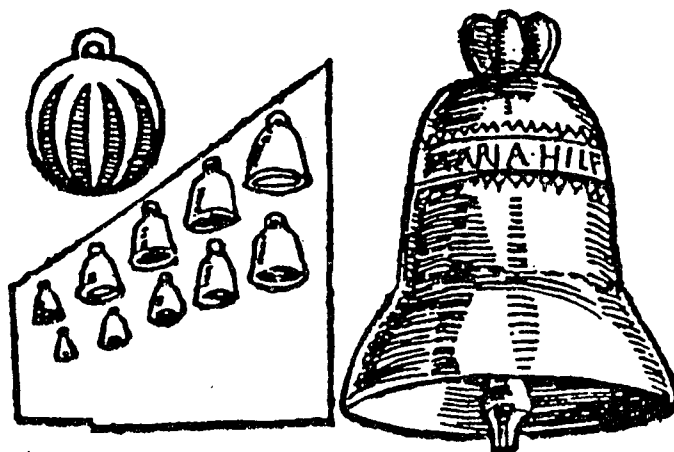


PLATE 1.8 Anvil and Bells Virdung 1511. A representation of an anvil used to test various hammers relative to weight and pitch. Also included are representations of various bells Virdung referred to in his manuscript.

Reprinted With the Permission of Cambridge University Press  
 Virdung, Sebastian. *Musica getuscht: a Treatise on Musical Instruments* [1511]. Translated by Beth Bullard. New York: Cambridge University Press, 1993, Sig. C2.

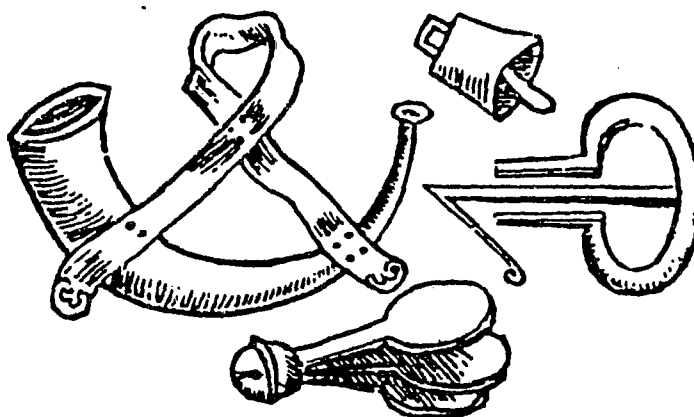
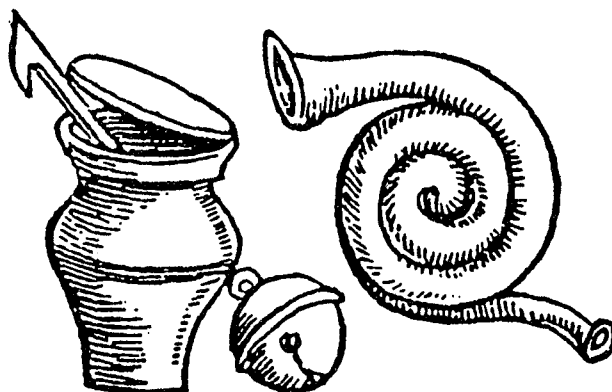


PLATE 1.9 Bell Virdung 1511. An etching displaying varieties of ancient bells.

Reprinted With the Permission of Cambridge University Press  
Virdung, Sebastian. Musica getuscht: a Treatise on Musical Instruments [1511]. Translated by Beth Bullard. New York: Cambridge University Press, 1993, Sig .D3v.

lost because of a lack of detail. The tone of the instruments is described as “all those instruments that resound like the hammers of an anvil.”<sup>157</sup> The musical applications are addressed in passages relative to Christian worship.<sup>158</sup> *Virdung* includes a segment of Psalm 150 stating, “Praise Him in the bells of rejoicing.”<sup>159</sup> *Virdung* refers to a treatise by Anicius Manlius Severinus Boethius (c.480-524 AD), *De institutione musica* (1491), as a source of information beyond that previously mentioned.<sup>160</sup>

The musical applications of the cup bells appears to have been relegated to tower or clock chime use. The spherical bell previously has been mentioned in association with decorative clothing and in the ornamentation of items of worship. A graduated set of cup bells in PLATE 1.9 implies a series of pitches and possibly tonality. As indicated previously, the Western European term for *Zymeln* is *cymbala*. Also as mentioned above, the *cymbala* consisted of four to twelve bells mounted on a frame and struck with hammers. The adaptation of wooden keyboards and a cog wheel mechanism with pins is the type of instrument used for tower bells as a precursor to carillons.<sup>161</sup> These fifteen bells were possibly a primitive type of carillon or an instrument to enhance existing consorts. The spherical bell, as stated earlier, was associated with decorative clothing and in the ornamentation of items of worship.

The largest bell possesses the visible characteristics to be classified as a Western European church bell. While this characterization appears as a generalization, the concurrent existence of the distinctive bell-forms of Chinese, Hindu, Indian, and Arabic

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<sup>157</sup> *Ibid.*, 110.

<sup>158</sup> *Ibid.*, 98.

<sup>159</sup> *Ibid.*

<sup>160</sup> *Ibid.*, 110. The source referred to is by Anicius Manlius Severinus Boethius, *De institutione musica*, trans. Calvin Bower as *Fundamentals of Music*, Claude Palisca, ed., (New Haven, Connecticut: Theory Translation Series, 1989). The edition *Virdung* refers to was in manuscript at the time and was published posthumously.

<sup>161</sup> Stanley Sadie, ed., *The New Grove*: 1: 352. s.v. “Chimes,” by Percival Price.

bells are documented during the sixteenth and seventeenth centuries.<sup>162</sup> The presence of Western European bell-foundries since the thirteenth century, however, possibly affected Virdung's decision to illustrate this particular type of bell. Provided the illustration is accurate in every detail, the shape of the bell further indicates a bell of Italian influence. The triple crown<sup>163</sup>, rounded head<sup>164</sup>, extended shoulder and perpendicular waist leading to the flare of the sound bow are characteristic of the Italian church bells.<sup>165</sup>

The anvil displays three different sized hammers as an illustration of the relationship of proportions. Apparently, Virdung has presented theories based on varying degrees of density and weight in relation to pitch. Virdung wrote that the "measurement of the tubes [of the organ] and the weight of the metals, like the hammer, is expressed through the theory of proportions."<sup>166</sup> Additional text references are absent in the remainder of Virdung's treatise. Agricola, however, provided extensive text regarding the weights and measures of hammers associated with Pythagorean experiments. This information is included below.

The spherical bell, located above the set of graduated cup-shaped bells, is illustrated in a unique manner. The depiction in the woodcut contains nebulous characteristics forming the light and dark portions of the instrument. The result is a shape resembling a claw-like formation. The purpose of the claw-like figure visible on the exterior of the instrument is indiscernible. Possibly, the design is an ornamentation or an attempt to illustrate resonating tines. Bullard included this particular plate among criticisms of Virdung's woodcuts. In addition, Bullard addressed the representation as vague and questions, "How does this sectioned bell make its sound?"<sup>167</sup> Bullard omitted any

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<sup>162</sup> Stanley Sadie, ed., *The New Grove*: 1: 204. s.v. "Bell," by Percival Price and James Blades.

<sup>163</sup> The crown refers to the loops at the top of the instrument used in suspending the bell.

<sup>164</sup> The head is the upper part of the cast extending from the crown to the edge of the taper.

<sup>165</sup> Bigelow, 39.

<sup>166</sup> Virdung, 111.

<sup>167</sup> *Ibid.*, 19.

justification for the identification of this instrument as a “sectioned bell.” The remaining characteristics, however, are consistent with the previous description. A circular ring is clearly visible, for example, on the top of the spherically-shaped bell. The ring is used, consistent with the other sources, in suspending the instrument.

A photograph of a modern bell resembling the instrument in Virdung’s text, is located in Handbook of Percussion Instruments by Karl Peinkofer and Fritz Tannigel.<sup>168</sup> There is a strong indication that this instrument possesses characteristics similar to the depiction in Musica getutscht. This picture displays a spherical bell with a solid upper hemisphere and tines extending to complete the lower portion. Peinkofer identified this type of bell as a *sarna bell*.<sup>169</sup> Similar to the representation by Virdung, this instrument has an attachment located at the top for the purpose of suspension. Since the bell is illustrated in two-dimensional black and white, the representation contains black space between the tines. The *sarna bell* appears to be the intended illustration in Virdung.

The musical application associated with the tined bell is absent from Virdung’s text. The absence of explanation, nonetheless, suggests the instrument was considered a peasant noise-maker and “not worthy of the high art of Music.”<sup>170</sup> Because text is not presented in combination with the bell as an illustrated percussion subject in Virdung’s book, the conclusion is that this style of bell was a common instrument. Virdung avoided, however, detailing explanations by stating the instruments are those “that any peasant would know.”<sup>171</sup> Peinkofer, however, provided information regarding this instrument:

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<sup>168</sup> Karl Peinkofer and Fritz Tannigel, Handbook of Percussion Instruments (London: Schott, 1969), 134.

<sup>169</sup> A *sarna bell* is a thin-walled Indian Elephant bell made of brass ranging from 2 to 10 cm. Traditionally, the bells are spherical with the lower hemisphere containing 8 to 10 claw-like tines.

<sup>170</sup> Virdung, 119-120.

<sup>171</sup> *Ibid.*, 118.

The diameter of these spherical, thin-walled bells of brass alloy may range from two to ten cm (three-quarters to four inches). The upper hemisphere extends into the handle, while the lower one has eight to ten claw-like, pointed prongs. Their sound has few overtones and is of a delicate timbre. Sarna bells are incapable of dynamic variations.<sup>172</sup>

Martin Agricola (c. 1486-1556), in Musica instrumentalis deudsch (1529) included bell illustrations bearing a striking resemblance to those in Virdung's text. As in Musica getutscht, Agricola's text contains an anvil and hammers, ten graduated cup-shaped bells on a frame, a hollow spherical-shaped bell, and a large cup-shaped bell (PLATES 1.10 and 1.11). The difference between Agricola's and Virdung's illustrations of bells is they are an exact reverse. Music historian William Hettrick explained the similarity:

A direct connexion [sic] between Musica getutscht and the 1529 edition of Musica instrumentalis deudsch can be seen in the latter's many woodcut illustrations derived from Virdung's book. These were not printed from the original woodblocks, which were surely not accessible to Agricola or Rhau, but rather give every indication of having been copied free-hand from the earlier work, which served as a convenient source of usable pictures of musical instruments. In the process, Agricola's artist simplified or coarsened many of the details of the originals, rendering a number of the wind instruments, for example, with thinner profiles. He also reversed most of the original illustrations (probably the result of simply applying his drawings directly over the surfaces of the new woodblocks as patterns for cutting), although he was careful to retain the configuration of Virdung's harp and already-backwards keyboards, thus perpetuating the error in the latter case.<sup>173</sup>

Hettrick included a table of woodcut illustrations derived from Virdung in "Appendix One" of the 1529 translated edition.<sup>174</sup> Among the entries are the anvil with hammers, the small bells, and bell. A major difference is visible with the images. In each case, the woodcuts

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<sup>172</sup> Peinkofer and Tannigel, 134.

<sup>173</sup> Agricola, xiv-xv.

<sup>174</sup> Ibid., 145.



# Anpos mit Demmern.

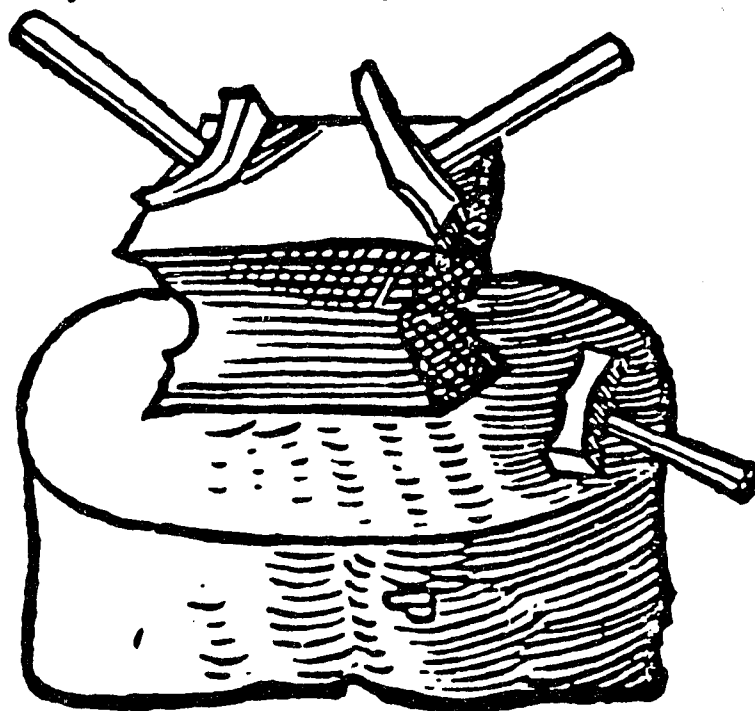


PLATE 1.10 Anvil Agricola, 1529. The proverbial Pythagorean anvil used to test the relationship between size and density relative to pitch.

Reprinted by Permission from Oxford University Press.  
 Agricola, Martin. *Musica instrumentalis deusch*. [Germany 1529]: reprint translated by John Trowell.  
 Leittenberg, Germany: Broude Brothers, 1965, sig. G8.

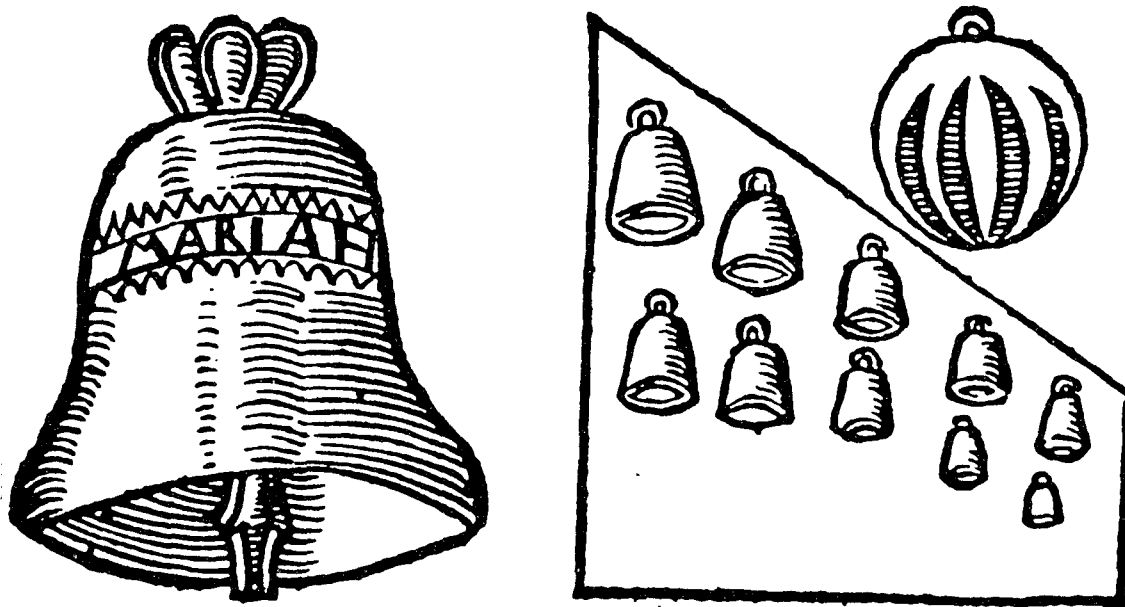


PLATE 1.11 Bells Agricola, 1529. Various types of bells with and without clappers.

Reprinted by Permission from Oxford University Press.  
 Agricola, Martin. Musica instrumentalis deutsch. [Germany 1529]: reprint translated by John Trowell.  
 Leittenberg, Germany: Broude Brothers, 1965, sig. H3.

are identified as being reversed, the only exception being the truncated inscription on the larger bell. Hettrick registered the larger bells as duplicated.<sup>175</sup>

Agricola provided information regarding the material composition and shape in the text accompanying the plates. The list of illustrations accompanies the respective divisions of stringed, winds, and those made of metal or other sound-producing substances. In the perfecture text, Agricola listed the bells as instruments producing tone “by sounding metal.”<sup>176</sup> Additional references are indicated throughout the text. A subsequent passage listed the bells as “instruments that are made adroitly out of metal and other substances that sound . . . .”<sup>177</sup> The remaining excerpt relates to the intervalic relationships resulting from weight and density proportions.

Although Agricola omits the exact admixture of metals, there is a distinct possibility that the bells were bronze since the casting of this metal had been in existence since approximately 2000 BC.<sup>178</sup> Bronze is the most likely metal due, in part, to the existence of iron bells primarily in north and west Africa. Diversarum artium schedula, a treatise on metallurgy written by Theophilus Presbyter around the tenth century, describes European bell-founding and the universal involvement of bronze alloys.<sup>179</sup>

Agricola’s musical applications of the bells are distinctive. The 1545 edition of Agricola’s text is expanded to include additional references to the bells. The first allusion in this edition describes bells in association with papist conduct. A behavior described as blasphemous that included the “ringing of bells.”<sup>180</sup> In the fourth chapter of this edition, Agricola again expounded on the 1529 edition by suggesting proportions for the “artful

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<sup>175</sup> Ibid., 146.

<sup>176</sup> Ibid., 57.

<sup>177</sup> Ibid.

<sup>178</sup> Stanley Sadie, ed., The New Grove: 1: 213. s.v. “Bell,” by Percival Price and James Blades.

<sup>179</sup> Ibid., 214.

<sup>180</sup> Agricola, 73.

tuning of bells.”<sup>181</sup> This quote is the most definitive reference in the sources suggesting a musical application of the instrument. Agricola included a mathematical formula and graphic chart relating to proportional tuning of the instruments.

The anvil and hammers appear reversed relative to the illustration in *Virdung* (PLATE 1.8). Although Agricola refers to an illustration of four hammers, only three are visible in the woodcut.<sup>182</sup> Two hammers are depicted on the anvil with a third on the pedestal, each distinctly different in size and shape. Agricola described the illustration as “instruments adroitly made out of metal or other substances that sound, just as a hammer sings on the anvil.”<sup>183</sup> Subsequent passages include details regarding the mathematical weight relationship and the relationship to a variance of pitch. Potential musical applications have been omitted from the text in this edition.

Agricola’s illustrations of bells provide a basis for commentary similar to those from *Virdung*. The only variance in detail rests with the inversion of the illustration. The remaining characteristics appear congruous with previous descriptions. The physical composition appears to be consistent with the previous information due to the fact that modern bell-founding maintains traditions established before this period. Any alteration in this process is likely to have appeared in Agricola’s *Musica instrumentalis deudsch* or in a subsequent source. In addition, the absence of contrary information suggests the instruments maintained a function comparable to those eight years previous.

The absence of bells in Arbeau’s treatise is incongruous. Arbeau’s subjects focused on martial music and the eventual application to dance and dance forms. The use of bells is documented in icons pertaining to small jingling ornaments on clothing for the accentuation of bodily movement. Although appearing as small container-type rattles and

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<sup>181</sup> *Ibid.*, 126.

<sup>182</sup> Agricola writes “since four hammers are illustrated below” on fol. 57: sig. H in page 57.

<sup>183</sup> *Ibid.*, 57.

jingles, a form of bells was a traditional member of the military percussion section in Janissary music.<sup>184</sup> Arbeau does include direct references to the tambourines and sistrums of the Janissary traditions, but omits references to the bells entirely.

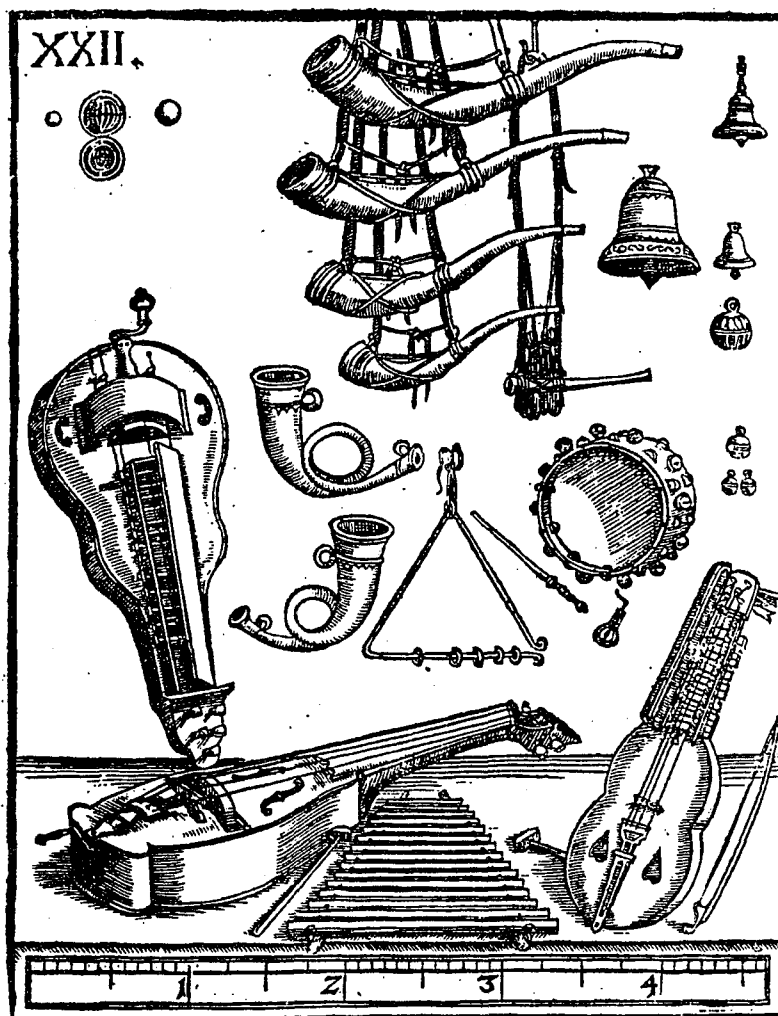
Syntagma musicum (1619) by Michael Praetorius (c. 1571-1621) contains an illustration of five hammers with an anvil and ten different depictions of various types of bells. Along with the varieties previously described, Praetorius expands the subjects by including chime balls, ago-go bells, and cowbells. Although numbered within the citation accompanying the plate, corresponding numbers are absent in the illustrations. The inclusion of a Brunswick scale in three of the four plates enhances critical observations.

PLATE 1.12 contains chime balls, three sizes of cup-shaped bells, and three spherical bells. Praetorius identified the instruments as tubular bells, cup-shaped bells, and sleigh bells.<sup>185</sup> While the illustrations of the cup-shaped and sleigh bells are obvious, the tubular chimes were identified through the process of elimination. Descriptive text and further identification regarding this peculiar representation are absent from Praetorius' treatise. The tubular chimes, however, contain the characteristics that resemble the modern chime ball. The similarities between the terms *tubular* and *ball* appears to have confused the relationship and impeded the identification of this instrument. The designation *ball* would have implied a solid consistency. Hollow cylinders, commonly referred to as tubes, possibly could have been the most descriptive term applied to the spherically-shaped instrument without the implication of density. Consequently, the tubular bells or "chime balls" are located in the upper left portion of PLATE 1.12. The illustration contains a one-inch diameter sphere, a cut-away view of a larger four-inch

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<sup>184</sup> Peters, 25. Janissary Music is in reference to the Ottoman martial music of the c.1320-1820 used to accompany Turkish sovereigns.

<sup>185</sup> Praetorius, pl 22. "9. Glocken, 9. Cimbeln; Schellen." Translation provided by Morris Lang and Larry Spivack, Dictionary of Percussion Terms (New York: Lang Percussion Co., 1988), 38, 23, & 69.



1. Allerley Dawren Lyren. 2. Schlüssel Fiddel. 4. Stroh Fiddel 4. Idgel  
hörner. 5. Triangel. 6. Singelugel. 7. Worenpaucklin.  
8. Bloeten 9. Cimbela : Schellen.

PLATE 1.12 Chime Balls and Bells. Praetorius, 1619. Chime balls are located in the upper left corner. The clam-like illustration is a cut-away view. This etching also includes a scale drawing of various sized bells with attached clappers.

Reprinted by Permission from Oxford University Press.  
Michael Praetorius, *Syntagma musicum*. [Wolfenbüttel, 1619]. Translated by David Crookes. Oxford:  
Clarendon Press, 1986, pl. 22.

instrument, and a medium-size sphere with a diameter of two and one-half inches.<sup>186</sup> A cut-away view is provided to explain the mechanical operations of the instrument. Circular tines are visible in each of the hemispheres. The one-inch pellet-clapper is inserted into the larger instrument to strike the tines. The turning motion of the instrument results in the movement of the clapper against the various tines similar to the modern nursery chime ball.

The illustration lacks a visible mechanism for fastening or hanging the instrument. The absence of such a device prohibits the ball from being fastened or suspended. Also, the limited area of motion for the clapper suggests the instrument is incapable of dynamic variation. The implication is that the instrument is hand held and relegated to functions other than carillon or dance. As a result of the scant information from primary and secondary sources, further description is speculative.

Four spherical bells are located in a triangular cluster and beneath the cup-shaped row at the right center portion of PLATE 1.12. Praetorius describes these bells with the label *sleigh bells*. The uppermost bell contains the visual characteristics similar to the previously described sarna bell. This instrument is three inches in diameter with the characteristic crown-ring detectable at the peak. The remaining three are representative of the modern ball-clapper or spherical sleigh bell. The upper bell is approximately two inches in diameter while the bottom two are each one inch in width. This type of bell is identified with the instruments as those fastened to the harness of an animal similar to the modern version of this bell. This identical variety of bell, however, is evidenced in other extant icons attached to the side of tabors, tambourines, and in the clusters of strung rattles. For example, the tambourine, also illustrated in PLATE 1.12, contains spherical bells

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<sup>186</sup> Praetorius includes the Brunswick Foot with each of the illustrations. According to Francis Galpin in the notes accompanying Nicholas Bessarhoff's Ancient European Musical Instruments (New York: October House, 1964), p. 353, One Brunswick foot equals 11.235 inches or 285.36 millimeters. A Brunswick inch (one-twelfth of a Brunswick foot) is equal to .93625 English inch or 23.78 millimeters.

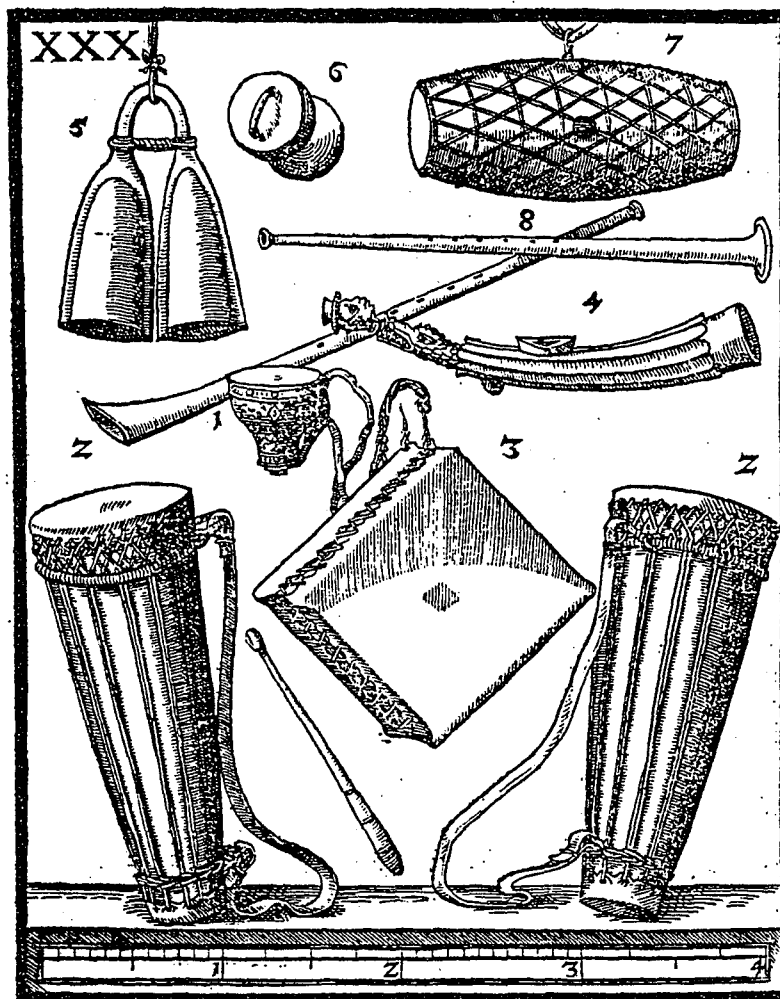
equidistant between the jingles. Additional references are found in the “Drums and Tabors,” “Tambourine,” and “Rattles” sections of this document, respectively.

The cup-shaped bells, *cimbeln*, are visible in the upper right corner of the illustration. The largest of the three is seven inches in height from the crown-ring to the bottom of the sound bow. The widest point of the bell is eight inches in diameter. The bell located in the uppermost portion of the plate is seven inches from the top of the handle to the end of the clapper and four inches in diameter across the sound bow. The smallest of the cup-shaped instruments is four inches in height by approximately three inches in diameter. There is evidence to suggest the cup-shaped bells are made of the same material as the larger instruments. The practice of founding bells originated three centuries previous and is a congruous practice that has survived into modern times. Traditionally, a bronze alloy is employed for these instruments. Since bronze is the established material, a variation is significant and worthy of mention. The absence of any information contrary to these points suggests a conformity to the physical composition.

The musical applications of the cup-shaped variety of bells appear to be consistent with the previously described information. The handles or rings attached to the top of the instruments suggest uses associated with carillons, handbells, or clock chimes. The smaller sizes also imply the application of these instruments as signals or decorative additions.

PLATE 1.13 contains a pair of bells in the upper left corner, identified as item number five, that resemble the modern ago-go bell. The ago-go is a Brazilian double-belled cowbell instrument associated with Afro-Cuban music. The bells usually differ in pitch by the interval of a major third or perfect fourth. The bell is classified as a struck





1. Ein Türkisch Trümmlein oder Päucklein. 2. 3. Mesopotamische Lauten oder Saiteninstrumente.  
 4. Indiamisch Horn von Hirschkorn. 5. Ist von Eisen gemacht, wird darauff gespielt, wird davon  
 auf der Kesseltrommel. 6. 7. 8. Indiamische Trümmlein und blasende Instrumente.

PLATE 1.13 Ago-go Bells Praetorius, 1619. Taken from Praetorius' list of "various exotic" instruments, a scale drawing of a pair of double cowbells or African ago-go bells.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbüttel, 1619]. Translated by David Crookes. Oxford:  
 Clarendon Press, 1986, pl. 30.

idiophone due to the absence of a clapper in either of the conical-shaped bells.<sup>187</sup> The instrument depicted by Praetorius is similar in appearance to a clapper-less double-bell. The bell on the left measures six and one-half inches at the opening and eleven inches from the top of the flare. The second bell also is six and one-half inches at the opening, but has a length of twelve inches. The differences in length of the bells suggest a variance in pitch.

Praetorius provided descriptive information regarding bells in the accompanying citation. Praetorius stated that the bells are made of iron. This is an exception to the brass or bronze bells evidenced in Virdung and Agricola. In addition, Praetorius explained that the bells are struck against the openings.<sup>188</sup> Price supported this information by citing techniques from similar instruments in African cultures. “It is made of forged iron shaped like a pyramid or a flattened hood, and is held in the left hand and struck with a hammer in the right.”<sup>189</sup> The musical application of the instrument is absent due to Praetorius’ aversion to providing written text regarding percussion instruments.<sup>190</sup> Price, however, cited religious and dance ceremonies which incorporate the use of this type of instrument.<sup>191</sup>

Praetorius completed this collection of bells in PLATE 1.14. In the “Instruments of Jerome”<sup>192</sup> unidentified items resembling a cowbell, a spherical bell, and a spherical bell attached to the end of a set of spoon-shaped clappers are included. The Brunswick scale is absent from this representation.

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<sup>187</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984). 1: 32. s.v. “Agogo,” by K.A. Gourlay and John Schechter.

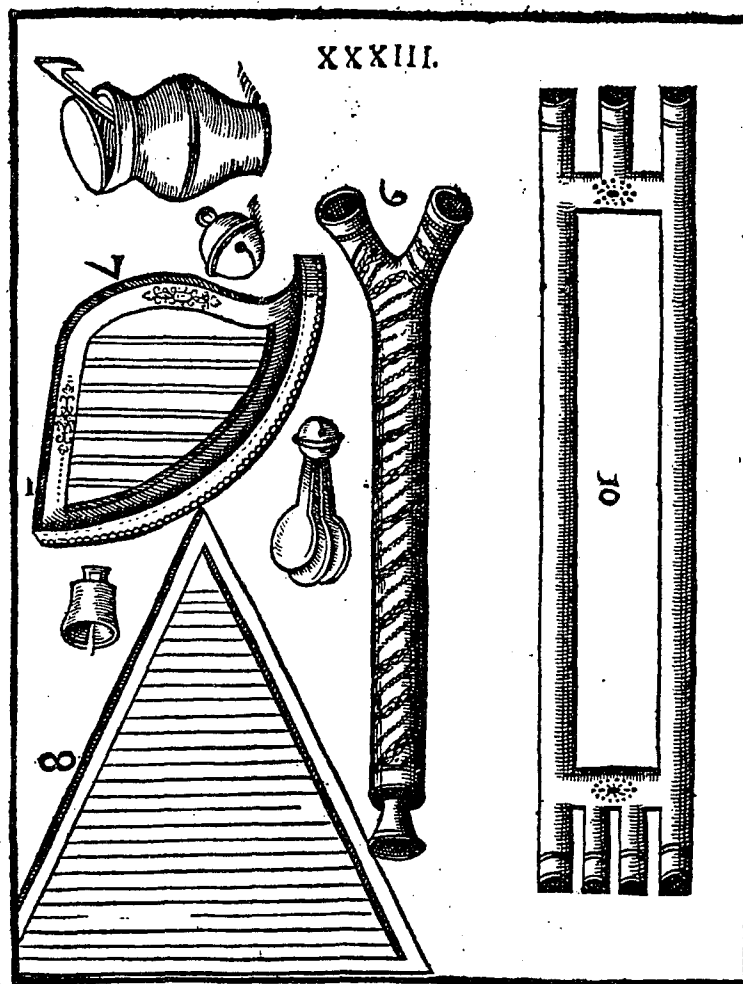
<sup>188</sup> Praetorius, pl., 30. “Ist von Eisen gemacht. Wird darauff gespielet wie ben uns auf der Kesseleccummeln.”

<sup>189</sup> Stanley Sadie, ed., *The New Grove*: 1: 212. s.v. “Bells,” Percival Price.

<sup>190</sup> Praetorius, 26. Praetorius states that only wind and stringed instruments are discussed in the text. “And although instruments can be classified in many different ways, as those tables will show, we will for present purposes divide them into only two categories, namely wind and stringed instruments [*inflatilia* and *Fidicinia*].” Crookes states that Praetorius is “not at all interested in percussion” in an end note on page 86.

<sup>191</sup> Stanley Sadie, ed., *The New Grove*: 1: 212. s.v. “Bells,” Percival Price.

<sup>192</sup> Saint Jerome.



7.8. Plateria. 9.10. Tympanum Hieronimi. Klappern: Schellen und Glocken.  
E

PLATE 1.14 Bells Praetorius, 1619. Taken from Praetorius' list of "Instruments of Jerome," this etching omits a scale drawing of two types of bells: one with an attached clapper, and, the second with an enclosed ball clapper.

Reprinted by Permission from Oxford University Press.  
Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 33.

Again, Praetorius omitted text regarding the percussion instruments in this plate. In a fashion similar to Virdung and Agricola, Praetorius included a disclaimer for the absent text:

Some of them [percussion instruments] deserve Sebastian Virdung's name of "uncouth instruments," namely instruments devoid of all art and refinement. We will not need to give any account of these, since they are familiar to everyone, and fall outside the boundaries of art music – except for the anvil.<sup>193</sup>

The bells appear to be consistent in size and shape with the previously described instruments in the works by Praetorius, Agricola, and Virdung. This same type of bell is included by all of the sixteenth- and seventeenth-century extant authors. The consistent inclusion of these items in illustrations suggests the instruments were, in fact, universally common. The omission of a description of the bells also supports a widespread adoption of the instrument in as many functions. Consistent with treatises by Virdung and Agricola regarding common instruments, Praetorius also omitted a description.

Harmonie universelle (1636) by Marin Mersenne (1588-1648) devotes more pages to the subject of bells than any of the other sources. Of the sixty-eight translated pages and thirty-one propositions comprising the "Seventh Book of Percussion Instruments," twenty-three propositions throughout forty-five pages are apportioned to information regarding bells. Mersenne addressed a variety of subjects including the intensity of the sound in comparison to thunder, weights, proportions, and mechanisms suitable for clock chimes and carillons. From the forty-five pages, only three woodcuts containing bells are available. Mersenne's written information on bells is, in itself, a potential subject for continued study.

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<sup>193</sup> Praetorius, 78.

Many different labels are applied to bells that Mersenne has collected in “Proposition II.” Mersenne credited the first name as an associative term to the location in which the bell was first employed. *Nolae* identifies the bells located in the tower of St. Paul’s Cathedral in Nole, Italy during the time of Pope Sabinian (reigned as Pope 604-608 AD).<sup>194</sup> Mersenne attributed the derivation of the generic term *Campanae* to this instrument. In addition, the previously mentioned terms are presented by Mersenne for the first time: *tinntinnabula*, *crotalum*, and *cloches*. The unidentified terms *Pestusus*, *Aeramentum*, *Signum*, *Cloca*, and *Capitulaires* are also included.<sup>195</sup>

The material composition of the bell is described in “Proposition III.” Mersenne suggested that the best composition consists of “three, four, or five parts of free copper, or red brass, to one part of Cornwall or English tin.”<sup>196</sup> A subsequent passage itemizes twenty pounds of tin to every hundred pounds of copper. The remaining text describes a variety of mixtures to accommodate the stress and proportions for the desired type of bell.

Musical applications also are addressed in the accompanying text. Mersenne listed the bells in association with dance, harmony, melody, the sounding of the hour, and as a solo carillon. While these applications are not unique, the terms provide an interesting verification for the sources. In addition, Mersenne provided detailed information regarding the tuning of the instrument as well as recommending a particular alloy ratio relative to the intended function of the bells. In comparison to the available material pertaining to other instruments of percussion, the specifics of Mersenne’s information are relatively comprehensive.

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<sup>194</sup> William Nault, ed., *World Book Encyclopedia* 20 vols. (Chicago: Field Enterprises Educational Corporation, 1971), 15:588. s.v. “Pope” by Fulton Sheen.

<sup>195</sup> Mersenne, 501.

<sup>196</sup> *Ibid.*, 503.

The first illustration of a bell appears among “Proposition IV” regarding the nomenclature of a bell (PLATE 1.15).<sup>197</sup> While the exact measurement of the illustration is omitted, Mersenne provided a series of ratios to determine size, and in turn, the pitch of a bell, presented as follows:

Now they make the width, or the diameter, fifteen times the edge. For example, if the edge is a foot, the bell must be fifteen feet from edge to edge. But the height of the bell, which is taken from the edge to the place where it begins to bend like a vault, is only twelve edges. Thus it is easy to conclude that the width of the bell is fifteen twelfths of the height, which gives the ratio of the major third.<sup>198</sup>

The musical application of the bell is difficult to determine since the purpose of the depiction is for labeling nomenclature. The shape of the bell suggests that this particular woodcut was inspired by an actual instrument. Although the bell portrays the characteristics of the European church bell type, as opposed to the Eastern variety, additional information is unavailable. The absence or identification of the actual subject prevents additional information from a visual examination.

PLATE 1.16 contains an illustration of a hemispherically shaped bell. The handle, labeled as item “D,” is a means for suspending the instrument. “I have left a tiny tail, ‘D’ so as to hold it more easily in the air, while making it sound.”<sup>199</sup> The size and dimensions of the bell have been omitted. Rather than portray the actual instrument, the stated purpose of this illustration is to provide graphic accompaniment for the text. The proposition for this section is “to determine the different sounds which bells of the same size make, because they are of different materials.”<sup>200</sup>

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<sup>197</sup> Ibid., 505.

<sup>198</sup> Ibid., 504.

<sup>199</sup> Ibid., 523.

<sup>200</sup> Ibid., 523.

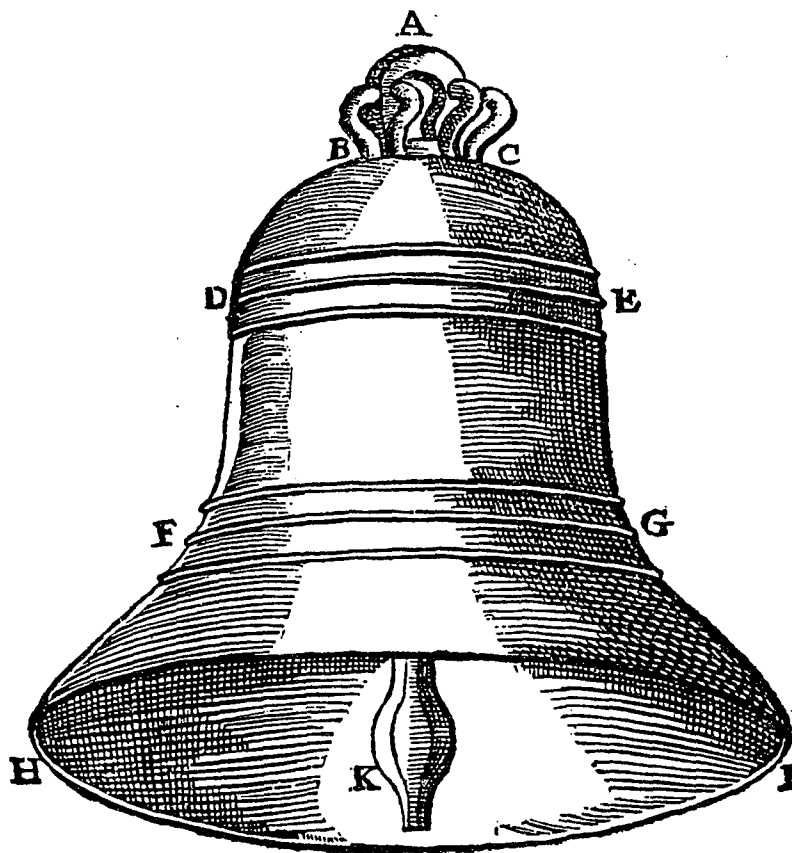


PLATE 1.15 **Church Bell** Mersenne, 1635. Mersenne's detail of a church bell.

Reprinted by Permission from Kluwer Academic Publishers  
Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 100.

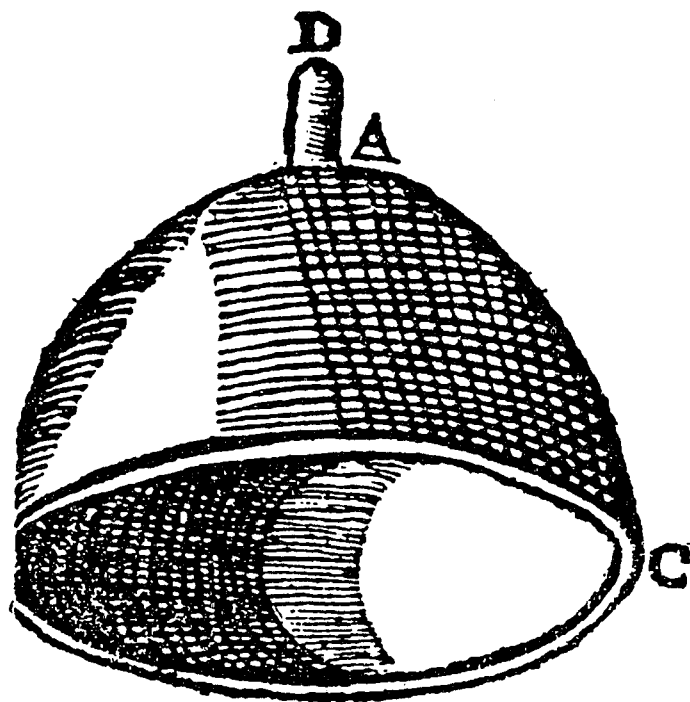


PLATE 1.16 **Bell** Mersenne, 1635. Mersenne's detail of a bell for composite and timbre comparison.

Reprinted by Permission from Kluwer Academic Publishers.  
Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 105.





PLATE 1.17 **Instrumento Sacro degl' Armeni** Bonanni, 1716. A representation of cup-shaped bells usually paired with cymbals.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 90.

PLATE 1.16 has been obscured by the accompanying text. The portion of the left side of the bell and the area labeled as “B” is missing from the illustration. Whether the representation was compromised by the editing or previous recommendations is unclear. The facsimile edition, however, contained a plate separated from the text with the complete illustration. As a result, the illustration appears to have been cropped as it appears for this edition.

Mersenne follows the illustration of the bell with a series of tables explaining the composite combinations relative to consonant and dissonant pitches. The characteristics of timbre also are addressed by suggesting the bronze be mixed with silver, tin, copper, gold, and lead. The result is notated on a staff in the form of a decatonic scale consisting of the pitches E, F, F-sharp, G, G-sharp/A-flat, B-flat, C-flat, C, D-flat, and E-flat.

A similar instrument is located in Athanasius Kircher’s Musurgia universalis (1650) and reproduced later in Gabinetto armonico by Filippo Bonanni in 1716. The bell, identified as “Instrumento Sacro degl’ Armeni,” is a hemispherical instrument suspended by a handle (PLATE 1.17). A figure is grasping the bell in the left hand while striking the instrument with a bulbous-headed mallet in the right hand. Editor Harrison stated the striking implement is an iron bar that is struck against a tongue-less bell.<sup>201</sup> The musical applications of this instrument are credited in a single line by Harrison. “In the [religious] rites of the Armenians groups of the kind of cymbals were sounded, together with a shallow cup-shaped tongue-less bell.”<sup>202</sup>

An unusual application of the bell appears in Bonanni’s PLATE 1.18. A cup-shaped bell with an attached clapper is visibly tied around the neck of a figure. The subject is bound by ropes with arms tied in the back, apparently for the purposes of punishment.

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<sup>201</sup> Bonanni, 90.

<sup>202</sup> Ibid., 90.

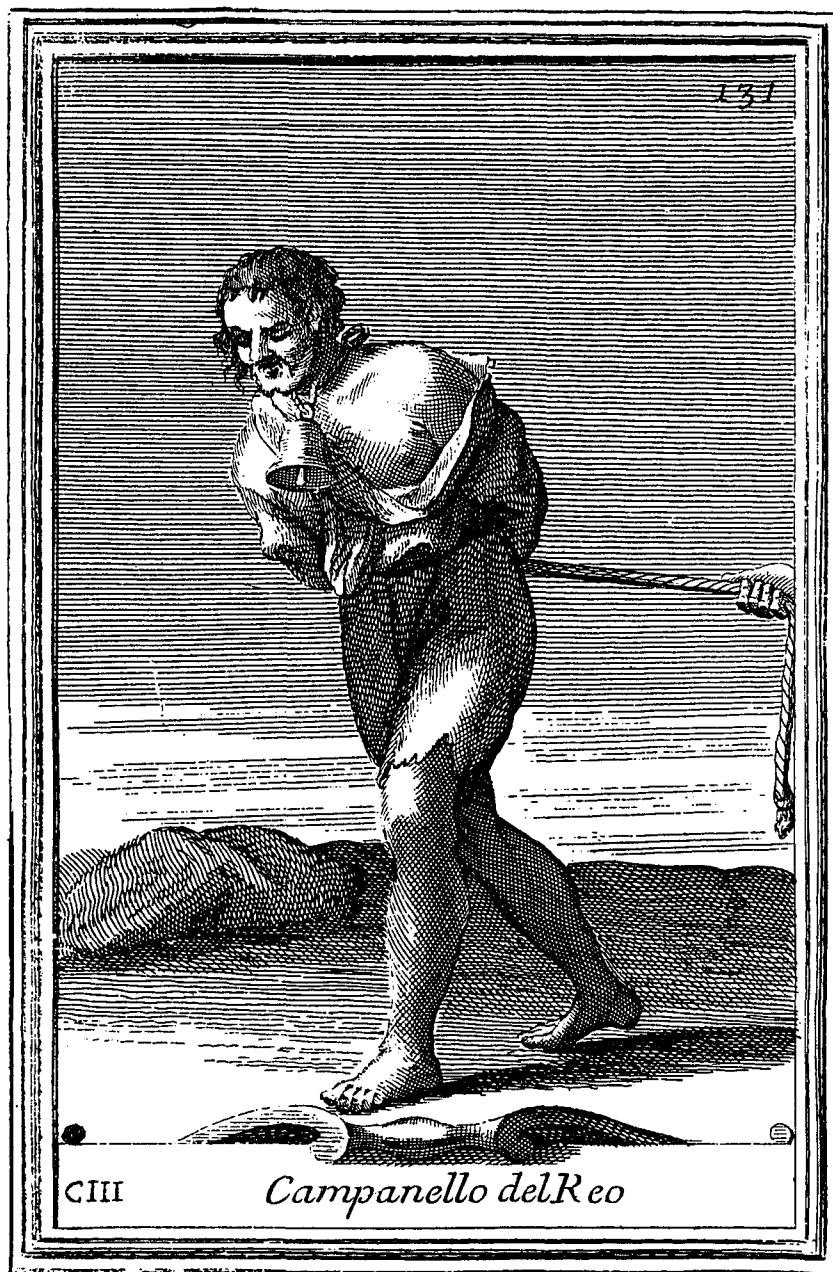


PLATE 1.18 **Campanello del Reo** Bonanni, 1716. A representation depicting bells applied as criminal punishment to draw public scorn.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 103.



PLATE 1.19 **Campanaccio del Villano**. Bonanni, 1716. An etching is of a common cowbell. Bonanni attributes its application to heckling, noise-making during carnival time, and the celebration of awarded doctorate degrees.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964),. pl. 107.

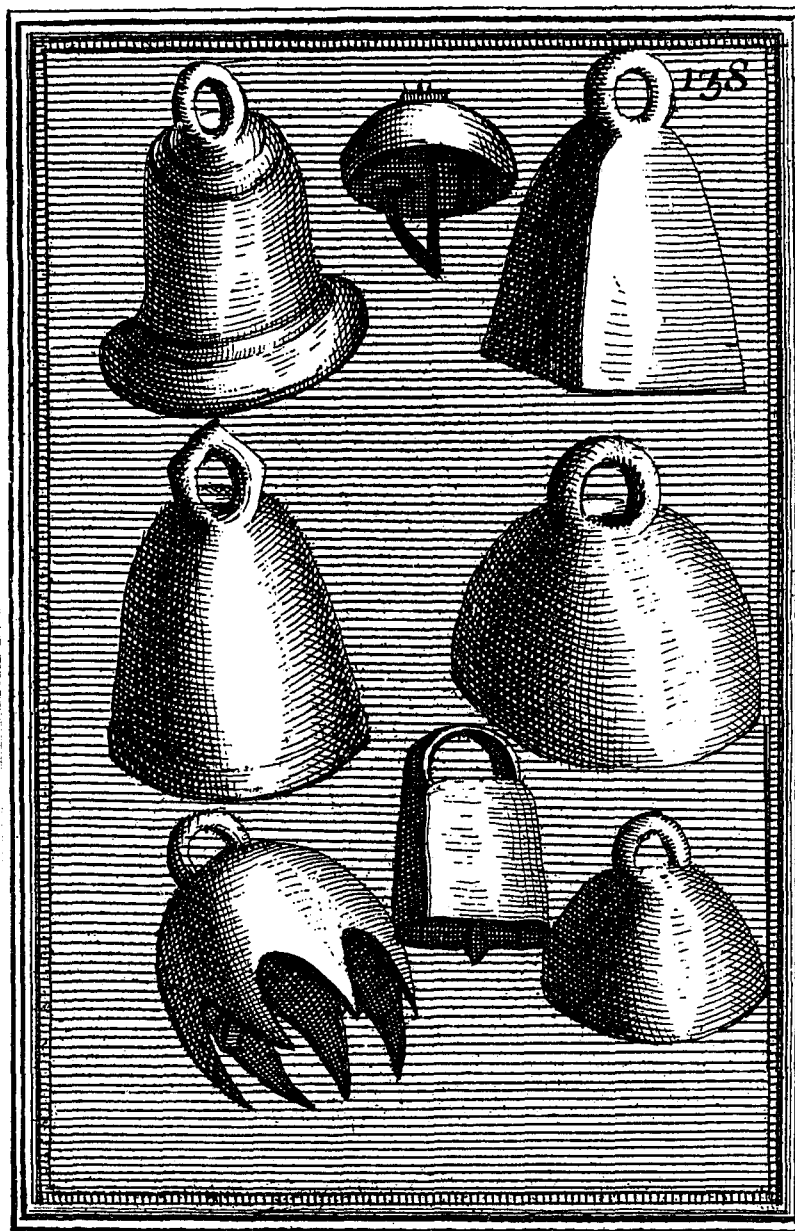


PLATE 1.20 **Untitled** Bonanni, 1716. Various seventeenth-century bells as preserved in the Kircher Museum in the Jesuit College in Rome.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 103a.

Harrison supported these observations in the accompanying citation: “This engraving shows a particularly grim one – a criminal being exposed to public scorn with a bell hung about his neck.”<sup>203</sup> While this depiction is the only application credited to punishment, the depiction does serve to support the universal acceptance and various applications of this instrument.

A larger version of this bell is found in Bonanni’s PLATE 1.19. The bell appears in the hands of a figure in the process of shaking the instrument. Identified as a “rustic bell” hung from the necks of cattle, Harrison suggested additional applications for the instrument:

It was used by the crowd at carnival time to mock or applaud the maskers. It was also rung in Rome by groups who drove around in carriages to celebrate the award of a doctorate to one of their number. Bonanni expresses some satisfaction that this custom, so unsuited to the dignity of the degree, has recently been forbidden by the university on pain of a fine of fifty scudi.<sup>204</sup>

Eight varieties of bells are displayed in PLATE 1.20. The supposition of Bonanni’s illustrations as a concept rather than a technical drawing is appropriate. While Bonanni has been sincere in efforts to display musical instruments, the details tend to be omitted or misrepresented. Bonanni’s accompanying citations justify the inclusion of these subjects by virtue of their presence in the Kircher Museum in the Jesuit College in Rome. Subsequent information inherently specific to these bells has been omitted by Bonanni. As a result, the following information is limited to visual evaluation supported with secondary sources.

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<sup>203</sup> Ibid., 103.

<sup>204</sup> Ibid., 107.

Beginning in the upper left corner of the plate and progressing counter-clockwise are two cup-shaped bells. The ring or crown, shoulder, and curved sound bow imply a primitive form of the English bell. A clapper or alternative striking device is not visible. While the next example also is a cup-shaped variety, the representation contains unique characteristics. Although the suspension ring or crown is similar, the more dramatic taper of the shoulder with a consistent conical flare is unique. A subtle sound bow is visible around the lower perimeter of the bell suggesting this instrument is primitive or from an earlier design. The absence of explanatory text makes positive identification difficult.

The bell in the lower left corner of the illustration appears to be a misrepresentation of a type of sarna bell. A clear depiction of the bell is evidenced in Praetorius' Syntagma musicum PLATE 1.12. While this bell possibly could have existed in this form, most likely the illustration is misconceived. The top hemisphere appears to be consistent with the previous information in addition to the inclusion of an attached clapper. The tines extending from the upper portion, however, are odd-shaped and too thick at the base. The effect of this type of cut on the vibration patterns of the bell is unclear. This particular representation is unique, however, to previous and subsequent illustrations.

Two square bells are depicted in the bottom center and upper right corner of PLATE 1.20. The lower instrument appears to be a precursor to the modern cowbell with a large handle extending from the left to the right portion of the top of the bell. The forward facade is at least three times the width of the sides. An attached clapper is visible on the underside of the opening. The bell in the upper right portion of the plate is a four-sided instrument forming a square at the bottom. A thick circular crown is visible at the top of the bell. Illustrations by Mersenne and Praetorius attribute a clapper to this type of bell. However, the presence of an attached clapper is indiscernible.



PLATE 1.21 **Campanello del Clero** Bonanni, 1716. A small elaborately decorated bell similar to those used in religious processions.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 104.



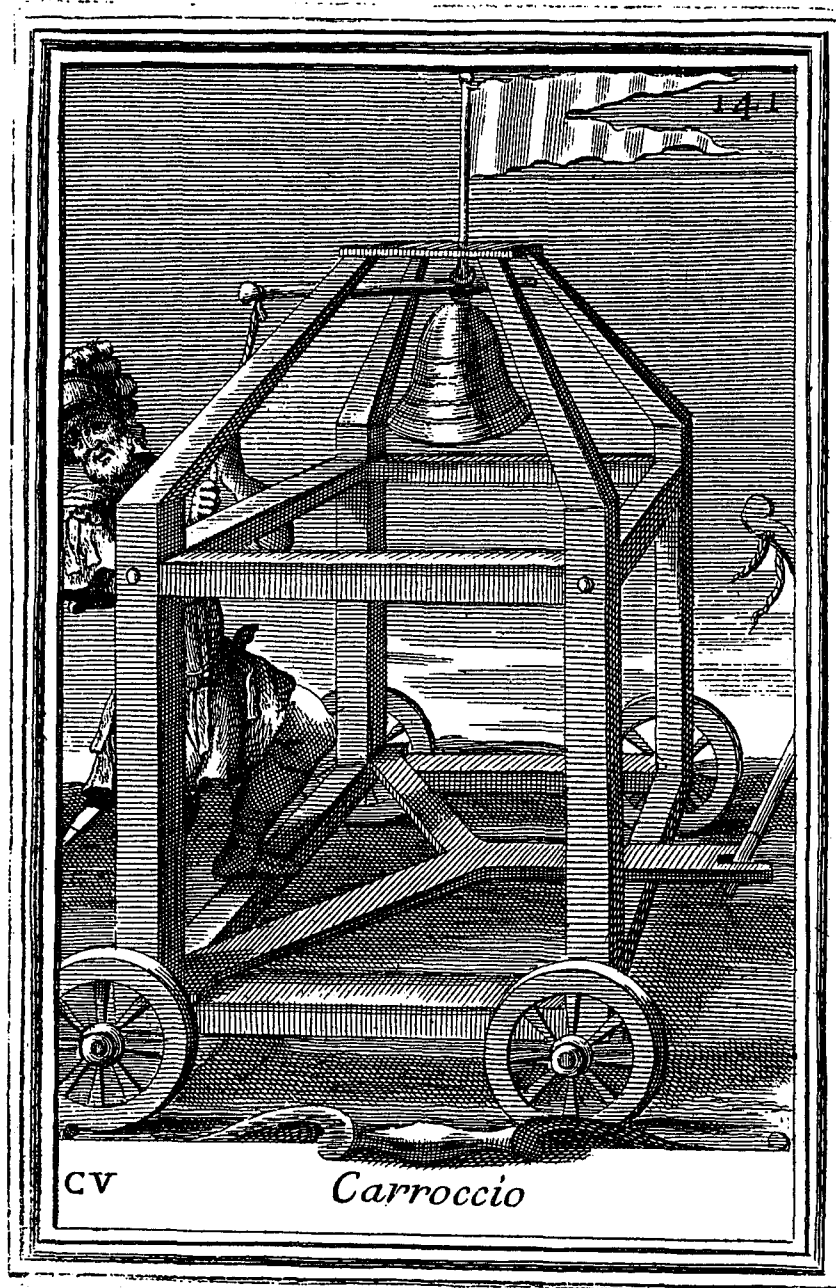


PLATE 1.22 **Carroccio** Bonanni, 1716. According to Bonanni, the large bells were used in Cremona as signals for troops.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 105.

The bottom right portion of the plate displays two hemispherical bells. A similar instrument previously has been documented in Mersenne's PLATE 1.16 and the preceding Bonanni PLATE 1.17. As is consistent with the information presented above, these bells most likely had a separate striking implement. Harrison credits these instruments as those used with Armenian music.<sup>205</sup>

The last subject of this plate is a shallow hemispherically-shaped bell resembling the modern bicycle bell. The "V-shaped" rod suspending the clapper is unique. Possibly, the curve of the rod was intended to add tension for enhancing the stroke of the clapper. Possibly, the shape of the bell demanded the clapper be recoiled instantly to facilitate a clearer ring.

A unique application of a cup-shaped bell in a religious setting is visible in Bonanni's PLATE 121. The bell, identified as a priest's bell, is located at the top of a staff and is attached to a piece of wood. The wood extends beyond the frame of the staff and is, in turn, fastened to a rope. The figure in the illustrations is pulling on the rope as an apparent bell-ringing technique. Harrison credited the use of this type of bell in Western Church religious processions since the eleventh century.<sup>206</sup>

A larger version of this type of bell is presented in PLATE 1.22. The instrument appears to be suspended in the middle of a large wheeled frame. A tone activating device, similar to the mechanism described in PLATE 1.21, extends from the top of the bell outside of the frame. The accompanying citations state this size bell was employed in religious processions as well as a signal for troops.<sup>207</sup>

The spectrum of instruments from this era conforming to the characteristics of a bell appears to be limitless. Although a popular subject in icons, scant written information is

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<sup>205</sup> Bonanni, 90.

<sup>206</sup> Bonanni, 104.

<sup>207</sup> Ibid., 105.

available from the extant sources. The lack of relative information is due, in part, to the practice of a purposeful omission of any discussion regarding percussion instruments by Virdung, and subsequently Agricola and Praetorius. The accepted practice of portraying percussion instruments as subjects of illustrations divorced from text contributed to the absence of information on percussion instruments from this era.

Another reason for the omission of written sixteenth- and seventeenth-century text regarding percussion instruments, especially bells, is associated with the universal acceptance of the instruments by peasants. As an instrument of the common people, written study and providing commentary on such matters were unacceptable. Virdung's evaluation of percussion, in general, as being devoid of the fine art of music served to relegate percussion into the realm of noise-making.<sup>208</sup> Agricola's systematic adaption of Virdung's treatise perpetuated the idea that percussion instruments should not be discussed. Yet, Agricola devoted text to the characteristics of idiophones and proportions effecting timbre. Mersenne's insight and the appreciation of bells established a literary source five centuries after the acceptance of the instrument in Western Europe.

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<sup>208</sup> Virdung, 119-20.

### Castanets and Clappers

Castanets are paired indefinite-pitched idiophones traditionally categorized as concussion vessel-clappers. The instrument consists of two pairs of small shallow cup-shaped pieces of chestnut wood that are laced together. The pairs differ in pitch as high and low sounds with the higher pair traditionally held in the right hand.<sup>209</sup> Similarly, bones and small wooden sticks resembling the modern clave, that were interchangeable with claves during the sixteenth and seventeenth century, also have been included in this section. Mersenne described one such variation of the castanet in Harmonie universelle (1636): “All of the knuckle-bones and small sticks of wood, and other material that one holds between the fingers or in other fashion, which are handled so dexterously and quickly.”<sup>210</sup> Blades cited a similar reference in Percussion Instruments and Their History.

The clappers, flat pieces of bone or wood, were held one in each hand in the case of the large ones, a pair between the fingers of each hand in the case of the smaller ones . . . . Simple instruments, among which are included the two pieces of a rib bone of an animal . . . were used by players . . . . These serve to remind us of man’s early music, as indeed do the claves (two rounded sticks) used in modern Latin American orchestra, which recall their counterparts – concussion sticks of ancient Egypt.<sup>211</sup>

While all the various clappers and castanet-style instruments coexisted, those instruments depicted in the extant sources from the sixteenth and seventeenth centuries are presented. As a result, the term *castanet* will refer to those paired indefinite-pitched instruments involving performance techniques that produce a rhythmical clapping sound while being

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<sup>209</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).1: 315. s.v. “Castanets,” by James Blades.

<sup>210</sup> Mersenne, 547.

<sup>211</sup> Blades, 194-95.

sustained within the palm of the hand. Larger instruments and variations of these instruments are found within the “Rattles” section of this document.

The earliest evidence of the Western European castanet originates with the Moorish and Spanish cultures. The Moorish occupation of Spain and its geographical proximity to Western Europe suggest the castanet was introduced by this culture. Castanet illustrations from Western Europe’s sixteenth- and seventeenth-century extant sources are scant.

Gangware supported this theory:

There are pictorial illustrations of the castanets among Spanish cantigas dating back to the thirteenth century; however, it is much more difficult to find these same instruments in Europe of the Renaissance and Baroque Periods.<sup>212</sup>

Castanets are thought to be primarily a Spanish instrument. Of the illustrations presented, castanets are subjects in fewer illustrations when compared to the other sixteenth- and seventeenth-century percussion instruments. Perhaps the scant presence is due, in part, to the absence of works by Spanish painters, or a lack of universal castanet popularity. Blades’ Percussion Instruments and Their History offers insight into the European acceptance of this instrument. “Castanets were very much peasant or Gypsy instruments, and not until a later period was it fashionable to paint ‘genre’ scenes of peasant merry-making.”<sup>213</sup>

The European castanets and clappers, in addition to the clave and bones variations, served primarily as accompaniment instruments to peasant music. Gilbert Chase included references to the “folk” use of the castanets with observations regarding the Spanish jongleurs methods of escorting Spanish women-jongleurs [jonglaressas]. These women

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<sup>212</sup> Gangware, 124.

<sup>213</sup> Blades, 118.

were “often accompanying themselves with castanets or tambourine.”<sup>214</sup> In addition, Blades includes a similar observation regarding the more earthy musical applications of these instruments. “[The castanets] were associated with burlesque music. Such implements and utensils formed the ‘orchestra’ of the children and the elders of the poorer class who believed in the power of noise to keep away evil and add zest to rejoicing.”<sup>215</sup> Curt Sachs observed that the instruments, especially the clappers, were “played almost exclusively by women.”<sup>216</sup>

Although castanets are credited to Spanish origin, English and Scottish traditions have been recorded through icons as early as the sixteenth century. While many of these instruments were indigenous imitations, the musical applications of the instruments remained the same. Percussion historian James Blades commented on these traditions:

Clappers in the form of marrow bones and cleavers were prominent in the traditional music of the butchers of Scotland and England. Both instruments are seen in . . . Holbein’s famous series ‘The Wedding of the Industrious Apprentice to His Master’s Daughter’ (1538).<sup>217</sup>

In addition, Dutch artist Werner van den Walckert (c. 1565-1637) depicted a small version of the castanet in the hands of a leper in the painting “Lazarus.”<sup>218</sup>

The significance of castanets in sixteenth- and seventeenth-century Western Europe is supported by scant iconography. Most of the information occurs in text and reference from the extant sources for this study. The absence of a scholarly study from this time has been observed by modern musicologists. Geiringer provided a similar reference to the instrument during this era:

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<sup>214</sup> Gilbert Chase, The Music of Spain (New York: W. W. Norton & Co., 1941), 14.

<sup>215</sup> Blades, 195.

<sup>216</sup> Sachs, 149.

<sup>217</sup> Blades, 195.

<sup>218</sup> Ibid.

In the seventeenth-century Richelieu, castanets in hand, danced the saraband before Anna of Austria, and a century later a German dance-master (Tauber's Rechtschaffener Tanzmeister, 1717) made the Castanets the subject of an exhaustive analysis.<sup>219</sup>

The first iconographic reference to a castanet-style instrument occurs in the sixteenth century. Sebastian Virdung included a depiction of a small clapper with an attached bell in Musica getutscht (1511). The clapper is included with six other instruments grouped as “instruments [that are] foolish [and] regarded as musicalia.”<sup>220</sup> Similar instruments are described within the Praetorius and Bonanni plates.

The clapper in this illustration consists of three spoon-shaped pieces bound together at the handle (PLATE 1.9). A ball-shaped bell is attached at the end where the bound handles meet. There is a space between the middle piece and each of the outer-spoon-shaped pieces. The lack of a scale or detailing text makes the composition or size of the instrument difficult to discern. Apparently the instruments were drawn to fit the space as opposed to displaying instruments to relative size.

Virdung was more direct in reference to performance technique of the instruments in PLATE 1.9. Although finding favor with the tone of some ancient bells, Virdung was critical regarding the tone of the clapper instrument:

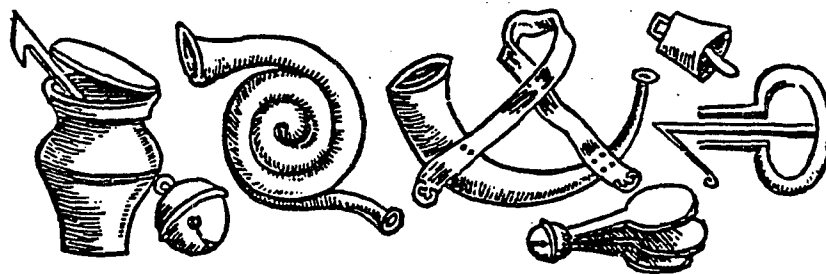
All of the instruments, whatever they are named or [whatever] names they might acquire, I consider “göckel spill” [juggler play]. Therefore it irks me to name them, even more to describe them. Thus, at the present time, I will take leave of them all together and speak only about those instruments that any peasant (eyn ietlicher paur) might know of and call by name [and] those that are serviceable to sweet melody.<sup>221</sup>

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<sup>219</sup> Geiringer, 190.

<sup>220</sup> Virdung, 119.

<sup>221</sup> *Ibid.*, 119-20.



**PLATE 1.9 Clappers With Bell** Virdung 1511. An etching displaying a clapper with an attached bell.

Reprinted With the Permission of Cambridge University Press  
Virdung, Sebastian. *Musica getuscht: a Treatise on Musical Instruments* [1511]. Translated by Beth Bullard. NY: Cambridge University Press, 1993, Sig .D3v.



Virdung's statement implies that tonal instruments provide an acceptable or pleasing sound. In a previous passage, Virdung used the cymballum of Jerome as a standard.<sup>222</sup> The other instrumental contemporaries, incapable of producing the same "sweet tone," are dismissed as noisemakers for the common peasant. Virdung further associated the clapper to the xylophone by stating "one finds many more instruments that are foolish . . . the xylophone (hülzig glechter) [literally 'wooden laughter']; and many other similar ones."<sup>223</sup> The association of this instrument with the xylophone implies the clapper was made of wood. The conclusion is, therefore, that the clapper produced a dry and unsustainable click that Virdung disassociated with acceptable tone. Reason dictates that the clapper illustrated in this graphic consisted of a wooden material consistent with the other types of clapper or castanet-style instruments of the era.

The performance technique of this clapper is distinguishable from the illustration. Virdung depicted the clapper with three spaced pieces bound at the handle. While the motion or technique is omitted, the illustration suggests the pieces must strike against another object to produce tone. The most logical striker-to-resonator relationship occurs as one of the outside pieces striking against the middle as a result of being shaken. The space illustrated between the pieces, the convergence of each piece at a thin end of each handle, and the bell attached at the opposite end support striker-to-resonator conclusion.

A castanet graphic or text reference is absent in Agricola's treatise. The striking similarities between the Virdung and Agricola text have been established previously, and there is no explanation as to why the castanets are omitted while including the

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<sup>222</sup> Ibid., 118. The cymballum of Jerome is a set of pan pipes with small bells hung on a frame and either shaken or struck.

<sup>223</sup> Ibid., 119.

other percussion instruments.<sup>224</sup> There is, however, no mention of castanets in either version of the *Musica instrumentalis deudsch* employed for this study.

The next chronological reference to a castanet-like instrument is contained in Arbeau's *Orchesographie* (1585). A graphic, however, is not included. In a description of the Morris Dance, Arbeau makes reference to a young girl incorporating the castanets into the dance. Arbeau wrote that the, "High born children and young girls of good family in Rome danced with 'crotala'[castanets]."<sup>225</sup> The reference to castanets is supported in a subsequent passage. Arbeau's fictional dialogue with Capriol replies, "*Crispum sub crotalo docta movere latus*. If the poet had meant bells he would have written *cum not sub*."<sup>226</sup>

Praetorius' text provides the next iconographic reference to the castanets. The graphics are an amazing resemblance to those in the Virdung text under the same heading. Four of the eight illustrations are identical to those in the Virdung text.

A clapper, identical to the one in Virdung, is positioned in the center of Praetorius' plate number thirty-three (PLATE 1.14).<sup>227</sup> The instruments are loosely categorized as *Klappern: Schellen und Glocken*, or literally, "wooden clappers, small and large bells."<sup>228</sup> Similar to Virdung, the clapper in this illustration consists of three spoon-shaped pieces bound together at the handle with a ball-shaped bell attached at the end where the handles are bound. Again, there is a space between the middle piece and each of the outer spoon-shaped pieces.

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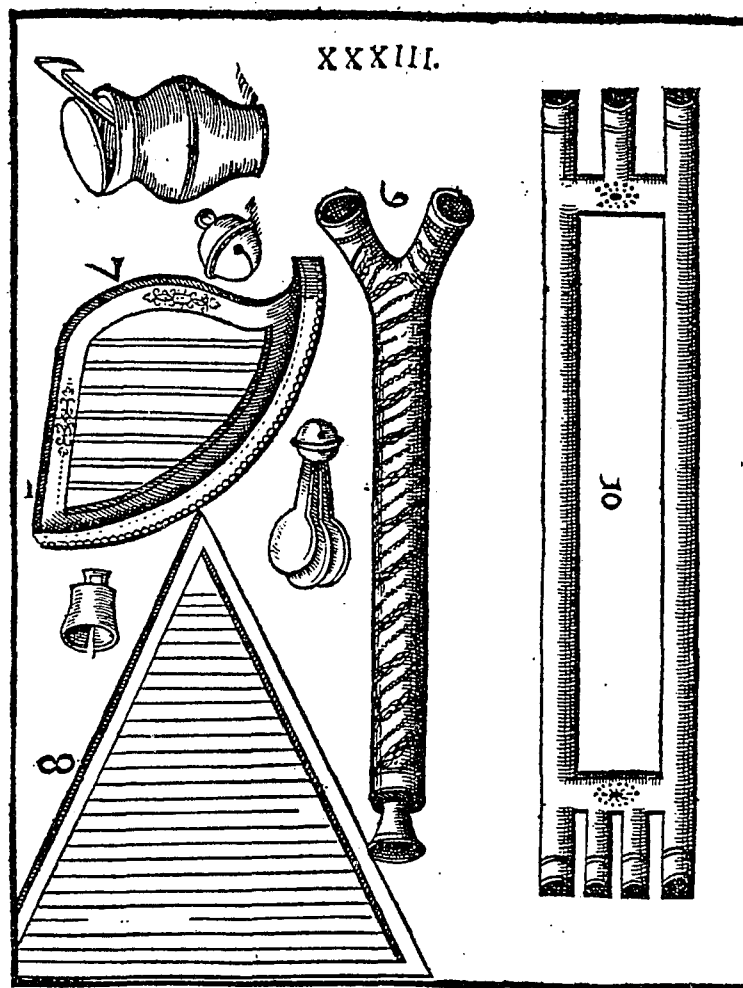
<sup>224</sup> The introduction of this chapter contains specific references regarding the similarities between the Virdung and Agricola texts.

<sup>225</sup> Arbeau, 177. While Arbeau continues to presume the reference is in regard to small bells, translator Julia Sutton insists the reference is regarding the castanets.

<sup>226</sup> Ibid., Sutton translates to literally mean "To deftly sway a vibrant hip under the castanets," p. 204.

<sup>227</sup> Praetorius, pl. 33.

<sup>228</sup> Peinkofer and Tannigel, 14.



7.8. Pfa lteria. 9.10. Tympanum Hieronimi. Klappern: Schellen vnd Glocken.  
 11. 

PLATE 1.14 **Bell-Clapper** Praetorius, 1619. Taken from Praetorius' list of "Instruments of Jerome," an etching including a scale drawing of a castanet-style clapper with an attached bell.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 33.

Praetorius omitted a scale impeding the ability to discern the composition or size of the instrument. Uniquely, however, Praetorius appears to have made an attempt at maintaining relative size. The bells and harps are not in a decorative pattern as in *Virdung*, and appear to be in relative proportion to the other instruments.

As in *Virdung*, the performance technique of Praetorius' clapper is distinguishable from the illustration. Similarly, Praetorius depicted the clapper with three spaced pieces bound at the handle. While the motion or technique is omitted, a reasonable conclusion is that the pieces must strike against another object to produce tone. The most logical striker-to-resonator relationship is from one of the outside pieces striking against the middle as a result of being shaken. The space illustrated between the pieces, the convergence of each piece at a thin end of each handle, and the bell attached at the opposite end supports the striker-to-resonator theory. Similar depictions are found in *Virdung* and *Bonanni*.

The similarities in the depiction and associated conclusions apply to the musical applications of this clapper as well. Praetorius includes scant text in reference to the musical applications and functions of this instrument. The only supporting texts are brief citations. In part XII, Praetorius makes reference to the clappers in a list of instrument "without strings which are struck in order to sound including those with a beater or rod . . . 'Sistra' [rattle]."<sup>229</sup> Praetorius adds subsequent information:

There are even more instruments, of various kinds, depicted in the plates . . . as well as different exotic Moorish instruments. Some of them deserve Sebastian *Virdung's* name of "uncouth instruments," namely instruments devoid of all art and refinement. We will not need to give any account of these, since they are familiar to everyone, and fall out of the boundaries of music.<sup>230</sup>

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<sup>229</sup> Praetorius, 23.

<sup>230</sup> *Ibid.*, 78.

Praetorius omitted any supplementary text and avoids additional material that would contradict Virdung's previous information. As a result, the observations applied to the Virdung graphic also are applicable to Praetorius' illustration of a clapper.

Of the sources examined for this study, only Mersenne included a castanet illustration with text. A detailed illustration of the castanets is included in Mersenne's Harmonie universelle (1636), PLATE 2.1. Unlike the previously cited sources, Mersenne illustrates a pair of instruments that resemble the modern clave.

Mersenne's castanet resembles the modern instrument. The illustration portrays castanets in the shape of small concave ellipses tied into a configuration so that the hollow portions are opposing. The text included with the illustration amplifies the relationship by stating "this instrument made in the shape of small spoons without handle . . . which shows the hollowness and the convexity."<sup>231</sup>

The size of the castanet is difficult to determine solely from the illustration. A relative estimate is possible, however, from the description that follows in Mersenne's text. Mersenne described the placement and performance technique of the instrument as belonging in the palm of the hand. This is surmised from the text stating the strings "tie them to the thumb . . . so that one makes them beat with the middle finger, or the fourth, which is used ordinarily."<sup>232</sup> By this passage, a logical conclusion is that the concave portion of the castanets is approximately three to five inches in diameter. In order to hold and perform the described technique, the combination of the closed pair ranges from one to two inches thick.

Performance techniques related to the castanet and similar instruments are addressed with this citation and additional supporting text. The above quotation describes the

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<sup>231</sup> Mersenne, 546.

<sup>232</sup> *Ibid.*,

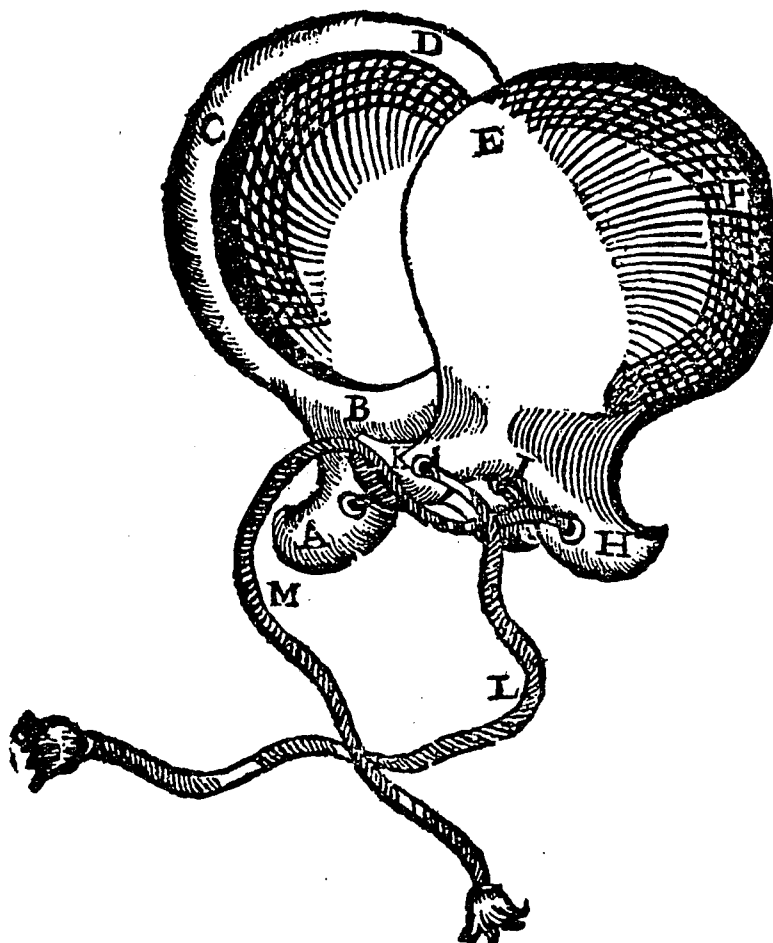


PLATE 2.1 **Castanets** Mersenne, 1635. A representation of Mersenne's detail of a pair of castanets.

Reprinted by Permission from Kluwer Academic Publishers.  
 Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands: Nijhoff, 1957, fig. 108.

performance technique involving the motion of the middle finger and fourth finger [commonly referred to as the ring finger] tapping toward the palm. Mersenne includes additional passages describing the rapidity of the movements.

The graces of the castanets depend on the hand of the player, and particularly on the movement, the cadences, the passages, the diminutions or shakes, which are made so fast that it is impossible to count the number of beats, unless one takes the precaution which consists of observing the measure and the cadence, which makes us judge that the more skillful beat eight or nine times in the time of a measure, or a pulse-beat which lasts a second. Thus one makes almost as great diminutions on this instrument as on . . . others, the speed which surpasses the imagination.<sup>233</sup>

All of the knuckle-bones and the small sticks of wood or other materials that one holds between the fingers or in other fashion, and which are handled so dexterously and quickly and with the same regulated cadences, that it is impossible to explain them can be regulated to castanets . . . . But one can only express them by figures so that one can understand the industry and movements of them.<sup>234</sup>

In these passages, Mersenne implied that the instruments are manipulated with such speed that counting the actual stroke is impossible. The reference to holding the implements “between the fingers,” and the dexterity associated with the movement, implies finger action is the principal form of motion applied to the castanets-style instrument. The reference to the “diminutions or shakes” has a parallel in modern music. “Diminutions” is in reference to a series of successive contacts, similar to the percussive term *roll*.<sup>235</sup> Mersenne applied the term *diminutions* in reference to the period of time in which they occur. As a result, the technique of the castanets involves small muscle coordination capable of producing measured articulations and rolls.

The musical applications of the castanet-like instruments are addressed within this passage. Mersenne contended the various sizes of castanets are suitable for the

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<sup>233</sup> Ibid., 546-47.

<sup>234</sup> Ibid., 547.

<sup>235</sup> A roll is a series or rapid alternating articulations for the purposes of sustaining sound. Although the snare drum may have measures-style rolls, the beating are usually intended to be imperceptible.

accompaniment of dances, in consort with guitars, and “within the tone of other stringed instruments.”<sup>236</sup> In addition, the direct reference to castanets as accompaniment to the guitar more positively identifies the castanets with peasant merrymaking. The implication of the dance and the associated instruments further removes the castanets from any consideration as a sixteenth- or seventeenth-century instrument of art music. The dance mentioned is the sarabande, an ethnic dance associated with folk-style or common practice.

In addition to the above text, Mersenne included additional references to the composition and variation in size affecting tonal properties of the castanets:

Although the castanets, the figure which is seen herewith, have only a single tone, one can nevertheless make concerts of them, if one makes them different sizes which maintain the harmonic proportion. The sound of this instrument is made in the shape of small spoons. They can be made of plum-wood, or beech, and every other sort of resonant wood, like the xylophones . . .<sup>237</sup>

Mersenne’s exposure to castanets inspired an application of the basic principles relative to sound. The passage comparing the wood composition of the xylophone to the castanets supports the premise that the more dense the material, the brighter the pitch. The recommendation of varying the size displays Mersenne’s knowledge relating size and timbre. The modern instruments maintain these same principles by manufacturing the instruments from grenadilla or ebony and pairing instruments of different sizes.<sup>238</sup>

Bonanni included five variations of clapper-like castanets and a number of similar instruments. Those concussion instruments not included within this section are found in the “Rattles” portion of this document. All of Bonanni’s graphics with instruments meeting

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<sup>236</sup> Mersenne, 546-47.

<sup>237</sup> Ibid., 546.

<sup>238</sup> Peinkofer, 142.



the previously described criteria of this section are hand-held instruments producing sound as a result of concussion between a striker and paired resonator.

Bonanni's plate number ninety-three depicts a woman dancing and holding a pair of castanets in each hand (PLATE 2.2). While the figure is a representation or concept, the characteristics associated with the castanets are clearly represented. The caption "Baccante con Nacchera," interpreted literally, means "beater with castanet."<sup>239</sup> The instruments appear to be consistent in size and shape relative to the other sources for this study. The only exception to Bonanni's depiction is the castanets in this graphic appear to be more spherical than spoon-shaped or elliptical. The strings mentioned by Mersenne are not included in this depiction. The figure's hand position provides an adequate view for determining whether the strings associated with the instruments are present.

Although limited text accompanies the Bonanni graphic, the figure and the instruments appear to be consistent with the previous materials. Mersenne and Arbeau specifically include the castanet in context with dancing and dance accompaniment. Bonanni's figure is depicted to be moving in a dance-like manner. The performance techniques described by Mersenne are seen in Bonanni's figure. The subject is holding the instruments in the palm of the hand and apparently striking the castanets with the middle and fourth fingers. The accompanying citation specifies the instruments are made of "hollowed out hardwood."<sup>240</sup> As a result, the size, shape, function, composition, and performance techniques of this graphic appear to be congruous to the previously cited materials.

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<sup>239</sup> Morris Lang and Larry Spivak, *Dictionary of Percussion Terms as Found in the Symphonic Repertoire* (New York: Lang Percussion, 1977), 11.

<sup>240</sup> Bonanni, 93.



PLATE 2.2 **Baccante con Nacchera** Bonanni, 1716. One of the few depictions of seventeenth-century castanets.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 93.



PLATE 2.3 **Gnacchare delli Turchi** Bonanni, 1716. Clave-like castanets depicted with a Turkish dancer.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 95.

The second depiction in the Bonanni collection is of a clave-like instrument. Bonanni labels this instrument as “Gnaccare delli Turchi,” or literally, “castanets of Turkey.”<sup>241</sup> The representation has a figure dressed in what appears to be an ethnic Turkish costume (PLATE 2.3). The instrument is, relative to the figure, a hand-held tubular piece of wood approximately six inches in length that has been cut length-wise. The figure is holding an instrument in each hand.

Bonanni attributed the development of this illustration to a passage written by Ottavio Ferrari.<sup>242</sup> As a result, the graphic is a representation. Therefore the detail of the performance technique and grip involved with manipulating the instrument has been omitted. On the basis of the graphic alone, the appearance is as though the figure is separating the two pieces by opposing the thumb and the fingers as opposed to strings or any peripheral devices.

While no specific information has been included with the graphic, the figure is again posed in a dance-related position. The right arm is raised above the head, while the left arm is extended away from the body. The body position appears to be off-center suggesting movement. The dance inference is appropriate and consistent with the previously cited sources.

Although scant text accompanies this graphic as well, the figure and the instruments appear to be consistent with the previous materials. The texts of Virdung, Agricola, Arbeau, Praetorius, and Mersenne all mention a castanet-like instrument in their texts. All of the sources cited in this study associate this type of instrument with dancing and dance accompaniment.

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<sup>241</sup> Lang and Spivak, 56.

<sup>242</sup> Bonanni, 95.

The performance technique associated with Bonanni's figure is slightly altered by virtue of the shape of the instrument. Apparently, the instrument is separated by retracting the fingers away from the thumb. Whether the instrument is compressed as the fingers extend, or if the sides alternately strike in a rocking motion as the instrument is separated by the fingers is indiscernible. On the sole basis of the depiction, either of these techniques is possible.

The third plate of the Bonanni collection contains two styles of clapper-like instruments (PLATE 2.4). The illustration labeled as "Instrumenti Fanciulleschi"<sup>243</sup> contains two children holding improvised instruments. One figure is holding a rock in each hand, the other two flat items in one hand.

The composition of the individual instruments is difficult to discern. Judging strictly on the basis of the illustration, the figure on the right appears to be holding two rocks. Although the specific composition of the instruments has been omitted from the accompanying text, the artistic shading appears to be consistent in its depiction with the larger rock on which the figures are seated. The figure on the left appears to be holding two animal rib bones. The long round-edged pieces are too flat to be wood, and too concave to be any other natural material. By virtue of the subjects being children, and one with a rock, an association of the other instrument with any artistic refinement is difficult. Both Mersenne and Blades have made similar observations regarding the use of animal ribs as peasant accompaniment instruments.<sup>244</sup> While the accompanying text omits specific references to the composition of these instruments, the only material consistent with the depiction and previously mentioned is an animal rib.

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<sup>243</sup> Ibid., 96. According to Don Randel, ed., The New Harvard Dictionary of Music, the label literally translates as "Children's Instruments."

<sup>244</sup> Blades, 195, and Mersenne, 546.



PLATE 2.4 **Instrumenti Fanciulleschi** Bonanni, 1716. Stone and bone clappers portrayed with children.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 96.

The figure on the right of the graphic appears to be striking two rocks together. The performance technique associated with this type of concussion instrument is primitive and involved the obvious motions of striking the rocks together and subsequently pulling the pieces apart. The figure seated on the left, however, displays a more complicated performance technique. Two ribs are held in the same hand in an upper and lower relationship. The subject is holding the lower rib beneath the index finger of the left hand. The rib extends along the side of an extended middle finger. The upper bone is suspended above the first rib between the thumb and the index finger of the same hand. The child appears to be striking the upper bone against the lower bone with the fingers of the right hand. The index finger is acting as a fulcrum to maintain separation while the hand provides a spring-like action to return the upper bone into the starting position.

As with the previous Bonanni illustrations, the subjects appear to be consistent with the musical applications obtained from the other extant sources. Restating the possible and known musical applications except to say that these figures further confirm the folk-instrument theory previously described is redundant.

A clapper in the form of a wooden pot and pestle is the subject of Bonanni's plate number one hundred sixteen (PLATE 2.5). The label for this plate, *Baciccolo*, is not found in this form in the music sources for this study. *Baciccolo*, however, appears a derivative of the Latin root word *bachi* or *bacci* which means "striker."<sup>245</sup> A *Bachi* is a south-eastern xylophone of Africa. Perhaps the sound of the resonator inspired Bonanni to reflect on the technique and the sound in the title concurrently.

In relation to the figure, the instrument appears to be a lightbulb-shaped vessel approximately four inches in diameter. The striker is a pestle relatively six to seven inches

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<sup>245</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).1: 95. s.v. "Bacchetta," "Bachi," and "Bachas."



PLATE 2.5 **Baciocolo** Bonanni, 1716. A folk instrument consisting of small wooden pot struck with what appears to be a wooden pestle.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 116.



in length and one inch in diameter. Bonanni mentions both instruments are made of wood. “It consisted of a wooden pot which was struck rhythmically by a wooden beater made in the form of a pestle.”<sup>246</sup>

As with the previous plates, the figure is a representation taken from a written passage and is not intended to be a rendering of an actual event or person. As is consistent with the previous depictions, the figure is posed in a dance position. This position suggests the person is dancing while possibly providing rhythmic accompaniment. The figure’s clothing also appears common as opposed to that of gentry. Jewelry, buttons, and other clothing peripherals indicative of aristocracy have been omitted. In addition, Bonanni’s citation includes a reference to “a noise-maker used by common folk in Tuscany.”<sup>247</sup> This observation helps to reinforce that the instrument was applied in musical settings separate from the art music of the era.

A unique addition to the clapper instruments appears only in Bonanni. This instrument evolved from Greek and Roman traditions of loosely attaching a second sole to a sandal for the purposes of a tap-style clapper. An example of this instrument is found in Bonanni’s plate one hundred twenty-seven (PLATE 2.6). The title of this plate, “Scabillo degl’ Antichi” derives from the Roman word for this instrument *scabellum* or “clapper.”<sup>248</sup>

The composition of the *scabellum* was addressed by Sachs as well:

All kinds of materials, mostly of wood in boot shape . . . . It was a kind of thick sandal, tied to the right foot and consisting of a block of wood cut out to form an upper and an under board, fastened together at the heel. Each board has a kind of castanet inside. In stamping, the boards with their castanets were clapped together with a sharp cracking sound.<sup>249</sup>

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<sup>246</sup> Bonanni, 116.

<sup>247</sup> Ibid.

<sup>248</sup> Sachs, 149.

<sup>249</sup> Ibid.

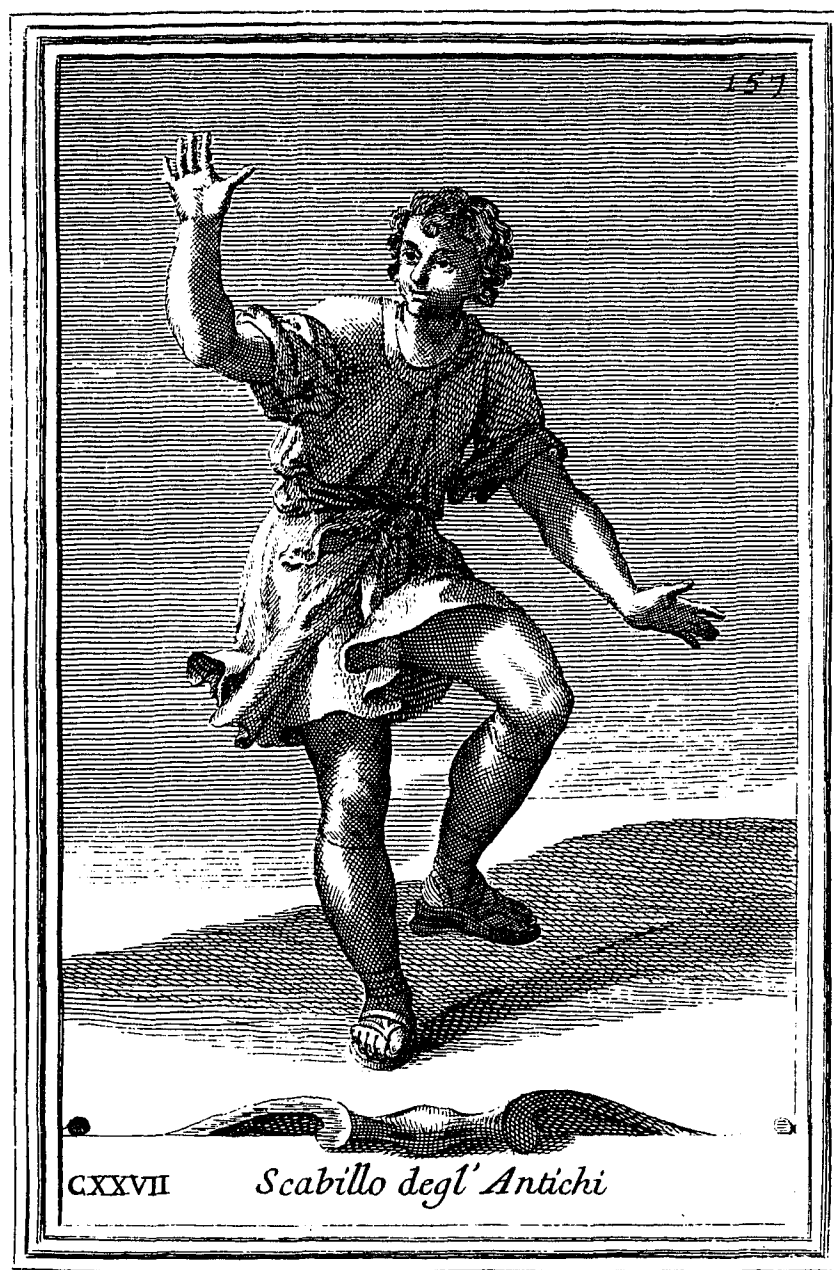


PLATE 2.6 **Scabillo degl' Antichi** Bonanni, 1716. A figure wearing shoes with attached clapper-heels.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964),. pl. 127.

Bonanni, however, deviates slightly from Sachs' description. The figure in Bonanni's plate has a clapper-sandal on the left foot. The illustration does not provide a perspective to discern whether the right sandal is another scabellum. The discrepancy lies in the possibility of depicting the wrong foot or illustrating the figure with two instruments as opposed to one. In addition, the raised arms and tilted body position suggests the figure is performing a dance. Sachs' description maintains the application was percussive accompaniment and not necessarily dance-related as suggested by Bonanni's depiction. The artistic inference that the clapper is attached at the toe as opposed to the heel has not been explained.

Sachs included a reference pertaining to the early applications of the instrument, claiming that "Another clapper, called *kroupalon* by the Greeks and *scabellum* by the Romans, belonged to the paraphernalia of the chorus leader and served to beat time."<sup>250</sup> The importance to this era is found with the citation by Frank Harrison, editor of *Gambinetto armonico*. Harrison wrote that, "A vestige of it survives in the stamping foot of Scottish and Irish Bagpipers."<sup>251</sup> An instrument similar to those in Virdung and Praetorius is plate 128 by Bonanni (PLATE 2.7). The "Crotalo del Mendico" or "beggar's clappers" resemble the previously described bell-clapper in the other sources.

A unique characteristic to this clapper is in the formation of the instrument. The clapper consists of a small flat piece of wood fixed to a handle. The piece of wood is, relative to the figure, approximately one inch wide and one-half inch thick by ten inches in length. Similarly sized pieces of wood are attached on either side at the base of the handle. This configuration allows for alternate striking by the pieces when the instrument is

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<sup>250</sup> Ibid.

<sup>251</sup> Bonanni, 127.



PLATE 2.7 **Crotalo del Mendico** Bonanni, 1716. A representation of a beggar's clapper. Bonanni credits this device as also functioning as a warning of approaching lepers.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964),. pl. 128.

shaken. The result is a clapping sound similar to the castanets or other clappers in this section.

Musicologists disagree on the particular function or applications of this instrument. Harrison suggested the clapper was used in the “Middle Ages . . . by lepers as a warning of their presence.”<sup>252</sup> Blades contended that this clapper, or a similar type, was incorporated in religious ceremony “especially during Holy Week when the bells were silent.”<sup>253</sup> On the basis of the depiction alone, the association of this clapper with any metered accompaniment is difficult. The construction would prevent any accurate rhythmic articulation resulting from shaking. In addition, a tensioning device limiting the range or rattling action is not present. As a result, the motion and resulting sound is inconsistent.

The castanets and clapper-like instruments in this collection are consistently constructed of wooden or bone materials. Except for the scabellum, all of the instruments have been hand-held concussion instruments with a striker and resonator component. The function and musical applications of these instruments appear to have been relegated to dance and folk music. The association of these instruments with the folk idiom possibly hampered the acceptance of castanets, or similar instruments, into the art music of this era. James Blades observed that as a result of this relegation “such instruments were not used in the ‘best circles’.”<sup>254</sup>

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<sup>252</sup> *Ibid.*, 126.

<sup>253</sup> Blades, 195.

<sup>254</sup> *Ibid.*

### Cymbals and Gongs

The instruments included within this section are those displaying one or all of the following characteristics: (1) depicted in a sixteenth- or seventeenth-century extant source for this study, (2) the form of the instrument appears in a plate or cup-shape, and, (3) the graphic has been identified as a metal idiophone (metallophone) by the authors of the extant sources. Metallophones maintaining these characteristics, but also bearing unique attributes or exceptions, are included in other sections. For example, precursors or antiquated forms of the bells and rattles displaying the above characteristics will be separated and included with the “Bells” and “Rattles” sections of this document respectively. For this study, a cymbal is defined as any plate or cup-shaped metallophone that is over four inches in diameter. Instruments smaller in diameter than the cymbal, but which maintain similar forms and characteristics, are identified as finger cymbals. A gong is a plate-shaped instrument with the above characteristics and the addition of an everted edge.

By definition, an idiophone is an instrument of naturally sonorous material capable of producing sound without the aid of additional substances.<sup>255</sup> In addition, similarly paired idiophones that are struck together are considered “concussion instruments” or “clappers.” As a result, cymbals, finger cymbals, and gongs are metallophones generally classified as vessel clappers with an everted rim that produce indefinite pitch.<sup>256</sup> Except for the gong, these instruments are traditionally exhibited in pairs.

The origins of information regarding the cymbal, finger cymbal, and gong from these centuries are varied. The sources appear to be restricted to graphic depictions while

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<sup>255</sup> Sachs, 455.

<sup>256</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).1: 529. s.v. “Cymbals,” by James Blades.

avoiding written description. The evasive treatment relative to the discussion of percussion instruments originated with Virdung and was sustained by Agricola and Praetorius creating a noticeable absence of written information. These previous authors, however, included invaluable illustrations of the instruments. As indicated in the other sections of this document, the majority of available information regarding percussion instruments in general is obtainable from modern sources.

The reverse is true, however, concerning the metallophones of the sixteenth and seventeenth century. Previously, sources have provided scholarly perceptions traversing the discontinuity of information from the extant sources. Ironically, the authors of extant sources have been consistent by providing limited written information, yet the secondary sources also have omitted discussion of the above instruments from this era almost entirely. For example, Blades omitted a chapter on Baroque percussion entirely.<sup>257</sup> In addition, Blades' information regarding percussion instruments in medieval and Renaissance Europe contains preorchestral instruments with the omission of the cymbal.<sup>258</sup> A Textbook of European Musical Instruments by Francis Galpin omits a discussion of the cymbal altogether.<sup>259</sup> Blades' article in the New Grove Dictionary of Musical Instruments contains one allusion, beyond the extant sources for this document, to sixteenth- and seventeenth-century references in the four-page entry.<sup>260</sup>

The origin of the term *cymbal* is difficult to determine. Previous to the sixteenth century, the name cymbal appears to have been applied to instruments, players, ensembles, consorts, and performance techniques. The appellation is displayed as a bell, dulcimer, or psaltery in England, and has been found as the name of a stop on the organ. Sachs

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<sup>257</sup> Blades, 189.

<sup>258</sup> *Ibid.*, 188-222.

<sup>259</sup> Galpin.

<sup>260</sup> Stanley Sadie, ed., The New Grove: 1: 529-33. s.v. "Cymbals," by James Blades.

attributed the term *cymbal* to a Coptic translation from the Greek word *kymbala*.<sup>261</sup> Blades contended the designation was established in association with bells and became confused by misperceptions of similar-sounding instruments.

Thirteenth- and fourteenth-century writers speak of *chyme bells*, *cymballs* or little bells, and chymes, also organs and chymes are played together. Doubtless because of its bell-like effect, the name cymbal applied to psaltery, and then to dulcimer, and later to the keyboard, in the English *clavicymbal* and the Italian *clavicembalo* which finally became the harpsichord. Small wonder why we find the cymbals misapplied Bach and Handel, possibly due to a misrepresentation of the organ stop Cimbel or Zimbel, a mixture to produce a bell-like sound (still used).<sup>262</sup>

Galpin cited two fifteenth-century phonetic equivalents to the term *cymbal* in a seventeenth-century writing by Sir William Leighton titled Tears and Lamentations of a Sorrowful Soule (1613). *Symbale* appears as the accepted term in the fifteenth century while Leighton subsequently modifies the term to *Simball*.<sup>263</sup> Reese suggests that the term *cymbala*, a derivative of cymbal, is a misnomer for the bell-chime.<sup>264</sup> Modern terms for the cymbals include the French *cymbales*: the German monikers *Becken*, *Schellbecken*, and *Tellern*; and the Italian labels *piatti* and *cinelli*.<sup>265</sup>

Similar to the bells, cymbals appear to have maintained a consistent material composition during the sixteenth and seventeenth centuries. Blades and Galpin suggest the metallurgy to be approximately seventy to eighty percent copper, with the remaining twenty to thirty percent a combination of silver, tin, and bronze. Sachs is more definitive in stating the instruments are 78.55% copper, 20.28% tin, 0.54% lead and 0.18% iron.<sup>266</sup> The

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<sup>261</sup> Sachs, 103.

<sup>262</sup> Blades, 200.

<sup>263</sup> Francis Galpin, Old English Instruments of Music (St. Clair Shores, Michigan: Scholarly Press, 1910), 256.

<sup>264</sup> Reese, 329.

<sup>265</sup> Peinkofer and Tannigel, 13.

<sup>266</sup> Sachs, 439.



modern instrument is composed of an alloy consisting of eighty percent copper and approximately twenty percent tin.

Cymbals are one of the few modern percussion instruments in their original form. Examination of the prints in this document support the theory that the cymbal has remained relatively unchanged from the cymbals of the Romans and ancient Greeks. The cymbals depicted in this collection are similar to the smaller ancient Greek cymbals. Specifically, the cymbals appear to be thick and approximately ten inches in diameter.<sup>267</sup> The dome or boss (raised portion of the cymbal that rests against the hand) also is a little larger than most of the modern cymbals. The taper (rim) is relatively shorter than the typical contemporary cymbal, but not unusual. Gangware noted that cymbals have “managed to survive from antiquity in their three basic forms, the small finger-type, the inverted-funnel type, and the flat soup-plate type, and all three forms are found in Europe of the [sixteenth century].”<sup>268</sup>

Like the other pre-orchestral percussion instruments from the sixteenth- and seventeenth-centuries, cymbals were universally accepted in sixteenth and seventeenth-century Western Europe. Other preorchestral percussion instruments depicted in European icons centuries before percussion parts were first scored include the snare drum, timpani, tambourine, and triangle. For example, Geiringer included a distinct sixteenth-century European representation of the funnel-type cymbal.<sup>269</sup> Paul Lang’s Music in Western Civilization includes an eleventh-century painting depicting the same type of cymbals. Lang’s plate of Gaudenzio Ferrari’s Convert of Angels, located in the Dome of Saronno, depicts six-inch-long cymbals. Lang included a description of the painting.

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<sup>267</sup> Gangware, 114.

<sup>268</sup> *Ibid.*, 113. It should be noted that the funnel-type cymbal was a popular subject in sixteenth-century Western European art. The funnel-type cymbal has not, however, survived in the present-day percussion family.

<sup>269</sup> Geiringer, 100.

The Orient [provided] wind and percussion instruments . . . as well as cymbals. All were popular with itinerant musicians. Early Medieval miniatures testify to the great popularity of the chimes, little pear-shaped or semi-spherical bronze bells hung up on a rod . . . .<sup>270</sup>

The soup-plate and finger cymbal forms were subjects in early representations as well. Reese includes depictions of eleventh-century soup-plate type cymbals. The “De Musica” section of the De Universe by Hrabanus Maurus has a clear image of three players, one of which is performing on cymbals. The cymbals are the soup-plate variety, approximately ten inches in diameter, and held together by a strap.<sup>271</sup> Kinsky reproduced a similar illustration from the Codex Beati Commentarius.<sup>272</sup> Gangware included references to the Codex and other significant icons dating before sixteenth-century Europe:

A pair of fourteenth century inverted-funnel type cymbals is portrayed in Kinsky in an illustration of the sculpturing in the minstrel gallery in the north triforium of the nave of Exeter Cathedral (built 1230-1370). These cymbals are quite small, about six to eight inches in diameter, which seems to be the general size for most of the cymbals. There is an example of one pair in an engraving by Georgio Ghisi, dated 1550, in which the cymbals are quite large, about twelve inches in diameter.<sup>273</sup>

There is a musician playing a cymbal of this type in the carved frame to Martin Schöngauer’s painting Maria im Resen hag, dating from 1473.<sup>274</sup> In the minstrel gallery of the Exeter cathedral a sculptured cymbal player is located, dating from the fourteenth century.<sup>275</sup>

Monteo Giovanni’s “Assumption of the Virgin” (c. 1490) portrays a pair of plate-shaped instruments held horizontally by a female subject.<sup>276</sup>

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<sup>270</sup> Paul Lang, Music in Western Civilization (New York: W. W. Norton and Co., Inc., 1941), 82.

<sup>271</sup> Reese, 158.

<sup>272</sup> Kinsky, 35, No. 2.

<sup>273</sup> Gangware, 115.

<sup>274</sup> Kinsky, 59, No. 1.

<sup>275</sup> *Ibid.*, 51, No. 2.

<sup>276</sup> Stanley Sadie, ed., The New Grove: 1: 531. s.v. “Cymbals,” by James Blades.

While the three types of cymbals existed concurrently in sixteenth- and seventeenth-century Western Europe, their occurrence in icons changed. Kinsky and Reese include numerous examples of all the cymbals, but with notable omissions of particular types in certain centuries. The inverted funnel type of cymbal is popular in fifteenth- and sixteenth-century works of visual art. There is no record, however, of the soup-plate and small oriental finger-types. The soup-plate type of cymbal, as recounted above, was a prevalent subject in works of visual art until the tenth century. Gangware observed that the soup-plate type of cymbal “does not reappear until the end of the eighteenth century.”<sup>277</sup> In addition, Gangware commented on the inclusion of the finger cymbals: “The small finger-type cymbals have much the same history [as the soup-plate type] except that there is no indication of this size cymbal being used from the end of the Roman Empire until the nineteenth century.”<sup>278</sup>

The figures in this document performing with cymbals are allegorical characters or women. Their performance technique is similar to that of the ancient Greeks. “Ancient cymbals . . . are held with one resting above one hand, and the other hanging below the other hand so they were horizontal and the hands came together vertically.”<sup>279</sup> Still resembling the instruments of the Greeks and Romans, modern cymbals remain a significant part of percussion sections.

The cymbals also are exhibited in a variety of other musical and cultural applications. Blades suggested that the cymbals followed a tradition associated with sacred and secular rituals and that the “cymbals have been credited with remarkable powers.”<sup>280</sup> Reese included a passage from Ailred, a twelfth-century English writer, describing the

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<sup>277</sup> Ibid., 116.

<sup>278</sup> Ibid.

<sup>279</sup> Blades, 192.

<sup>280</sup> Stanley Sadie, ed., *The New Grove*: 1: 530. s.v. “Cymbals,” by James Blades.

“noise of the cymbals and the united strains of the organ pipe” as an unpleasant combination.<sup>281</sup> Guillaume Machaut (c. 1300- c. 1377) included cymbals in the list of instruments described in the poem *Remède Fortune*.<sup>282</sup> Galpin credited the inclusion of cymbals into military music by the seventeenth century. “By this time the army bands had adopted them, and with the ‘dusky Moors,’ wielding the ‘clashpans’ with emmense [sic] effect and empresentation [sic].”<sup>283</sup> At the end of the seventeenth century, F. A. Lampe produced a history of the cymbals in Greek, Roman, and Jewish cultures called De cymbalis veterum.<sup>284</sup>

The first orchestrated part for cymbals is in the sixteenth-century opera Esther (1680) by Nicholas Adam Strungk (1640-1700).<sup>285</sup> In the same year, Domenico Freschi’s (1625-1710) opera Berenice employed cymbals in the accompanying orchestra.<sup>286</sup> Since 1680, composers have included cymbals regularly in the percussion section. The only instrument of the percussion section to have acquired a permanent place before the cymbals was the timpani.<sup>287</sup>

Cymbals are absent from the illustrations and text in Virdung’s Musica getuscht (1511).<sup>288</sup> Virdung included twelve varieties of percussion instruments in four plates with the cymbals having been omitted. Although cymbals were available during the sixteenth century, Virdung possibly associated the instruments with peasant noise-making and unworthy of reference. Virdung made an indirect reference to the cymbals in a

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<sup>281</sup> Reese, 409.

<sup>282</sup> Ibid., 383.

<sup>283</sup> Galpin, 256.

<sup>284</sup> Stanley Sadie, ed., The New Grove: 1: 531. s.v. “Cymbals,” by James Blades.

<sup>285</sup> Sachs, 439.

<sup>286</sup> Stanley Sadie, ed., The New Grove: 1: 531. s.v. “Cymbals,” by James Blades.

<sup>287</sup> Ibid., 193.

<sup>288</sup> Virdung.

generalization of percussion instruments as *göckelspill* [fool's play]. "Therefore it irks me to name them, even more to illustrate them, and above all to describe them."<sup>289</sup>

Martin Agricola is credited with including cymbals among the percussion instruments of *Musica instrumentalis deudsch* (1529).<sup>290</sup> There is, however, disagreement as to the reference. James Blades suggested that Agricola included written references to the "cymbals, bells, xylophone, and anvil."<sup>291</sup> Blades' reference is to Agricola's inclusion of the word *zimbeln*.<sup>292</sup> The term is applied generically to the ancient form of cymbals associated with the modern *crotale*.<sup>293</sup> The discrepancy lies in the interpretation of "ancient." Agricola was possibly referring to an antiquated metallophone possessing the characteristics of the cymbals by the application of the term *ancient*. Agricola omitted additional references.

*Orchesographie* (1585) by Thoinot Arbeau includes two references to the cymbals.<sup>294</sup> The first occurrence is in a discussion of the ancient percussive accompaniments and applications cited in the Bible.<sup>295</sup> Although the specific term is omitted, the reference to percussion is noted in the footnotes by Mary Stewart Evans. Arbeau's second citation specifically mentions the word *cymbals*.<sup>296</sup> The application of Arbeau's label, however, remains in question.

Arbeau's use of the term *cymbals* appears to be for the description of a triangle. Arbeau stated the accompanying instrument is a Basque tabor [tambourine]. Editor Julia

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<sup>289</sup> Ibid., 119.

<sup>290</sup> Agricola.

<sup>291</sup> Blades, 189.

<sup>292</sup> Agricola, 57.

<sup>293</sup> Peinkofer and Tannigel, 10. The modern *crotale* is a definite-pitched metallophone producing a handbell-quality tone. This instrument is frequently referred to as "ancient cymbals" and is called "zimbeln" in the German vernacular.

<sup>294</sup> Arbeau.

<sup>295</sup> Ibid., 47. *Laudate Dominum in tympano et choro* or literally, "Praise the Lord with Cymbals and Pipe."

<sup>296</sup> Ibid., 177.

Sutton concurred by stating the instrument in reference is a tambourine.<sup>297</sup> Arbeau's subsequent passages, nonetheless, provide contradictory information by stating the instrument "was what we call cymbals, triangular metal plates furnished with loops."<sup>298</sup> Whether the loops are leather straps fastened to the instrument or the customary loop visible in the depictions of ancient triangles is unclear (see the "Triangles and Sistrums" section of this document). In addition, triangular-shaped cymbals have not been evident in extant or secondary sources. The absence of this shape is not to suggest cymbals existed only in plate or cup form. The inconsistency, however, strongly supports the idea that Arbeau misapplied the label. In addition, the use of a triangle in dance accompaniment and the cymbals with Janissary music is well documented. As a result, and because the accompanying text is concerned with dance music, all indications are that Arbeau is identifying the triangle.

The first extant source to include graphic representations of cymbals occurs in Michael Praetorius' Syntagma musicum (1619).<sup>299</sup> Praetorius included two types of cymbals in three plates. The incorporation of a Brunswick scale in the first plate enhances visual assessments.

Praetorius' plate twenty-nine (PLATE 3.1) is labeled as "various exotic instruments."<sup>300</sup> The subjects include various plate-shaped cymbals identified as number six. The plate contains two sets of instruments identified by the number six: the instruments arranged on a wooden platform at the lower right corner of the plate, and the relatively larger discs suspended on a frame. The following information is in reference to

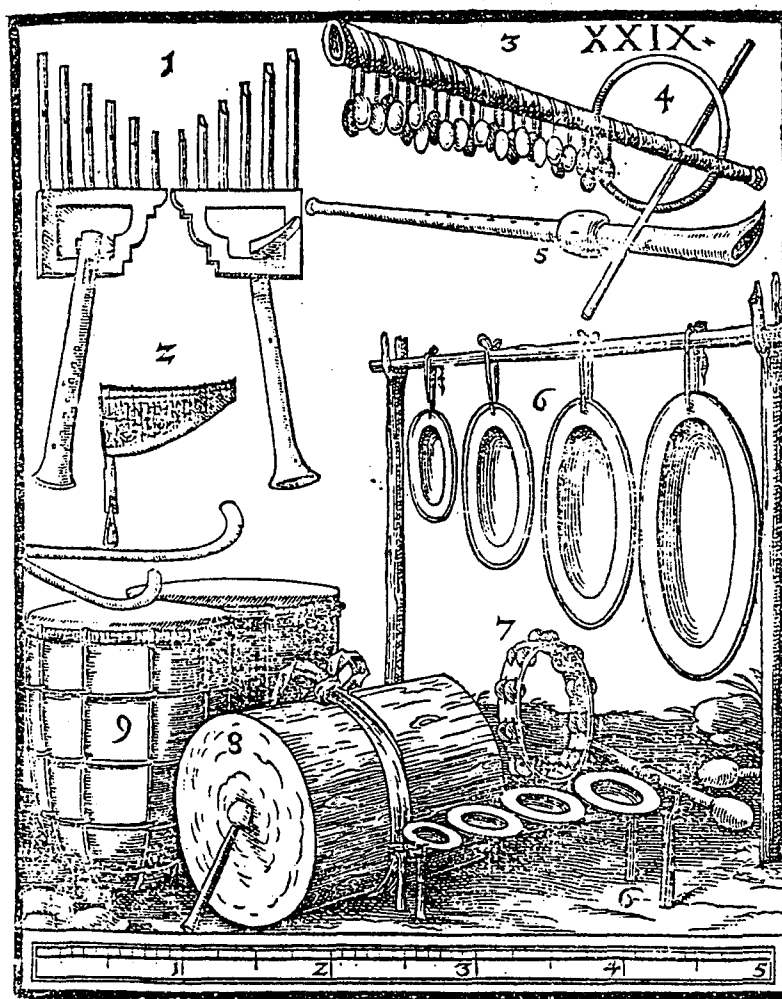
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<sup>297</sup> Ibid., 204. Footnote 105 by Julia Sutton, from page 204, states the instrument Arbeau is citing is a tambourine.

<sup>298</sup> Ibid., 177.

<sup>299</sup> Praetorius.

<sup>300</sup> Ibid., pl. 29.



1. 2. Sind Saryri Pfeiffen. 3. Americanisch Horn oder Trommet. 4. Ein Ring so bey den Americanern gleich wie ein Triangel geschlagen wird. 5. Americanische Schalmen. 6. Becken/ darauß die Americaner/ wie bey vns auß Schoet en/ spielen. 7. Ein Ring mit Schellen/ die sein die hö/ rffwerffen und wiederfangen/ ecc. 8. 9. Americanische Trummeln.

**PLATE 3.1 Plate-Shaped Cymbals** Praetorius, 1619. An etching taken from Praetorius' list of "exotic" instruments, that includes a scale drawing of a set of tuneful metallophones. The only identification attributed to the instruments is, "they are played in a similar manner to bells."

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 Michael Praetorius, *Syntagma musicum*. [Wolfenbüttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 29.

the instruments in the lower right corner. The vertically suspended discs are discussed within the gong portion of this section.

The set of four plate-shaped discs range in diameter from three to six Brunswick inches. The instruments are arranged in graduating widths of three, four, five, and six inches respectively, with the smallest disc to the left. The discs are horizontally arranged and affixed to a “V-shaped” wooden frame. The frame is approximately eighteen inches in length and is supported approximately six inches above the ground at the small end to ten inches on the right side. The absence of a visible means to affix the discs suggests the instruments are set on the frame. The shape of the recessed hemispherical portion of the disc probably coincides with a nodal point that is in contact with the frame. This observation is supported by the graduating width of the frame coinciding with the relative expansion of the discs.

The citation accompanying the plate describes the instruments as “cymbals when played sound like bells.”<sup>301</sup> This passage suggests the instrument to be a form of ancient cymbal or crotales. As stated previously, crotales are plate-shaped cymbals of definite pitch that produce a bell-like tone. The significance is that modern crotales are traditionally mounted on frames in an inverted manner similar to the Praetorius graphic. The only other portion of text applicable to this plate is a generalization of percussion as “Moorish [sic] instruments . . . devoid of all art and refinement.”<sup>302</sup> In consideration of the graphic and the caption, and on the basis of the previous information, there is reasonable certainty that these ancient plate-shaped cymbals are a precursor to the modern crotale. The absence of additional information inhibits a positive identification.

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<sup>301</sup> Ibid. “Becken harauff die Americaner wie ben uns auff Glöcken spielen.”

<sup>302</sup> Ibid., 78.



Although text describing the specific performance technique has been omitted, the positioning of the instruments near two large mallets would suggest the involvement of striking implements. The absence of supporting straps or visual indication of handles suggests the instruments are played on the frame. The graduating disc size also supports a concept of varying timbre or pitch. If pitch differences are intended, a pair of concussion instruments is impractical for tone production. Additionally, the certainty exists that the instruments are not struck together as other cymbals due to the variation in size, absence of a matched pair, the presence of beaters, and the custom-shaped frame. A similar set of discs are described with the Bonanni collection below.

An unusual pair of cymbals is illustrated in the upper left portion of Praetorius' PLATE 1.13. The disc-shaped pair of cymbals, identified as item six, are six inches in diameter with a metal handle fixed directly to the back. The accompanying citation describes the pair only as part of the Indian percussion instruments.<sup>303</sup> Unlike the previous depictions, these cymbals do not appear to have a symmetrical boss. Instead, the instrument appears to be a six-inch by two inch thick disc. The material composition, presumed to be consistent with the previous descriptions, has been omitted. The circular lines on the underside of the disc imply a forging process as opposed to being hammered into form.

Additional information regarding the cymbals is scant. Apparently, Praetorius has maintained the attitude regarding cymbals that was established previously with the bells: that the instruments are "uncouth . . . and devoid of all art and refinement."<sup>304</sup> As a result,

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<sup>303</sup> Ibid., pl. 30. "Indianische Trummeln und blasende Instrumenta."

<sup>304</sup> Ibid., 78.

Praetorius restricts the information to generalizations and refers additional information to writings by Anicius Boethius (480-524 AD) and Sethus Calvisius (1556-1615).<sup>305</sup>

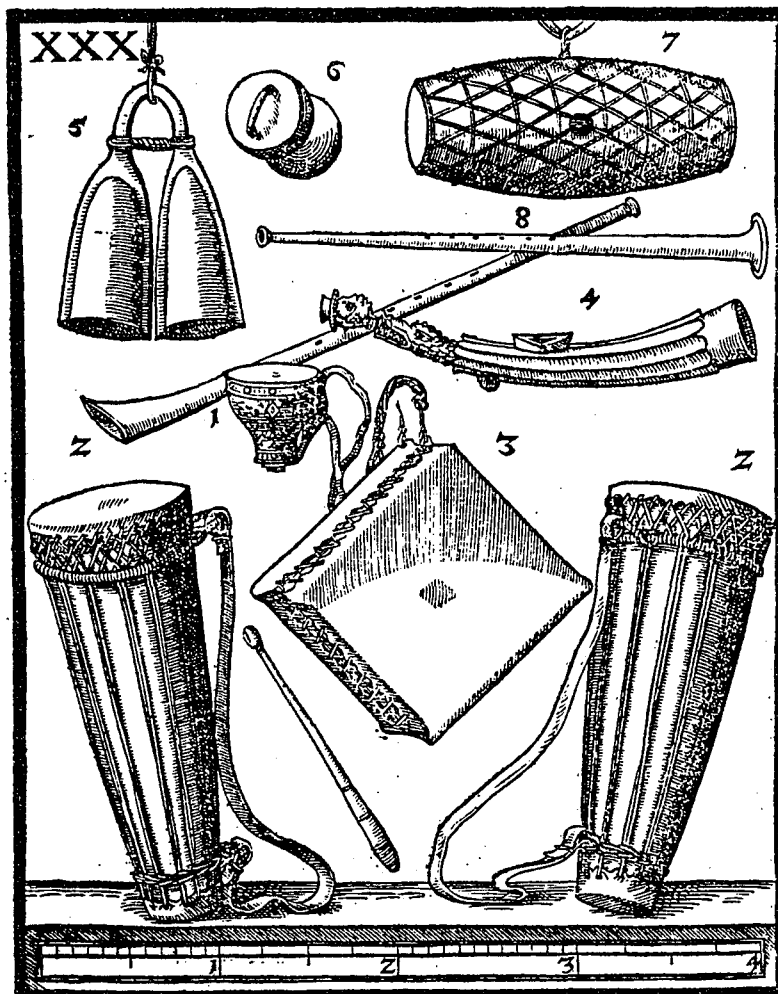
PLATE 3.2 contains two depictions of cymbals. The pair of instruments identified with numeral one (item one) is a pair of hemispherical or cup-shaped cymbals suspended by two hands. The hands with item one are displayed with palms facing each other and the thumb looped into a raised portion of the outer taper. The hands are in a parallel relationship and are separating the pair. A consistent diameter and taper of the cymbals are suggested by the symmetrical edge of the lower piece. The upper member of the pair appears to be slightly smaller in comparison to the bottom. This relationship may, however, be a misperception. The possible size discrepancy is the result of this graphic appearing as a free-hand illustration as opposed to the previous technically scaled drawings that appear adjacent to the Brunswick scale. The remaining characteristics appear to be congruous.

Item two in PLATE 3.2 is a cup-shaped pair of cymbals with a thick rim. The citation at the top of the plate describes the thick-rimmed pair as “another form” of cymbals.<sup>306</sup> The acorn-shaped instruments are illustrated in a slightly separated position. Unlike the previous depictions, the taper of the upper piece is at a greater degree than the lower part. The upper part appears to have a greater depth and diameter than the lower portion. This distinguishable mismatch results in the pair having an acorn-like appearance. The lines stretching from the rim upward to the zenith of the hemisphere are unexplained. These lines are omitted from the bottom member. The possibility that the lines delineate straps appears to be contradicted by the absence of similar lines in the lower piece. In

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<sup>305</sup> Anicius Manlius Severinus Boethius, *De institutione musica*, trans. Calvin Bower as *Fundamentals of Music*, Claude Palisca, ed., (New Haven, Connecticut: Theory Translation Series, 1989), lib. I, cap. 10, and Sethus Calvisius, *Exercitationes musicae duae* (n. p. c. 1600-1611 ), 2.

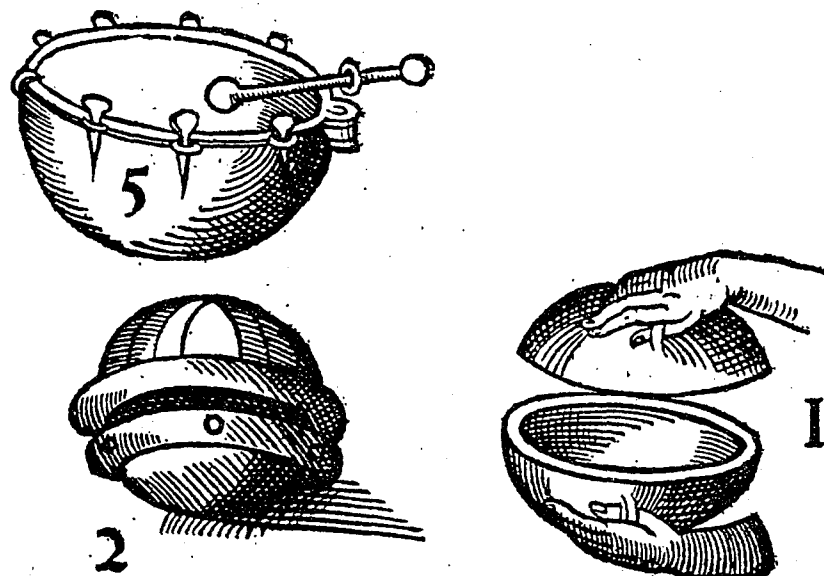
<sup>306</sup> Praetorius, pl. 40. “Die anderer Art von Cymbeln ben den alten ist alhier auch *fub* Num: 2 bezeichner.”



1. Ein Türkisch Trümlein oder Päncklein. 2. 3. Mesopotamische Lauten mit 2 Saiten.  
4. Indianisch Horn von Hirschhorn. 5. Ist von Eisen gemacht, wird darauff gespielt, wiebey uns  
auf der Rejtanen. 6. 7. 8. Indianische Trummeln und blasende Instrumenta.

PLATE 1.13 Disc-Shaped Cymbals Praetorius, 1619. Taken from Praetorius' list of "various exotic" instruments, an etching including a scale drawing of a pair of cymbals.

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Michael Praetorius, *Syntagma musicum*. [Wolfenbüttel, 1619]. Translated by David Crookes. Oxford:  
Clarendon Press, 1986, pl. 30.



**PLATE 3.2 Hemisphere-Shaped Cymbals** Praetorius, 1619. An etching taken from Praetorius that includes a scale drawing of small disc-shaped cymbals.

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Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 40.

addition, the bottom piece appears to have five to six rivets or pins equidistant around the perimeter of the rim.

The use of straps for only the upper member of a pair of cymbals is substantiated. Blades cited one example of an illustration in which the bottom cymbal rests in the palm while the other member is manipulated:

Instruments of this nature are frequently represented as played – by women and angels generally – in the manner of ancient cymbals in that they are held with one resting above one hand and the other hanging below the other hand so that they were horizontal and the hands came together vertically. Matteo di Giovanni [in the “Assumption of the Virgin” (fifteenth century) portrays cymbals played in this manner. This style of performance and grip is corroborated by earlier and later artists.”<sup>307</sup>

The absence of the Brunswick scale inhibits additional accounting of information through visual evaluation. As a result, the size of the cymbals, relative to the kettledrum, is indiscernible. The instruments, however, are congruous with previous descriptions.

The cymbals in PLATE 3.3 are identified as item number three and located in the bottom center of the illustration. The cymbals are a similarly sized funnel-type pair with a stem that protrudes from the zenith of the crest. Kinsky ascribed this type of extension as a handle for supporting the instrument.<sup>308</sup> Blades’ text contains a fourteenth-century example of this type of instrument supported from the elongated handle of the funnel.<sup>309</sup> The citation, previously described in connection with PLATE 3.2, states these instruments also have “been heard.”<sup>310</sup>

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<sup>307</sup> Blades, 192.

<sup>308</sup> Kinsky, 59, No. 1.

<sup>309</sup> Blades, pl. 94.

<sup>310</sup> Praetorius, pl. 40. “Und hieher gehört auch das 3. In Columna XLI.”

As is consistent, all the pairs of cymbals in Praetorius appear to be metal concussion instruments. The citation at the top of PLATE 3.2 supports the metal concussion observation with a description of the performance technique. Praetorius stated that a member of the pair is held in each hand and brought together. The resulting sound is cited as being similar to the bell sound.<sup>311</sup> The accompanying citation depicts hands suspending the cymbals indicating that the pairs are separated. This separation, in turn, supports the conclusion that the instruments employ a concussion performance technique.

The physical composition of the instruments is indiscernible from the illustrations. Although the accompanying citations suggest the sound to be “bell-like,” additional information has been omitted.<sup>312</sup> The suggestion of a “bell-like” tone, however, supports the instrument is a metallophone. To conclude the cymbals deviate from the previous information regarding the traditional material composition is incongruous.

Mersenne’s Harmonie universelle (1636) contains illustrations bearing a striking resemblance to those in Praetorius PLATE 3.2.<sup>313</sup> As seen in PLATE 3.4, Mersenne depicted the three identical instruments: a small kettledrum, an acorn-shaped pair of cymbals, and a pair of cup-shaped cymbals suspended by hands. The singular exception is the text Mersenne applies to the illustrations. Mersenne identified the pair of cymbals on the right as “ancient cymbals.”<sup>314</sup> The performance technique is described as being “beaten together by holding them with the two hands by the handles, as is seen at the hand and the handle.”<sup>315</sup>

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<sup>311</sup> Ibid. “Welchen die Latin tinnitum nennen.” Tinnitum appears to be a derivative of the word tintinnabulum. As previously stated in the “Bells” section, the term *tintinnabulum* is an onomatopoeic Latin term for “tinkling bells.”

<sup>312</sup> Ibid.

<sup>313</sup> Mersenne.

<sup>314</sup> Ibid., 548.

<sup>315</sup> Ibid.

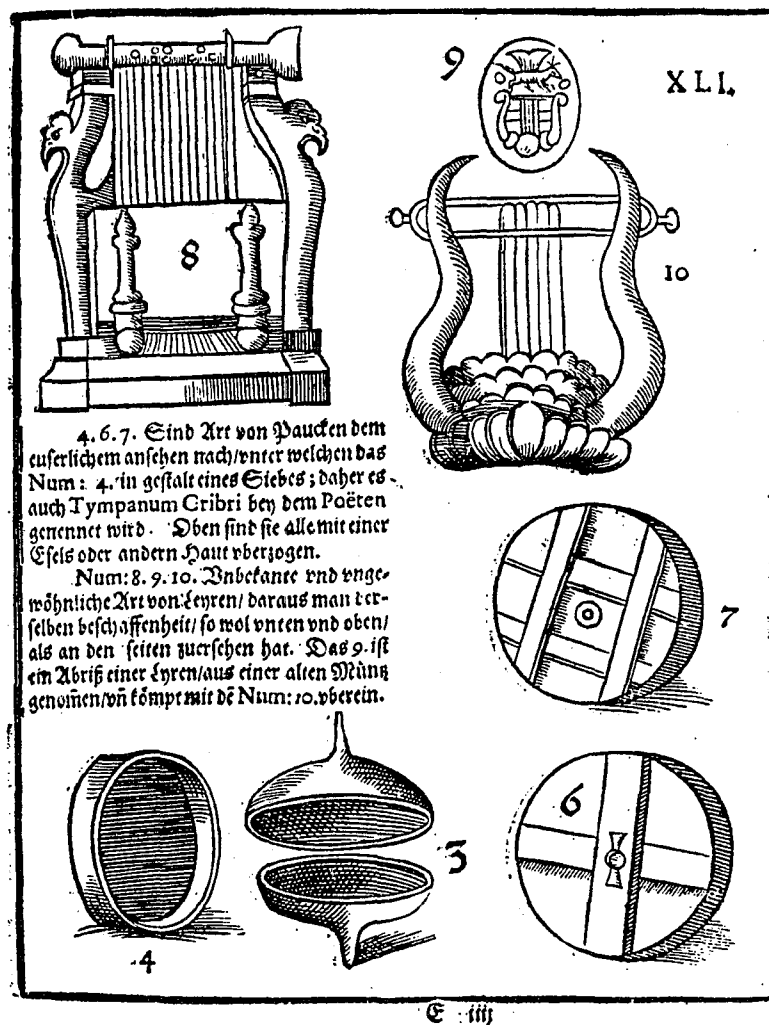
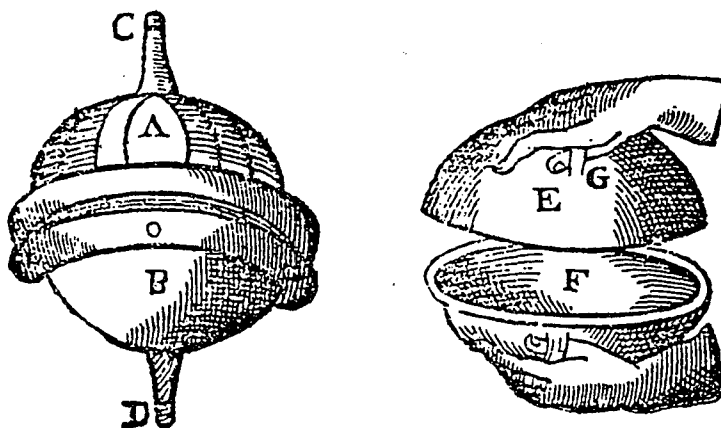


PLATE 3.3 **Cup-Shaped Cymbals** Praetorius, 1619. An unscaled etching of cup-shaped cymbals (lower center #3) taken from Praetorius. Note the pointed handles.

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Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford:  
Clarendon Press, 1986, pl. 41.



**PLATE 3.4 Hemisphere-Shaped Cymbals** Mersenne, 1635. An etching displaying two pair of cup-shaped cymbals.

Reprinted by Permission from Kluwer Academic Publishers.  
Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 110.



The musical application of the instruments is addressed in at least two passages in Mersenne's text. The absolute identity of the instrument in reference, however, is obscured by the liberal application of the term *cymbals*. Mersenne first identified an illustration of an ancient sistrum as the *cymbals*.<sup>316</sup> While the word *cymbals* reappears subsequently in reference to plate and cup-shaped illustrations resembling the modern cymbals, the presence of the term in accompanying text presents doubt whether the designation is used interchangeably. For example, Mersenne stated the cymbals are mentioned in the Holy Scripture.<sup>317</sup> Various parts of this study have substantiated that the triangle and the cymbals are concurrently listed in the Scriptures. The absence of additional delineating information contributes to the quandary. An uncertainty exists whether the cymbal, triangle, or ancient form of metallophone are identified with Mersenne's passage. A reasonable conclusion is, however, that passages in direct reference to an illustration are a definitive description of the graphic. As a result, the first definitive instrumental reference is in a description associated with folk music. "Beggars who play the hurdy-gurdy ordinarily accompany its harmony with the sound of these cymbals; and that with the violin and the drum."<sup>318</sup> Mersenne also suggested the musical application of the instrument as an accompaniment to the kettledrum.

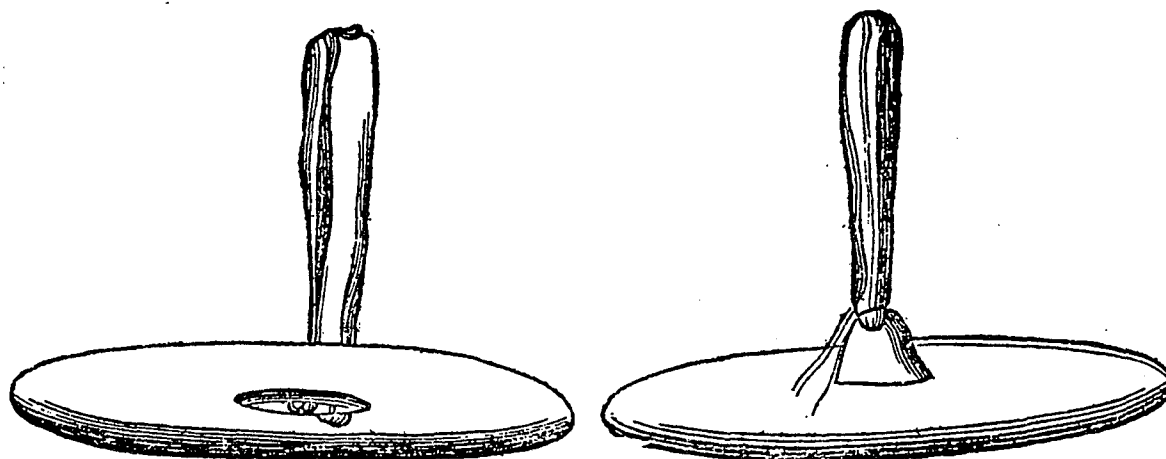
A pair of plate-shaped cymbals with straps is depicted in Mersenne's PLATE 3.5. The pair appear as discs with relatively little taper and a raised dome in the center. A strap, knotted on the underside of the disc, is visible through the center of each dome. This type of cymbal also is contained in Blades' Percussion Instruments and Their History.

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<sup>316</sup> Ibid., 547.

<sup>317</sup> Ibid.

<sup>318</sup> Ibid., 548.



**PLATE 3.5 Plate-Shaped Cymbals** Mersenne, 1635. An etching is of a pair of plate-shaped cymbals with straps.

Reprinted by Permission from Kluwer Academic Publishers.  
Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 115.

There is some evidence for larger thinner cymbals in many parts of Europe [known as *clash-pans*]. These seem to have been about twelve inches in diameter and would sound rather like the light cymbals used for dance music today. They were played in the modern style – vertically – and are to be found most often in Bacchic processions . . . There are so few of the larger cymbals that it is difficult to compare statistics, but from all accounts the larger light ones were used most often for pagan than for Christian rites as instruments of war, and the small ones were used most often by the angels.<sup>319</sup>

The performance technique associated with this type of cymbal appears to be consistent with the description in Blades but differs from the previous information. As suggested by the straps on each member of the pair, this variety of cymbal technique probably involved a vertical position. The previously described performance techniques maintained the pairs were held horizontally with one strap employed for manipulating a single cymbal.

In addition, the depiction of these instruments among the ancient tambourines and drums imply a common musical application. The drums and tambourines are attributed to ancient folk dancing and martial music. Blades supports the dance observation by stating that, “Cymbals were also used by dancers and were almost certainly used to some extent in ensemble music, for their rhythmic properties.”<sup>320</sup> There is a degree of certainty that these cymbals were employed in similar fashion. The combination of the straps, the variation in size and shape, and the text references by Mersenne support the use of these cymbals for martial and pagan purposes.

Gabinetto armonico (1716) by Filippo Bonanni contains four depictions of various-shaped cymbals. Bonanni’s illustrations are intended as representations and are not to be confused with technical drawings. Most often, Bonanni’s graphics are the result of a perception obtained from the written descriptions found in Athanasius Kircher’s Musurgia universalis (1650) and subsequently transformed into visual images.

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<sup>319</sup> Blades, 192.

<sup>320</sup> Ibid.

A pair of ball-shaped cymbals is depicted in Bonanni's PLATE 3.6 labeled "Cembalo Antico."<sup>321</sup> The term *cembalo* is Latin for *dulcimer*.<sup>322</sup> As previously described, the generic application of the term appears to reflect the tone production as opposed to physical characteristics of the instrument. Possibly, the term was applied to these instruments by virtue of the timbre as well. Ball-shaped cymbals were included in European manuscripts as early as the thirteenth century.<sup>323</sup> This style of instrument is recorded as late as the seventeenth century by Randle Holme III. There is a strong possibility that this instrument existed in this form during the assembly of Kircher's collection. The illustration contains a figure of a woman grasping the handles of each hemisphere. The figure is supporting the pair at shoulder level. Relative to the figure, the instrument appears to be approximately eight inches in diameter.

The performance technique illustrated with Bonanni's plate are a misrepresentation. The discrepancy is between the accuracy of the illustration, as identified by the title, and the presence of a handle on each cymbal. A handle is visible on each member of the pair. The presence of two handles implies that the instruments were played in a vertical position as illustrated. The title "antico," however, suggests the subjects to be "old" or "antique" cymbals. As previously described in Mersenne and Praetorius' illustrations, antique cymbals were played in a horizontal posture with the lower member being supported in the palm of one hand.<sup>324</sup> In addition, musicologist Frank Harrison observed that the "plate shows cup-shaped cymbals which have no equivalent in Western European music though they appear in some early medieval drawings after antique models."<sup>325</sup> As a result, the difficulty lies in determining whether the representation is accurate or a misperception. The

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<sup>321</sup> Bonanni, pl. 86.

<sup>322</sup> Lang and Spivak, 21.

<sup>323</sup> Blades, 192.

<sup>324</sup> Blades, 192.

<sup>325</sup> Bonanni, 86.



PLATE 3.6 **Cembalo Antico** Bonanni, 1716. A representation of cup-shaped cymbals.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 86.

absence of additional information makes further assessment of the musical applications or compositional material speculative.

Bonanni's PLATE 3.7 contains a pair of small plate-shaped cymbals identified as "Cembalo diverso."<sup>326</sup> The cymbals are portrayed in the hands of a barefoot woman apparently mid-step. The flow of the robes, the posture of the figure facing away, and position of the arms would suggest a dance step. As with the previous plate, this figure is holding the instrument at shoulder level. Only one handle, on the upper cymbal, is visible around the hands of the performer. This technique is consistent with the performance technique described earlier in association with the antique cymbals.

The musical applications are described by Harrison in an accompanying citation. Harrison wrote that the "small cymbals . . . were used by *cymbalistriae*, women dancers at the feasts of Bacchus."<sup>327</sup> Harrison's statement, in addition to the information evidenced in the illustration, supports a dance function for these instruments.

A pair of similarly shaped cymbals is evidenced in Bonanni's PLATE 3.8. These instruments are depicted with a relatively larger diameter and edge. The variation in this instrument is an extended rim surrounding the raised middle-portion of the cymbal. Another distinction is that the straps attached to both of the cymbals are clearly visible. Harrison observed that this instrument was "less concave in shape than antique cymbals, [and] they were held by strings passing through their centers."<sup>328</sup> The position of the instruments has remained consistent in each of the plates. While most representations have been women, the figure in this representation is a man.

The musical application is, again, addressed by Harrison in the accompanying citation. Harrison stated that the, "Armenians accompanied the chants of an important

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<sup>326</sup> Ibid., pl. 87.

<sup>327</sup> Ibid.

<sup>328</sup> Ibid., pl. 88.



PLATE 3.7 **Cembalo diverso** Bonanni, 1716. A depiction of the plate-shaped cymbals.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 87.

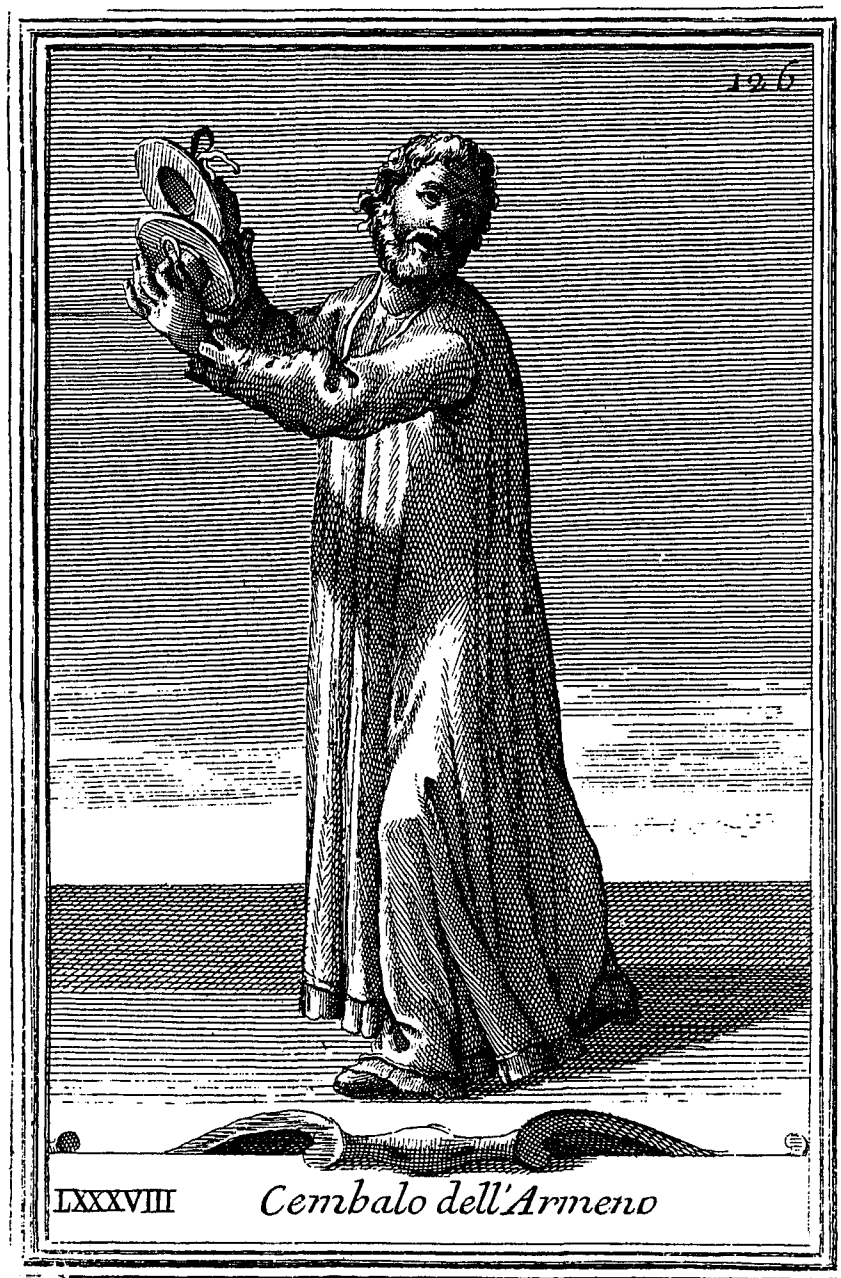


PLATE 3.8 **Cembalo dell' Armeno** Bonanni, 1716. Flat soup-plate cymbals with a wide tapered edge.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 88.



Mass with flat cymbals.”<sup>329</sup> The accompanying function explains the portrayal of a male figure with the cymbals since females were prohibited from participating in worship services during this era. Although the figure appears to be mid-stride, the absence of flowing robes or extended posture implies the person is walking as opposed to dancing. Additionally, the open mouth suggests the person is chanting or singing as is traditionally attributed to the processions associated with worship services.

A unique instrument is evidenced in Bonanni’s PLATE 3.9 labeled “Altro cembalo intico.”<sup>330</sup> A single plate-shaped disc is suspended at eye level by a female figure. Seven cup-shaped bells with visible clappers are placed equidistly around the perimeter of the instrument. Harrison claims that the illustration is a misrepresentation. “Although Bonanni says that a ‘cymbal’ of this kind was preserved in the Museum of the Jesuit College, it is an unlikely instrument as he describes it – a metal plate with a hole in the center, hung around with small bells.”<sup>331</sup> This illustration demonstrates one end of the perspective spectrum and best exemplifies the need for precaution in examination of Bonanni’s subjects. This precaution is not intended to imply a general attitude for the collection, but does solidify the need to question the authenticity.

The term *gong* has come to identify any large metallic plate with deep resonance, usually heavier and thicker than the cymbal. The New Grove Dictionary of Musical Instruments defines a gong as a circular metal plaque with the strongest vibration near the vertex of definite or indefinite pitch.<sup>332</sup> The generic application of the term for large circular metallophones, regardless of the capability to produce definite pitch, has resulted in the confusion of the moniker by composer and novice alike. Blades contended that, “The

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<sup>329</sup> Ibid.

<sup>330</sup> Ibid., 142.

<sup>331</sup> Ibid.

<sup>332</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).2: 60. s.v. “Gong,” by James Blades.



PLATE 3.9 **Altro Cembalo antico** Bonanni, 1716. A representation of a plate-shaped cymbal with bells attached to the perimeter.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 142.

orchestral tam-tam or gong (synonymous terms in the Western Orchestra) is one of the few instruments with an internationally accepted name.”<sup>333</sup>

The true definition of a gong, however, is a metallophone of definite pitch. Instruments of similar construction that produce indefinite pitches are correctly labeled as tam-tams. Peinkofer suggested that while the term *gong* is a general classification for circular metallophones, tam-tam is reserved for those disc-shaped metallophones “whose sound is diffused into numerous partials due to their thinner metal and lack of the gong’s center dome.”<sup>334</sup>

Hermann Scgerchen in his *Handbook on Conducting* (Oxford, 1956, p. 132) says: “The tone of the gong does not differ from that of the tam-tam but is definitive in pitch. Sometimes, unfortunately, the point is over-looked, and composers prescribe a gong when they obviously mean tam-tam. Special care should be taken not to use the one or the other indiscriminately.”<sup>335</sup>

The majority of large metallophones in this study are gongs. The system in which they are arranged and depicted indicates a system of tonality. Furthermore, many of the accompanying inscriptions describe scales, tones, semi-tones, and modes used in performance. The majority of the subjects in the plates containing gongs are of Eastern or non-European origin. The instruments with the characteristics of a large metallophone of definite or indefinite pitch have been included within this section.

The gong is an instrument originating with the gamelon orchestra of the Far East. Sachs suggested that the gong originated with the Chinese during the time of Emperor Hsüan Wu (AD 500-516).<sup>336</sup> The exact date and circumstance surrounding the arrival of the

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<sup>333</sup> Blades, 382.

<sup>334</sup> Peinkofer and Tannigel, 63.

<sup>335</sup> Blades, 383.

<sup>336</sup> Sachs, 208.

gong into Western Europe is unknown. Marcuse stated the instrument existed as early as the sixteenth century.

The first Western mention of the word gong was in England in 1590, but the use of the instrument is not recorded in Europe until 1791, when it was played at Mirabeau's funeral (Gossec's Funeral Music [for Mirabeau]). Since then it has gained acceptance in the orchestra as an instrument of indefinite pitch.<sup>337</sup>

Peinkofer concurred by stating that "even though gongs must have been known in Europe as early as the sixteenth century, they did not appear in the orchestra prior to the nineteenth century, probability [sic] because of their rarity."<sup>338</sup>

Praetorius is the only source to provide a detailed illustration of an instrument with the characteristics of the gong. In PLATE 3.1, Praetorius includes four suspended plate-shaped discs.<sup>339</sup> The instruments are graduated in size from the largest on the right. The range extends from approximately twenty-three to eighteen, thirteen, and eight inches in diameter, respectively. The largest three discs have a hemispherical recession beginning three inches from the perimeter. The depth of the recession is difficult to ascertain from the perspective provided in the illustration. Each disc has a hole approximately two inches from the edge through which a strap has been looped, and in turn, used to suspend the instrument on a wooden frame.

As mentioned earlier in relation to the cymbals appearing in this plate, the performance technique appears to employ the striking implements depicted in the lower right portion of the illustration. The beaters, fifteen inches in length, appear to be large enough to activate the gongs. While the cymbal technique involving mutual concussion is

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<sup>337</sup> Sibyl Marcuse, Musical Instruments: A Comprehensive Dictionary, 2nd ed., (New York: W. W. Norton and Co., 1975), 212.

<sup>338</sup> Peinkofer and Tannigel, 63.

<sup>339</sup> Praetorius, pl. 29.

certainly possible, the mismatch of the sizes and pendant position of the gongs would make this technique difficult to execute.

The possible musical applications of these instruments are extracted from the characteristics exhibited in the graphics. The placement of the instruments from lowest to highest appears to be deliberate. The wooden frame is assembled in a manner that allows for the arbitrary suspension of the instruments. Each disc has a relative gradation of five inches. This variation of width would certainly effect pitch, and with all other characteristics remaining consistent, would provide a relative tonality base. The consistent placement of the cord, the hemispherical boss relative to the rim, and the appearance of two mallets suggests the gongs are to be played as a set with possible harmonic implications. In addition, Praetorius describes the instruments in an accompanying citation as “American cymbals played like bells.”<sup>340</sup>

Three plates containing suspended gongs are located in Bonanni’s Gabinetto armonico.<sup>341</sup> All the depictions bear a close resemblance to those contained in Praetorius. The first example is PLATE 3.10 of an ethnic male figure supporting a gong in the left hand while striking with the right. Although a scale is absent from the representation, the size and shape of the instrument appear to be consistent with the instruments in Praetorius’ collection. One of the similarities is the physical shape of the gong. The centrally recessed hemisphere and the flattened rim of the gong are characteristic of those previously described. The cord tied through a hole in the upper rim also is indicative of the gongs illustrated in Praetorius. The long bulbous-headed mallet used to strike the instrument bears a resemblance to the Praetorius implement identified earlier.

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<sup>340</sup> Ibid. “Becken harauff die Americaner wie ben uns auff Glöcken spielen.”

<sup>341</sup> Bonanni, 100-102.

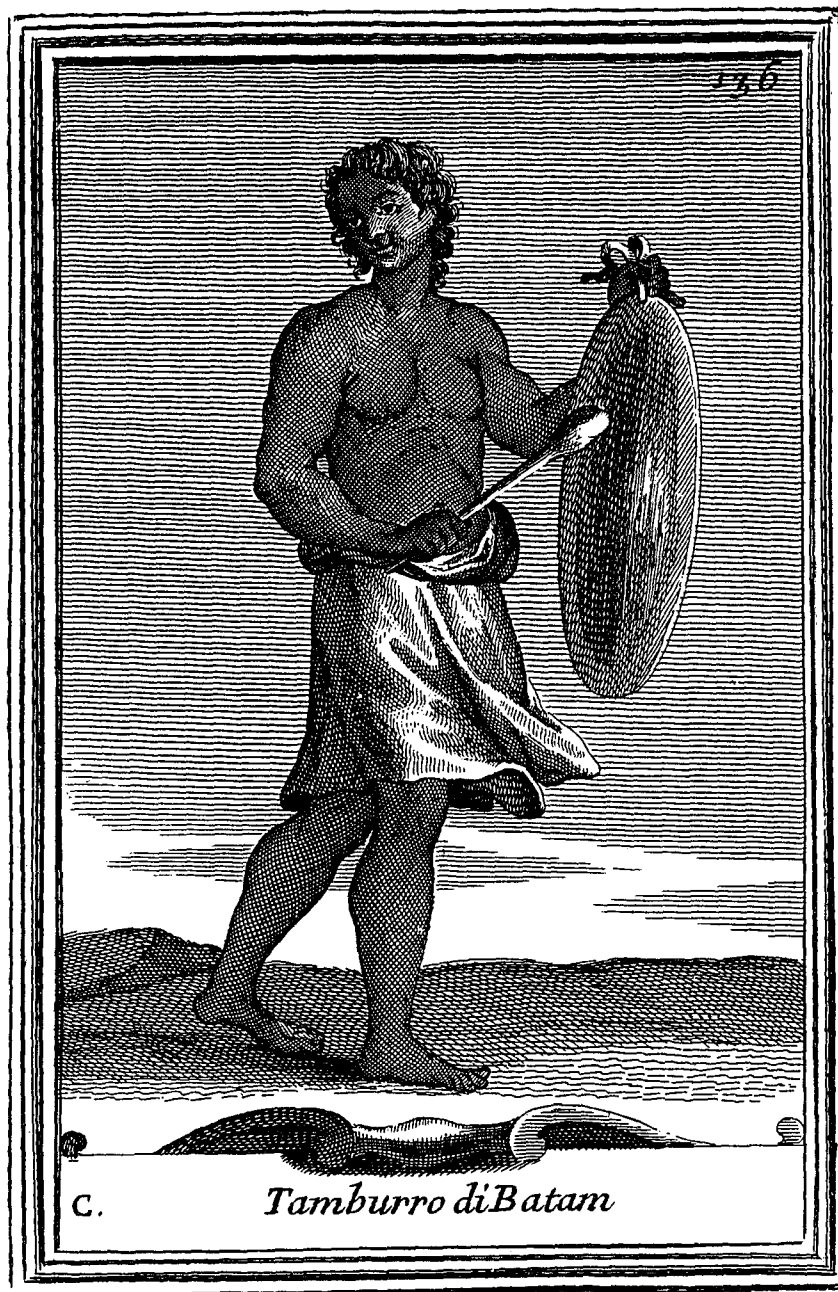


PLATE 3.10 **Tamburro di Batam** Bonanni, 1716. A large gong. The depiction displays an ethnic player for the purposes of stressing the origin of the instrument.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 100.



PLATE 3.11 **Instrumento in Batam** Bonanni, 1716. An etching depicting tuned gongs similar to those referred to in Praetorius.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 101.

The musical application of this instrument is described briefly in the inscription with the plate. The citation accompanying the plate describes the musical function as a method for summons or proclamation.<sup>342</sup> This statement is the first account describing the use of the instrument in a manner other than in a military or religious function.

PLATE 3.11 includes four plate-shaped gongs suspended on a wooden frame. A figure is seated behind the set of discs holding a mallet in each hand. As with the earlier description of the Praetorius set (PLATE 3.1), the discs are arranged in a horizontal position. Bonanni's illustration, however, has the edges of the plates touching the side of the frame. While the instruments appear to be arranged in relative size order, there is no method for determining exact size. Harrison noted the similarity of Bonanni's representations to those in Praetorius. Harrison stated that the "illustration . . . seems to have been taken from a source also used by Praetorius."<sup>343</sup>

The performance technique is certainly associated with striking implements. The absence of visible straps on each disc, the presence of a frame, and the position of the mallets all suggest the discs are struck. While the possibility exists that the instruments would produce sound as the result of mutual concussion, mismatching pairs and removing the plates from the frame in order to produce a tone would be incongruous.

Bonanni's PLATE 3.12 is similar to Praetorius PLATE 3.1.<sup>344</sup> The illustration contains four graduated sizes of discs suspended in a vertical position from a wooden frame. The discs are arranged with the largest to the left of the player. Each plate has a strap extending through a hole in the rim of the instrument that is tied around the horizontal support on the frame suspending the instrument. A seated player is alternately striking the discs with a mallet in each hand. Harrison cited the similarity to the Praetorius illustrations

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<sup>342</sup> *Ibid.*, 100.

<sup>343</sup> *Ibid.*, 101.

<sup>344</sup> *Ibid.*, 102.



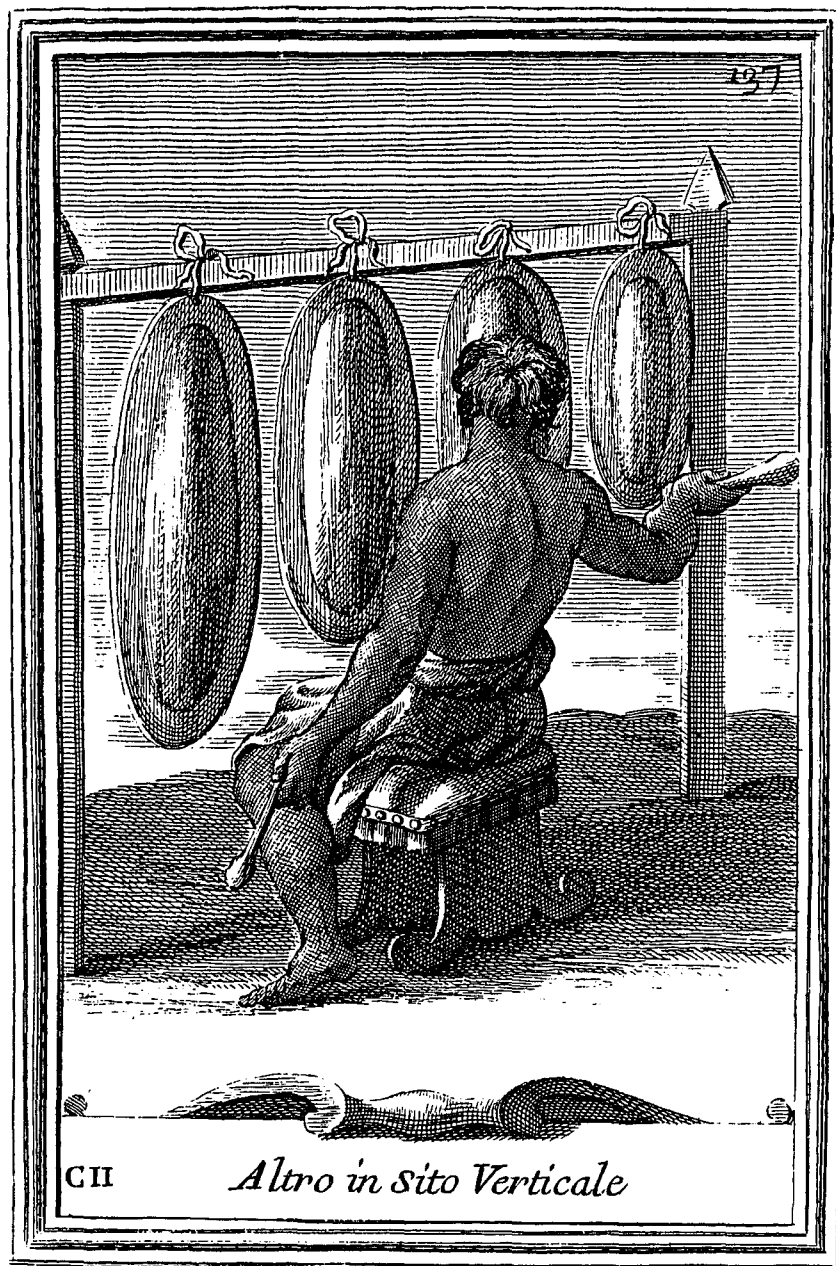


PLATE 3.12 **Altro in sito Verticale** Bonanni, 1716. A representation of suspended gongs.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 102.

by suggesting Bonanni's work originated from the "same source."<sup>345</sup> Bonanni, however, attributed the instruments to Indonesia contradicting Praetorius' "American" classification.

The musical application of these instruments is unique to Western Europe. Blades, Sachs, and Kinsky attributed the European use of the gong as an isolated adoption of the Javanese gamelon traditions. The earliest application of the gong appears to have been relegated to military signaling, dance accompaniment, and early orchestral effects. The representations in Praetorius and Bonanni, however, consistently display graduated sizes of instrument performed in a manner much like the Javanese gamelon. That is, the instruments appear in graduated sets that have apparent tonal implications. Since the majority of depictions contain sets of gongs, the belief that a single instrument was consistently employed to heighten orchestral mood or dynamics is incongruous.

Ironically, the cymbals and gongs, considered the oldest percussion instruments experiencing fewer changes than the other percussion instruments, have relatively the least available information. Although the instruments have been evident in Greek and Roman artifacts, the entrance into European art music and scholarly writings appears to have been retarded. The further study of this phenomenon would be beneficial to percussion instrumental history.

A possible conclusion is that the cymbals and gongs have remained unchanged into modern times. The methods of performance, musical applications, and even the physical composition have remained consistent in comparison with the other percussion instruments in this study. This relative consistency is not to suggest that no changes have occurred, but that the influences associated with the cymbals and gongs have been mere adaptations of the original functions and forms established centuries ago.

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<sup>345</sup> Ibid.

### Drums and Tabors

The definition of a drum encompasses instruments consisting of a cylindrical shell, covered at one or both ends by a parchment, that is included among the graphics from the extant sources for this study. This section includes instruments identified by the authors of extant sources as *drum*, *tabor*, *frame drum*, and *bass drum*. Those instruments, however, identified as drums or tabors with jingles inset to the frame will be included with the “Tambourine” section of this document. Instruments with a snare device attached only to the top head also are included within this section. Drums with snares attached to the bottom head are found in the “Snare Drum” section of this document. Instruments identified as *nakers* are included among the graphics in the “Timpani” section.

This grouping of particular instruments is determined by the labels assigned in the sources. Frequently, authors of the sixteenth- and seventeenth-century extant sources illustrated membranophones with similar characteristics but differing monikers. As a result, the subjects are compiled according to the title or name assigned the particular instrument as opposed to the recognition of the various physical characteristics.

Little difference exists between the instruments bearing the name “drum” and those labeled as “tabors.” The distinction is apparent in the use and application of the instrument. During the sixteenth and seventeenth centuries, these terms were generically applied and interchangeable with the designations frame drums, ancient nakers, cavalry kettledrums, long drums, side drums, and bass drums.<sup>346</sup> The depth of the shell ranges from three to twenty-eight inches. The diameters range from six to thirty inches. The parchments are

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<sup>346</sup> Blades, 205.

usually an animal skin (goat, calf, mule or deer skin), and are affixed to a cylindrical shell with rope.

One significant difference between the term *drums* and *tabor* is associated with performance techniques. Generally, the tabor is depicted as being played by the same player with a pipe concurrently, or held aloft with the left hand and beaten with the right. The drum, in contrast, is usually strapped over the right shoulder and played with two sticks.

A form of frame drum or tambourine was probably one of the first percussion instruments to be accepted in Europe. The previous cultural influences from Moslem-controlled lands and universal military percussion applications appear to have had significant impact on European cultures. Woodcarvings, paintings, and sculptures dating to the first Crusades include numerous references indicating extensive use of the drum and tambourine. "Since the Moslem use of the tambourine was universal in the lands they controlled and this instrument became known to the early Europeans of initial Moslem contacts, it is probable that this instrument was the first to be adopted in the European area."<sup>347</sup> Additional information is located in the "Tambourine" section of this document.

The frame drum appears to be a transitional form of drum in Europe during the sixteenth and seventeenth centuries. Blades stated that the frame drums were early tambourines appearing in Europe "as early as Pre-Islamic times."<sup>348</sup> Blades described the drums as occurring in a number of shapes including square, octagonal, rectangular, and round. Sachs contended the drums were used chiefly by women in rituals associated with dancing, mirth and mourning.<sup>349</sup> In addition, Sachs listed the dimensions of the drums as ranging in diameter from ten to nineteen inches.

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<sup>347</sup> Gangware, 71.

<sup>348</sup> Blades, 183.

<sup>349</sup> Sachs, 246.

Depictions of single and double-headed jingle-less frame drums are included in Praetorius (PLATES 1.13, and 3.3).<sup>350</sup> The caption under the plates indicates that Praetorius considers these drums various exotic and ancient instruments. Only the square drum in PLATE 1.13 is accompanied by the Brunswick scale. No other source includes a plate of a frame drum

Praetorius omitted textual references to the majority of the percussion instruments with the exception of three timpani. The frame drums are mentioned as an inclusion to the plates. As a result, the information regarding the musical application, performance techniques, and material composition of the instruments is not directly obtainable from Praetorius. Sachs, however, described Eastern performance traditions that have been maintained with the European frame drum in this depiction. “At the beginning of the thirteenth century we first hear of oriental . . . frame drums which were used chiefly by girls as in the Near East.”<sup>351</sup> Sachs subsequently described the development and application of the frame drum in association with martial music as early as the fourteenth century.

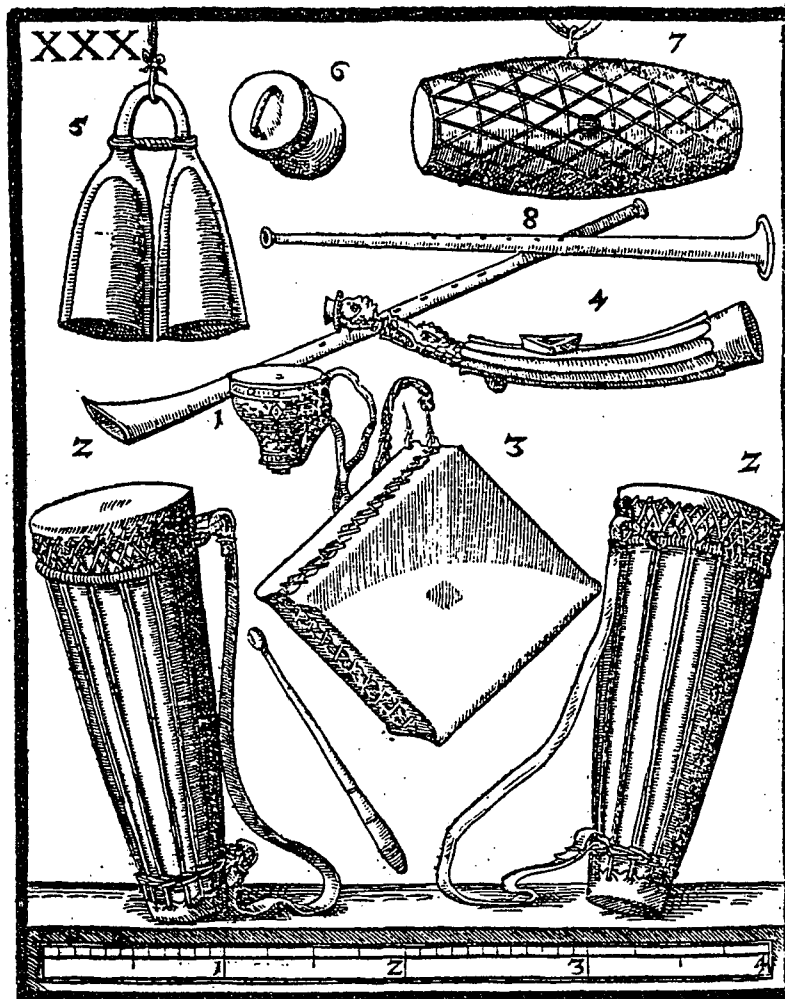
The frame drum, labeled item number three in PLATE 1.13, is a double-headed frame drum sixteen inches square and approximately five inches in depth. A large drum stick measuring twenty-one inches in length is located to the bottom left of the figure. Each vellum is laced to the other at the edges over the frame of the drum. No visible means of adjusting the tension is apparent. The laces are gathered at the upper-most corner and bound to a carrying strap. The caption corresponding with the drum is indiscernible except for the word “drum” (*Pauken*).<sup>352</sup> The absence of two sticks and the depiction of pipes,

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<sup>350</sup> Praetorius, pl., 30, 41, and 42.

<sup>351</sup> Sachs, 289.

<sup>352</sup> Praetorius, pl. 30.



1. Ein Tibetisch Trümplein oder Päcklein. 2. 3. Mesopotamische Cymbeln. 4. Indianisch Horn von Haffebach. 5. Ist von Eisen gemacht, wird darauff gespielt wie bey uns auf der Rejlerum-meln. 6. 7. 8. Indische Trummeln und blasende Instrumenta.

PLATE 1.13 **Square Frame Drum** Praetorius, 1619. Taken from Praetorius' list of "various exotic" instruments, including a scale drawing of a square Indian drum.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 30.

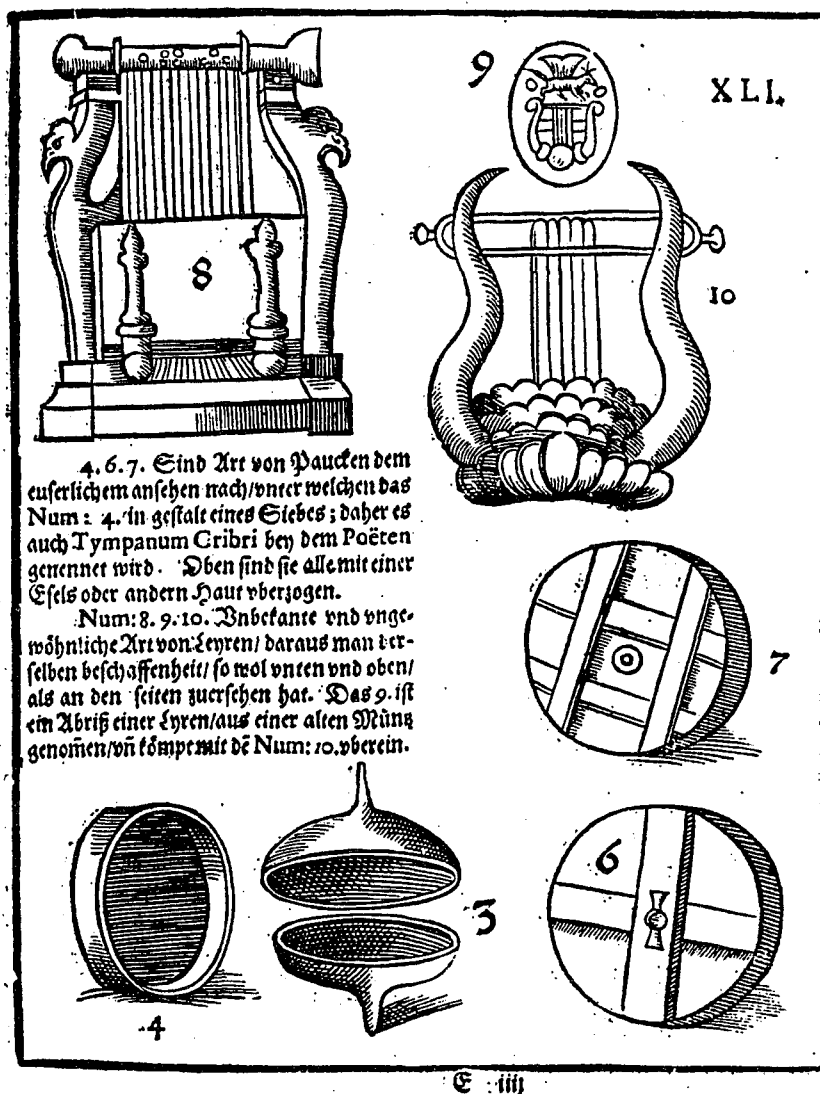


PLATE 3.3 **Frame Drum** Praetorius, 1619. A scale drawing of a frame drum (lower left #4) taken from Praetorius.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford:  
 Clarendon Press, 1986, pl. 41.

however, suggests the drum was played one-handed, possibly in association with the pipes. This technique is amplified within the discussion of tabors below.

PLATE 3.3 contains three different depictions of frame drums. The drums are numbered as items four, six, and seven. The absence of a Brunswick scale makes ascertaining the exact size of the instruments difficult. The caption within the plate refers to the drum as having goat or mule skin heads. In addition, the application is credited as the type of drum traditionally employed by poets of high standing.<sup>353</sup> Blades' Percussion Instruments and Their History contains additional citations supporting the probability that the drums were employed as a poets' accompaniment.<sup>354</sup> Galpin concluded that the frame drum was "used by minstrels on feast days and at the dance."<sup>355</sup>

The drums in PLATE 3.3 are varied. The drum listed as item four appears to be a simple frame with a head. Details regarding the material of the body and head, head tensioning methods, and performance techniques, beyond the cited caption, are absent. The drums identified as six and seven display crossbars on the underside of the instrument. Crossbars are mentioned in context with Eastern and Indian frame drums in Blades, Sachs, and Farmer.<sup>356</sup> Although these same sources cite variations in shape including oval, rectangular, and triangular, Praetorius' illustrations are consistently round. The circular shape is consistent with previous information.

Bonanni included a depiction of a frame drum as evidenced in PLATE 4.1. The woodcut, titled "Tamburro Lapponico," is of an oval frame drum with a wooden handle. The term *Tamburro* is derived from the Italian word *tamburo* or drum.<sup>357</sup> The drum has a

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<sup>353</sup> "Sind Art von Pauken dem auserlich an sehen nach unter welchen das Num: 4, in gestalt eines Ziebes; daher es auch Tympanum Cribri ben dem Pöeten genennet wird. Oben sind sie alle mit einer Esels oder andem haut oberzogen."

<sup>354</sup> Blades, 184.

<sup>355</sup> Galpin, European Musical Instruments, 243.

<sup>356</sup> Blades, 177., Sachs, 247., Henry Farmer, The Rise and Development of Military Music (London: Boosey and Hawkes, 1913), 22.

<sup>357</sup> Lang and Bettman, 80.





PLATE 4.1 **Tamburro Lapponico.** Bonanni, 1716. A folk instrument representation of a drum commonly associated with the percussion instruments used during meditation and pagan rituals.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 82.

single head with a snare device visible across the top of the velum. The figure is striking the instrument with a hammer-like implement.

In the accompanying citation, Harris explained that the drum is a “Lappish Shaman drum beaten with a bone hammer.”<sup>358</sup> Harris also described the snare device as a chained metal tongue that jumps when the instrument is beaten. The Shaman is credited with divining the future with this type of performance.<sup>359</sup> The size and material composition of the drum are difficult to ascertain due to the representative nature of the graphic.

Similar to the term *drum*, the designation *tabor* appears to be a generic designation frequently applied to variations of parchment-covered cylinders. All the names with “tabor” as the root are presented in this section. *Taberett* (English), *Taboret*, *Tambourin de Provence*, *Tambour de Province* (French), *Tambourin*, *Timpanon* (German), *Tambourino* (Italian) and *Atambor* (Spanish). The German and Italian word describes both the tabor and the tambourine.<sup>360</sup> As stated previously, each of these terms referred to various-sized instruments. The application of the terms were inconsistent from country to country and from region to region. Tabors are among the percussion instruments depicted in Arbeau, Praetorius, and Mersenne, and Bonanni.

During the sixteenth and seventeenth centuries, the Western European tabor was universally employed. The minstrels made extensive use of a more shallow drum frequently referred to as a tabor. The reduced size allowed the minstrel to perform various accompaniments concurrently. “This combination of pipe and tabor seems to have originated with the Arab minstrel who, by nature of his position, would find it advantageous to play more than one instrument at a single time.”<sup>361</sup> This observation is substantiated by similar remarks in Geiringer and Apel. The origin of this practice,

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<sup>358</sup> Bonanni, 82.

<sup>359</sup> *Ibid.*, 82.

<sup>360</sup> Blades, 205.

<sup>361</sup> Gangware, 78.

however, differs between the two sources. Geiringer wrote, "The combination of a flute and drum, which had been used by the juggler and the montebank since the latter days of the Roman Empire, has persisted in altered form down to the present time . . . ." <sup>362</sup> Apel supports origin of the pipe and drum as the result of necessity to accompany folk dances.

The playing of the "pipe and tabor" . . . was popular as early as the thirteenth century, as is shown by the famous miniatures of the Cantigas-MSS of the Escorial . . . It was the unusual accompaniment to the farandole and to the English Morris Dance, and is still used for the Spanish sardana. <sup>363</sup>

The minstrel tabor differs slightly in terms of being more shallow in depth than the orchestral version. Also, the minstrel tabor is rarely portrayed without snares. The depictions often include a frame drum or large tambourine without jingles. As in the previous examples, the tabor is hung from the player's neck and struck by a stick with the player's right hand. The same player uses the left hand to finger notes on the pipe, hence, the pipe and tabor. "The playing of these instruments in this manner continues for centuries, during which time the type of percussion instrument used changed from the tambourine-type to the true drum of more depth and often with snares, although still called the tabor." <sup>364</sup> The differences in the drums, snare drums, and performance techniques are illuminated in the respective sections.

The application of the pipe and tabor extends beyond minstrels. Geiringer suggested that the European military employed pipes and tabors primarily for signaling and boosting of morale. Geiringer also supported the placement of the pipe and tabor in ceremonies.

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<sup>362</sup> Geiringer, 85.

<sup>363</sup> Willi Apel, ed., *Harvard Dictionary of Music* (Cambridge: Harvard University Press, 1946), 584.

<sup>364</sup> Gangware, 75.

This combination is especially suitable for military purposes. Drum and Pipe, later succeeded by the Fife, became the foot-soldier's instruments, and in a painting of the battle of Sinalunga in the Plazzo Publico of Sienna, the infantry are preceded by three men with Tabor-pipes and drum, and the cavalry by trumpets.<sup>365</sup>

Seven illustrations in Kinsky reveal evolutionary changes in the sizes of the pipe and tabor. The earliest illustration is one of the miniatures from the third codex of the *Cantigas de Santa Maria* (c. 1260).<sup>366</sup> This illustration shows the drum in a vertical position hanging from the player's neck. Icons from the fifteenth century show an increase in the sizes of the pipe and tabor.

One of the drawings, *Amusements at the Sign of the Planet Venus*, depicts a number of musicians playing in the country, one of whom is playing the pipe and tabor only some nine inches in diameter, but about twelve or fourteen inches deep.<sup>367</sup> A more obvious depiction of the drum or tabor is the *Dance Festival in Munich Castle*. This engraving is only initialed "M Z" by the monogramist. Kinsky thought this person may have been the goldsmith Matthäus Zasinger, the work being completed about 1500 AD.

In this instance there is a group of musicians playing for the dance, divided into two units, one each in two separate balconies. The tabor is unique in that it is played with two sticks. The tabor is quite large, probably sixteen inches in diameter and at least that in depth, with one or two snares across the top head. Again the heads are retained by ropes which are used for adjustment. Although in this instance the pipe and tabor are played separately, this engraving illustrates the closeness felt for these two instruments during this period of history.<sup>368</sup>

One of the tabors included in the text of Arbeau's *Orchseographie* is a small hand-held type of frame drum that is an apparent precursor to the tambourine. Sutton concurred

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<sup>365</sup> Geiringer, 101.

<sup>366</sup> Kinsky, 46, No. 7.

<sup>25</sup> Ibid., 62.

<sup>368</sup> Gangware, 81. In this excerpt, Gangware is referring to the plates in Kinsky on page 62, number 1, and page 63, number 3, respectively.

by stating the tabor in reference by Arbeau is actually a forerunner of the tambourine.<sup>369</sup> Arbeau included an illustration of the tabor as part of a pipe and tabor ensemble (PLATE 4.2). The drum is described as six inches deep by twelve inches in diameter and held in the left hand. Although the velum is not described, Arbeau listed the body as wood. Arbeau mentioned attached copper bells on similarly shaped instruments from India, and that “we do not put any bells in it.”<sup>370</sup>

Arbeau’s description of the performance technique is scant. The illustration, however, shows a figure with a tabor strapped over the left shoulder. A snare device is visible across the top parchment. The player is holding a stick in the right hand while fingering a pipe in the left. The sound is described simply as “pleasing.”<sup>371</sup>

As with most pipe and tabor descriptions from this period, Arbeau credited the musical applications to dance and the drone of the tabor as harmonically consonant with the flute. “You should know before hand that the music of the basse dance is played in triple time, and in each bar the tabor also beats triple time to harmonize with the flute.”<sup>372</sup> A description of the similar step with tabor accompaniment is addressed in subsequent portions of Arbeau’s text. Also in a later passage, Arbeau described the drum in accompaniment to dance movements by explaining the “tabor and other instruments play eight bars while the dancers advance and eight bars while they move backwards.”<sup>373</sup>

The reference to “harmonize” is not only a reflection of the accepted consort, but an actual inference to harmonic concourse. Arbeau made frequent references to the “harmony” of the drum. Arbeau stated, “And as for bass accompaniment instead of the

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<sup>369</sup> Arbeau, 199.

<sup>370</sup> *Ibid.*, 47.

<sup>371</sup> *Ibid.*

<sup>372</sup> *Ibid.*, 52.

<sup>373</sup> *Ibid.*, 58. “Other instruments” are listed as violins, spinets, flutes, hautboys, and “all sorts of other instruments.” on page sixty-seven.



**PLATE 4.2 Pipe and Tabor** Arbeau 1589. Arbeau's representation of a pipe and tabor. Note the snare across the top head.

Reprinted With the Permission of Cambridge University Press  
Arbeau, Thoinot. Orchesographie. [Longres: Johann des Preyz, 1589]; reprint translated by Mary Stewart  
Evans. New York: Dover Press, 1967, p. 48.

drum . . . . In this case we are concerned about the drum serving as the bass, and because it has no definite pitch it blends with everything.”<sup>374</sup> As previously noted, Arbeau’s description places the tabor in a variety of musical settings with as many different instruments. The significance is the noted acceptance of the drum in art musical ensembles not associated with the orchestra.

A tabor is clearly visible among the various lengths of pipes in Praetorius (PLATE 4.3). The drum, item number six, is described in Praetorius’ citation as a “small drum used with pipes.”<sup>375</sup> The drum is five inches in depth by twelve inches in diameter. Similar to the larger military drums, the heads are fixed to the shell by means of rope tensioning. The “V-shaped” laces are visible on the side of the body of the drum. The strap for supporting the instrument is visible in the upper portion of the drum illustration. An eighteen-inch drumstick is portrayed just above the drum.

Praetorius’ description of the plate includes extensive narrative regarding the pipes and a single line pertaining to the tabor. “Some English players use it [a recorder] in conjunction with a small drum or tabor which they play with the left hand.”<sup>376</sup> A subsequent reference to the tabor is included in Praetorius’ text containing information on the use, location, and performance technique associated with this instrument.

In addition, there is a small drum which is used a great deal by the French and the Netherlanders. The right hand plays the drum with a stick, while the left supports it, and also plays a tabor-pipe or *Stamentienpfeiffe*, with two holes on top and one underneath. This combination is used in all sorts of songs and dances.<sup>377</sup>

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<sup>374</sup> Ibid., 40.

<sup>375</sup> Praetorius, pl. 9. The text reads “Klein Päuclin: zu den Stamentien Pfeiffilin zugebrauchen.”

<sup>376</sup> Ibid., 45.

<sup>377</sup> Ibid., 77.

As displayed in Arbeau, Praetorius also suggested the musical application of the tabor in dance. Significantly, Praetorius expanded on the applications to include song accompaniment. The specification of the geographic location associated with this type of activity, particularly in the description of tabor use for non-military applications, also is unique.

The description regarding the physical composition of the head or shell of the instrument is absent. Ironically, the scale woodcut of a drum that also includes the most information in text omits details concerning the substance of the instrument. One possible conclusion, however, is that the drum was consistent with the tabor of the sixteenth and seventeenth centuries. Although circumstantial, the absence of any text suggesting extraordinary details in the materials of the drum support a traditional construction of the instrument. Specifically, the instruments are a cylindrical piece of wood with either sheepskin or calfskin stretched across the openings.

Two variations of the tabor are illustrated in Mersenne. The first, PLATE 4.4, is an example of a pair of inverted conical tabors resembling a modern pair of nakers.<sup>378</sup> The lacings traversing the length of the body are a head-tensioning method similar to the previously described cords in the side drum. A single oval-beaded drumstick is portrayed horizontally between the pair of instruments. The importance of the illustration is the portrayal of the bottom of the drums providing a detail of the head-fastening technique.

The second illustration is of a long cylindrical drum with parchments at each end (PLATE 4.5). The visible head has a single strand stretched across to produce a snare effect. The V-shaped chords that fasten the head have buckles for tensioning similar to those of the military or snare drum. The right illustrated portion of the drum suggests the

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<sup>378</sup> Modern nakers are a bongo-type drums, usually in pairs, and made of calfskin stretched over clay shells.



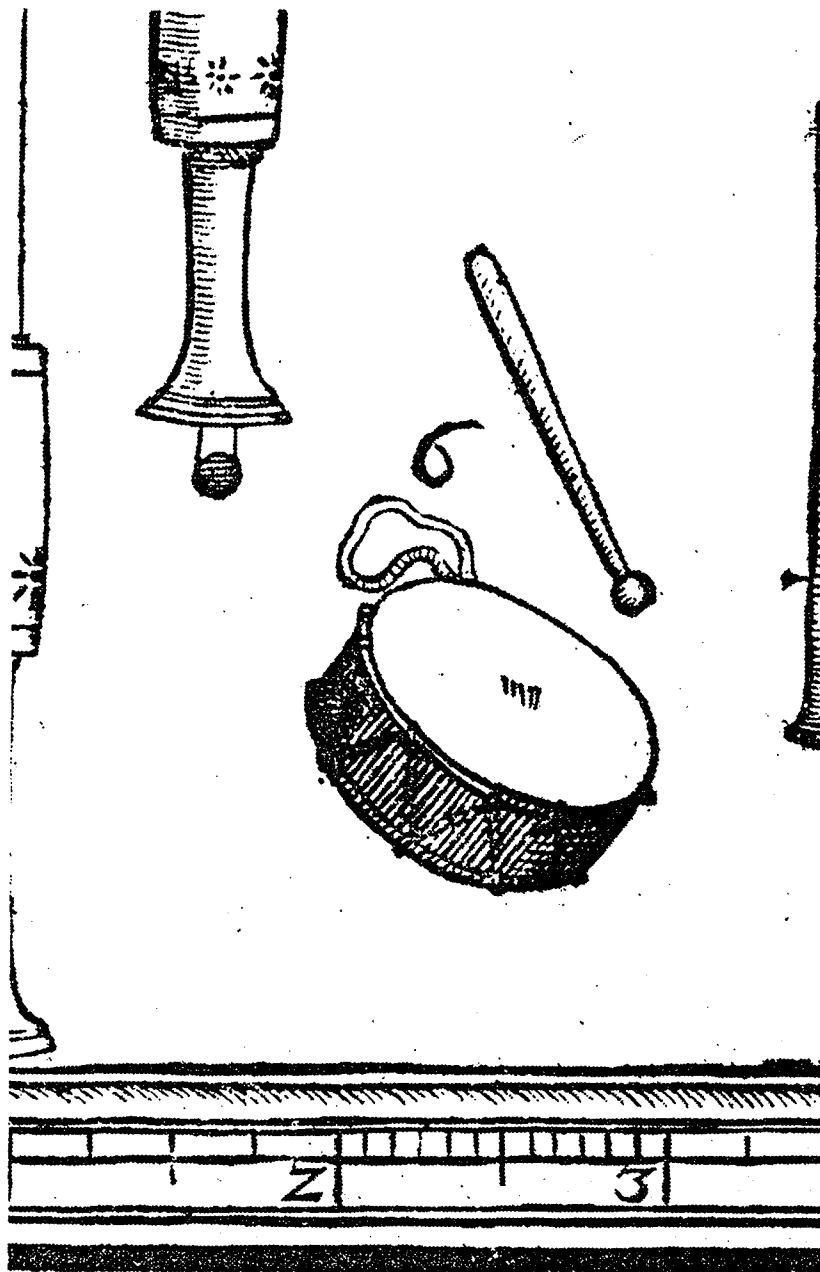


PLATE 4.3 Tabor Praetorius, 1619. A scale drawing of a “klein pauken” or small drum [commonly associated as the pipe and tabor].

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford:  
 Clarendon Press, 1986, pl. 9.

use of counterhoops. Counterhoops were employed as a means of supplying greater tension to the vellum. The sticks, above the top horizontal section of the drum, are bent in a unique shape.

Physical descriptions of the drums are provided in Mersenne's accompanying text regarding the size, shape, and musical application of the instruments of PLATE 4.4.

Another sort of drum is also used, the body of which is made of brass in the form of a concave hemisphere, two feet in diameter, or thereabouts, and covered with a skin like the others. They are carried on the bow of the saddle and make a great noise which imitates that of thunder; . . . the figure of them is seen here with the drumstick, which shows the side of the skin on which one beats them.<sup>379</sup>

Mersenne omitted further description of the drum in PLATE 4.5 except to credit the acquisition from Mr. De Peiresc.<sup>380</sup> The detail of the illustration does, however, allow for reasonable conclusions. The curvature of the sticks provides insight into the evolution and application of the tabor. Curved sticks are depicted with drummers from the Near East and North Africa as well.<sup>381</sup> The sticks located above the depiction are curved in similar fashion to those of the Egyptian drummers. The possibility is likely that trade with these cultures influenced the adoption of the curved stick for this particular instrument. The instrument of these drummers is comparable to the depiction in Mersenne. Wilkinson supported this observation in The Manners and Customs of Ancient Egypt.

Besides the long drum, the Egyptians had another, not very unlike our own [long drum], both in form and size, which was broader in proportion to its length . . . . It was beaten with two wooden sticks; but as there is no representation of the mode of using it, we are unable to decide whether it was suspended horizontally and struck at both ends, as is usual with a drum of the same kind still used in Cairo, or

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<sup>379</sup> Mersenne, 551.

<sup>380</sup> *Ibid.*, 551.

<sup>381</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).1: 602. s.v. "Drums," by James Blades.

at one end only. Though, from the curve of the sticks, I am inclined to think it was slung and beaten as the tambour of modern Egypt.<sup>382</sup>

The instrument in Mersenne's description, PLATE 4.4, appears to be a precursor of the modern timpani. The similarity between the copper shell of Mersenne's graphic and modern copper-shelled timpani is more than coincidence. The only other drum described as having a metal shell is the side drum.<sup>383</sup> In addition, the instrument in PLATE 4.4 is the only drum with a hemispherical shell. All the other drums and tabors in Mersenne contain cylindrical shells with parchment-covered ends. The diameter of the drum is consistent with Mersenne's other tabors, but the omission of text regarding a second head is unusual. In addition, carrying the drum on horseback, as opposed to being held in the hand or strapped on the player's shoulder, suggests a timpani-like application. Additional information regarding the similarities is found in the "Timpani" section of this document.

Although the accompanying text translates as "which shows the side of the skin on which one beats them," the interpretation is possibly the result of a misperception. Mersenne did include a disclaimer by writing "I am omitting a thousand other shapes which can be given drums." Logic dictates that this drum is an accurate representation by virtue of the plethora of drum-types from the sixteenth and seventeenth centuries. Mersenne's description contains the characteristics of the kettledrum from this period. While other drums were of similar diameters, this particular instrument is in a hemispherical form and not cylindrical as has been consistent with the other tabors.

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<sup>382</sup> James Wilkinson, *The Manners and Customs of Ancient Egypt* (London: Murray, 1937), 266; quoted in Blades, 155.

<sup>383</sup> Mersenne, 550. Mersenne states that side drums consist of brass or wood.

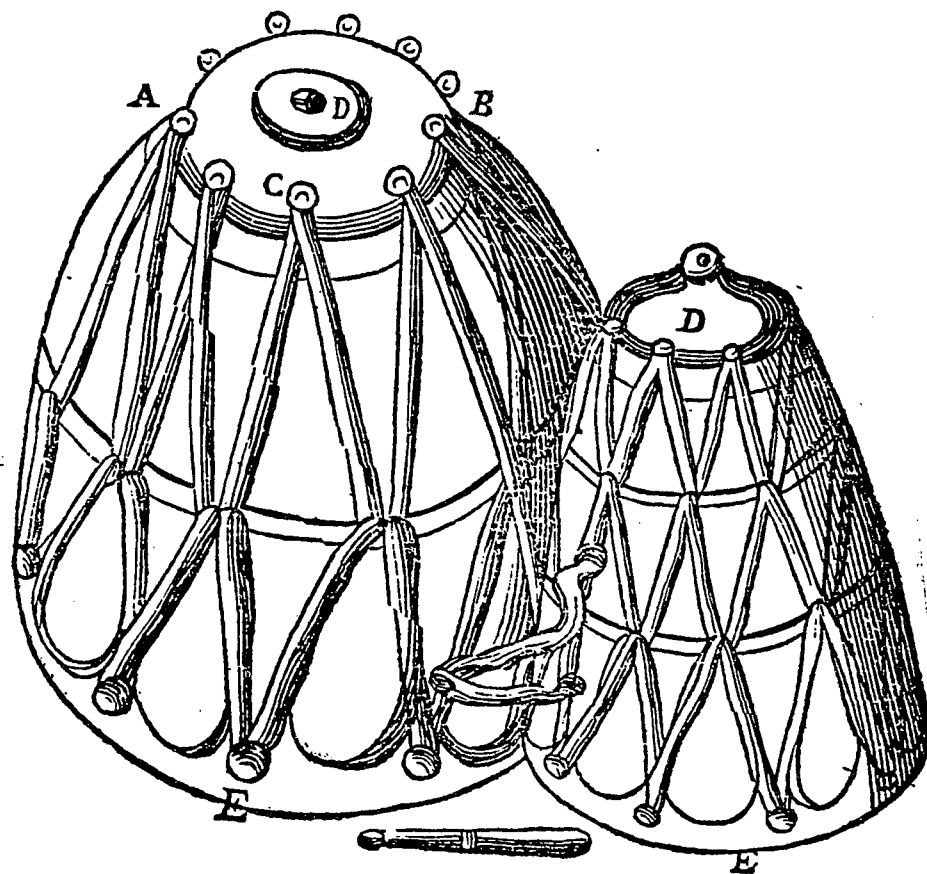


PLATE 4.4 **Small Kettledrums** Mersenne, 1635. A representation of a pair of small kettledrums possibly inverted to display head-fastening and tensioning techniques.

Reprinted by Permission from Kluwer Academic Publishers.  
 Mersenne, Martin. *Harmonie universelle*. Translated by Roger Chapman. The Hague, Netherlands:  
 Nijhoff, 1957, fig. 113.

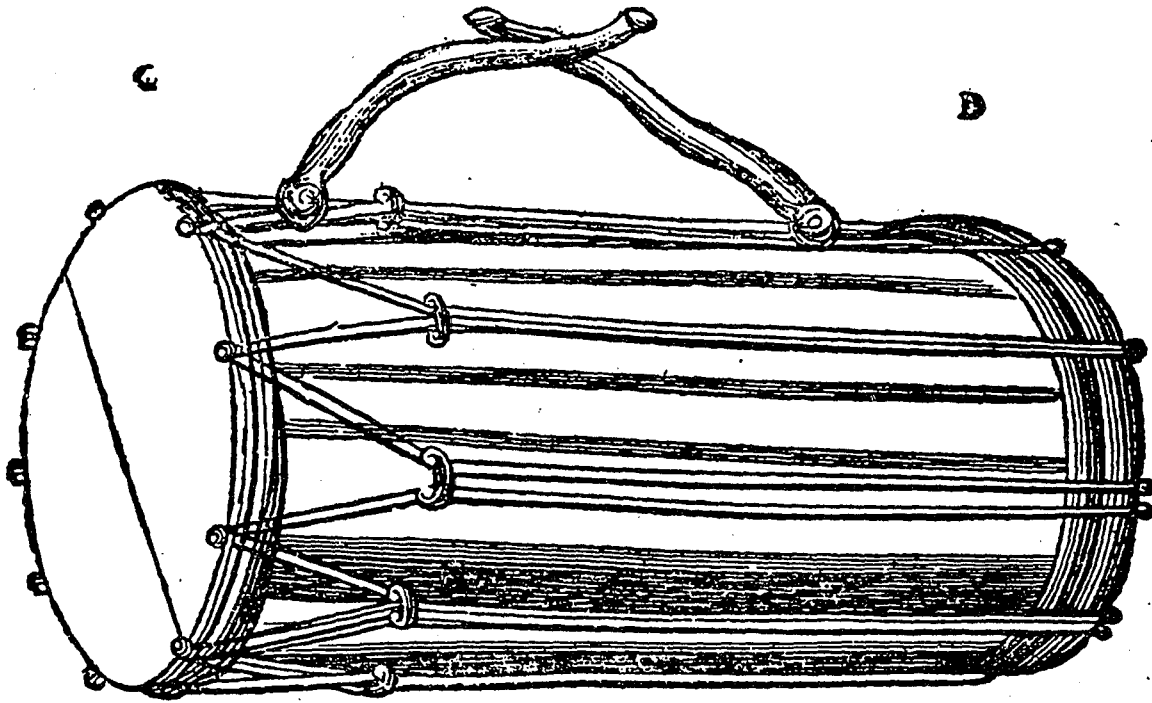


PLATE 4.5 **Long Drum** Mersenne, 1635. An etching containing a long drum with a snare fixed across the visible head.

Reprinted by Permission from Kluwer Academic Publishers.  
Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 114.

The chord lacings pierce the bottom vellum on each drum. The visible velum, designated as the playing surface, has tacks fastened into the head omitting any visible tensioning marks.

The uses associated with the larger of the tabors and field drums are difficult to ascertain. Rarely do these instruments appear with snares attached and so are presumed to be the precursor of the bass drum. Ancient Sumerian civilizations had a plethora of functions associated with the use of these big drums. Later, these larger bass drums were an integral part of the Janissary corps, and subsequently become popular with European military units around the twelfth century. The modern instrument has almost the exact form as during the Sumerian civilization of 5,000 years ago. This same drum, however, is not a popular subject in twelfth- through seventeenth-century Western European icons. Apparently, one isolated area of Europe recorded interest in the bass drum.<sup>384</sup>

The only area of Europe displaying interest and showing activity in an instrument resembling the bass drum is the Balkan Peninsula, where a drum of this general type has been played for many centuries. This instrument, which was native to this area, was called the “taupan,” a drum shaped much like the present bass drum though usually having a head smaller in diameter. The bass drum was to emerge in several shapes and sizes before arriving at the present general size of sixteen inches in width and thirty-six inches in diameter. The taupan is thought to have come directly from the Turks at a very early date, at least prior to the Turkish invasion of the fifteenth century.<sup>385</sup>

A clear illustration of the *taupan* is found in Yary Arbatsky's Beating of the Taupan In the Balkans.<sup>386</sup>

The bass drum is credited as one of the first sixteenth-century forms of the military drum. The Swiss mercenaries are said to have created a larger drum during the Middle

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<sup>384</sup> Ibid., 126.

<sup>385</sup> Ibid.

<sup>386</sup> Yary Arbatsky, Beating the Taupan In the Balkans (Chicago: The Newberry Library, 1953), 12; as cited in Gangware, 126.

Ages for the Crusades. Sachs described the evolution and application of this type of drum in The History of Musical Instruments.

The crusades had altered the military organization of European countries; the knight with his train was replaced by armies of mercenaries. The new infantry, like oriental soldiers, needed inspiring music and took possession of the cross fife and the drum. Here, time beating was more important than melody, and loudness was an urgent need. This evolution finally led to the enormous drums of the Swiss lansquenets of the fifteenth and sixteenth centuries who, according to the Italian Paulus Jovius (1483-1553), kept pace with the beating of the drums.<sup>387</sup>

The earliest depiction of the European instrument labeled as a bass drum occurs in Italian painter Vittore Carpaccio's painting of a Turkish band in 1505.<sup>388</sup>

Sixteenth-century depictions of the bass drum are scarce. One of the earliest representations of a bass drum appears in Scholes' Oxford Companion.<sup>389</sup> The drum is illustrated with the Nuremberg town band from around 1500. One of the percussion instruments is very similar to the modern bass drum. Kinsky provided another example of the bass drum in a plate of the title page including many decorative musical instruments to an edition of Lasso's motets (1589).<sup>390</sup> The bass drum is located in the upper left corner with other instruments layered over the head. Galpin contributed a sixteenth-century reference to a big drum [bass drum?] from France's King Edward the Third's court records. "It is said that it was of English origin and was introduced to France by King Edward the Third, when his army entered Calais in 1347." In the sixteenth century, the drum was two and one-half feet in depth by two feet in diameter.<sup>391</sup>

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<sup>387</sup> Sachs, 290.

<sup>388</sup> Ibid., 435.

<sup>389</sup> Percy Scholes, The Oxford Companion to Music (London: Oxford University Press, 1955), 91.

<sup>390</sup> Kinsky, 91.

<sup>391</sup> Galpin, European Musical Instruments, 66.

Bonanni included the only depiction of the bass drum in PLATE 4.6. The plate is identified as “Tamburro sonato dal Turco” or “Turkish music drum.”<sup>392</sup> The instrument appears in a horizontal position strapped at the neck of a figure. The drum is cylindrical in shape and has parchments attached by means of chords. The “X-shape” of the chords imply the heads were fixed and not intended to be drawn taut by means of buckles or other devices.

The representative nature of Bonanni’s illustrations is questionable regarding the inclusion of specific detail. The illustrations in Bonanni’s collection are artistic renderings and not necessarily scaled depictions. One example of an artistic rendering is evident in the accompanying citation. Harris explained that the drum is depicted “much too small.”<sup>393</sup> In consideration of the plethora of drums and terms, the difficulty lies in deciphering all of the possible inconsistencies in Bonanni’s illustrations.

The figure is holding two striking implements of different diameters. Although Harris implied that the smaller implement is a switch for effecting the timbre, this is not certain. Switches were applied to all variations of drums as a snare device. The switches subsequently were attached to the side of the shell to facilitate two-handed performance. References to the application of switches to the drums are found in Blades. “The notes on the bass drum are today, to many, inexplicable. It should therefore be noticed, that this instrument was struck on both sides: on the right with the drum stick, and on the left side with the switch.”<sup>394</sup> This instrument apparently is struck on each side, but the combination of scant descriptions with the absence of artistic detail impede definitive conclusion.

A single credit to the musical applications of this particular instrument also are found in the accompanying citation. Harris stated the drum was applied to orchestras in the

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<sup>392</sup> Bonanni, 137.

<sup>393</sup> Ibid.

<sup>394</sup> Blades, 265.





PLATE 4.6 **Tamburro sonato dal Turco** Bonanni, 1716. An etching intended to portray a bass drum. The instrument, however, does not match Bonanni's description.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 137.

middle eighteenth century. As has been the practice, the entrance of percussion into the orchestra has traditionally been subsequent to the accepted musical traditions. As a result of the matriculation of traditional practice and the previous information from sources for this document, the suggestion that the drum had made earlier appearances with other musical ensembles before this date is reasonable.

Galpin stated this reference should not be confused with the bass drum, but instead referred to as a *long drum*. While the coexistence of the two drums occurred throughout Europe, the long drum was more of a transitory form. That is, the drum was altered for various functions. For example, snares frequently were attached to the underside and played as a military field snare. The larger field drum enabled players to have sufficient volume during battle. English artillery units abandoned the field snare and adopted the larger snare-less bass drum for signaling. Because the performance technique for all of the drums and their modifications was virtually the same, and, due to the artistic freedom with which the drums were rendered, it is no wonder that some confusion would exist over iconographic depictions of “large drums.”<sup>395</sup>

Like the tabor, instruments labeled as “drum” varied in size and depth. Arbeau’s *Orchesographie* contains an illustration of a drum approximately two and one-half feet in depth with rope-tensioned heads and snares. Praetorius illustrated a side drum with a Brunswick foot scale, showing the drum to be twenty-two inches in diameter and depth. A side drum dated 1575 (hung low from the shoulder to rest on the player’s side – thus the name) has a shell a few inches deeper than its diameter.<sup>396</sup> Unlike the tabor, the side drum usually is depicted with snares and the player generally has two sticks. The popularity of these drums declined as the snare drum was used for military purposes. The snare drum

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<sup>395</sup> Gangware, 127.

<sup>396</sup> Blades, 211.

was the first to have screw-tensioned heads, and was thought to be louder.<sup>397</sup> The tabor and drum became less important folk instruments.

The percussive icons from sixteenth- and seventeenth-century Western Europe do not support a single use for the drum. Because of the generic application of the term *drum*, a multitude of applications are in evidence. A drum is included with the musicians in the *Dance Festival* as accompaniment to a dance. The miniature from a fifteenth-century Psalter described in McKinney and Anderson is depicted in similar fashion.<sup>398</sup> In both instances, the drummer is accompanying five other instrumentalists, each performing on a different instrument. Gangware described the drum in the miniature as:

Being about fifteen inches in diameter and only five or six inches in depth and held in a position similar to that used when played with one stick, although in this instance the drummer is playing with two sticks. As is normal for this type of drum, the heads are retained by ropes.<sup>399</sup>

Kinsky provided another example of the drum used with a small orchestra. A drummer is included in the unsigned painting of *Sir Henry Unton's Wedding Feast*. The instrumentalists appear as a small group with the drummer slightly separated from the group.<sup>400</sup> The drum visible in this painting appears to be similar to the one previously described by Gangware. In addition, the drum-player is portrayed with a large flute-like instrument, or pipe, hung around his neck.

Along with the numerous iconographic references of the sixteenth-century European drum is Michael Praetorius' (1571-1621) *Syntagma musicum*.<sup>401</sup> The

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<sup>397</sup> Gangware, 80.

<sup>398</sup> Howard D. McKinney and W. R. Anderson, *Music in History* (New York: American Book Company, 1940), 204.

<sup>399</sup> Gangware, 84.

<sup>400</sup> Kinsky, 99 (pages in reference are in reprint edition).

<sup>401</sup> Praetorius.

illustrations display sizes of what Praetorius labeled as “Indian Drums.” The first collection of these instruments is included in the “various exotic instruments” in PLATE 3.1. These instruments are in the bottom left corner of the plate and identified as numbers eight and nine. PLATE 1.13 contains two distinct varieties of drums. The instruments are labeled as items seven and “Z.”

The drums identified as number nine are a large pair of parchment-covered hemispherical drums approximately seventeen inches wide by twenty-four inches in depth. Two curved sticks are illustrated above the drums. The vellum is attached to the shell by rope tensioning. The ropes are laced in horizontal and vertical configurations with no visible method of tensioning. A counterhoop is not evident, nor is the cord laced through the vellum. The method appears to have a rope flesh-hoop encircled by the parchment.<sup>402</sup> This, in turn, is laced by cords to fasten the head to the shell. This method appears to be common practice from the traditions that can be traced back to the ancient Egyptians.<sup>403</sup>

The single-headed hemispherical drums resemble the modern timpani. The existence of this type of drum in other parts of the world has significance. Music historians have long credited the origin of the kettledrum with Muslim and Near Eastern traditions.<sup>404</sup> Although this plate is not the first depiction of a timpani-like drum from seventeenth-century America, the depiction is the most detailed scale drawing, thus providing proof that this type of drum was universally accepted during this period. Praetorius’ depiction implies independent concurrent development of this type of drum.

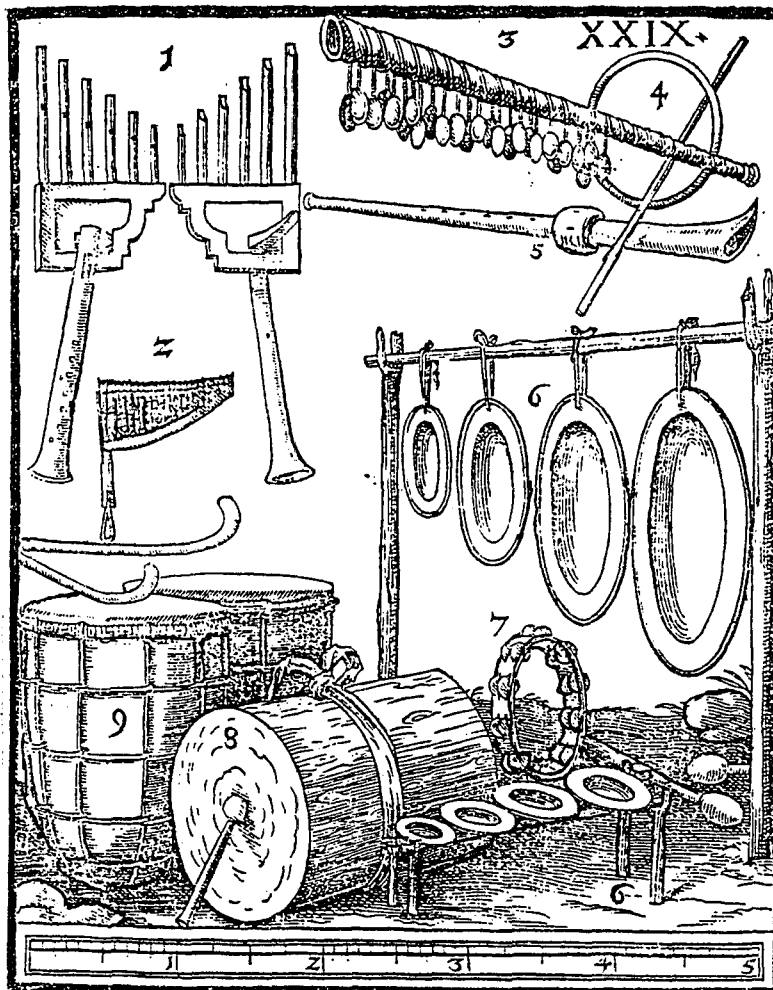
Although the performance technique of these drums is absent from any of Praetorius’ text, one reasonable step is to outline obvious circumstantial conclusions. The

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<sup>402</sup> A flesh-hoop is a thin ring of metal, wood, or in this case rope that is used as a frame for the vellum. The head is fastened or “tucked” permanently around the circle and usually placed under a counterhoop for greater tensioning.

<sup>403</sup> Blades, 206.

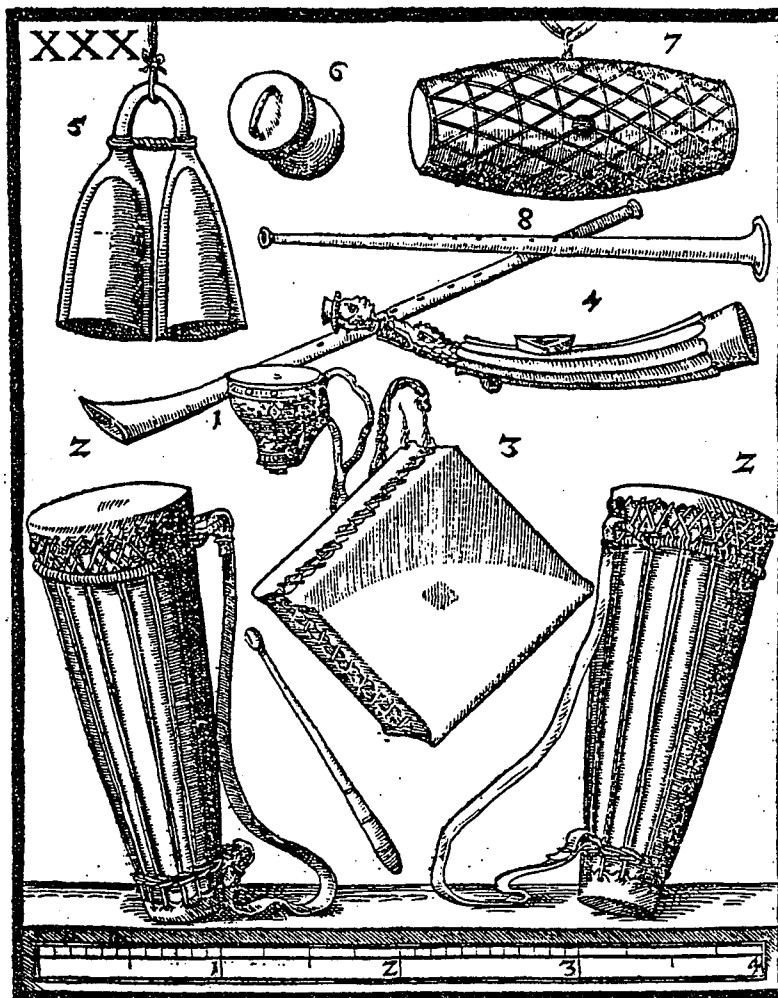
<sup>404</sup> Cecil Forsyth, *Orchestration* (New York: The Macmillan Company, 1949), 41; Gangware, 112.



1. 2. Sind Satyri Poffen. 3. Americanisch Horn oder Trommet. 4. Ein Ring so bey den Americanern gleich wie ein Triangel geschlagen wird. 5. Americanische Schalmen. 6. Decken/ darauff die Americaner/ wie bey ons auff Blocken/ spielen. 7. Ein Ring mit Schellen/ die sie in die hö/ aufwerffen und widerfangen/ etc. 8. 9. Americanische Trummeln.

PLATE 3.1 **Indian Drum** Praetorius, 1619. Taken from Praetorius' list of "exotic" instruments that includes a scale drawing of a log drum.

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 Michael Praetorius, *Syntagma musicum*. [Wolfenbüttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 29.



1. Ein Türkisch Trümplein oder Päncklein. 2. 3. Mesopotamische Cymbeln. 4. Indianisch Horn von Hirschzahn. 5. Ist von Eisen gemacht, wird darauff gespielt: wie bey uns auf der Kettencymbeln. 6. 7. 8. Indianische Trommeln und blasende Instrumenta.

PLATE 1.13 **Conga Drums** Praetorius, 1619. Taken from Praetorius' list of "various exotic" instruments including a scale drawing of African and Indian percussion instruments.

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Michael Praetorius, *Syntagma musicum*. [Wolfenbüttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 30.

presence of two of the drums suggests the instruments were traditionally paired. The appearance of a pair, in turn, implies drums of varying pitch were employed. The implication that the drums were struck with the illustrated type of sticks by one player is certain. The size of the drums and absence of a carriage mechanism possibly indicates the instruments were awkward to move. Other relative details regarding the development and application of kettledrum are found in the “Timpani” section of this document.

Item number eight in PLATE 3.1 is a large cylindrical wooden drum with covered ends. A single mallet is depicted against the closed end of the drum. The drum is approximately fifteen inches in length and width. A strap encircles the body of the instrument to suggest a method of carriage.

The covering on the near end appears to be wood. The absence of visible cords, tacks, or other means of securing the covering supports this observation. In addition, Praetorius has included curved lines in larger circles to suggest a wood grain texture instead of the customary shading that usually identifies vellum in the illustrations. Although omitted from the sources for this document, hollow log drums are evidenced in artifacts from antiquity.<sup>405</sup> Notably, Praetorius has provided graphic detail without text.

The inclusion of the Brunswick foot allows accurate measurement of the illustrations in PLATE 1.13. The horizontal drum, upper right corner of the plate and identified as number seven, is a barrel-shaped cylinder of twenty-four inches in length and six inches in diameter at the openings. The drum appears to be covered at each end with parchment affixed to the shell by means of cords. The “X-type” arrangement of the cords suggests a fixed tension. A strap is partially visible at the mid-portion of the drum. The conical drums at the lower right and left portions of the plate labeled as “Z” are precursors to the modern conga. These drums have a simplified version of rope tensioning to maintain

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<sup>405</sup> Blades, 44.

a single head at the widest aperture. The drums are approximately forty inches in length and range from six to fifteen inches diameter from bottom to top, respectively. The vellum is attached at the widest opening. Long straps are displayed as a means to carry the drum for performance.

The drums in PLATE 1.13 were probably utilized in a similar manner as the modern counterparts. As exotic instruments among a collection from Africa, a likelihood is these instruments were employed for similar European settings. The presence of straps suggests carriage or a need to transport the instrument possibly for outdoor parading or movement during performance. Blades suggested that the traditions of employing the drums for rituals and marches come from northern Africa and the Near East.<sup>406</sup> The geographical proximity and the exploration routes suggested in Gangware support this theory.

Between 1448 and 1482, the following areas were explored on the West coast of Africa: Arguin, cape Verde, Gambia, Sierra Leone, Gold Coast, Po, and the South of the Congo River. While the interior still had not been explored to any real extent, it was not necessary to penetrate the African coast in order to observe the fanatical display of rhythm and melody so characteristic of the xylophone playing of the African people, especially those of the Congo area.<sup>407</sup>

Praetorius' consideration of these drums as "various exotic" instruments indicates a novelty association.<sup>408</sup> The origin and traditions of these instruments in sixteenth-century European cultures is uncertain.

Bonanni included an example of an instrument identified as "Tubo Timpanite" (PLATE 4.7).<sup>409</sup> The representation includes an armor-clad figure performing on a drum with two sticks. Due to the title of the plate and the absence of a visible snare, this

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<sup>406</sup> Ibid., 111-112, 158.

<sup>407</sup> Gangware, 130.

<sup>408</sup> Praetorius, pl. 30.

<sup>409</sup> Bonanni, 80.



instrument has been included in this section. The sticks, however, are held consistent with the previously described method in both this and the “Snare Drum” section of this document.

Timpanite is a derivative from the Italian *timpano* meaning “small timpani.” To conclude that the drum is a small precursor to the timpani on the basis of the name is a misperception. In fact, the Italian name *timpanetti*, also originating from the root word *timp*, translates to be “timbales” or “paired drums.”<sup>410</sup> The association of the titles most likely have been applied to suggest similarity in the application of the instrument.

The drum appears to be attached to an hour-glass shaped resonator and suspended from a tree. The heads are secured by means of ropes laced across the length of the body of the drum. The V-shape of the cords suggests buckles are present for tension adjustments. In addition, counter-hoops appear to have been employed due to the omission of stress points in the vellum. The status of this graphic as a representation, as opposed to a detailed illustration, prevents specific conclusions regarding the actual appearance of this type of detail.

Harris credited the original curator of the Gabinetto armonico for the information regarding the tube within the accompanying citation. Harris wrote that the tube was believed to have imposing qualities that would amplify the sound for greater distances. The absence of additional plates or text from this period suggests the practice was limited.<sup>411</sup> Resonators and other amplification devices for drums are absent from the other sources.

The figure dressed in armor implies a military application to the instrument. The martial reference, in combination with the statement in citation regarding amplification, supports an application intended to produce a sound of great intensity. The logical

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<sup>410</sup> Lang, 84.

<sup>411</sup> Bonanni, 80.



PLATE 4.7 **Tubo Timpanite.** Bonanni, 1716. The field drum attached to the resonating tube is a representation by Bonanni on a suggestion from the Kircher collection. No other references are found relative to this instrument.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 80.

application would be martial music or signaling. This conclusion is consistent with the application of the instruments identified as drums.

The graphics in this section provide ample information regarding the drum and tabor of the sixteenth and seventeenth centuries. The variety of parchment-covered instruments was universally accepted in about as many applications. Blades described the drums as occurring in a number of shapes including square, octagonal, rectangular, and round. These varieties appearing in the extant sources included, but were not limited to, instruments bearing the label *drum*, *tabor*, *frame drum*, and *bass drum*. The sources support this statement. Additional forms and precursors of the modern tambourine, snare drum, and timpani were concurrently employed with the surviving varieties of these instruments. The various precursors are demonstrated by the grouping of particular instruments according to the identification assigned by the authors of the extant sources.

The musical applications appear to be chiefly in martial music. Additional settings, however, were incorporated the various types of drums. Arbeau and Mersenne made references to dance and rituals. Arbeau, in particular, elaborated on various steps and provided lengthy detail concerning military and dance music notation. Praetorius and Bonanni supported a universally traditional martial use of the drum and tabor. The inverted view of the pair of tabors in Mersenne is unique. While discrepancies in Bonanni's etchings are common, the text by Mersenne is usually consistent. While it is possible that Mersenne's text thoroughly and accurately describes the depictions, the detail of the illustrations suggests otherwise.

The sizes of the instrument appear to range from the small hand-held tabor of ten inches in diameter to the relatively larger bass drum of approximately thirty inches in

diameter. The majority of the instruments in the plates maintained a diameter equal to the depth of approximately two feet. All of the drums were depicted with rope tensioning for affixing the heads to the shell. The application of a counterhoop is a notable detail in Praetorius, Mersenne, and Bonanni.

### Friction Drums

A friction drum is a membranophone that produces a sound as a result of friction. The instrument consists of a wooden cylinder, approximately six inches in diameter and depth, with a parchment tacked directly to one of the ends. Typically, a rod is tied in the middle of the parchment and extends through the center of the shell of the drum. Rubbing the stick with a moistened or rosined finger produces friction and, in turn, causes the head to vibrate. Applying pressure to the head, changing the speed of the rub, and a change in direction varies the pitch of the instrument.<sup>412</sup>

The friction drum has been found in various forms throughout sixteenth- and seventeenth-century Western Europe. The origin of the instrument, however, is difficult to determine. James Blades attributed the origin of the drum to sixth- or seventh-century Babylonian culture. Blades contended the drum remained a part of European folk culture achieving significance through the documents of the sixteenth century.

The friction drum is known in many widely distributed primitive cultures. The age-old connection with specific occasions is maintained in European traditions noticed from the sixteenth century onwards.<sup>413</sup>

Records regarding sixteenth-century Western European traditions provide insight into the musical applications of the instrument. The friction drum was played during Christmas, New Year, and various religious holidays and probably served as the genesis for other European folk traditions. The Flemish *rommelpot* [friction drum] was the

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<sup>412</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).3: 869. s.v. "Friction Drum," by James Blades.

<sup>413</sup> Blades, 196.

common instrument for accompanying Christmas celebrations. The *rumbaba* and *putti-putti* are all sixteenth-century names originating in Hungary and Italy, respectively, describing the instrument played for New Year's celebrations known as the friction drum. The German *Brummtopf* was the preferred folk instrument to accompany music during various celebratory occasions.<sup>414</sup>

Sachs offered additional information regarding the application of the friction drum in European cultures:

The connection of the friction drum and fertility and initiation rites is preserved in European traditions. Martinmas and the days between Christmas and Epiphany – the festivals which the Christians substitute for the rites of the winter solstice – are the season in which boys go from house to house to sing old verses and rub the *rummelpot* as the Dutch say, which is artlessly made of a kitchen pot or a flower pot with a bladder.<sup>415</sup>

Peinkoffer contended that the instrument was relegated as a toy with little musical application by writing, “It [the friction drum] is known in Asia, Africa, North America, and Europe. In the last-mentioned area, however, it is found only as a toy instrument.”<sup>416</sup> An additional statement is provided regarding the instrument in the seventeenth century. Peinkoffer wrote, “As a folk and toy instrument it can be traced to Europe at the turn of the seventeenth century.”<sup>417</sup>

Details regarding the applications of this instrument are visible in sixteenth-century iconography. James Blades referred to a Dutch graphic depicting the friction drum and included a plate of the Dutch painting labeled only as *Rummelpot*. Blades cited Franz Hals (1580-1666) as the artist of one of the depictions of a friction drum from this era.<sup>418</sup> In the

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<sup>414</sup> Ibid.

<sup>415</sup> Sachs, 40.

<sup>416</sup> Peinkofer and Tannigel, 103.

<sup>417</sup> Ibid., 104.

<sup>418</sup> Blades, 196.

painting, the figure of a peasant man is holding the friction drum under his right arm while grasping the friction-stick in the fist of the other hand. The instrument is clearly visible.

Michael Praetorius included references to the friction drum in Syntagma musicum (1619). The friction drum Praetorius wrote about is labeled as a “pot-and sticks.”<sup>419</sup> While this citation possibly is in reference to some form of pot, the occurrence is unusual. The customary construction of the friction drum was primarily a vessel or pot. In addition, Praetorius’ graphic is of a pot with what appears to be a ladle protruding through an opened top. Additionally the top is not shaded like the vessel so as to imply any similarity in material composition. Also, a handle is the only visible “stick,” which could be interpreted as either a striking implement or an inner part exposed for illustrative purposes. For Praetorius to display a striking implement inside an instrument when other graphics consistently display the beaters at the side is inconsistent. Another interesting note is the absence of the Brunswick scale. Praetorius’ intention appears to be a simple list of the instruments as encyclopedic references and not as detailed musical instruments. Possibly, because of the limited citations by Virdung, Praetorius had limited information with which to properly display the instrument. Praetorius did write about this intention.

Some of them deserve Sebastian Virdung’s name of “uncouth instruments,” namely devoid of all art and refinement. We will not need to give any account of these, since they are all familiar to everyone and fall outside the boundaries of art music – except for the anvil.<sup>420</sup>

A degree of controversy surrounds another seventeenth-century illustration in one of the extant sources. In A Textbook of European Musical Instruments, Galpin credited

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<sup>419</sup> Praetorius, 78.

<sup>420</sup> Ibid., 78.

Mersenne with including a Rommel-pot with the list of illustrations “i.A.a” in Harmonie universelle.<sup>421</sup>

This form, which is very popular in Flanders, is described by Mersenne (1635) and is called a *Rommel-pot*, though in this case the rod is placed horizontally on the head instead of vertically.<sup>422</sup>

The earliest notice of its presence in Europe comes from the close of the sixteenth century, and the old German name *Brummtopf* or “growling pot,” is now merged into the more dignified *Reibtrommel* [literally “scrape-drum”]. Mersenne, who gives the illustration of the form with a horizontal stick inclines to consider it as an Indian instrument; but in that country the distribution is very limited, and the type shown is Dutch.<sup>423</sup>

Galpin’s reference to Mersenne’s friction drum appears to be confusing the text and the corresponding illustrations. Mersenne includes a long drum depicted in a horizontal position. This drum is contained in PLATE 4.5. Mersenne briefly describes the drum as an Indian drum, used in Provence, and donated for study by Mr. de Peiresc.<sup>424</sup> The only visible drum head has a device stretched over the parchment. While the possibility exists that the drum in the depiction is a friction drum, Mersenne’s depiction of a snare device is inconsistent. Why Galpin considered this particular instrument a friction drum is unclear.

Bonanni provided the only depiction of a friction drum in this study. The Bonanni plate, number eighty-three and labeled “Instrumento nelle Vendemmie,” is found in PLATE 5.1. This plate is an artistic rendering and not a re-creation of an actual scene.

The figure appears to be a peasant holding the instrument wrapped in his left arm. The body of the instrument is vessel-shaped and, relative to the figure, twelve to fourteen inches in diameter at the widest point. The upper portion of the vessel tapers to an

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<sup>421</sup> Galpin, European Musical Instruments, 72.

<sup>422</sup> Ibid.

<sup>423</sup> Ibid., 73.

<sup>424</sup> Mersenne, 551. Provence was a sixteenth-century territory in southern France.



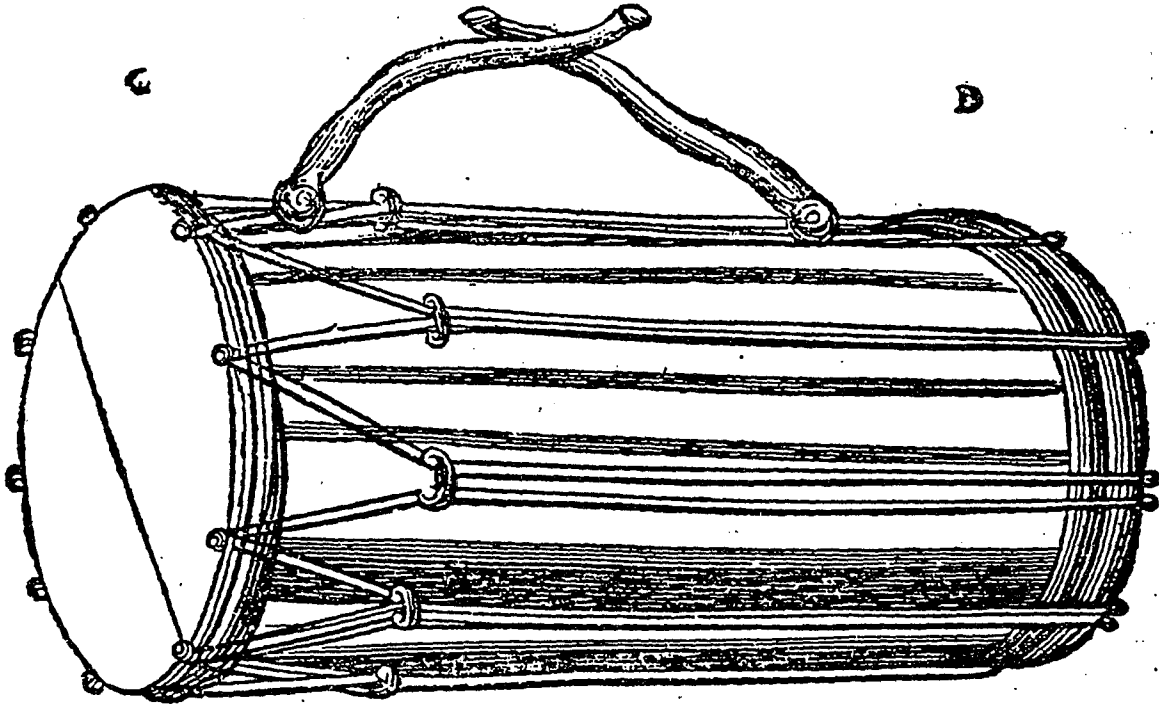


PLATE 4.5 **Long Drum** Mersenne, 1635. An etching containing a long drum with a snare fixed across the visible head and credited as being a friction drum by Galpin.

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Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 114.



PLATE 5.1 **Instrumento nelle Vendemmie.** Bonanni, 1716. A clay friction drum commonly associated with festivals and celebratory occasions.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 83.

approximately eight-inch width. A parchment covers the upper end of the vessel. A stick, protruding from the parchment of the instrument, is held in the figure's right hand. The stick in this illustration appears to be larger than the Hals depiction mentioned previously.

The material of the friction drum is difficult to determine strictly from the illustration. The construction of this instrument is discernible by the accompanying citation in the Bonanni collection. Bonanni made only general comments regarding the instrument, tone production, and performance techniques.

The friction drum consists of a vessel of pottery or wood with a skin head containing a central perforation into which a stick fits. The drum, which makes a rumbling noise not unlike a bullfrog, is sounded by rubbing the stick up and down in the hole. Its origin is not known. It is associated with fertility rites in primitive communities, while in Europe it is a humble fiesta and fairground instrument.<sup>425</sup>

The sixteenth- and seventeenth-century Western European friction drum apparently was a folk instrument employed to accompany music performed at festivals and celebratory gatherings. The frequent reference by sources infers a universal knowledge of the instrument during this era. Information regarding the construction and physical characteristics of the instrument is limited to Kircher, and subsequently, Bonanni. The friction drum reference attributed to Mersenne is inadequate to provide the missing details. The lack of additional extant iconographic references, however, makes accurate descriptions and evaluation speculative.

Consistent information, however, is readily available regarding the instrument from this era. The performance techniques employed for this instrument are consistently listed as friction or rubbing action against a stick affixed into the head. The specific size of the friction drum is not available, but descriptions from extant and secondary sources provide

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<sup>425</sup> Bonanni, 83.

for logical conclusions. The instrument was small enough to allow carriage under an arm as supported in both Bonanni and Hals. In addition, the stick used to activate the sound has been consistently attached to the parchment. The only variation of the stick separate from the instrument occurs in Mersenne. The instrument consistently has been attributed to simple assembly or construction which further supports the theory that the friction drum was employed as a folk instrument.

The first orchestrations for the friction drum did not appear until the twentieth century. Modern art music applications of this instrument appear as effects with Western music. Believing that the instrument did not appear in Europe after the seventeenth century, and was suddenly resurrected in the twentieth century is inconsistent. Possibly the instrument had little social significance as a folk instrument and was played as a toy until subsequent compositions were ready for the application of the sound.

### Rattles

A rattle is defined as a shaken or scraped idiophone found in a variety of forms with numerous names.<sup>426</sup> Circular and enclosed bells containing a ball-clapper have been included in this section. Open-ended instruments with an exposed clapper have been placed in the “Bells” section of this document. Hand-held idiophones with a performance technique similar to the castanet, or that produce a sound through a striker and resonator relationship, are included within “Castanets”. While the sistrum is generalized within this category, by virtue of the historical association with the triangle, it has been included in the “Triangle” section. As a result, any sixteenth- and seventeenth-century Western European percussion instrument depicted in the extant sources that produces a sound by being shaken or scraped is included in this section. Instruments for this section include, but are not limited to ratchets or “cog rattles,” strung rattles, maracas, gourds, and other bell-like idiophones.

The performance techniques associated with rattles are significant and provide an additional basis for division: scraped and shaken rattles. Peinkofer defined a scraped rattle as “sticks, plates, tubes, and other vessels with a cross-grooved or notched surface [that] may be scraped with a suitable object to produce a crackling, scratching, or even clattered sound.”<sup>427</sup> Other rattling instruments are those idiophones that produce sound when beaten or shaken may be further divided into two sub-categories: (1) container rattles, and, (2) strung rattles.<sup>428</sup> Instruments with small rattling substances contained within the body of the instrument will be considered container rattles. These include small sleigh bells,

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<sup>426</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).1: 195. s.v. “Rattles,” by James Blades and John Schechter.

<sup>427</sup> Peinkofer and Tannigel, 152.

<sup>428</sup> *Ibid.*, 156.

maracas, and shakers. Rattles of naturally sonorous material are strung in such close proximity that sound is produced by the pieces striking against each other. These instruments include wind chimes, chained rattlers, or ornamental jewelry ordained with rattling devices.

The rattle is a simple instrument that has changed little since antiquity. While Blades, Sachs, and Galpin traced the lineage and development of the rattle and all of the various forms of rattling instruments in Western music, few icons have survived. There is a notable absence of the rattle in written documents while numerous examples of sixteenth- and seventeenth-century Western European icons exist.

The omission of rattles in Western European writing while maintaining an abundance of icon can be attributed to the then prevalent attitude regarding peasant instruments. Writing was considered an art and studies of this era were to be scholarly. The extant sources viewed peasant instruments, and most percussion instruments, as folly and unworthy of inclusion in a scholarly work. Virdung considered most percussion instruments “noise-makers” that disturb “sweet melody.”<sup>429</sup> Agricola shared this opinion by avoiding detailing or adding descriptive text regarding percussion in general.

I will not explain them [xylophone, et. al.] or teach a complete foundation for them at this time; rather, I will concentrate only on how one is to write for the above mentioned instruments according to the correctly established tablature, derived from music and vocal notation.<sup>430</sup>

Arbeau omitted specific references to rattles, but did include text regarding castanets and tambourines.<sup>431</sup> Praetorius contended the instruments are “devoid of all art and refinement”

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<sup>429</sup> Virdung, 115.

<sup>430</sup> Agricola, 29, fol. 28<sup>v</sup>: sig. D4<sup>v</sup>. This text is omitted in the 1545 edition.

<sup>431</sup> Arbeau, 177. While Arbeau continued to presume the reference is in regard to small bells, translator Julia Sutton insisted the reference is regarding the castanets.

undeserving of any detailed account.<sup>432</sup> While Mersenne provided the most detailed text regarding percussion instruments, seventy percent is dedicated to church bells with the remaining portion including clappers but omitting any reference to rattles. The result is scant information regarding ancient artifacts and oblique inferences regarding the rattle in sixteenth- and seventeenth-century Western Europe.

The sources cited for this study have provided limited written information regarding rattles. Specific information regarding the Western European rattles is even more sparse. Only Praetorius and Bonanni contain depictions of a rattle-style instrument. All of the information has been consistent in description, composition, musical applications, and varieties of other rattles. In addition, Praetorius included three varieties of rattles in one plate of primitive and ethnic instruments. Bonanni, however, included ten different plates with as many varieties. All of the plates remain consistent in the graphic presentations of rattles. As a result, the descriptions regarding the use, musical applications, and functions are presented next and omitted from repetition with each plate. Notable variances of size and composition, however, continue to accompany each plate.

Various rattles originated before antiquity. Gustave Reese described rattles among Sumerian artifacts. "Sumerian idiophones included dancing sticks and rattles . . . of which there is evidence in the earlier part of the third millennium BC."<sup>433</sup> Blades and Schichter included references to the rattles during the Babylonian period in Mesopotamia during the early second millennium BC.<sup>434</sup> Sachs included the rattle with the list of instruments from ancient Israel, India, and Mexico.<sup>435</sup> The next chronological reference to any rattle is included with Captain John Smith's Historie of Virginia (1624).<sup>436</sup> Other information

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<sup>432</sup> Praetorius, 78.

<sup>433</sup> Reese, 5.

<sup>434</sup> Stanley Sadie, ed., The New Grove: 1: 195. s.v. "Rattles," by James Blades and John Schechter.

<sup>435</sup> Sachs, 121, 151, and 194 respectively.

<sup>436</sup> Stanley Sadie, ed., The New Grove: 1: 195. s.v. "Rattles," by James Blades and John Schechter.

regarding the European rattle in the time between the ancient period and the late eighteenth century, however, is scant. The functions and musical applications of the European rattle would subsequently be discovered later as defined by the various peoples incorporating them into their respective cultures.

Since the rattles were members of the orchestra as early as Haydn and Mozart, the instruments were obviously in existence.<sup>437</sup> The orchestral occurrence was only seventy years after Bonanni's publication. And, because the specific reference to the type of rattle in the score still exists, a logical conclusion is that the rattles remained virtually unchanged in form, design, or function throughout the sixteenth and seventeenth centuries. While the authors of the extant sources omitted specific text and the above information regarding rattles, other sources containing providing contrary information are nonexistent. The summation that rattles remained unchanged because of a lack of existing contradiction is presumptuous. The suggestion does, however, provide a basis for the possible applications in light of the absence of additional information.

Pertinent instrumental histories depict rattles as having been traditionally associated with religious ceremony and primitive rituals incorporating dance. Sachs described the application of the rattle to dancing for the purposes of stressing movement.

It was made to stress dancing – that is, a complex activity, in which the movement of the head, the arms and the trunk were not audible without an added device. Suspended from the ankles, knees, waist or neck of a dancer, they respond to his movements with a sharp noise; but their rhythm seldom is accurate, as they sound slightly after the dancer's movement.<sup>438</sup>

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<sup>437</sup> Franz Joseph Haydn scored for a notched rattle in the Toy Symphony in 1788. According to Don Randel, editor of the New Harvard Dictionary of Music (Cambridge, Massachusetts: Harvard University Press, 1986) on page 865, this same symphony is argued to have been the work of Leopold Mozart (1719-1787) in 1786 subsequently and mistakenly attributed to Haydn.

<sup>438</sup> Sachs, 26-27.



James Blades included similar references to the musical applications and other traditional functions of the percussive rattles. “Rattle worship and the belief in the instruments’ magical power is widespread. It is used to stress dancing, being shaken or hung from the ankle, leg, arm or neck of the dancer.”<sup>439</sup>

Rattles also were a part of religious ceremonies. During Holy Week, the Roman Catholic Church forbade the ringing of bells.<sup>440</sup> As a result, the scraped rattle, or ratchet, was used as a substitute for signalling parts of the service and to call the congregation to worship. The Metropolitan Museum contains a medieval *crécelle* [rattle] that, according to custom, was used to replace the sound of church bells while parishioners reenacted the “travel to Rome” during Palm Sunday. Winternitz claimed the rattles were used to “break the bones of Judas on Good Friday.”<sup>441</sup> Sachs added the observation regarding the application of the rattle to religious ceremonies by shaman.<sup>442</sup> Galpin supported the shaman function in A Textbook of European Musical Instruments. “[The rattles] . . . occupy an important place in worship . . . . The round rattle . . . has descended to the ritual of the modern European dance band.”<sup>443</sup> Blades and Schechter contended that “rattle worship and the belief in the instrument’s magical power is widespread.”<sup>444</sup>

Similar to the castanets and triangle, the rattle appears to have been considered a peasant or commoner’s instrument. Blades stated, “Such implements and utensils formed the orchestra of the . . . elders of the poorer class who believed in the power of noise . . .”<sup>445</sup> Sachs contended the rattle, “except in shamanic rituals, . . . is mostly shaken by women.

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<sup>439</sup> Stanley Sadie, ed., The New Grove: 1: 195. s.v. “Rattles,” by James Blades and John Schechter.

<sup>440</sup> *Ibid.*, 196.

<sup>441</sup> Winternitz, 135.

<sup>442</sup> Sachs, 28.

<sup>443</sup> Galpin, European Musical Instruments, 39.

<sup>444</sup> Stanley Sadie, ed., The New Grove: 1: 195. s.v. “Rattles,” by James Blades and John Schechter.

<sup>445</sup> Blades, 195.

As a woman's instrument, the rattle vessel has entered the nursery and lives as a toy given to babies.<sup>446</sup>

Praetorius' plate number thirty-one includes depictions of two kinds of rattles: three varieties of container rattles and two varieties of strung rattles.<sup>447</sup> The three container rattles are identified as numbers eight, nine, and ten in the left portion of the illustration, while the two strung rattles are located in the lower center of the plate and numbered as six and seven (PLATE 6.1).

The citation at the bottom of this plate includes references to the various styles of rattles. The two strung rattles, numbers six and seven, are briefly described by Praetorius. The citation states that the strung rattles are native American belts consisting of woven corn husks or other crop residue. These belts are worn about the legs during dance and ritual ceremonies. The sound is typically a "dry or dull clanking sound."<sup>448</sup> The container rattles, number eight, nine, and ten, are described as Indian instruments consisting of gourds.<sup>449</sup>

The sizes of the rattles are discernible from the scale at the bottom of the plate. The strung rattle, labeled as number six, is approximately fifteen inches in length with four-inch ties on either end. The belt is approximately five inches in width. Because the belt is partially obstructed, the exact number of jingles is difficult to determine. If the ratio of seven jingles to every five inches remains consistent, there would be approximately twenty-one jingles attached. The belt labeled as number seven is approximately thirteen inches long by five inches in width. Approximately twenty-three sets of jingles are visible on this

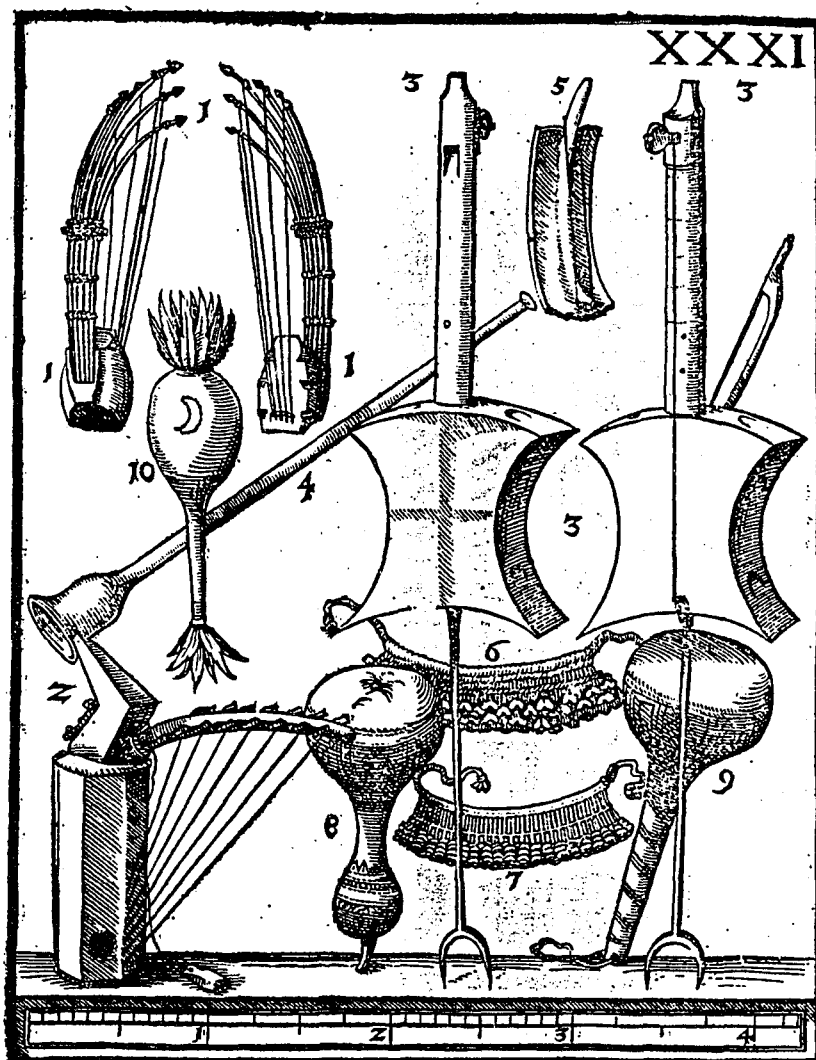
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<sup>446</sup> Sachs, 28.

<sup>447</sup> Praetorius, pl. 31.

<sup>448</sup> Translation by Rich Dougherty.

<sup>449</sup> Praetorius, pl., 31.



1. 2. Indische Instrumenta anlang den Harffen gleich. 3. Monocordium ist ein Pfeiff und hat eine Saue dar neben/ welche mit dem Fiedelbogen gestrichen wird/ den Arabern gebruechlich. 4. Ein Americanisch Cronwet. 5. Ein Fischlein darauff zwe Säuen eines Thons. 6 7. Sind Beins beider den Americanern an stat der Schellen gebruechlich: Sind Geruechte von Fruechten zusammen gemacht. 8. 9. 10. Indianische Kassen von Geruechten gleich den Kuebissen.

PLATE 6.1 Rattles Praetorius, 1619. Taken from Praetorius' list of "various exotic" instruments, including a scale drawing of a pair of rattles made from large gourds and strung rattles.

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Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 31.

belt. The container or gourd rattles range from twenty-four to twenty-six Brunswick inches in length.<sup>450</sup>

The performance techniques associated with the strung rattles would be consistent with the information previously presented. That is, the belts are tied around an appendage for enhancing or accenting dance movements. The rhythmic articulation would be inconsistent and relative to the type of movement used to activate the sound.

A depiction consistent with those of Praetorius' strung rattles is found in Bonanni's plate 125 (PLATE 6.2). The figure in this representation is adorned with strung rattles on each upper arm and above the calf of each leg. The citation in the plate explains the "strung rattles of nut shell are fixed to the arm and legs . . . . They make noise like the jingles which in Italy are attached to the feet of horses or dancers."<sup>451</sup> While detailed text is unavailable, the depiction appears consistent in size, shape, and application when compared with the information in Praetorius' treatise.

The container rattles in PLATE 6.1 produce sound through a variety of performance techniques. The two most obvious techniques would involve shaking and striking. The shaking would be performed by manipulating the instrument from an upward starting position to a lower perpendicular position. The striking involves beating the instrument against the hand or other body part and, even possibly, the ground. Because the complete performance technique from this era has not been addressed, a reasonable conclusion is that the instrument was played in a manner similar to the modern maraca or cabasa.<sup>452</sup>

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<sup>450</sup> Praetorius includes the Brunswick Foot with each of the illustrations. According to Francis Galpin in the notes accompanying Nicholas Bessarhoff's *Ancient European Musical Instruments* (New York: October House, 1964), p. 353, One Brunswick foot equals 11.235 inches or 285.36 millimeters. A Brunswick inch (one-twelfth of a Brunswick foot) is equal to .93625 English inch or 23.78 millimeters.

<sup>451</sup> Bonanni, 125.

<sup>452</sup> Playing techniques for the maraca involve shaking, rotating, and taps against the body of the instrument to produce various long and short articulations.



PLATE 6.2 **Donna Brasiliana in ballo** Bonanni, 1716. Italian strung rattles consisting of bells tied together.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 125.

The musical applications and functions have not been addressed with the citations beyond the categorization with Moorish “exotic instruments.”<sup>453</sup> The categorization implies the instruments are associated with rituals and functions originating with the Moors. These rituals and functions are congruous with the previously described dances and non-Christian religious ceremonies.

Another example of a container rattle is included among Bonanni’s collection. Bonanni’s plate 119, PLATE 6.3, depicts a mother and child. The child is holding two container rattles. The rattle in the child’s left hand is a large stone-filled container rattle with calf-skin at each end.<sup>454</sup> Due to the artistic rendering and, in turn, the absence of a scale, an exact measurement is unavailable. Harris credited the depiction as a primitive “rattle drum.” No visual or written evidence with the depiction suggests a compositional difference between the sides and body of the instrument. The instrument in the child’s right hand is a smaller container rattle consisting of a woven basket on the end of a stick. Harris contends this instrument contains a small bell within a woven basket globe.<sup>455</sup>

Bonanni’s plate number eighty-nine contains a rattle consisting of fifteen circular ball-clapper bells on a hoop (PLATE 6.4). The label is concurrently indicative of the origin of the instrument and the sound production. Bonanni identified the instrument as Armenian with the label *degl’ Armeni*.<sup>456</sup> The word *crotalo* comes from the Greek word *krotalon* generically applied to “small rattles or bells.”<sup>457</sup>

The function of the instrument is described in the citation accompanying the plate. Bonanni wrote, “The Maronites and Sumerians used cymbal clappers in their services. . .

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<sup>453</sup> Praetorius, 78.

<sup>454</sup> Bonanni, 119.

<sup>455</sup> Ibid.

<sup>456</sup> Ibid., 89.

<sup>457</sup> Lang and Bettman, 26.



PLATE 6.3 *Altro diverso usato dalle Nutrici* Bonanni, 1716. A depiction of a child's rattle drum and container rattle.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 119.

[rattling bells were also] used by the Syrians to signal the Elevation of the Host at the Mass.”<sup>458</sup> This information is consistent with the general application of rattling instruments as devices associated with worship services, particularly during Holy Week.

Based solely on the representation, size and composition are barely discernible. The visible material, however, provides for other logical conclusions. The bells must be metallophones as was consistently the practice throughout the ages. The size of each bell relative to the figure in the depiction is approximately one and one-half inches in diameter providing the figure is six feet tall.

A similar representation to “Crotalo degl’ Armeni” is Bonanni plate number 132 titled “Sonagli adoprtati nella Chiesa” (PLATE 6.5).<sup>459</sup> Gambinetto Armonico editor Frank Harris referred to this instrument as being elevation bells and bearing a close resemblance to those in PLATE 6.4. Harris associated the instruments in the two plates as similar despite the obvious visual inconsistencies. Harris was correct in considering the functions comparable, but there are discrepancies in the shape, size, and performance technique associated with this particular instrument. The title PLATE 6.5 contains the word *Sonagli*, the Italian word for sleigh bells or jingles.<sup>460</sup> The inscription describes a rattling as opposed to a ringing sound produced by the type of bells in this plate. This plate contains only fourteen bells as opposed to the fifteen in the previous depiction. All fourteen bells are open ended metallophones with attached clappers. An explanation related to the discrepancy in the number or the type of bell has been omitted. In addition, PLATE 6.4 produced sound from a shaking technique. This instrument is rotated causing the attached clapper to move and strike against the bells. The sound of this particular bell

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<sup>458</sup> Bonanni, 89.

<sup>459</sup> *Ibid.*, 132.

<sup>460</sup> Lang and Bettman, 73.





PLATE 6.4 **Crotalo degl' Armeni** Bonanni, 1716. A representation of a common clapper-type bell or rattle of the Armenian instruments associated with religious services.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Doyer, 1964), pl. 89.

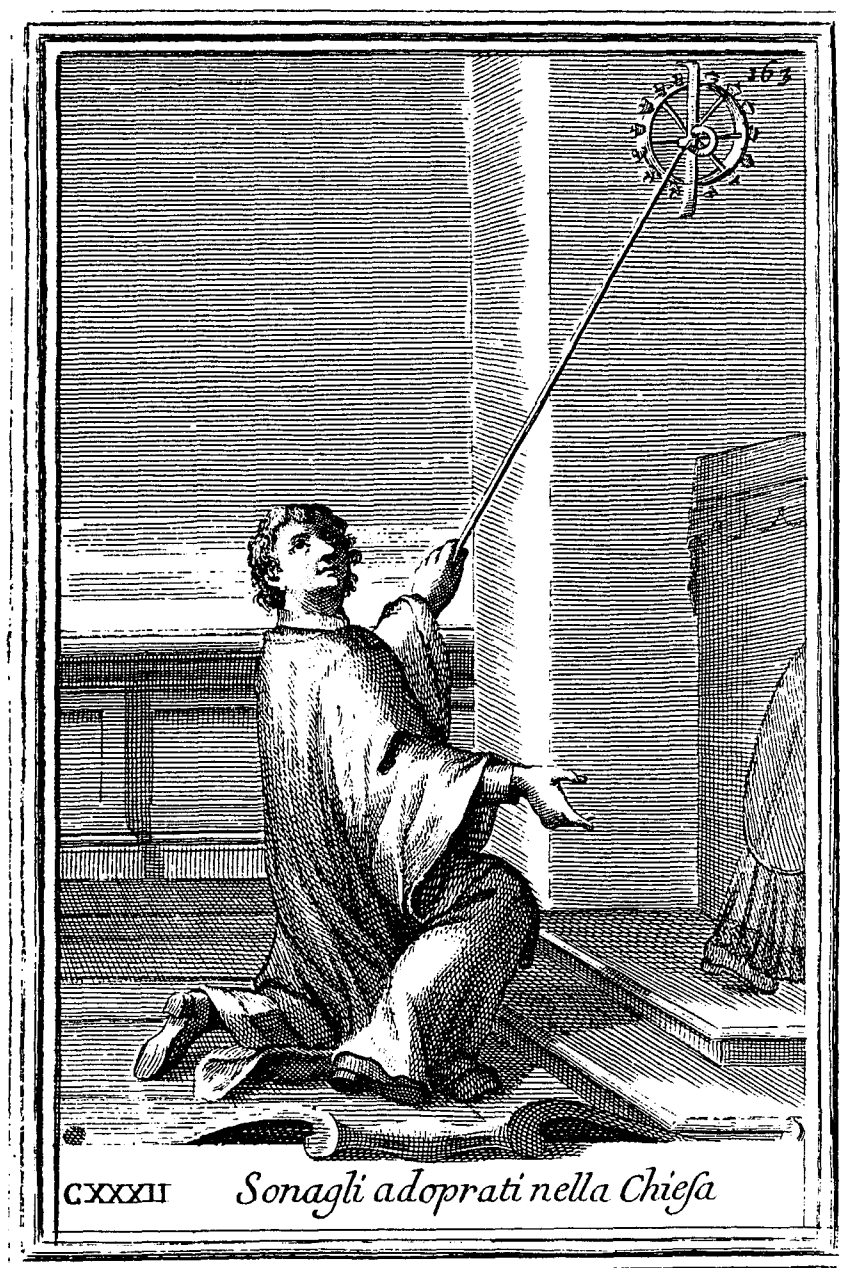


PLATE 6.5 **Sonagli adoprati nella Chiesa** Bonanni, 1716.  
 Ascension bells or "elevation bells" used as religious rattles

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 132.

would be more of a focused ringing pitch as opposed to the jingle sound produced from the other variety.

Two machine rattles are included in the Gambinetto armonico. Bonanni's plates 113 "Altro diverso" and 114 "Matracca" contain rattles that produce sound by mechanical means (PLATES 6.6 and 6.7). Machine-type rattles are absent from the illustrations in the other extant sources.

Bonanni's titles contain entendres. The "Altro diverso" refers to the ingenuity of the first instrument by addressing the complexity of the machinery. *Divers* in Latin and German is an adjective meaning various or sundry.<sup>461</sup> The second title, "Matracca," is a simple label meaning "wooden rattle."<sup>462</sup>

As graphic representations, the specific dimension and material composition are difficult to accurately assess. As is the case in PLATE 6.6, the carving on the case, the spacing of the clappers, and the consistent thickness of the parts supports the notion that the instrument is wooden. Specifically, in the case of PLATE 6.7, the title literally means "wooden rattle." While metal working in this era was sophisticated enough to have produced instruments of similar shape and size, the rattles would have been too heavy and unwieldy. This factor, in itself, make a metallic rattle an unlikely instrument to have been applied to common rituals and peasant music as the citation implies. In addition, metallophones would have produced a chiming sound. Even if constructed in this fashion, the instruments would have been omitted from consideration with rattles and similar instruments by virtue of their tone. Because the "Altro diverso" is partially obstructed from view, the measurements would be inaccurate. The same is true for the "Matracca." Due to

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<sup>461</sup> Ibid., 52.

<sup>462</sup> Ibid.

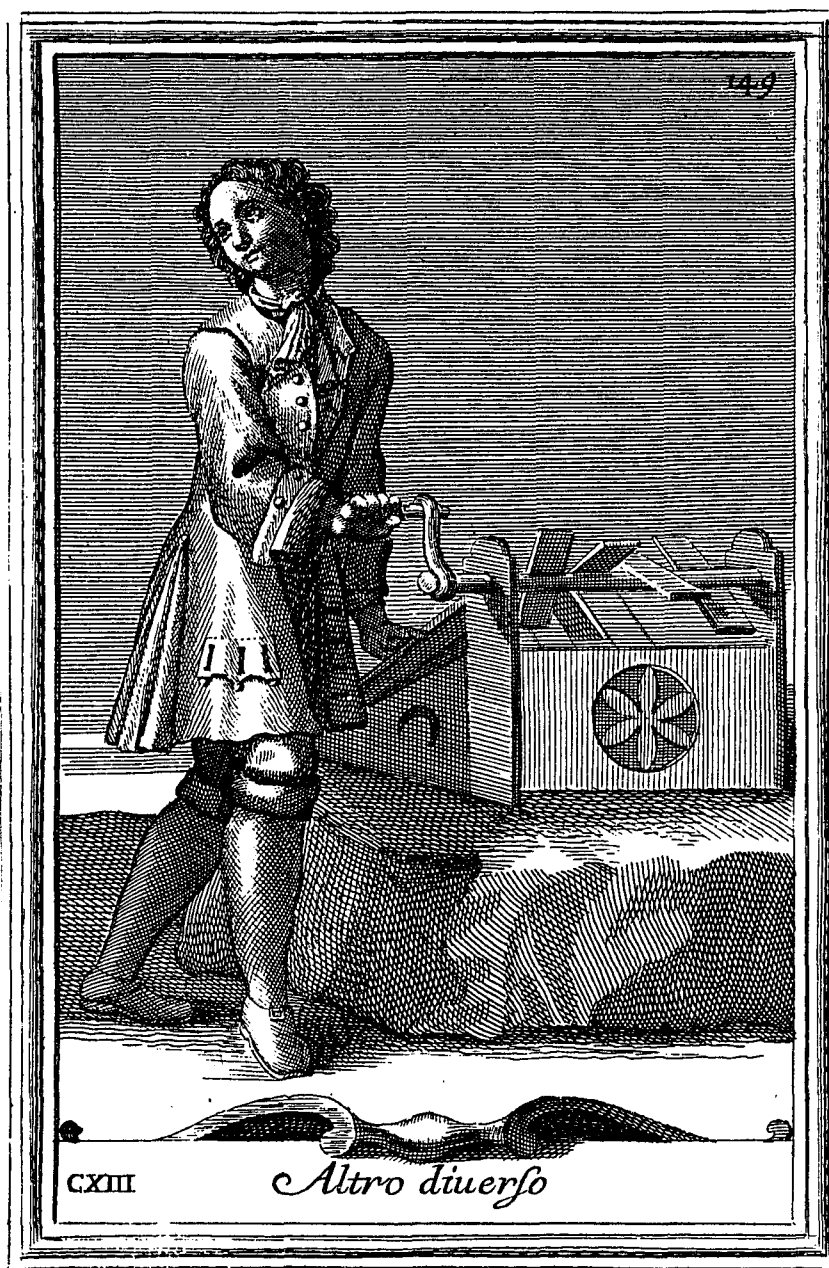


PLATE 6.6 **Altro diverso** Bonanni, 1716. The box rattle associated with pseudo-religious functions.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 113.



PLATE 6.7 *Matracca* Bonanni, 1716. A depiction of one of the large machine rattles originating with Spanish cultures.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 114.

the absence of detail from the depiction and omission from other sources, ascertaining supporting information regarding a relatively unknown and obscure instrument is difficult.

The performance technique is the result of speculative reasoning in the case of “Altro diverso.” The complete and detailed action of the machinery has been omitted from the illustration. The mechanical aspects that are visible, however, do supply enough perspective to draw conclusions regarding the power source and probable outcomes. The action obviously involves a hand crank for rotating wooden clappers. The clappers, in turn, are positioned at varying angles on the crossbar. The left hand of the figure is in contact with another piece of wood. The proximity of the piece of wood to the clappers on the crossbar support a resonator-striker relationship. Additional pieces of wood, similar in size, may be located out of view and parallel to the visible piece. The location of the rotating clappers along the width of the box suggests additional pieces could be involved. Each subsequent piece is located close enough to be struck at various times by the rotating clappers on the crossbar. The action appears to involve the rotating pieces alternately striking resonators laid across the body of the box in order to lift and subsequently release the pieces. The result would be a banging sound against the body of the box. The shaded pieces, located as the second and third object along the width of the depiction, are at odd angles to the crossbar. This visual relationship supports the previously described function. The visible beaters suggest striking, lifting, and subsequent releasing of pieces as a result of the crank action.

Close examination of the “Matracca” suggests a type of tone production similar to the “Altro diverso.” The “Matracca” appears to be a wheel with spokes extending beyond the circumference. Between the extensions of the spokes are hammer-shaped objects. The hand crank appears to be for the purpose of rotating the wheel in order to set the spokes in motion against the hammers. By virtue of the position of the spokes in the wheel, the

spokes are apparently attached at the hub on a type of hinge. The probable action, again, suggests a striker-resonator relationship. The relationship of the spokes at the one o'clock position appears to be compromised and supporting the hinge theory. The subsequent movement would lift the spokes as the wheel rotated to the top, move in combination with gravity and the centrifugal force, and alternately drop against the hammers past the top of the rotation. The resulting sound would be the clatter of the spokes against the hammers.

The musical application of the “Altro” is suggested in the accompanying citation by Frank Harris: “The box rattle [was] used in the Western churches.”<sup>463</sup> This reference appears as additional supporting material to the previously described use of rattles and clappers. Harris provided the first suggestion besides the forbidden ringing of church bells during Holy Week. The citation included with the “Matracca” specifically includes reference to the use of this rattle during Holy Week.<sup>464</sup> Harris contended, however, that the “Matracca” was used by the Spanish churches.

Indefinite pitched idiophone mechanisms, assembled to make rattling sounds, are found in Bonanni's plates 112, 117, and 123. Bonanni's plate 112, PLATE 6.8, contains wooden boards with a pivoting handle or knocker-like attachment. Harris described the instrument as having “iron knockers which struck against the wooden boards when the latter were turned back and forth.”<sup>465</sup> The rattle labeled by Bonanni as plate 117, PLATE 6.9, contains a figure holding a wooden plate with an attached wooden clapper. James Blades described the *trich trach* as an instrument in which a “pivoted wooden hammer oscillates on a wooden base.”<sup>466</sup> PLATE 6.10 is Bonanni's plate 123 and contains three wooden hammers positioned to pivot and strike against the other. Harris includes Bonanni's description by writing that this instrument consisted of “three to five wooden

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<sup>463</sup> Bonanni, 113.

<sup>464</sup> *Ibid.*, 114.

<sup>465</sup> *Ibid.*, 112.

<sup>466</sup> Blades, 195.

hammers that in the centre being fixed while the others moved laterally to strike against it.”<sup>467</sup>

The title of PLATE 6.8, *Crepitacolo* is a Latin synonym for sistrum. *Crepitacolo* appears to have been applied to this instrument by the performance techniques associated with the shaking technique in a similar fashion to the sistrum. The definitive “per le Chiese” refers to the application of this instrument in a church setting.<sup>468</sup> PLATES 6.9 and 6.10 contain the term *trich* or *trich trach* in the title. The trich trach is derived from the Medieval *cliquettes* or *click-clack*.<sup>469</sup> This term, as well as the term *trick-track*, was applied generically to idiophones producing a clattering sound. Precursors to the seventeenth century trich trach include the Neapolitan *triccaballacca*<sup>470</sup> and the Spanish *matraca*.<sup>471</sup> The instrument in PLATE 6.10, however, is more closely related to the Neapolitan *triccaballacca* by virtue of design.

The musical application of each instrument is consistent with the previously described information. That is, the *Crepitacolo* and the trich trach were employed as noise makers during Holy Week in the absence of bell ringing. The citation provided by Harris, in reference to the *Crepitacolo* states the instrument was in use “three days before Easter (Maundy Thursday, Good Friday, and Holy Saturday) [when] the sound of bells is banned and Rattles are used instead.”<sup>472</sup> In reference to the trich trach, Harris added that “in Holy Week young boys amused themselves with rattles of various kinds, such as the trich trach. Sometimes they even sounded them in church to mock the ritual rattles.”<sup>473</sup> Blades

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<sup>467</sup> Bonanni, 123.

<sup>468</sup> Stanley Sadie, ed., *The New Grove*: 1: 195.

<sup>469</sup> *Ibid.*, 433. Also in reference to Blades, 195.

<sup>470</sup> Blades, 195.

<sup>471</sup> Galpin, *Old English Instruments*, as referred to in Blades, 195.

<sup>472</sup> Bonanni, 112.

<sup>473</sup> *Ibid.*, 117.



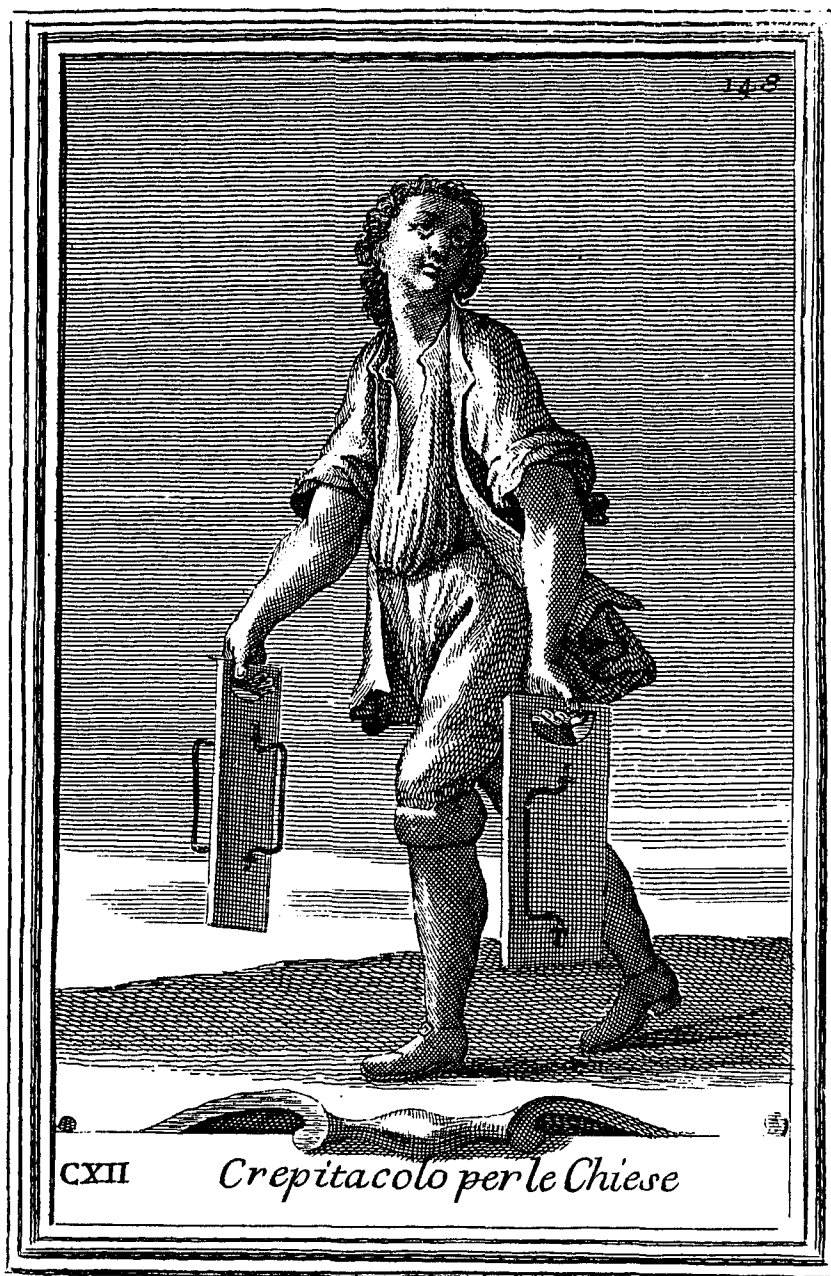


PLATE 6.8 **Crepitacolo per le Chiese** Bonanni, 1716. A representation of the rattles that served as substitutes for bells when the sounds of bells were banned during Holy Week. Sound was produced through alternately turning the boards activating the knockers.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 112.



PLATE 6.9 Fanciullo con Trich Trach Bonanni, 1716. A common rattle known as the "Tric-Trac."

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 117.



PLATE 6.10 **Trich Varlach** Bonanni, 1716. A “Tricche-ballacche” or rattle producing sound by the hammers alternately striking the middle when shaken.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 123.

concurr with writing the “tric trac [trich trach] . . . was used as a noise-maker during Holy Week.”<sup>474</sup> Harris described additional applications of these instruments in summoning monks to Matins,<sup>475</sup> use as a police rattle or alarm, and by worshipers in liturgical responses.<sup>476</sup>

Another Bonanni plate titled as “Fanciullo con Trich Trach” is included in PLATE 6.11.<sup>477</sup> Although this depiction bears the same title, this instrument is different in construction, performance technique, and sound. The confusion in the similarity of the titles appears to have resulted from the comparable application of the instrument to church services. Unlike the previous plate, the instrument in this illustration is a cog rattle or ratchet. This depiction is of a cog wheel which is revolved or twirled against wooden tongues.<sup>478</sup>

Similar to the previous rattles, the application of the instrument also appears to be involved in religious ceremony and worship. Harris wrote that the instrument was “a familiar noise-maker. In Corsica, this kind of rattle, unlike the knocker, could be sounded in church by any worshiper.”<sup>479</sup> Harris is supported by James Blades’ entry in the New Grove Dictionary of Musical Instruments. In addition, Blades supported the idea that rattles of all sorts were a common instrument within the European population.

Ratchets serve in the Orthodox Church; in Roman churches they replace the bells during Holy Week. They have served secular purposes over a long period of time: in Europe as a watchman’s rattle, as an alarm signal, and as a noise-maker at sports gatherings. They are used universally to scare birds and animals, and in a simpler form to amuse children.<sup>480</sup>

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<sup>474</sup> Blades, 195.

<sup>475</sup> Matins is a part of the Catholic Mass or service beginning before dawn.

<sup>476</sup> Bonanni, 112, 117.

<sup>477</sup> *Ibid.*, 118.

<sup>478</sup> Stanley Sadie, ed., The New Grove: 1: 195. s.v. “Rattles,” by James Blades.

<sup>479</sup> Bonanni, 118.

<sup>480</sup> Stanley Sadie, ed., The New Grove: 1: 194-95. s.v. “Rattles,” by James Blades.



PLATE 6.11 **Fanciullo con Tric Trach** Bonanni, 1716. Although labeled in similar fashion to the previous plate, this is a cog rattle. No distinct function has been determined for the hammer in the figure's left hand.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 118.

The rattles this section were fabricated from a variety of materials and range from simple to complex mechanized forms. Various types of wood and gourd were formed into instruments capable of producing rattling or clattering sounds. The forms included various container and strung rattles in sizes ranging from small basket-type rattles containing bells to the larger strung rattles of over fifteen inches in length.

The function of the rattles remained consistent in all the primary references. In addition, sources have sustained the idea of religious and common music making during this period. Sachs and Blades described the application of the rattles to dancing for the purposes of stressing movement. Also, citations accompanying the plates suggest that rattles also were a part of religious ceremonies. These rattles included, but were not limited to, the scraped rattle, trich trach, or ratchet. As with the castanets and triangle, the rattle appears to have been a peasant or commoners' instrument that was so universally employed that variations of the instrument gradually became accepted into the orchestral scores late in the seventeenth century.

### Snare Drums

Identifying one instrument as the precursor to the snare drum of sixteenth- and seventeenth-century Western Europe is difficult. Each country possessed multiple versions of the snare drum. Additionally, variations existed between regions within these countries. Consistent characteristics of the drums, however, were long, cylindrical, parchment-covered membranophones with a chord stretched across at least one vellum identified as a snare drum. The drum sizes during the sixteenth and seventeenth centuries ranged from five to over thirty inches in depth by ten to twenty inches in diameter. The physical composition is consistently a type of hard wood in a cylindrical shape. The vellums were usually sheepskin or calfskin and fastened through a variety of methods to be expanded below.<sup>461</sup>

Modern terms, originally used to identify precursors of drums subsequently labeled as a “snare drum,” are as follows. English terms for the snare drum include side drum, long drum, field drum, parade drum, military drum, and snare drum. French terms include *le grand tambour*, *la caisse roulante (avec cordes)*, *tambour d'empire*, *caisse*, *tambour*, *caisse claire*, *tambour petit*, and *tambour militaire*. In Germany, *kleine Trommel*, *Rührtrommel (tief und hoch)*, *Basler* or *Paradetrommel*, and *Militärtrommel* all have historically been used in reference to the snare drum. Italian terms are *tamburo basso*, *gran tamburo vecchio*, *tamburo rullante*, *tamburo di basilea*, and *tamburo militare*.<sup>462</sup>

Because the precursors to the snare drum and tabor were used interchangeably during the first part of the sixteenth century, two additional criteria will delineate between

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<sup>461</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984):1: 605. s.v. “Drum §3: Side,” by James Blades.

<sup>462</sup> Peinkofer and Tannigel, 11.

the snare drums for this section and those drums to be included with other collections. Cylindrical instruments with parchment-covered ends that involve the use of (1) two sticks and (2) a snare mechanism graphically displayed on the bottom head in the extant sources. All other instruments constructed in similar fashion are included in the “Drums and Tabors” section.

The multitude of variations that existed throughout the European continent were present during this era. Marcuse and Blades support the idea that the early snare drum evolved from the many represented forms.

The medieval tabor<sup>463</sup> had no definitive form; sometimes the diameter was greater than the depth, and sometimes less. It was a double-headed drum with one or more snares on the struck head. In the majority of cases the heads were tensioned with cords going diagonally to and fro from one head to the other with thongs to close the ‘V’ formation and add tension to the vellums.<sup>464</sup>

Historically the body was wood or metal and the heads were stretched by lacings. The medieval tabor is the earliest form of the snare drum; during the 15th century it gradually increased in size, to emerge by the sixteenth century as a military instrument popularized by the fife-and-drum corps of the Swiss mercenary foot soldiers, a large instrument carried over the player’s right shoulder suspended on a strap. It is to this instrument that the English word *drum* was first applied. From then on the snare drum has remained associated with the infantry and the fife.<sup>465</sup>

The earliest Western European iconographic references originate with Greek traditions, Roman practices, and the Moors’ Janissary Bands. The term *Janissary* refers to the regular infantry of the Ottoman Empire which made vast conquests up through the fourteenth centuries.<sup>466</sup> Janissary also refers to the military body guard of the Turkish sovereigns (c. 1320-1820) and the music traditionally used to accompany them. The

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<sup>463</sup> The tabor was the precursor to the snare drum of this era. In this case, Blades is referring to the earliest known tabor as a side or snare drum.

<sup>464</sup> Stanley Sadie, ed., *The New Grove*: 1: 606. s.v. “Drum §3: Side,” by James Blades.

<sup>465</sup> Marcuse, 482-83.

<sup>466</sup> Peters, 34.



works of Peters, Blades, and Kinsky contain plates of Janissary depictions illustrating a large drum being held in a horizontal position.<sup>467</sup> The players are illustrated striking the right side of the drum with a stick, while holding rawhide switches against the left head. The resultant sound is a rattled or snare effect. Janissary music characteristically included “big drums, cymbals, tambourines, and triangles.”<sup>468</sup> The emergence of the snare occurred in subsequent practices of fastening the drum in a vertical manner. Since the drums were slung from the shoulder, snares were fastened directly to the shell.<sup>469</sup> Based on the icons in this document, the drum is probably the most popular and widely distributed of the sixteenth- and seventeenth-century percussion instruments. Musical guilds that dominated percussion use with the timpani usually did not employ the snare drum, and therefore the drum was universally accessible to the common person. In addition, because most of the functions of the snare drum had been established in previous centuries, the common availability to the instrument contributed to its universal acceptance.

The snare drum of this era is identified by a variety of labels. The difference in terms did not necessarily delineate or identify different instruments. The most popular term applied to the instruments in this category is the *side drum*. The label is due, in part, to the “playing position of the original military instrument which was slung from the shoulder and worn at an angle at the player’s side.”<sup>470</sup> As mentioned previously, the origins of the Western European snare drum also are associated with the tambourine and the pipe and tabor. Willi Apel, Karl Geiringer, Oliver Strunk, H.W. Schwartz, George Kinsky and other authorities on the music of the Middle Ages have mentioned the combinatory use of

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<sup>467</sup> Ibid.; Blades; Kinsky.

<sup>468</sup> Peters, 24.

<sup>469</sup> Blades, 216.

<sup>470</sup> Stanley Sadie, ed., The New Grove: 1: 605. s.v. “Drum §3: Side,” by James Blades.

these instruments.<sup>471</sup> Specific information regarding the use of the pipe and tabor is found in the “Drums and Tabors” section of this document. In addition, most of the musical paintings portray these two instruments being played together.<sup>472</sup>

As has been previously indicated, during the Middle Ages the difference between the tambourine and the regular side drum or snare drum was very small, since the tambourine was often constructed with one or more snares across its single head, though being different from the drum in that it was usually constructed with only a single head with the opposite side of the drum open. The drums were divided into two main groups, those with two membrane heads and those with one membrane head, usually kettle-shaped, being closed on the opposite side. The first type would include most of the regular snare drums, side drums, field drums, tambourin [not to be confused with the tambourine], taupin, bass drums, and the like. The second group would include kettledrums with some scattered samples of smaller drums having only one head but still not conforming to the tambourine.<sup>473</sup>

Before the sixteenth century, one of the primary applications of the snare or field drum appears to be of a military function. The date of the snare drum’s first military applications can be traced to the ancient Greeks. The Greek traditions were maintained by the Romans and Moors which subsequently became a regular fixture in the European military. Two of the earliest confirmations of the snare drum in the European military are located in Farmer’s Military Music.<sup>474</sup> A thirteenth-century manuscript by Hariri Maqamot, entitled the Caliph’s Guard, indicates the use of the drum imitating oriental practices during the Crusades.<sup>475</sup> J. van Gheyn portrayed a Dutch field drummer in an engraving after Hendrik Gottsius entitled *Dutch Drummer*.<sup>476</sup> The depiction is of military personnel supporting a large field drum.

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<sup>471</sup> Apel, ed.; Geiringer; Oliver Strunk, The Baroque Era (New York: Norton, 1965); H. W. Schwartz, The Story of Musical Instruments (Elkhart, Indiana: Conn Band Instrument Division, 1938); Kinsky.

<sup>472</sup> Gangware, 78.

<sup>473</sup> Ibid.

<sup>474</sup> Farmer, 13.

<sup>475</sup> Ibid., 11.

<sup>476</sup> Ibid., 23.

Written documents regarding the snare drum from the sixteenth century, besides the extant sources, were distributed for the purposes of consistency in training and performance of military duty. In England during the sixteenth century, military journals contained details of the snare drum as a means of communication during battle. The Sweche (1492, author is unknown) is the earliest surviving English military document describing the function of the snare drum.<sup>477</sup> Italian author Niccolo Machiavelli stated the use of the trumpet, drum, and flute could be heard “above all” during battle in Libro della arte della guerra (1521).<sup>478</sup> The first military signals in notation is found in Clément Jannequin’s La Bataille (1528).<sup>479</sup> Jannequin (c. 1485-1558) encouraged the adoption of primarily English signaling practices to the extent of including actual English drum notation.

By 1557, the snare drum was a regular part in the function of the European military. These drums also were a permanent fixture in regimental bands. The primary function of the military snare drum included, but was not limited to, signaling battle commands and providing rhythmical accompaniment for marches. In Germany, Fronsberger’s Kriegsbuch (1566) detailed the duties of snare drummers and other military musicians.<sup>480</sup> Additional German manuals are noticeably absent until the early 1800s. The establishment of the Imperial Order of Trumpeters and Kettledrummers by the Holy Roman Emperor Ferdinand II in 1632 possibly prevented publication of additional resources from this country.<sup>481</sup> Similar references to the snare drum are in Robert Barrett’s The Theorike and Practike of Modern Warres (1598) and John Digge’s Arithmetical Warlike Treatise

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<sup>477</sup> Peters, 34.

<sup>478</sup> Stanley Sadie, ed., The New Grove Dictionary of Music and Musicians, 20 vols. (London: Macmillan, 1980), 12:316. s.v. “Military Calls,” by Edward Tarr.

<sup>479</sup> *Ibid.*, 318.

<sup>480</sup> *Ibid.*

<sup>481</sup> *Ibid.*

(1590).<sup>482</sup> These texts instruct soldiers to learn battle signals and react accordingly.

Garrod's Arte of Warre (1591) gives direction to marching and the manner in which the soldiers are to maneuver. At the "stroke of the drum, all things in battle the soldier shall go, just and even, with a gallant and sumptuous pace."<sup>483</sup>

The military calls involving the combination of trumpet and snare drum appear in sixteenth-century documents. Ralph Smith's Rules for Drums and Fifes (1557) described British "callings like Marche, Allarum, Approache, Assault, Battaile, Retreat, and Skirmish."<sup>484</sup> In 1558, the Italian use of the snare drum is recorded by Gioseffo Zarlino (1517-1590) in Le institution armoniche.<sup>485</sup> Zarlino's references to the trumpeters and drummers illustrate the snare drummer's duties for signaling troop movements and various behaviors during battle. According to the available writings from the early seventeenth century, this practice was imitated by the major European armies throughout the century.

Seventeenth-century military documents include references to the snare drum as well. The first surviving seventeenth-century manual is the Italian military document for tournaments Il torneo (1621) by Pistofilo. According to the instructions in Pistofilo's manual, "the quality of their sound, and that they appeal to the nature of the men . . . [should be] suitable on horse or foot."<sup>486</sup> Francis Markham's Five Decades and Epistles of Warre (1622) includes a list of military signals for duty. Markham distinguished between the then traditional fife and drum usage by proposing the use of the solo snare drum.

The phiph is but an instrument of pleasure, and not necessity, and it is the voice of the Drumme the soldier should wholly attend . . . the Drumme being the very

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<sup>482</sup> Ibid. 316-18.

<sup>483</sup> Blades, 216.

<sup>484</sup> Stanley Sadie, ed., Music and Musicians: 12: 312. s.v. "Military Calls," by Ed Tarr.

<sup>485</sup> Stanley Sadie, ed., The New Grove Dictionary of Music and Musicians 20 vols. (London, England: Macmillan, 1980), 12: 311. s.v. "Military Band," by Charles Hind.

<sup>486</sup> Blades, 219.

tongue and voice of the Commander, he is to have an exceedingly careful and diligent ear.<sup>487</sup>

In addition, Markham dictated the specific signals associated with military duties of the hour.

First in the morning the discharge or breaking up of the Watch, then a preparation or Summons to make them reparaire to their colours; then a beating away before they begin to march; after that a *March* according to the nature and custom of the country (for diuers countries have diuers Marches), then a *Charge*, then a *Retreat*, then a *Troupe*, and lastly a *Battalion* or a *battery*, besides other sounds which depending on the phantastikenes of forain nations are not so useful.<sup>488</sup>

Subsequently in England, the first written seventeenth-century source regarding the military snare drum is credited to King Charles I in a decree directing the revival of the English March for military purposes circa 1632. The Academy of Armoury (c. 1688) by Randle Holme III included precursors to modern orchestral rudiments including the “flam,” “dragge” [drag], “rooffe” [ruff], “diddle,” and “rowle” [roll].<sup>489</sup> Additional European sources that involve written notation of military signals include Direction of Warre (1624) by Count Mansfield, du Prassac’s Art of Warre (1639), the Complete Body of the Art Military (1650) by Richard Elton, English Military Discipline (1680, author is unknown),<sup>490</sup> Sir James Turner’s Palas Armata (1683),<sup>491</sup> and The Military Garden (1692) by William Acheson.<sup>492</sup>

<sup>487</sup> Ibid., 216.

<sup>488</sup> Stanley Sadie, ed., The New Grove Dictionary of Music and Musicians 20 vols. (London, England: Macmillan, 1980).12: 316. s.v. “Military Calls,” by Edward Tarr.

<sup>489</sup> Stanley Sadie, ed., The New Grove: 1: 608. s.v. “Drum §3: Side,” by James Blades. A flam is an almost simultaneous striking of both sticks. The drag is a stroke involving a controlled rebound that occurs immediately after a principal stroke. Similar to the drag, the ruff is a double rebound occurring immediately prior to a principal stroke. A diddle is a multiple rebounded stroke while a roll is a sustained sound through multiple and balanced stroke rearticulations.

<sup>490</sup> Stanley Sadie, ed., Music and Musicians: 12: 316-18. s.v. “Military Calls,” by Edward Tarr.

<sup>491</sup> Farmer, 36.

<sup>492</sup> Stanley Sadie, ed., Music and Musicians: 12: 318. s.v. “Military Calls,” by Edward Tarr.

The practice of combining trumpet and drum ensembles into martial music continued well into the seventeenth century. The Earl of Arundel and Surrey issued the Lawes and Ordinances of Warre (1639) describing the use of trumpets and drums. The document includes instructions specifying that soldiers distinguish between the “distinct and different sounds of the trumpet and drum.”<sup>493</sup> In France, the Mousquetaires substituted trumpets and drums for the previous fife and drum corps in 1663.<sup>494</sup> Hind credited this event as a major influence affecting other military units to adopt as a model.

Many of their marches and the *airs* performed as routine calls with the drums, written by Lully, André Philidor *l'aîné*, Martin Hotteterre and others c. 1670 are in the Philidor Manuscripts of 1705. England followed with the appointment of “hautboys” to the Horse Grenadier Guards in 1678 and to the Foot Guards soon afterward, while in Germany replacement of the *deutsche Schalmeyen* . . . had begun by the beginning of the 18th century.<sup>495</sup>

Western European icons from the sixteenth century provide interesting insight into the nonmilitary use of the snare drum as well. English traditions of incorporating the snare drum in art music originated with court musicians. The first nonmilitary reference to the snare drum is the list of the King’s Musicians in 1547. “The word ‘tabretts’ no longer appears, its place being taken by the larger ‘dromslades’ which is the Dutch term for drum-beaters.”<sup>496</sup> The painting of the masque at the *Wedding of Sir Henry Unton* (1596) includes a “broken consort” that included side drums.<sup>497</sup>

The first record of a snare drum in an orchestral setting was in 1561. Court records indicate payroll disbursements for royal musicians that included percussion. The transactions show Queen Elizabeth I employed violins, violas, oboes, fifes, cornettos and

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<sup>493</sup> *Ibid.*, 316.

<sup>494</sup> *Ibid.*

<sup>495</sup> *Ibid.*, 311.

<sup>496</sup> Peters, 34.

<sup>497</sup> Blades, 215.

drums in her Royal Orchestra. Blades credits the entries in the Royal Privy Purse as containing expenses for the “Drumsleds” [drum players] to the extent of £18 per year.<sup>498</sup> Also in 1561, Italian playwrights Alessandro Striggio (c. 1535-1592) and Francesco Corteccia (1502-1571) collaborated in writing music employing the snare drum to accompany plays. Jacapo Peri (1561-1633) specified the snare part in his opera “Euridice” (1600).<sup>499</sup> Lord Chamberlain recorded the use of fifers and drummers into the Royal orchestra on August 7, 1689.<sup>500</sup>

Vital iconographic references, contributing to the understanding of percussion instruments, continued well into the seventeenth century. Rembrandt’s famous painting *The Night Watch* (1642), includes a very detailed illustration of a field snare.<sup>501</sup> The subjects are a company of Amsterdam civil guards preparing for call to the changing of the guard.<sup>502</sup> The drum appearing with the subjects is a large field drum approximately twenty inches deep and possibly sixteen inches in diameter. The player is turned to reveal the bottom head where four gut snares are clearly visible. The head-tension is the result of the rope-tensioning method.

Although the sources for this document omit the specific depictions, documents recording the use of the snare drum in the European navy throughout this time are available. The most significant record regarding the naval drum is contained in two books written by John Smith (1580-1631). Smith’s Accidence for Young Seamen (1626) and

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<sup>498</sup> Stanley Sadie, ed., The New Grove: 1: 607. s.v. “Drum §3: Side,” by James Blades.

<sup>499</sup> Peters, 34

<sup>500</sup> Gilbert, 7.

<sup>501</sup> Ludwig Goldscheider (ed.), Rembrandt (London: Phaidon Press Ltd., 1960), plate No. 40; as cited in Gangware, 85. Rembrandt’s full name is listed as “Rembrandt Hermenszoon van Rijn” with birth and death dates as 1606-1669.

<sup>502</sup> Gangware, 85.

The Seaman's Grammar (1636) provide details involving the traditions of the naval snare drum.<sup>503</sup> Blades provided the applications of the drum in naval affairs.

In addition to its use as a military instrument the side drum [snare drum] served a purpose in naval routine. On board ship (until 1865) it was concerned with Action calls, burial at sea, flogging, and 'walking the plank.' Shortly before his death (1596), Drake is reputed to have told his soldiers to hang his drum at Plymouth so that it could be beaten in time of danger to recall him.<sup>504</sup>

A depiction of the drummer at sea from a sixteenth- or seventeenth-century source is difficult to obtain.

Apparently, the snare drum did not achieve a permanent place in the orchestra until the late seventeenth century. The first written part for snare drum did not appear until the sixteenth century, and then only in instruction books. The absence of percussion parts in early seventeenth-century orchestrations is attributed to the military traditions in performance. Music historians, however, suggest that the absence of percussion parts do not accurately reflected the application of the snare drum as traditionally incorporated into orchestral settings.

Military drummers were about the only drummers available, and because they were accustomed to a great deal of latitude in performances, they would tend to embellish uninteresting, nontechnical parts.<sup>505</sup>

Blades provides additional information regarding the absence of the snare drum in orchestral music of this era as well.

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<sup>503</sup> Geiringer, 160. Blades lists the date for The Seaman's Grammar as 1653, (Blades, 216). No explanation has been given for the publication date occurring after the death of John Smith.

<sup>504</sup> Stanley Sadie, ed., The New Grove: 1: 607. s.v. "Drum §3: Side," by James Blades.

<sup>505</sup> Peters, 50.



The fact that little written music exists for the drum during the Middle Ages and even later, is not surprising. A good deal of medieval music was unwritten, and it is not likely that the drum would be included among these instruments for which it was written. Music of the Middle Ages flourished as much by ear as by eye, and percussion playing was assimilated in the main by rote. Such drum music as we have is tied to military purposes, and consists mainly of instructions for the instrument's use in signaling and pace-making, little being said regarding the technical approach.<sup>506</sup>

As is mentioned in the subsequent text accompanying Arbeau, the snare drum was, in fact, used in early orchestral settings for entertaining the court and for dances.

An additional possible deterrent to accepting the snare drum in the orchestra, at this time, had been the military cadence. Traditionally, the cadence was a continual rhythmic accompaniment played at a volume too loud for the softer orchestral instruments to penetrate. Since the cadence was the usual manner for the military drummer's improvisation on uninteresting parts, composers rarely employed the drum for anything other than effect.<sup>507</sup> Gordon Peters suggested the written snare drum part was unnecessary, and therefore, contributed to the confusion in establishing the first orchestrated parts. "Prior to the mid-seventeenth century, the composer apparently did not feel it necessary to notate percussion parts knowing that the player's training would have made him thoroughly consistent with what was then traditional technique."<sup>508</sup>

In general, the mechanics of the snare drum changed little during the sixteenth and seventeenth centuries. The consistency is due, in part, to the many existing variations of the snare drum and tabor. Frequently, a variation in construction was localized and imitated in a geographic progression. Variations in construction appear to have warranted a different identity and function for the instrument as opposed to the application of the construction practice to existing drums.

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<sup>506</sup> Blades, 212.

<sup>507</sup> Peters, 7.

<sup>508</sup> Ibid.

Head tensioning was achieved through a variety of methods and remained virtually unchanged until the preferred screw tensioning of the late eighteenth century.<sup>509</sup> One method was to tack the parchment directly to the side of the drum shell. On the basis of the icons, the tacked heads were primarily viewed in shallow frame drums and tambourine-type drums. Generally, the rope-tensioning techniques were common among the military units. Rope was laced over the length of the shell and slide buckles were placed between two ropes. The angle of the ropes would change with the sliding of the buckle, allowing for tensioning and release of the heads. Blades suggests counterhoops also were employed on the snare drum during this era. “There is some pictorial evidence for the use of the flesh hoop, but generally speaking, artists portrayed the rope directly threaded into the vellum.”<sup>510</sup>

The extant sources from sixteenth- and seventeenth-century Western Europe illustrate the use of percussion instruments to a greater degree. *Virdung* included an illustration of a snare drum, labeled *Trumeln* in *Musica getutscht* (1511).<sup>511</sup> The snare drum (PLATE 7.1) is a deep cylinder with rope-tensioned heads on each end. The counterhoop is visible on each end of the drum to support head tensioning.<sup>512</sup> As previously discussed, although the technology was available, a sixteenth-century depiction including this detail is unusual.

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<sup>509</sup> An exception to this appears in Praetorius' plate number 23 depicting a timpani with screw tensioning. This statement is in reference to the snare drum in which screw tensioning was not universally applied until the late 1700s.

<sup>510</sup> Stanley Sadie, ed., *The New Grove*: 1: 607. s.v. “Drum §3: Side,” by James Blades.

<sup>511</sup> *Virdung*, 115.

<sup>512</sup> A counterhoop is a ring placed on top of the vellum for the purposes of securing the head to the cylindrical shell of the drum. Previously, ropes were threaded through the flesh-hoop. The flesh-hoop was a ring on which the head was mounted. Tightening the ropes would frequently result in the tearing of the drum head. The application of a counterhoop allowed for increased tension to the head without distressing the actual parchment as the previous rope tensioning method. The earliest representations of this method is evidenced in the early sixteenth century.

Details surrounding the characteristics of the snare drum in Virdung's text are scant. Virdung's infamous passage regarding the musical application of the snare drum inhibits efforts to fully appreciate the potential of the instrument.

All of these drums are here if you want them. They greatly disturb the peace of honorable, virtuous old people, of the sick and ailing; of the religious in cloisters, who have read, study, and pray. And I believe and consider it the truth [that] the devil invented and made them, for there is absolutely nothing pleasant or good about them. On the contrary, [they cause] a smothering and a drowning of all sweet melodies and of the whole of Music . . . . For if the beating or making a loud noise is supposed to be Music, then the hoopmakers or the coppersmiths or the coopers must be musicians as well.<sup>513</sup>

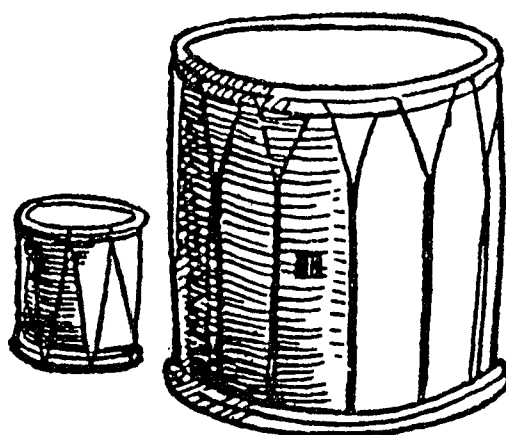
Although the text is a pointed opinion intended to categorize percussion as noisemakers, the illustration is remarkably detailed. As a result, a number of probable applications can be extracted from the illustration. For example, the drum is a deep cylinder similar to those previously described in association with martial applications. The head-tensioning technique involving visible counterhoops and ropes imply the drum was intended for harder and louder dynamics further supporting a military function. In consideration of Virdung's written perception and the inaccuracies of the woodcuts, the fact that these characteristics are included in this graphic is remarkable.<sup>514</sup> Virdung omitted references to performance technique or materials employed for striking the instrument.

Agricola disregarded the snare drum in Musica instrumentalis deudsch (1529). The recognized similarities between Musica instrumentalis deudsch and Virdung's Musica

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<sup>513</sup> Virdung, 115.

<sup>514</sup> Virdung, 18. In the forward of the translation, Beth Bullard include a quotation from Gerhard Strader regarding the inaccuracies of Virdung's illustrations. "Unfortunately, these woodcuts are unreliable in many respects, especially concerning technical problems. [The woodcuts] are sometimes reversed [i.e., they form a mirror image of the depicted instrument], and they demand critical inspection in order to guard against false conclusions."



**PLATE 7.1 Snare Drums** Virdung 1511. Two perspectives of rope-tensioned drums of indeterminate size are displayed with scant accompanying text. Virdung felt it beneath him to explain these instruments.

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Virdung, Sebastian. Musica getuscht: a Treatise on Musical Instruments [1511]. Translated by Beth Bullard. NY: Cambridge University Press, 1993, Sig .D.

getuscht would heighten expectations of a similar inclusion of a snare drum in the contents of Agricola's treatise.

A direct connexion [sic] between Musica getuscht and the 1529 edition of Musica instrumentalis deutsch can be seen in the latter's many woodcut illustrations derived from Virdung's book. Similarities in the text of both works are also apparent, although Agricola's is couched in the form of verse and exhibits some significant changes consistent with the practical nature of his book.<sup>515</sup>

While the striking similarities are acknowledged, Hettrick attempts to justify the omission of the snare drum. "In keeping with his avowed pedagogical emphasis in his book, Agricola omits portions of Virdung's work that would have had little practical application for his own readers: the pseudo-Jerome instruments, folk instruments, and drums."<sup>516</sup>

Orchesographie (1585) written by Frenchman Jehan Tabourot, under the pseudonym Thoinot Arbeau, provides information pertaining to the previously described applications traditional to Western Europe. The first of the two-part Orchesographie details military march beats played on the *snaartrommel* and the first notated cadence.<sup>517</sup> In addition, five separate graphics contain depictions of snare drums and players. The second part provides insight to the function of the drum as applied to dance rhythms.

Arbeau included an exhaustive description of musical notation for the snare drum. In fact, Arbeau's text is considered the first such document to include notation for this instrument. Musical notation and a variety of rhythmic examples accompany the graphics in Arbeau's text. These examples have been the subject of the original studies from this extant source. While the importance of these examples is not to be diminished, the focus of this study will remain on gathering information from the icons presented in the extant

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<sup>515</sup> Agricola, xiv-xv.

<sup>516</sup> Ibid., xv.

<sup>517</sup> Peters, 24.

sources. While the notation has significance, there is little, if any, impact on the illustrations of the instruments. As a result, the notation directly affecting the graphics will be included as related to the characteristics identified as important to the focus of this document.

Solfeggio symbols accompany references to the drums. One reference including these symbols is from 1585 by Arbeau. Arbeau's system of *tans* (♩), *teres* (♪), and *de dans* (♫) are among the earliest surviving parts for the military drum. This system provided a reference for the standardization of military teaching traditions. Transcribed, Arbeau's basic signals are as displayed in TABLE 1 and 2 respectively.<sup>518</sup>

Arbeau's first illustration of snare drums appears in the coat of arms (PLATE 7.2). The drums appear in the bottom two-thirds of the illustration and are equally distanced in an inverted triangle relationship. All of the drums have the same diameters, but differ in their relative lengths. The drum to the left is the most shallow of the depictions. The lengths of each drum progressively increase beginning with the drum in the lowest position and proceeding to the drum at the upper right. The V-shape extending the length of the body is intended to portray the drums as rope-tensioned military side drums. The translated text contains a reference to the graphic "upon which appear a lion sable on a silver chief and three drums with a gold chevron on an azure field."<sup>519</sup> Sutton, however, contended the passage is more accurately represented as "Azure a chevron or between three drums proper, on a chief argent a lion passant sable."<sup>520</sup> The only reference is in regard to the recognition of the symbols and the association to Arbeau. As a result, a logical conclusion is that the nature of the graphic appears to be intended as a decorative inclusion.

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<sup>518</sup> Arbeau, 46.

<sup>519</sup> Ibid., 10.

<sup>520</sup> Ibid., 197.

TABLE 1<sup>521</sup>

## NOTATION APPEARING IN ARBEAU'S TEXT

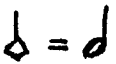


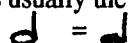
<u>NOTE</u>	<u>FRENCH</u>	<u>BRITISH</u>	<u>AMERICAN</u>
	minime blanc	minim	half note
	minime noire	crotchet	quarter note
	crochue	quaver	eighth note

TABLE 2

## MILITARY SIGNALS APPEARING IN ARBEAU'S TEXT

TO ARMSCOMMENCE FIRINGCEASE FIRE<sup>522</sup>

<sup>521</sup> Ibid., 211.

<sup>522</sup> Stanley Sadie, ed., *The New Grove*: 18: 266. s.v. "Snare Drum," by James Blades. Sutton adds that "the modern form of the minim would be a half note, it is, as Arbeau says, the basic unit of the beat; today this is usually the quarter note." In the transcriptions accompanying the Labanotation this procedure is followed: . Arbeau, 212.

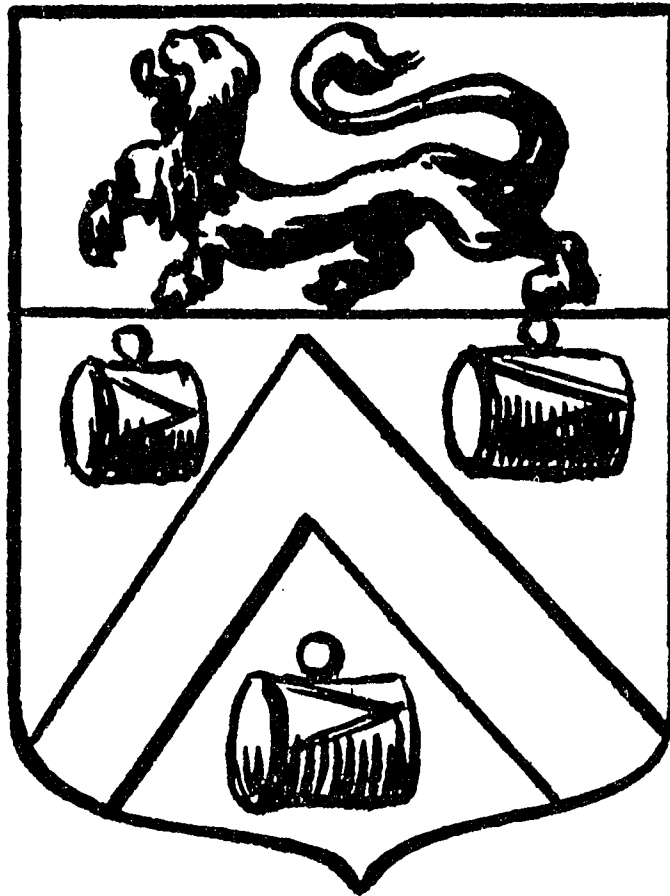


PLATE 7.2 Coat of Arms Arbeau 1589. An etching displaying three drums among Arbeau's coat of arms.

Reprinted With the Permission of Cambridge University Press  
Arbeau, Thoinot. Orchesography. [Longres: Jehan des Preyz, 1589]; reprint translated by Mary Stewart  
Evans. New York: Dover Press, 1967.



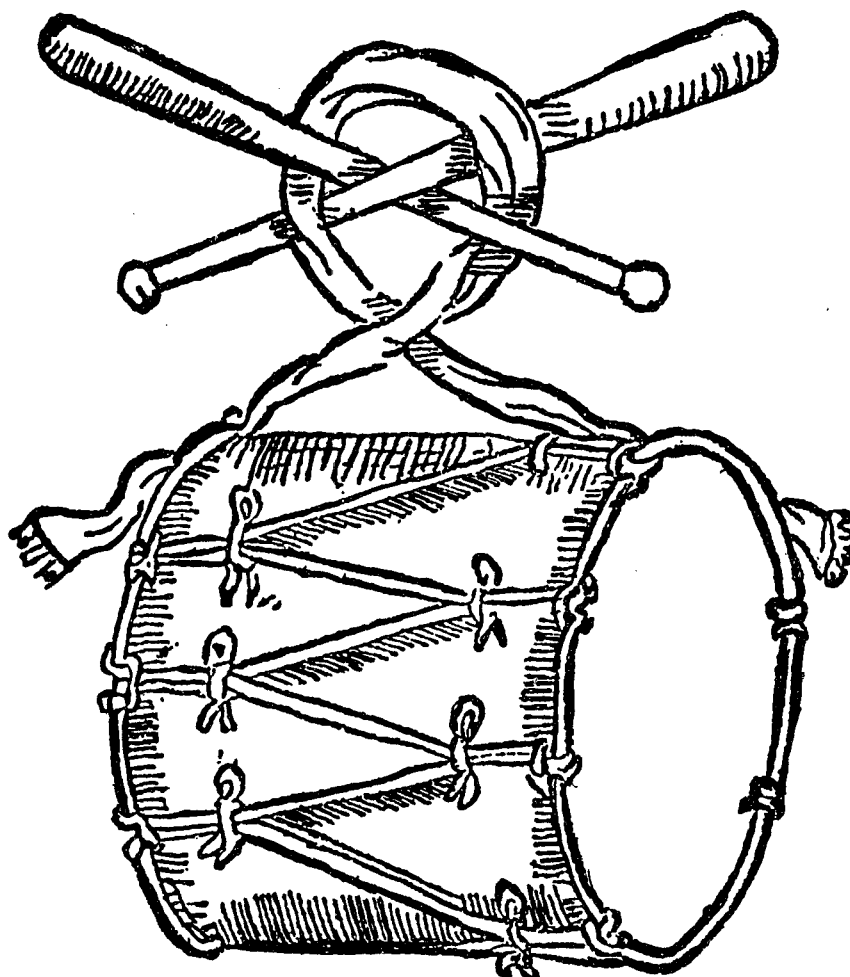


PLATE.7.3 **Military Drum** Arbeau 1589. A rope-tensioned military drum described by Arbeau.

Reprinted With the Permission of Cambridge University Press  
Arbeau, Thoinot. Orchesography. [Longres: Jehan des Preyz, 1589]; reprint translated by Mary Stewart  
Evans. New York: Dover Press, 1967, p. 19.

The second graphic contains two portrayals of a snare drum (PLATE 7.3). This graphic appears reprinted within different context twice in later portions of the book. The first depiction, viewing from left to right, is a rope-tensioned French military drum. The second representation is of a figure marching and playing the same drum. Arbeau described the drum as “hollow wood about two and a half feet deep, closed at each end with parchment skins secured by two bands, about two and a half feet in diameter, and bound with cords to keep them taut.”<sup>523</sup> Two sticks are portrayed within the laces above the first image and also in the hands of the figure in performance. The details included with the image are consistent with the items mentioned in the text. The drum and the parchments are laced with cords in a manner congruous with traditional tensioning methodologies. Also, the drum, compared to the figure, appears in relative perspective to the measurements listed.

Along with the above information, Arbeau includes details regarding the head-tensioning previously suggested. In response to a question from the fictitious Capriol, Arbeau elaborates on the graphic details displayed that are involved with the head-tensioning.

This [the buckles and straps binding the lengths of cord] is to tighten the skins when one wishes to beat the drum, by slipping the straps toward the centre, and to loosen them when the drum is not in use by slipping the straps towards the bands and edges.<sup>524</sup>

While the description of this method is consistent with the previously listed methodologies, Arbeau made a point of describing the parchments as consisting of leather.<sup>525</sup> As with modern calf skin, a method to counteract the effects of the weather would have made the

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<sup>523</sup> Ibid., 18-19.

<sup>524</sup> Ibid., 19.

<sup>525</sup> Ibid., 18.

tension variations necessary. The omission of this detail effects the perception of the instrument and compromises Arbeau's credibility.

The performance technique described in the text and those depicted with the illustration provide interesting speculation. Arbeau described the performance as resulting "when the skin is struck with the sticks," and "the skins are beaten with two sticks which the drummer holds in his hands."<sup>526</sup> Blades claimed that the snare drum, "unlike the tabor . . . was played invariably with two sticks, and by the sixteenth century the snare was below the lower head instead of the upper head as on the tabor."<sup>527</sup> And consistent with this description, the figure is portrayed with a stick in each hand. The grip, however, is surprisingly accurate. The left hand is holding the stick in a reversed manner as compared to the right. The practice of changing the left-hand grip originated with the Greeks and is practiced to accommodate the angle of the drum when suspended for the march.<sup>528</sup> The sticks are to be manipulated in much the same manner as modern techniques.

Musical applications of the snare drum are suggested in the accompanying text as well. Martial applications are the first order of explanation. The snare drum pictured in PLATE 7.3, is a representation of those described in association with the French march. In addition, the striking of the left stick concurrent with the left step was a traditional technique in time-keeping. The left hand and foot relationship is supported in a subsequent passage addressing the military march.

That is why, in military marching, the French make use of the drum to beat the rhythm to which the soldiers must march . . . . The drum rhythm contains eight minims<sup>529</sup>, the first five of which are beaten and struck. The first four of these with

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<sup>526</sup> Ibid., 18-19.

<sup>527</sup> Stanley Sadie, ed., *The New Grove*: 1: 608. s.v. "Drum §3: Side," by James Blades.

<sup>528</sup> Ibid., 606.

<sup>529</sup> Arbeau, 198. A minim is equal to a half note. Julia Sutton includes "Peter Warlock, in his preface to Cyril Beaumont's translation of the *Orchesography*, points out that in the sixteenth century the minim was a relatively quick beat and used much as the crotchet (quarter note) would be today."

one stick only and the fifth with both sticks at once. The other three beats are silent. During the time occupied by the five minims and three rests the soldier takes one pace, that is to say, on the first note he places his left foot on the ground, and during the succeeding three notes raises his right foot so as to bring it down on the fifth note. On the first note he [the soldier] places his left foot to recommence another pace as before. Because most men are right footed and the left foot is weaker, so if it should come about that the left foot were to falter for any reason the right foot would immediately be ready to support it.<sup>530</sup>

The drum is portrayed as being struck with the left stick and the right stick in a prepared position. Had this portrayal been of the fifth pace, both sticks would have been against the vellum. Had the stride occurred during the rest, both sticks would be raised in a preparatory position.

A second application, described by Arbeau and related to the martial music, is the fife and drum corps. The addition of the melody line to the rhythmic cadence of the military drum increased the musical applications of the percussive unit. Numerous accounts of the fife and drum corps accompanying marches, entertaining troops, and providing incidental music are found in Blades, Galpin, Farmer, and Sachs.<sup>531</sup> Galpin credited the fife and drum corps as musical accompaniment to the first English tragedy “Gorbudoc” (1561).<sup>532</sup> Sachs included the fife and drum corps relative to German troop movements and battle signals.<sup>533</sup> Farmer amplified the application of the fife and drum corps into parley with enemies, summoning of forts and towns, and in redemption of prisoners’ conduct.<sup>534</sup> In addition to the military applications, Blades included references to the royal consort of Queen Elizabeth I containing a complement of fifes and drums.<sup>535</sup>

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<sup>530</sup> Arbeau, 20-21.

<sup>531</sup> Blades, 210; Henry Farmer, The Rise and Development of Military Music. (London: Boosey and Hawkes, 1913), 29-32; Galpin, Old English, 155; and Sachs, 288.

<sup>532</sup> Galpin, Old English, 155.

<sup>533</sup> Sachs, 288.

<sup>534</sup> Farmer, Rise and Development, 31.

<sup>535</sup> Blades, 215.

The list of the musical applications of the snare drum in Arbeau's text progresses into dance music. Included within the descriptions are size and performance techniques associated with performance.

I must first inform you that, in likeness of the drum of which we have spoken above, a little one has been made called a tabor, about two small feet long and one foot in diameter, which Isidorus calls a half symphony.<sup>536</sup> Twisted threads are placed at the extremities of both skins on the tabor, unlike the big drum where a double cord is placed across one of the skins only. [The purpose] that when the drum is struck by a stick or the fingers the sound is strident and throbbing.<sup>537</sup>

The remaining text describes Biblical passages containing references to the historical applications of the half symphony in St. Luke: Chapter Fifteen, the pipe and tabor, and related dance accompaniments.<sup>538</sup>

Praetorius' Syntagma musicum includes two illustrations of field drums (PLATE 7.4).<sup>539</sup> One of the instruments is positioned so the bottom head is visible to expose a single snare. With the inclusion of the Brunswick foot for each of the drawings, the scaled illustrations can be accurately assessed to be twenty inches in depth as well as diameter. In addition, sixteen-inch drum sticks have been included with the illustration. The sticks are located in the bottom right corner of the illustration.

The detailing of screw tensioning on the timpani in addition to a screw tensioning mechanism near the lower head of the snare drum with the visible snare is significant. Timpani with screw-tensioned heads were found in Germany in the sixteenth century.<sup>540</sup>

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<sup>536</sup> Arbeau, 213. Sutton explains that this reference is "No doubt in reference to Isidore, bishop of Seville (602-636 AD), who in his Originum seu Etymologiarum Libri XX (3, 21, 14) describes the 'symphonia' as a hollow piece of wood covered at both ends with skins, which the musician hits on either side with sticks. The combined sound of bass and treble produce a most lovely sound."

<sup>537</sup> Arbeau, 46. Arbeau's reference is descriptive of snares.

<sup>538</sup> *Ibid.*, 47.

<sup>539</sup> Praetorius, pl. 23.

<sup>540</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).3: 593. s.v. "Timpani, §3: to c. 1600," by James Blades.

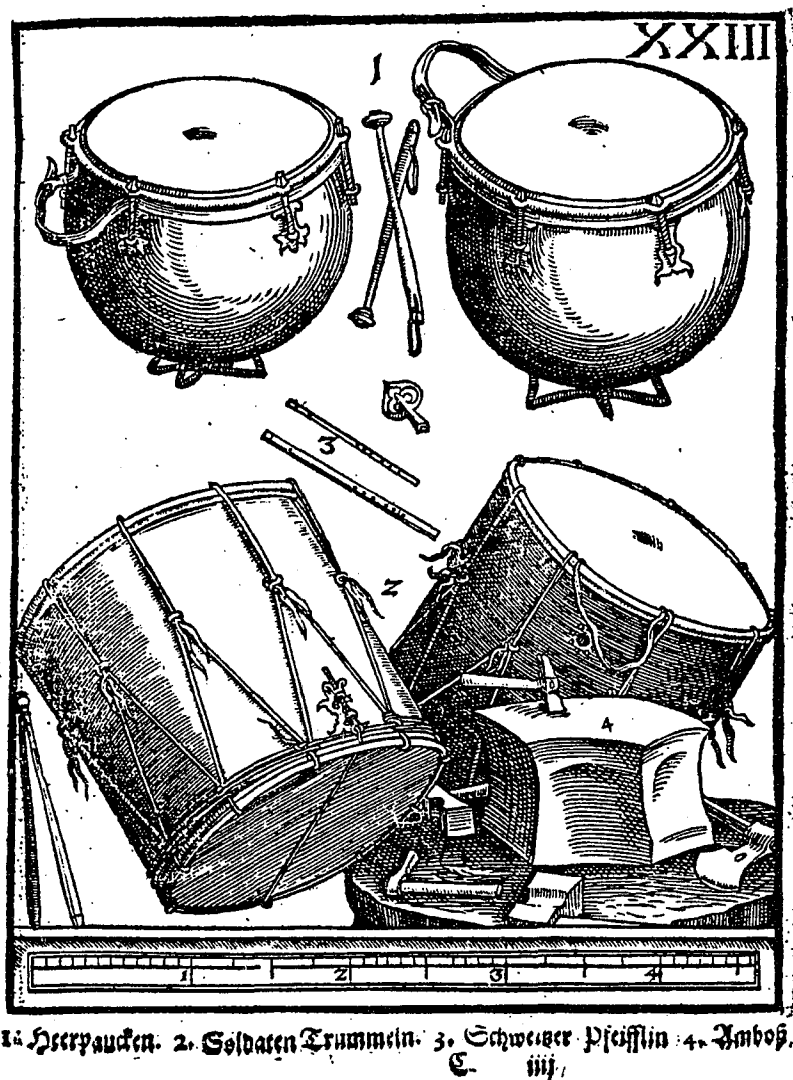


PLATE 7.4 Snare Drums Praetorius, 1619. Rope-tensioned snare drums. Two angles are presented to facilitate observations.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford:  
 Clarendon Press, 1986, pl. 23.

Screw mechanisms were universally applied to the head tensioning of the snare drum in the early eighteenth century. Although the technology was available for application to the snare drum, the variable pitch associated with the timpani demanded a more accurate tensioning device. Apparently, the snare drum tensioning methods were adequate for the applications of the drums and did not necessitate change. Notably, the changes in tensioning methods were concurrent with the first orchestral parts for the snare drum.

Praetorius provided direct references to the snare drum throughout the text. In the description of the instrumental categories, Praetorius lists the snare drum with “the struck instruments,”<sup>541</sup> Praetorius explains that these are “instruments which are struck with special sticks or other objects.”<sup>542</sup> The next reference occurs with text regarding the flute. Praetorius listed the military drums as the traditional accompaniment to the Swiss fife and drum corps.<sup>543</sup> A similar reference occurs in a subsequent passage stating “then there are other drums called ‘soldier drums,’ which are used along with the *Zwerchpfeiffe*, or Swiss fife.”<sup>544</sup> A final textual reference occurs in the descriptions of the plates containing percussion instruments. Praetorius summarized the contents by listing the names of the entries. The snare drum is included as *side-drum* belonging with the instruments in plate twenty-three.<sup>545</sup>

The apparent application of the snare drum from Praetorius’ text is for military purposes. Although Arbeau previously listed dance and orchestral applications within the text of *Orchesographie*, Praetorius omitted similar references. The entries in Praetorius’ text consistently refer to the snare drum with militaristic associations such as *military drum*, *soldier’s drum*, and *side-drum*.

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<sup>541</sup> Praetorius, 23.

<sup>542</sup> Ibid.

<sup>543</sup> Ibid., 46.

<sup>544</sup> Ibid., 77.

<sup>545</sup> Ibid., 78.

Performance technique is absent from Praetorius' text. The inclusion of sticks and the classification of these drums as "instruments that are struck" are the extent of explanation provided by Praetorius. The mention of the instrument as a side drum, and the previous explanations of the military applications suggest the drum was played in martial traditions. In addition, the long sticks support the previous text in the suggestion of a martial tradition. Large sticks would have been required to produce the louder sound from the large and loosely tensioned field drums. The only exception to the large sticks paired with a large drum is found below with Mersenne. Additional military traditions are amplified in the above text regarding Arbeau's depictions.

Like Praetorius, Mersenne included two views of a snare drum in Harmonie universelle (PLATE 7.5). The drum is a rope-tensioned cylinder with two snares across the bottom head. Two thin sticks are depicted above the drum on the right. The circular black mark at mid-point in the shell is an air vent. The counterhoop is drawn on and repeated above the instrument to the left. The depth of the drum is slightly larger than the diameter.

Mersenne included a description of the physical composition of the snare drum illustrated in "Proposition XXVI" of the Seventh Book of Percussion Instruments. The shell, or "case," is described as consisting of hard wood or brass. Mersenne suggested the use of fir or other wood "which can be bent into the shape of a cylinder."<sup>546</sup> The size of the drum is described in relative terms. Mersenne simply suggested the "height of the case is almost equal to its width." The absence of a scale or figure prohibits an accurate measurement. Counterhoops are illustrated as the means for securing the head to the drum. The counterhoops, or "switches," are said to consist of wood or similar material as

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<sup>546</sup> Mersenne, 550.



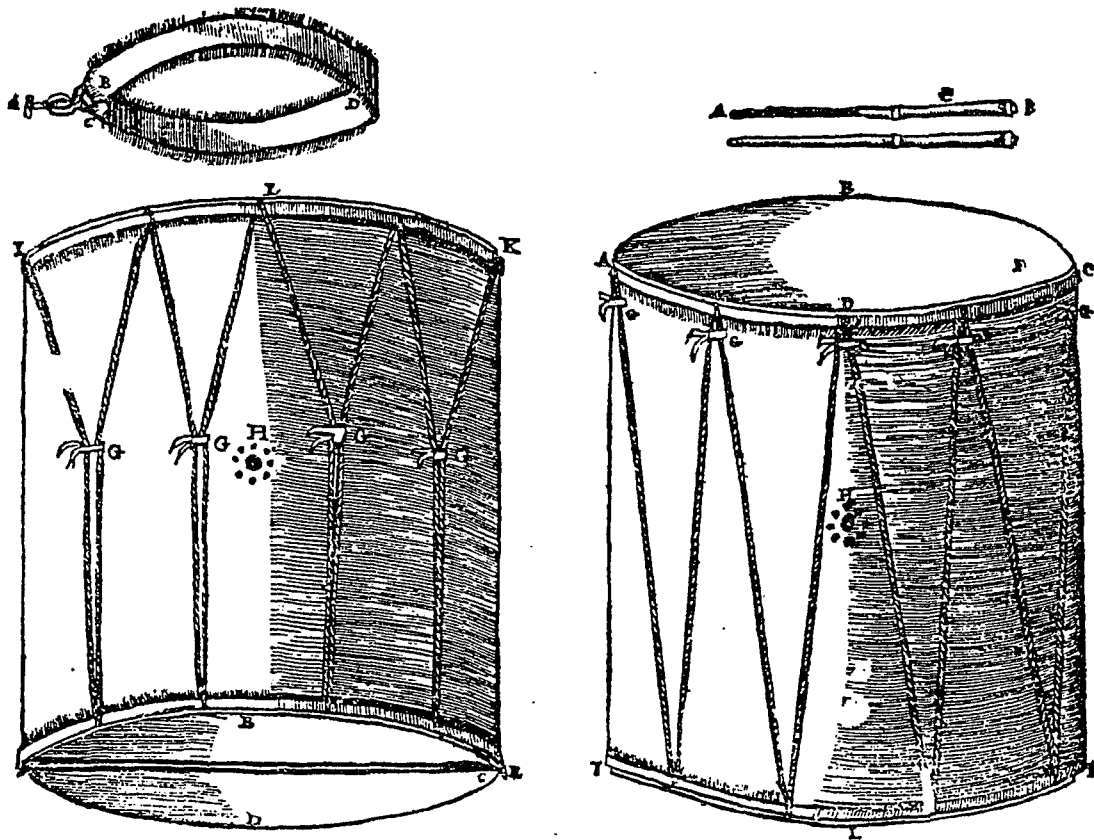


PLATE 7.5 Snare Drum Mersenne, 1635. An etching depicting two views of a rope-tensioned snare drum. The counterhoop and sticks are visible.

Reprinted by Permission from Kluwer Academic Publishers.  
 Mersenne, Martin. *Harmonie universelle*. Translated by Roger Chapman. The Hague, Netherlands: Nijhoff, 1957, fig. 112.

the “case.” The ropes traversing the side of the drum are composed of “hemp or silk.”<sup>547</sup> In coordination with the ropes, Mersenne described the action of the buckles when slid along the V-shape and the effect on the pitch of the drum. Mersenne stated the skins are from sheep, and not mule-skin as has been previously perceived. The snare on the under side of the bottom head is described as a doubled cord tacked to the shell. An additional citation describes other variations of the snare drum as square, triangular, and “all sorts of shapes.”<sup>548</sup> This statement is in probable reference to the multitude of variations described in the above text.

Mersenne depicted a pair of small sticks relative to the size of the drum. The small sticks are inconsistent with sticks depicted in Praetorius’ and Arbeau’s graphics. The sticks in Mersenne’s depiction appear smaller than those in the previous sources, and undersized for the drum in the graphic. The size, ironically, is of particular issue in a portion of the accompanying text. Mersenne stated that the “thickness and size of the sticks . . . ought to be proportional to the size of the drum, like the clappers of bells, for if they are too thick or too small the skins do not have a good sound.”<sup>549</sup>

Mersenne’s concern with detailing the pitch and performance technique is evident in the text. Although detailed technical passages are absent from the text, numerous implications regarding the performance technique are evident. Mersenne included resultant tappings categorized as *baton rompu* or “round beat” or flam stroke, *baton rond* meaning a single tap, and single beats combined with doubled rebounds as *baton meslé*.<sup>550</sup> Mersenne also included commentary comparing the sound to military matters.

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<sup>547</sup> Ibid.

<sup>548</sup> Ibid., 551.

<sup>549</sup> Ibid.

<sup>550</sup> Ibid., 554-55.

It is first necessary to note that some beat the drum so fast that the mind or the imagination cannot comprehend the multitude of blows that fall on the skin like a very violent hailstorm; among them the drummers who beat the case perfectly strike sometimes with so much violence that its noise imitates that of muskets or cannons.<sup>551</sup>

Previous to this passage, Mersenne also included a detailed description of the snare drum notation. Because Mersenne's notation has limited effect on the graphics, only those previously mentioned will be included.

Mersenne referred to accentuation and phrase punctuation during the cadences of the march. An interesting passage concerns the drummers making use of the tonal zones of the head during this performance process. Mersenne commented that this practice of combining the accent with the tonal area "distinguished the sounds a little by making them clearer or plainer."<sup>552</sup> Velocity and height of the stroke, in relation to the pitch of the drum, are implied by the following passage.

One recognizes the lowness or highness of the tone, which is always constant as to pitch level, whether one strikes the skin softly or violently, provided it always has the same tension . . . although the string does not perceptibly make a higher tone, when it is drawn tighter in striking it more strongly than in touching it weakly.<sup>553</sup>

The musical applications of the snare drum are addressed as well in the accompanying text. Consistent with the previous extant sources, Mersenne suggested that the snare drum is to be considered as a martial music instrument. The essence for this suggestion originates with the numerous reference to soldiers and forced marches.<sup>554</sup> In addition, Mersenne's description of the sound production reinforces the suggestion of military applications by the snare drum. Mersenne implied additional applications by

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<sup>551</sup> Ibid., 555.

<sup>552</sup> Ibid., 556.

<sup>553</sup> Ibid.

<sup>554</sup> Ibid.

writing, “I omit many uses one can draw from the drum.”<sup>555</sup> Although Mersenne followed this statement with a curious reference to measuring the heights of towers, of equal importance is the implication that the drum has been employed in additional functions.

Of the seventy-one percussion instruments included in the Gabinetto armonico only one is labeled as a military side drum. PLATE 7.6 is of Bonanni’s plate number seventy-four. The representation is labeled *Tamburro Militare* after the Italian word for field drum.<sup>556</sup> The depiction is of a large cylinder with rope-tensioned parchments at each end. Buckles are visible consistent with the previously described material relating to a tensioning mechanism for the parchments from the extant sources. The figure in the plate has the drum suspended from the left shoulder and is holding the sticks in a traditional manner congruous with the previously described information. Although the criterion of a visible snare across the bottom head is obscured, an exception has been granted to include this depiction by virtue of the title of the plate.

The Bonanni plate is a representation from a written description by Kircher. As a result, a discrepancy is in evidence. While Bonanni has detailed the rope-tensioning technique of the instrument, the specifications of attaching the vellum have been omitted. If a counterhoop was present, a raised edge at the top of the drum would be visible closest to the player. The raised edge is absent from the depiction. Whether the detail is an omission of Kircher’s description or an oversight on the part of Bonanni is unclear.

The player is striking with the left hand simultaneous with the step of the left foot. This type of movement was previously described as proper military technique in Arbeau’s text. In addition, the figure’s left hand grip on the stick is consistent with previous

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<sup>555</sup> Ibid.

<sup>556</sup> Peinkofer and Tannigel, 11.



PLATE 7.6 **Tamburro Militare**. Bonanni, 1716. A typical infantry field drum. The subject, however, has been generalized making specific details difficult. The military drums were a regular part of the European infantry since the fourteenth century.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 74.

portrayals in other works of visual art from this period. A Flemish military drum is included in a portrait of Pierson la Hues titled *Drummer to the Guild Archers of Antwerp* (1581) by Gillis Cognet.<sup>557</sup> The grip of the drummer in this painting is exactly the same as that of Bonanni's figure. The previously mentioned famous portrait *The Night Watch* (1642) by Rembrandt portrays a grip similar to Bonanni's representation with the exception of Rembrandt's figure applying an additional finger to a location above the stick.

The musical application of Bonanni's depiction appears relegated to military purposes. The title of the plate is clearly a militaristic reference. The citation accompanying Bonanni's plate states the drum was a "functional instrument for the new mercenary foot soldiers."<sup>558</sup> In addition, Bonanni made references to German military fife and drum ensembles and the fame associated with these groups.

References to the physical composition of the drum, parchments, snare devices, and size of the instrument are omitted. A single line in the citation accompanying the plate does state that the German drum is larger than the Italian instrument of this era. This citation implies that the German drum is larger than two feet in diameter and two and one-half feet deep. This reference, however, provides little assistance in determining whether the depiction is a German, French, English, or Italian instrument and the resultant size. A logical assumption is that the drum is consistent with the construction materials previously mentioned by Arbeau, Praetorius, and Mersenne. This consistency is implied by the consistent shape, relative size of the drum to this figure and those represented in the other extant sources, and the implication of the military applications.

The snare drums in sixteenth- and seventeenth-century Western European extant sources are consistent in appearance and application. The depictions contain views of large

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<sup>557</sup> Blades, pl. 101.

<sup>558</sup> Bonanni, 74.

cylindrical instruments with a parchment fixed at each end by ropes. Each of the drums portrayed a tensioning technique involving ropes laced in a manner that traverse the side of the drum made taut by sliding buckles. Each of the instruments involves a performance technique utilizing two drumsticks to strike the top membrane. The sound of the drums is distinguished from all other drums and tabors by a sympathetic resonating device stretched across the bottom parchment.

The sizes of the drums are contained in Arbeau and Praetorius. Arbeau's instrument is two and a half feet deep by about two and a half feet in diameter, while the military drums contained in Praetorius measure twenty inches in depth as well as diameter. The representations in Virdung and Bonanni, although unspecified, appear to be consistent in size relative to the figures and graphic representations.

The discrepancies in the instruments from this period were limited. Head-tensioning methods involving a counterhoop were frequently evidenced. While the inconsistencies most likely resulted by means of an artistic interpretation, such as in the representation contained in Bonanni, those in Virdung, Praetorius, and Mersenne are intentionally depicted. The additional inconsistencies referring to the applications of the drum beyond a military function are limited to Arbeau's association to the dance. In all cases, the snare drum is associated with martial music and functions.

### Tambourine

The tambourine is a small, single-headed frame drum of Near East origin. The shell consists of a shallow ring of wood, covered on one side with parchment. With isolated exceptions, metal discs (jingles) arranged singly or in pairs, hang loosely in openings within the shell. A parchment is usually tacked directly to the shell. The diameter ranges from six inches to twenty-seven inches relative to the size of the figures in the illustrations.<sup>559</sup>

The earliest recordings of the tambourine are found among artifacts from ancient Assyria and Egypt. “Not only was it used by the Gauls, but its popularity was increased by the Romans. One such precursor to the tambourine is the ‘timbrel.’ On many occasions, the timbrel was used to rouse dancers to a frenzy in Bacchic rites.”<sup>560</sup> The timbrel also is recognized in ancient writings of China, India, Peru, Greenland, Europe, and central Asia.

A number of tambourine varieties preceded the sixteenth- and seventeenth-century Western European tambourine. The origin of the European tambourine is credited to the Moslems. The Moslem occupation of southeastern Europe until the fourteenth century and the widespread use of tambourines within Moslem societies support a logical matriculation leading to acceptance by European cultures. The Moslem-held territories of what would later become Spain and Italy could have largely influenced the early French instrument still referred to as the *Tambour de Basque*. The various names were derived from Moorish performance techniques associated with the instrument. Thirteenth-century tambourines

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<sup>559</sup> Blades, 385.

<sup>560</sup> Ibid.



played with one stick are called *taburel*, while others shaken or played with the hand are the *tympanum*, *timbrel*, and *tambret*.<sup>561</sup>

The word *tabor* was derived from the Spanish *Atambor*, in which the capital “A” indicates this word to be of Moorish origin. The word then passed through the early and middle French *tambour*; being called the *tabour* in the thirteenth century England and eventually taking the form of *tabor*. The present tambourine was derived from the French *Tambour* and evidently was meant to distinguish between the *Tambour de Basque* and the *tambourin*, a type of drum quite different from the tambourine which is mentioned in more detail later with the snare drum.<sup>562</sup>

One of the most frequent applications of the tambourine before the sixteenth and seventeenth centuries was with Janissary music. Janissary, or Janizary, refers to the music of the regular infantry of the fourteenth-century Ottoman Empire (1400-1826).<sup>563</sup> Peters credited the military ensembles with an instrumentation including “characteristic percussion instruments . . . big drums, cymbals, triangles, and occasionally tambourines.”<sup>564</sup> Because the European military practices developed from the Turkish traditions, reason dictates the likelihood that the martial music was imitated and maintained.

Notably, a number of fifteenth-century varieties of this instrument are generically labeled as a *tambourine*. Instruments bearing this label include the frame drum, a Lapp Shaman drum, frame drums with bell-jingles, and frame drums with snare devices either above or below the head.<sup>565</sup> The frequently depicted and possibly more popular variations of the tambourine developed independent identities. These included the snare drum, the

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<sup>561</sup> Gangware, 73.

<sup>562</sup> Ibid.

<sup>563</sup> Peters, 25.

<sup>564</sup> Ibid.

<sup>565</sup> The Lapp Shaman used a large frame drum resembling the modern orchestra bass drum with only one head. Also included in Blades, 197.

pipe and tabor, timbrel, and the tambourine.<sup>566</sup> Galpin described the variations of these instruments in Old English Instruments of Music.

We have, first of all, the *timbrel* or *tambourine*, a shallow circle of wood covered with skin on one side only. Then there is the *tabor* or *drum* proper, with its barrel-shaped frame of wood. To those who only associate the tambourine with . . . Gypsy dances, it may be a surprise to hear that the timbrel and tambourine . . . are the same instrument . . . [and] one of the oldest of the world's music-makers.<sup>567</sup>

The most frequent reference to the various forms of the tambourine originated with the pipe and tabor. The tabor variety of this era is similar to the contemporary tambourine. The tabor is frequently distinguished, however, as a two-headed drum. The drum is laced to the player to allow simultaneous performance on either head with the pipe.<sup>568</sup> A more detailed description is found in the "Snare Drum" section of this document.

The tambourine of the sixteenth and seventeenth centuries is one of the few percussion instruments depicted with women.<sup>569</sup> The prints included in this paper support this statement. Women were responsible for various family celebrations and would employ the tambourine as an accompanying instrument for the festivities. For example, to celebrate a successful hunt, the women were responsible not only for the preparation of the kill, but also for providing the entertainment after the feast. Egyptians associated the tambourine with funeral processions, while the Israelites portray women with tambourines in celebrations of joy.<sup>570</sup>

The use of the European tambourine was universal. As a result, the numerous depictions have caused music historians to disagree on its significance. According to

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<sup>566</sup> Blades, 197.

<sup>567</sup> Galpin, Old English, 239.

<sup>568</sup> Gangware, 78.

<sup>569</sup> Geiringer, 162.

<sup>570</sup> Ibid.

Geiringer's Instruments in the History of Western Music (1978), "the tambourine was regarded as an instrument of the Gypsies and was of no importance during the Baroque era . . . it was only used by beggars."<sup>571</sup> Other observations of the material in this document support the idea of the tambourine gaining significance in art music. Immediately following this era, Christoph Gluck included the tambourine in his orchestration of Echo et Narcisse (1779). Within the next ten years, the tambourine is to be found in Mozart's German Dances (1787).<sup>572</sup>

Gangware suggested the tambourine was established in Medieval Europe first as a minstrel's instrument. Because of the wide exposure to the instrument and its use, the tambourine became popular and widely accepted in folk music. Gangware stated that, "Since it was probably the wandering Arab minstrel who first brought this instrument into southern France, it was probably the wandering European minstrel who found the earliest use for this instrument."<sup>573</sup> This premise is supported by twelfth-century works of visual art containing abundant references to the tambourine. Willi Apel's supports these observations with descriptions of jongleurs from this period.

A vivid description of their activities is given in a German report of the 12th century according to which they were expected to "play the drum, the cymbals, and the hurdy-gurdy; to throw small apples and to catch knives; to perform card tricks and to jump through hoops; to play the citole and mandora, the manichord, the guitar, and many other instruments."<sup>574</sup>

The minstrels' numerous activities and performance specialties would make the tambourine the most likely "drum" to be included with the other instruments. The smaller tambourine

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<sup>571</sup> Ibid.

<sup>572</sup> Blades, 386.

<sup>573</sup> Gangware, 75.

<sup>574</sup> Apel, 448.

allowed for accompaniment, and possibly, a free hand enhancing simultaneous performances. In addition, the tambourine is easily tossed and incorporated into a juggling scheme.<sup>575</sup>

The tambourine seemed to reach its highest popularity during the Middle Ages. Kinsky includes a plate of a tambourine in a Middle Ages Crispin van de Passe painting of a small group performing for a dance.<sup>576</sup> Geiringer stated that, “In the late Middle Ages it [the tambourine] was sometimes also given a part in concert music.”<sup>577</sup> Geiringer also suggests the popularity of the tambourine faded with that of the medieval jugglers and minstrels during the Baroque and Rococo.<sup>578</sup> While the possibility exists the tambourine was not previously as popular in subjects of visual art as in subsequent centuries, Geiringer subsequently contradicts this statement with numerous references to sixteenth- and seventeenth-century paintings and other icons. Geiringer’s observations of a painting by sixteenth-century Bernardino Luini suggest the tambourine was included with wandering minstrels and concert settings.<sup>579</sup> In addition, Kinsky attributed approximately six references to icons from the sixteenth century.<sup>580</sup>

Emanuel Winternitz made an interesting reference to the tambourine in Musical Instruments and Their Symbolism in Western Art. Winternitz writes that a form of the tambourine was used in dance accompaniment as a drone bass.

From many suites of the 17th and 18th centuries we know dance forms which were based completely or partly on a drone bass, often strengthened by its fifth. Among them was the graceful “musette,” in a calm three-four time. It had received its name from the bagpipe musette, just as about five hundred years earlier the organistrum had probably been named after the harmony it was fitted to perform, the organum.

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<sup>575</sup> Geiringer, 109.

<sup>576</sup> Kinsky, 117 (page reference is to reprint edition).

<sup>577</sup> Geiringer, 93.

<sup>578</sup> *Ibid.*, 109.

<sup>579</sup> *Ibid.*, 144.

<sup>580</sup> Kinsky, 70, 91, 112, 117, 131, and 152.

Another drone dance, in two-four time, was the “tambourin,” derived again from the instrument of the same name, which is a stringed drum producing a drone bass in the tonic and dominant of the melody of a little one-handed pipe.<sup>581</sup>

James Blades elaborates on the applications of the tambourine to include religious ceremony and art music.

The tambourine was popular throughout the Middle Ages in all parts of Europe, and was frequently depicted in ecclesiastical carvings and manuscripts. The commonest medieval type was similar to the Turkish instrument of the 19th [sic] century, which usually had three or more sets of jingles arranged equidistantly in groups of two pairs. This is the form more often in paintings and carvings in churches, and in illuminated manuscripts from the 11th century and throughout the Middle Ages. Though the tambourine is often illustrated in the hands of angels, it was, in many respects, a rustic instrument . . . . In the late Middle Ages it was given a part in concerted music (Henry VIII had four tambourines in his musical ensemble of 79 musicians).<sup>582</sup>

Virdung and Agricola omitted references to the tambourine. While no specific material is cited as justification for the omission, reason dictates that Virdung and Agricola considered the tambourine unworthy of scholarly research. The omission supports the extant authors’ perception that nonmartial and indefinite-pitched percussion were peasant instruments. As a result, most percussion instruments were deemed as folly and unworthy of inclusion in a scholarly work. As previously stated, Virdung considered most percussion instruments “noise-makers” that disturb “sweet melody.”<sup>583</sup> Agricola shared this opinion by avoiding detail or descriptive text regarding percussion in general. As a result, the tambourine is absent from these texts.

Arbeau is the first source from this era to include references to a tambourine. There is, however, some discrepancy in the translated reference regarding the specificity of the

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<sup>581</sup> Winternitz, 83.

<sup>582</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984):3: 512. s.v. “Tambourine,” by James Blades.

<sup>583</sup> Virdung, 115.

type of instrument. Julia Sutton, editor of the 1967 edition, identified the tambourine as the instrument in each of Arbeau's references.<sup>584</sup> Sutton footnoted the text and documented each reference as "a tambourine." However, the 1925 edition translated by Cyril W. Beaumont consistently refers to the instrument as a *tabor*.<sup>585</sup> Portions of ambiguous text, a discrepancy in the recent translation, and the absence of any illustration in the current edition obscure a definite interpretation. The variety of descriptions accompanying the references and the application of the instrument, however, suggest two varieties of tambourines.

Arbeau's text suggests, in the first reference, an instrument that is similar in construction to the modern tambourine. Arbeau wrote the Basques' instrument is "only half a foot deep and the skins a small foot in diameter. It [the instrument] is surrounded by tiny bells and little pieces of copper and makes a pleasant sound."<sup>586</sup> Yet, subsequent text contradicts this first suggestion. Arbeau wrote, "As for our tabor [previously interpreted by Sutton to mean tambourine], we do not put bells in it and usually accompany it with a long flute or large tibia. And the musician plays whatever song he fancies on the said flute, holding it in his left hand while supporting the tabor by the same arm."<sup>587</sup> Arbeau is clearly making reference to another instrument. As a result, the tambourine in Arbeau's second reference appears to be of the pipe and tabor variety.

There also is strong evidence suggesting that the two generic terms *tabor* and *tambourine* were confused by translators as referring to the same instrument. That is, both the tambourine and the pipe and tabor have been mentioned by Arbeau in context and have been possibly confused as being the same instrument in translation. Subsequent passages contain additional support for the idea that Arbeau's text actually includes two separate

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<sup>584</sup> Arbeau, 199.

<sup>585</sup> *Ibid.*, 52.

<sup>586</sup> *Ibid.*, 47.

<sup>587</sup> *Ibid.*, 47-48.

references. The previously mentioned passage describes the tabor of the Basques as being “another kind” with bells and copper jingles.<sup>588</sup> The text then continues to describe musical applications of this first instrument as belonging to a chorus and symphonic setting. The subsequent references identify the tabor of the Basques in reference to Morris Dances.<sup>589</sup> The accompanying text describes the instrument as a “tabor surrounded by tiny bells, such as the mother of the gods is represented as carrying.”<sup>590</sup> In addition, modern orchestral references *Tambour de Basque* similarly delineates the use of a tambourine as opposed to the instrument first referred to by Arbeau. To avoid confusion in the identification of the instruments, this term most likely originated through context similar to that of Arbeau. As a result, the passages will be interpreted as two distinct instruments: the tambourine and the pipe and tabor.

In addition to compositional and size references, Arbeau included passages regarding performance techniques. Arbeau suggested the tabor, or tambourine, is to be held in the “left hand while playing it with the fingers of the right.”<sup>591</sup> The reference to the pipe and tabor, as mentioned above, elaborates the pipe technique while superfluously including tabor techniques.

The musical applications of the tambourine in Arbeau’s text are unique. The passages mentioned previously describe the use of the tambourine or tambourine-like instruments in a dance and “chorus” setting.<sup>592</sup> In addition, Arbeau includes references to the similar Indian tabor used in battle. The inclusion of pipe and tabor in excerpts suggests additional applications of the tambourine by minstrels.

Praetorius includes two illustrations of tambourines in the Syntagma musicum

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<sup>588</sup> Ibid., 47.

<sup>589</sup> Ibid., 177.

<sup>590</sup> Ibid.

<sup>591</sup> Ibid., 47.

<sup>592</sup> Arbeau, 47, 177. According to Sachs, 281, the term “chorus” refers to instruments in the bagpipe genre. The application appears to be limited to martial music.

(1619). The first illustration is included with other percussion instruments in the plate numbered twenty-two (PLATE 1.12), while the second appears as item number seven with the “various exotic instruments” of plate twenty-nine (PLATE 3.1).<sup>593</sup> Although Praetorius contends the instruments are “devoid of all art and refinement” undeserving of any detailed account, tangentially related text is included.<sup>594</sup>

The tambourine in PLATE 1.12 is located to the right of the center of the plate. Although numbers appear at the bottom of the plate, no number is visible next to the tambourine. The plate is an under-side view of a circular tambourine with a double row of jingles and small bells attached to the outer perimeter. The jingles are positioned in vertical alignment with bells equidistant between the jingles. The physical composition of the jingles has been omitted in both text and illustration. The shading on the instrumental facade suggests a head appears to be attached to the shell. Small marks on the upper rim of the shell suggest the head is tacked to the body. Alternative head tensioning devices are indiscernible. As is consistent with most of the percussion illustrations, Praetorius includes a Brunswick scale. Relative to the scale, this instrument is approximately ten inches in diameter and four inches in depth.

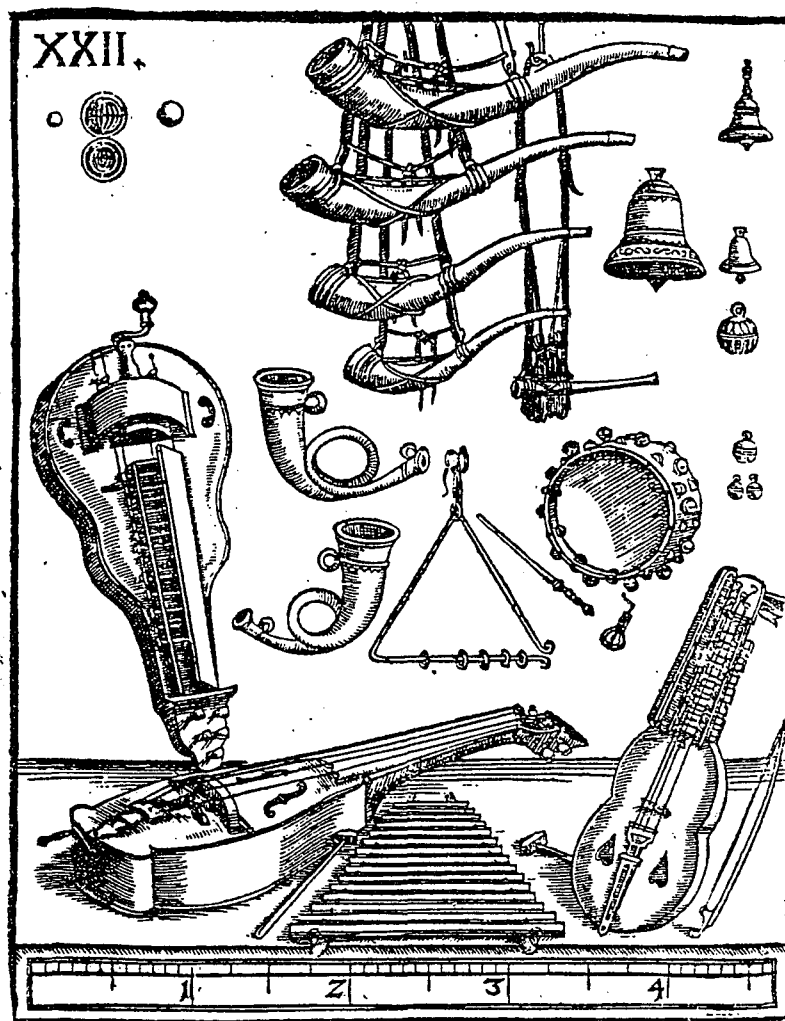
The tambourine in PLATE 3.1 is similar in shape and design. This depiction is located at the bottom of the plate and also is numbered as item number seven. The instrument is circular with a double row of vertically aligned jingles. The diameter appears to be approximately ten inches relative to the scale at the bottom of the plate. The depth is significantly shorter at approximately two Brunswick inches. A significant difference in this illustration is the absence of a head. The absence is obvious by the background remaining visible through the middle of the instrument. Although the material composition

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<sup>593</sup> Praetorius, pl. 22 and 29.

<sup>594</sup> *Ibid.*, 78.

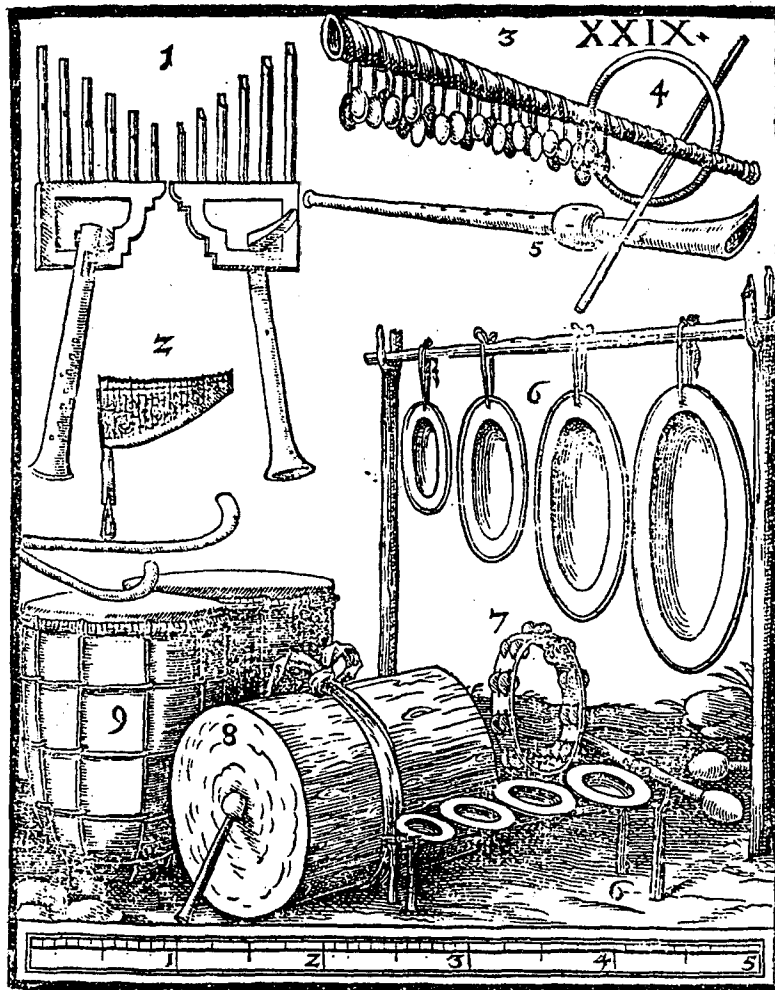




1. Allerley Davren Lyren. 2. SchlüsselFiddel. 4. StrohFiddel 4. Jügel-  
hörner. 5. Triange. 6. Singelugel. 7. Morenpaucllin.  
8. Bloccen 9. Cimbela: Echellen.

PLATE 1.12 Tambourine Praetorius, 1619. The tambourine has two inset pairs of jingles with bells attached to the perimeter of the shell.

Reprinted by Permission from Oxford University Press.  
Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford:  
Clarendon Press, 1986, pl. 22.



1. 2. Sind Saryi Pfeffen. 3. Americanisch Horn oder Trommet. 4. Ein Ring so bey den Amerikanern gleich wie ein Triangel geschlagen wird. 5. Americanische Schalmen. 6. Becken/ darauß die Americaner/ wie bey uns auß Glocken spielen. 7. Ein Ring mit Schellen/ die sie in die hö/ außwerffen und wiederfangen/ etc. 8. 9. Americanische Trummeln.

PLATE 3.1 **Tambourine** Praetorius, 1619. Taken from Praetorius' list of "exotic" instruments, that includes a scale drawing of a headless tambourine. Note the stacked double-rows of jingles.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 29.

of the tambourine is omitted by Praetorius, Galpin contended this instrument is metal instead of the customary wood. Galpin wrote that the tambourine “on a subsequent plate, [is] the figure of a simple ring of metal without a skin head but with ‘jingles’ inserted in it.”<sup>595</sup>

Praetorius’ reluctance to describe the tambourines in specific detail hampers the effort to provide information regarding the musical applications. Conclusions regarding the general applications, however, are possible. As previously mentioned, the tambourine had been established in martial music of the Ottoman Empire in this era. Praetorius supports this presumption by making references to Muslim rituals involving martial music.

When a Christian has decided to become a Muslim, and to be circumcised, he is mounted on a fine horse and led through the whole town to the sound of shawms and drums. Even today this wretched music is highly esteemed by the Turks, whereas our music is despised as worthless.<sup>596</sup>

Although the tambourine is not specifically listed, a reasonable theory is that the instrument was possibly a member of the processional ensemble. Another reference to the martial application of the tambourine occurs in a subsequent passage describing the flute and the customary accompaniment by the military drums.<sup>597</sup> The tambourine in plate twenty-two (PLATE 1.12) is labeled as “Morenpaucklin” meaning “small Moorish drum.”<sup>598</sup> The final reference supporting the theory regarding the inclusion of the tambourine in Janissary music and martial practices occurs in Praetorius’ description of “Moorish instruments.”<sup>599</sup>

A citation is included regarding performance technique on this instrument.

Praetorius included a description of the second tambourine as a “ring with jingles that is

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<sup>595</sup> Galpin, European Musical Instruments, 62.

<sup>596</sup> Praetorius, 6.

<sup>597</sup> *Ibid.*, 46.

<sup>598</sup> *Ibid.*, pl., 22.

<sup>599</sup> *Ibid.*, 78.

tossed in the air and caught again.”<sup>600</sup> The possibility exists that the processions included the spectacle of the performers tossing the instruments along with any other performance technique. As a result, Praetorius associates the instrument with that particular tossing technique for a recognizable description.

Mersenne provided a descriptive passage and illustration of tambourines in Harmonie universelle (1636). The first tambourine, viewing from left to right, appears as a circular frame with a single row of jingles set into the perimeter (PLATE 8.1). The instrument is on edge with the head directed toward the right. Although a parchment covers one end of the frame, the tensioning device is not visible. The jingles are gathered in sets of fives and fours for a total of nine jingles with space between the groupings. Mersenne’s print may have possibly omitted some detail and the jingles would have maintained an equidistance around the frame. Bells are visible between the jingles. The second tambourine is depicted in a horizontal position. The parchment is upward with no visible means of attachment. The jingles are, again, in a single row of equidistance around the middle of the perimeter of the frame. This instrument, however, is without any visible bells or additional jingling attachments. The positioning of the tambourine obscures the view of all the jingles. Provided the jingles maintain the interval completely around the circumference of the instrument, the instrument would contain approximately ten jingles.

Mersenne commented on the material composition of the instruments describing the skin of the tambourines as “like those of other drums.”<sup>601</sup> Previously, in the text describing the snare drum and various military drums, Mersenne lists the material of the drum head as sheep skin. The jingles are described as iron or brass. Information regarding composition of the frame or tensioning devices has been omitted.<sup>602</sup>

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<sup>600</sup> Ibid., pl., 29. The actual citation is as follows: “Ein Ring mit Schellen / die sie in die höfferwerfen ?rd wiederfangen / etc.[sic]”

<sup>601</sup> Mersenne, 551.

<sup>602</sup> Ibid.

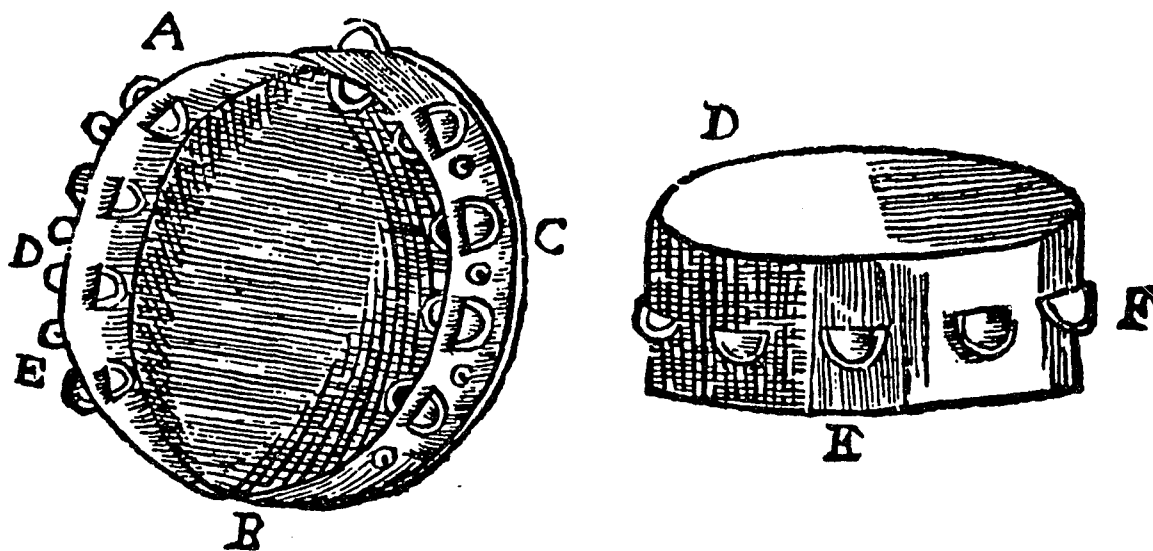


PLATE 8.1 **Tambourines** Mersenne, 1635. Two tambourines, each with a single row of inset jingles and heads, and one with attached bells. No detail is provided regarding the attachment of the vellum.

Reprinted by Permission from Kluwer Academic Publishers.  
 Mersenne, Martin. *Harmonie universelle*. Translated by Roger Chapman. The Hague, Netherlands: Nijhoff, 1957, fig. 116.

In regard to performance, Mersenne provided information on one type of technique. Mersenne stated that the instrument may have “beats that one makes with the skin of the fingers.” The subsequent comment describes the action of the pairs of jingles striking against the other in response to being touched. Mersenne was probably referring to a technique in which the player holds the instrument with one hand while tapping the jingles with the fingers of the other hand. This technique, maintained in modern orchestral tambourine performance technique, originated through the practice of the described traditions.

Information regarding the musical applications of the tambourine in Mersenne’s text is speculative. Mersenne grouped the discussion of the drums into one chapter of the Seventh Book of Percussion Instruments. The most detailed description of the instruments in this section is in reference to martial percussion. Mersenne included the terms “thunderous march,” “Among the noise of musketry,” and “soldier’s uses” in probable reference to martial application.<sup>603</sup> The tambourines also are listed with, and referred to as, drums. Tambourines are most likely considered as a usual complement within an ensemble of drums. There are indications that the tambourines were relegated to martial music. In addition, Sachs supports the idea of martial usage by writing that tambourines of the late middle ages “succeeded in securing a place as a soldier’s instrument.”<sup>604</sup>

One additional reference beyond the martial applications of the tambourine is in regard to the Old Testament Mary, sister of Moses and Aaron, as performing on the tambourine during the fifth day of the exodus from Egypt.<sup>605</sup> Mersenne continued to expand on the application of the tambourine for “those who use them to sing more and more the praises of the Lord.”<sup>606</sup>

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<sup>603</sup> Ibid., 556.

<sup>604</sup> Sachs, 289.

<sup>605</sup> Mersenne, 551.

<sup>606</sup> Ibid., 553.

Consistent with the other authors of the extant sources, Bonanni contained depictions of two types of tambourines: one with bells around the perimeter, and the other with jingles only. Again, the instruments in this depiction are representations and are not to be judged as accurate. The first tambourine (PLATE 8.2) is depicted with a male figure holding a large tambourine with approximately thirty bells attached to the perimeter. The tambourine has a decorated parchment fixed to the frame and no jingles are visible in this print. Harris explained the bells are a misrepresentation of the protruding heads of the nails which fastened the skin to the frame.<sup>607</sup> While Harris is accurately describing the instrument, the statement also may be a naive generalization.

Sachs stated that one of the versions of the tambourine was the jingling frame drum in evidence as early as the thirteenth century. “Their most frequent names were . . . *timbre* in French, and *timbrel* in English; the Germans called it *rotumbes*. The modern term is known as *tambourin* or *tambour de basque*.”<sup>608</sup> The title of the plate, “Timpano antico” supports Harris statement, but again, may be the result of confusion over the generic application of the term elaborately discussed in the “Timpani” section. While Bonanni’s representations are not to be considered as detailed depictions, there is enough factual precedence to accept the illustrations as a probability. Due to the many versions of the tambourine in this era, a hasty generalization is to assume the depiction is completely inappropriate.

The second representation (PLATE 8.3) is of a woman dancing and holding a large tambourine. The instrument has a double row of jingles and a head attached to the outer, visible, side of the frame. The angle of the instrument, and the obstruction by the figure, prevents a more detailed view. The jingles appear to be spaced equally around the

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<sup>607</sup> Bonanni, 72.

<sup>608</sup> Sachs, 289.



PLATE 8.2 **Timpano antico**. Bonanni, 1716. An etching that appears to be a frame drum [tympanum] with numerous bells attached in place of jingles. This illustration may be, however, a misrepresentation.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 72.



perimeter. In addition to the sets of jingles, a beaded cord is visible from the underside of the instrument. The cord appears to represent bells or another noise-making device.

The figure in PLATE 8.2 appears to be male. A male figure is contrary to many of the accounts previously noted. Characteristically, the tambourine has been depicted and considered as an instrument for women. Blades contended that, “There was no lack of skill on the part of the instrumentalists (mainly women) . . . . The tambourine is frequently illustrated in the hands of angels . . . .”<sup>609</sup> Sachs concurred by stating the tambourines “were chiefly used by girls.”<sup>610</sup> Harris includes a similar reference in the citation accompanying the plate. Harris states that the depiction “is meant to be an ancient frame drum, a large jingle-less tambourine. It is used chiefly by women dancers.”<sup>611</sup>

The functions inferred by the representations of the figures with the tambourines in Bonanni’s collection appear to be consistent with the information previously presented. That is, the tambourines are round with the typically inset jingles. As has been consistent with Arbeau, each tambourine is portrayed with a head attached to one side of the frame. The figures are holding the tambourine upward with one hand and striking with the other consistent with the technique previously discussed in Mersenne. The positioning of the second figure with a raised foot implies a dance movement congruous with Arbeau’s descriptions. The curious insertion of the male figure appears to be the only inconsistency worthy of the previous attention.

Overall, the graphics examined in this section appear to present the tambourine in a variety of patterns. These patterns support the theory that the tambourine served universally as a common, martial, and folk instrument. The most consistent description of the tambourine is in the hands of women. The female figure, however, is challenged by

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<sup>609</sup> Blades, 197.

<sup>610</sup> Sachs, 289.

<sup>611</sup> Bonanni, 72.



**PLATE 8.3 Timpano Moderno.** Bonanni, 1716. This tambourine displays two sets of jingles set into the frame. Originating with the Janissary bands, this type of tambourine was evidenced in Europe since the eleventh century.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 73.

the graphic representations for this study. Of the plates, only two sources contained figures with the instrumental depiction. Of the three depictions, only one was a woman.

Based on the graphics from the extant sources, additional consistencies are summarized. The composition of the instrument appeared as a circular frame with the jingles consistently set at the perimeter of the shell. The variations included attached or absent bells, double or single rows of jingles, and the jingling members attached to the side or set into the frame of the instrument. While the potential varieties of tambours and tambourines were described by the primary and secondary sources, only Bonanni depicted a variation other than the inset-jingle variety of tambourines. The performance techniques associated with the tambourine remain consistent in all the description supplied by Mersenne and depicted by Bonanni. Modern tambourine technique is surprisingly similar to those described and depicted in the various sources.

### Timpani

As previously discussed with the sections of this document identifying the drum, tabor, tambourine, and snare drum, the sixteenth and seventeenth-century term *timpani* was applied generically to a diversity of membranophones. The diameters, shape, and functions are described in a variety of applications with as many settings. The extant sources, however, consistently apply the term to graphics of hemispherically-shaped shells with parchment coverings. Those graphics identified by authors of the extant sources as kettledrums, nakers, or timpani are included. Instruments with similar characteristics in shape and function, but not identified as the above, are included in the “Drums and Tabors” or “Snare Drum” sections of this document.

Establishing a date and location for the origin or the precursor to the sixteenth-century timpani is extremely difficult. The difficulty lies with establishing the origin and proper adaptation of the designation. Sachs contended that the term *kettledrum* has existed in Europe since the thirteenth century.<sup>611</sup> The designation of the term *timpani* has been loosely applied to all genres of drums and often associated with the original nakers and large calvary drums of Janissary origin. “The term ‘tympanum’ was used originally in the Greek and Roman civilizations denoting a very large drum. Since classical learning was regenerated during the Renaissance, it is quite probable that this term also was revived and used.”<sup>612</sup> The Irish and Scots referred to a chordophone-type dulcimer as a *tympanum* during the thirteenth and fourteenth centuries. The confusion is compounded with the discovery of the terms *tympanum*, *tympanon*, *tympani*, and *timpani* being used interchangeably during the Baroque era in reference to the same type of drum. Johann

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<sup>611</sup> Sachs, 329.

<sup>612</sup> Gangware, 112.

Sebastian Bach uses *tambouri*, *tymपालes*, *tymपालi*, and *pauken* in reference to the timpani employed in his musical scores.<sup>613</sup> Bach used the label *pauken* more frequently in the “council of Leipzig in 1730, evidently to make sure that the nonmusicians would know of what instrument he spoke.”<sup>614</sup>

The term *kettledrum* became associated with timpani in the court records of King Edward VI of England in 1551. The use of the term *kettledrum* is included with the list of entertainers, and appears recorded as timpani later in the century.<sup>615</sup> During the sixteenth century, “the terms *Drumplayer*, *Timpanist*, and *Drumslade* alternate and are often to be found in reference to one and the same performer.”<sup>616</sup>

The sixteenth- and seventeenth-century European kettledrum received its name from the simple association of the shape of the shell of the drum. Originating with the Moslem drum *kurka*, the kettledrum resembled a small timpani. The origin of this drum is not clearly represented in existing documents or icons, but the instruments smaller in size, yet similar in shape and function, are distinctly evidenced from the fourteenth century.<sup>617</sup> Geiringer included iconographic references to the Arabic *kurka* and supported the use evidenced with the depiction.

In its original form, as introduced by the Saracens, the small cauldron-shaped kettledrum had a stretched skin barely larger than the palm of the hand. It was always used in pairs fastened to a strap slung around the performer’s neck or attached to his girdle.<sup>618</sup>

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<sup>613</sup> *Ibid.*, 113.

<sup>614</sup> Charles S. Terry, *Bach’s Orchestra* (London: University Press, 1932), 50; as quoted in Gangware, 113. *Pauken* is the German word for timpani still used in modern notation. *Pauken* has been typically associated with the German calvary timpani and other martial percussion instruments.

<sup>615</sup> Galpin, *Old English*, 251.

<sup>616</sup> Jeffrey Pulver, *A Dictionary of Old English Music and Musical Instruments* (London: Kegan Paul, Trench, Trubner and Co., Ltd., 1923), 73.

<sup>617</sup> Gangware, 90.

<sup>618</sup> Geiringer, 108.

The kettledrums were of Arabic origin. They were originally quite small – a half-gourd covered with a dressed skin – and could be conveniently held in one hand and played with the other. Introduced into Europe toward the close of the thirteenth century, they were commonly known as *nakers*. In a list of Edward I's musicians (1310-11) we have the names of Regero le Troumpour, Janino le Nakerer, Menstrallis Regis.<sup>619</sup>

The precursor to the sixteenth- and seventeenth-century European kettledrum and timpani appears to be the preferred drum of the Moslem Empire Janissary bands, similar to the *kurka*, called the *naker*. *Nakers* were small kettle-shaped drums fastened to the waist of the player and played with a pair of sticks. Icons from the thirteenth through the seventeenth century depict the varieties of this instrument in as many settings. Ulrich Daubney, James Blades, and Karl Geiringer all support this assessment. Daubney's observations of this subject are best represented in the statement "nakers were invariably used in pairs, and being only of small size, were worn strapped around the player's waist."<sup>620</sup> English music historian Jeffrey Pulver offered additional insight regarding the *naker*. Pulver wrote, "The *Naker* is mentioned very early in our literature, having probably been brought from the East by returning Crusaders. The first traceable reference to its musical use is in the records relating to Edward I beginning in the fourteenth century."<sup>621</sup>

The icons of the sixteenth- and seventeenth-century Western European *naker* and kettledrums are less prevalent than those in previous centuries. An early fifteenth-century Gothic manuscript includes a depiction of two kettledrums of approximately six inches in diameter and eight inches in depth.<sup>622</sup> The player is holding two sticks in a posed position obscuring the determination if both sticks were actually employed during performance. A snare, however, is visible across the top head. The occurrence of the snare device possibly

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<sup>619</sup> Forsyth, 41.

<sup>620</sup> Ulrich Daubney, *Orchestral Wind Instruments* (London: William Reeves, 1920), 118. as referred to in Gangware, 90.

<sup>621</sup> Pulver, 158.

<sup>622</sup> McKinney and Anderson, 220.

suggests this instrument served as the impetus for the field snare appearing in subsequent works of visual art. Bernardino painted a clear representation of relatively larger nacers [nakers] than those appearing in the Gothic manuscript at the end of the sixteenth century.<sup>623</sup> In this depiction, a woman playing two small kettle-shaped drums is performing with a small group of musicians. The drums are positioned around the waist, and she is beating with a drum stick in each hand. The drums are approximately eight inches in diameter and five inches in depth. The parchments are fastened directly to the bowl.

Kettledrums are apparent in works of visual art as early as 1512. According to Gangware, the kettledrum was an attractive figure in works of visual art. “Apparently the style of playing kettledrums which met with such favor among audiences also was appealing to the eye when used for decorative purposes.”<sup>624</sup> In most examples, kettledrums are usually found with groupings of other musical instruments regardless of the principal subject. Farmer noted the inclusion of the kettledrum in the woodcut the Triumph of Maxmilian. “Firstly, there is a stately mounted band of five trumpeters and five kettledrummers.”<sup>625</sup> Included with the court musicians of King Henry VIII (1526) are “three lutes, fifteen trumpets, three rebecs, three taborets [small snare drums or tambourines], a harp, two viols, four drums [kettledrums].”<sup>626</sup>

The practice of including timpani in works of visual art continued into the seventeenth century as indicated by the surviving paintings, woodcarvings, and sculpture. Kinsky includes two examples of kettledrums used as decorative subjects in visual art. The first is a woodcut from the title page of the Compendium Musicae (fifth edition) listed as

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<sup>623</sup> Geiringer, 93.

<sup>624</sup> Gangware, 111.

<sup>625</sup> *Ibid.*, 14.

<sup>626</sup> Reese, 867. The bracketed inclusions are based on the popularity of trumpets and kettledrums in court music as referred to in subsequent quotes.

Augsburg, 1611.<sup>627</sup> The second example is an engraved title page by Thomas Corneille for two libretti by Lully (1679).<sup>628</sup>

From the icons and texts in the sources for this study, the first application of the kettledrums was relative to martial music. One of the earliest examples is contained in a collection by Henry Farmer which includes a woodcut by Jost Amman titled *Kettledrummer* (1584). Amman's work contains a definitive example of a large draped kettledrum.<sup>629</sup> Drums like those depicted by Amman were a valuable spoil of war. Military units could only obtain a kettledrum by winning them in battle. Military units were in great competition to obtain and use a large kettledrum. Farmer noted that the "infantry still continued the drum and fife bands, whilst the calvary had trumpets and kettledrums."<sup>630</sup>

The sixteenth-century European martial practices are well documented by Apel. Apel takes special interest in the importance of the drums in martial practice.

The mercenary of the Austrian emperor Karl V and of the French king Francois I had large bands of trumpets and kettledrums, and when they met in the battles of Marignano (1515) and Pavia (1525) the clash of the instruments was as fierce and famous as that of the weapons . . . .<sup>631</sup>

During this period, the size of the Western European kettledrum varied greatly. Scholars disagree about the origin, logical evolution, and application relative to the size of the drums. Jeffrey Pulver theorizes the larger kettledrum was the logical descendant of the smaller naker. "As the increased resources of the West were applied to its construction, the

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<sup>627</sup> Kinsky, 85

<sup>628</sup> *Ibid.*, 191.

<sup>629</sup> Henry Farmer, *Handel's Kettledrums and Other Papers on Military Music* (London: Boosey and Hawkes, 1913), 20.

<sup>630</sup> *Ibid.*, 17.

<sup>631</sup> Apel, 446.



Naker grew in size and became a hemispherical shell of metal (generally copper) with a vellum head; the latter being tunable in the most highly developed specimens.”<sup>632</sup> Galpin suggested the adaptation of the kettledrum into martial music originated with the Hungarian exodus from Scythia as early as the ninth century.<sup>633</sup> The New Grove Dictionary of Music and Musicians directs attention to the historical accounts where the drums of various sizes were transferred and accumulated.

Larger kettledrums were introduced to Western Europe in the 15th century, the earliest known report of them being in the train of a Hungarian envoy to France in 1457. By 1500 it was already customary for the retinue of German noblemen to include a mounted kettledrummer in support of his trumpeters.<sup>634</sup>

Karl Geiringer and Gustav Reese included similar references to these comparable occurrences involving the transport of kettledrums into Europe from the East. Geiringer stated that, “About the middle of the fifteenth century, however, this delicate instrument was superseded by the mighty Wardrum, which spread from the east via Hungary and Poland, reaching first Germany and then Western Europe.”<sup>635</sup>

The Turkish influence on military music soon led to the acceptance of giant Kettledrums by the trumpet corps. They were introduced into Western Europe through Hungary. German and French sources mention the impression these drums made when in 1451, the ambassador of Ladislaus V visited Germany and France with trumpet corps in their retinue.<sup>636</sup>

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<sup>632</sup> Pulver, 158.

<sup>633</sup> Galpin, Old English Instruments, 251.

<sup>634</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).2:772.

<sup>635</sup> Geiringer, 108.

<sup>636</sup> Reese, 721.

Sachs, however, cited an earlier reference to the incorporation of the kettledrum into the German military. Sachs stated that, “As early as 1384, Duke Philip of Burgundy has sent one of his drummers to Germany to learn the art of playing.”<sup>637</sup>

Iconographic references including the kettledrum in military settings are evidenced from the sixteenth century. Joannes van Duetecum of the Court of Trumpeters produced an engraving of kettledrummers at the Funeral of Charles V in 1558. Jost Aman depicted a mounted kettledrummer in a processional in 1584. Hendrick Lubeck made a woodcut with similar subjects in 1598.<sup>638</sup>

Edmond Bowles referred to military icons in support of the varying sizes of kettledrums. Sixteenth- and seventeenth-century Western European countries made extensive use of the timpani in the military. The smaller drums were carried by foot soldiers, while the larger drums were mounted on horseback for the calvary. The advancements in weaponry demanded a drum capable of greater volume to assist signaling the artillery. The volume demand, in turn, inhibited the growth of the drum sizes beyond that which was practical for the horse to carry. The drums were “dismounted” and increased in size to accommodate such demands. The size variation also allowed for the inclusion in art music during peace time, or special occasions involving the military musicians. When the large drums were insufficient for signaling artillery, even larger drums were incorporated.<sup>639</sup> Gangware, however, claimed no logical explanation for the increase in kettledrum size. Gangware supported this observation by citing examples of both large and small drums appearing independently in works of visual art between the fourteenth and eighteenth centuries.<sup>640</sup> Examination of the representations in Kinsky

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<sup>637</sup> Sachs, 329.

<sup>638</sup> Blades, 228-29.

<sup>639</sup> Edmund Bowles, “The Double, Double, Double Beat of the Thundering Drum: The Timpani in Early Music,” *Early Music* 19 (August 1991): 421.

<sup>640</sup> Gangware, 94.

supports Gangware's statements. The relationship of size to progressive development is challenged by a sixteenth-century woodcut by Hans Burgkmair titled *Die Geschicklichkeit in der Musik* displaying thirty-inch kettledrums.<sup>641</sup> Kinsky also contains eighteenth-century engraving of two twenty-inch kettledrums draped in heavy tapestry bearing regimental insignias.<sup>642</sup> A Groupy engraving from the same era titled *Handel at the Organ* depicts thirty-inch drums.<sup>643</sup>

A seventeenth-century illustration portrays the smaller kettledrum with the military cavalry. A small kettledrum assumed to have been employed during the Thirty Years' War approximately twenty-three inches in diameter appears with appropriate cavalry tapestry in an article by Beard.<sup>644</sup> The drum appears with sticks and straps indicating a method for mounting the drum on horseback. The smaller size is consistent with the sixteenth-century illustrations of the kettledrums. That is, the smaller drums of approximately twenty to twenty-five inches in diameter frequently appear in pairs with military regalia. Larger drums, however, are subjects included with royal orchestras and festivals.

Throughout sixteenth-century Western Europe, the practice of incorporating kettledrums into other social mediums progressively increased. This practice, in turn, affected the iconographic productions from this period. There is an increase in kettledrum appearances in works of visual art, as background subjects in title pages, and in European court records. "Apparently the style of playing kettledrums which met with such favor among audiences also was appealing to the eye when used for decorative purposes."<sup>645</sup> Additional kettledrum applications can be found in stage directions, guilds, and noble processions.

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<sup>641</sup> Ibid., 75.

<sup>642</sup> Kinsky, 246.

<sup>643</sup> Ibid., 266.

<sup>644</sup> C. R. Beard, "A Kettledrummer of the Thirty Year's War," *The Connoisseur* (November, 1933), 325; as quoted in Gangware, 139.

<sup>645</sup> Gangware, 111.

The most comprehensive written documents on sixteenth- and seventeenth-century Western European kettledrums relate to the practice of guilds. Emperor Ferdinand II established and specified privileges for the Imperial Trumpeters' and Kettledrummers' Guild on February 27, 1623. On October 24, 1630, Ferdinand issued twelve articles in an Imperial Decree redefining the Order. This decree stated that no person under the rank of Baron may possess a timpani unless acquired from an enemy during battle.<sup>646</sup> A subsequent decree of 1653 by Friedrich III expanded and addressed specific abuses of the previous mandates in twenty-three articles. Brandenburg Court Trumpeter Caspar Hentzshel addressed the necessity of the mandates.

Not only because of the great defects and lacks with which untrained people bring to our profession . . . into dispute, . . . but also because . . . many bumlbers and stumbers can be found in all cities and villages . . . mixing among our colleagues like mouse-droppings among pepper.<sup>647</sup>

Sachs included a reference to subsequent developments of the society in the seventeenth century. "As late as 1683, the Scotch officer, Sir James Turner, stated that, 'Germans, Danes and Swedes permit none under the rank of baron to have them unless they are taken in battle from an enemy.'"<sup>648</sup>

Various decrees were issued through the next 250 years as the guild would wane and subsequently reorganize. Franz I, in 1711, reestablished the guild only to have it be dissolved by Prussian King Friedrich Wilhelm III in 1713. In 1767, Josef II returned the guild and reduced the mandate to twelve articles. The guild's universal practice deteriorated in 1806 with the dissolution of the Holy Roman Empire and later with the Elector of

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<sup>646</sup> Blades, 216.

<sup>647</sup> Ed Tarr, ed., Mandate Against the Unauthorized Playing of Trumpets and Beating of Kettledrums. (Tallahassee, Florida: International Trumpet Guild, 1991).

<sup>648</sup> Sachs, 330.

Saxony abolishing the practice of guilds in 1831. The last surviving account of the order occurs with the Viennese Union Court of Trumpeters being dissolved in 1878.<sup>649</sup>

This practice, though not formally established throughout Europe, did influence the adoption of similar practices. Charles Burney noted that the “kettledrums were a mark of sovereign power. The king has forty-five of these drums always beating before him when he marches.”<sup>650</sup> The French and English imitated the practice as well. The Elector of Saxony included three kettledrummers with nineteen trumpeters.<sup>651</sup> In 1558, three kettledrums were used in the funeral of Charles V. In the late sixteenth century, “trumpets and kettledrums . . . were signs apparent for Elizabeth and her nobility.”<sup>652</sup>

Icons reflecting the prominence of kettledrums are numerous. As in the sixteenth century, the use of kettledrums by nobility in festival, processions, and other public occasions continued as a symbol of sovereign power and popular acceptance during the seventeenth century. One of the most detailed illustrations is by Rembrandt who distinctly depicts two large kettledrums in *Two Negro Drummers on Mules* (1637)<sup>653</sup> The two kettledrums, approximately twenty-five inches in diameter, appear in a procession each with a Negro player. The players are striking the drums with large-tipped sticks. Another example is in Kinsky’s collections of art in festivals. This collection includes etchings from the *Festivals at the Marriage of Leopold I* by Matthias Küssel (1667).<sup>654</sup> In addition, Sandford’s painting of the *Coronation of James II* (1678) displays a man carrying a large kettledrum on his back while the player follows behind.<sup>655</sup> Adam Carse underscored the popularity of the kettledrum by stating “the trumpets and drums together provide martial

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<sup>649</sup> Ibid., 1.

<sup>650</sup> Charles Burney, *A General History of Music* (London: G. T. Foulis & Co., Ltd., 1935), 178.

<sup>651</sup> Farmer, 20.

<sup>652</sup> Reese, 879.

<sup>653</sup> Ludwig Goldscheider (ed). *Rembrandt* (London: Phaidon Press, Ltd., 1960), plate #20; as quoted in Gangware, 101.

<sup>654</sup> Kinsky, 186.

<sup>655</sup> Farmer, *Handel’s Kettledrums*, 21.

music for the army and for all occasions where ceremonial display was called for.”<sup>656</sup>

Geiringer emphasizes the timpani’s popularity and functional use with trumpets as well.

“Wherever the Trumpets blared – at princely banquets, at tourneys, or in the field, there also the great Kettledrums would roll. Strapped on the back of a horse, a pair of them accompanied the nobles on the field of battle.”<sup>657</sup>

The universal predominance of the trumpeters and kettledrummers association affected musical composition. The smaller drums relegated into martial music were combined with the larger kettledrums exposing a potential for numerous orchestral applications. Gangware emphasized the association of the trumpets and kettledrums.

At this point it is necessary to re-emphasize that the position of the kettledrums in general life during the Baroque was primarily with the military . . . . In a military sense, the kettledrums were considered a natural supplement to the trumpets, which completed the trumpet choir by adding the bass voice in a range for which there was no trumpet available. This treatment of trumpets and kettledrums as a unit is widespread, with many scholarly works in agreement.<sup>658</sup>

Adam Carse offered a similar commentary on the relationship of the trumpeters and kettledrummers. Carse suggested that kettledrums appeared with orchestras long before written parts.

Timpani are associated with trumpets in the scores of Lully and other French composers. The constant and intimate association of trumpets and drums in the sixteenth and seventeenth centuries strongly suggests the view that drums would be used in conjunction with trumpets even though no parts were written for the former in the scores.<sup>659</sup>

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<sup>656</sup> Adam Carse, The Orchestra (New York: The Chanticleer Press, Inc., 1949), 14.

<sup>657</sup> Geiringer, 108.

<sup>658</sup> Gangware, 135.

<sup>659</sup> Adam Carse, The History of Orchestration (London: Kegan Paul, Trench, Trubner & Co., Ltd., 1925), 19.

Gangware cited similar circumstances on the trumpet and timpani association.

It is entirely possible that earlier parts may have been written for the kettledrums although it is probable that the use of the drums prior to this time was not called for in the score. Although on page ninety-six Lang was quoted as saying that Dufay, Ockegham and a number of other composers of the late fifteenth century used drums with their orchestras, the proof of this practice has not yet been found.<sup>660</sup>

The possibility exists that the kettledrums matriculated to the orchestra in similar fashion as the snare drum. Like the kettledrum, the first orchestrated part for snare drum occurred during the sixteenth century. Percussion historian David Gilbert suggested that “prior to the mid-seventeenth century, the composer apparently did not feel it necessary to notate percussion parts knowing that the player’s training would have made him thoroughly consistent with what was then traditional technique.”<sup>661</sup> That training would have been associated with the loud rhythmical accompaniment occurring in festivals, parades, and functions occurring out of doors. Military drummers and guild members were the only available players. And due to the customary latitude in performances, the tendency to embellish in traditional fashion was frequent. Conceivably, composers scoring for the instruments possessing limited dynamic range would have rarely written for the contemporary percussion instruments.

The association of the kettledrums to the trumpets enhanced the introduction of the drums to the orchestra. “They reached England in the middle of the sixteenth century. About the middle of the seventeenth century the kettledrums followed the trumpets into the orchestra both in German church music and in Italian opera.”<sup>662</sup> The earliest application of

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<sup>660</sup> Gangware, 139.

<sup>661</sup> David Gilbert, “Military Drumming in the British Isles: 1450-1900,” *Percussionist* 8/1 (1970): 6.

<sup>662</sup> Eric Blom, ed., *Grove’s Dictionary of Music and Musicians*, 5th ed., (London: Macmillan & Co., Ltd., 1954), 2:772.

kettledrums in orchestration appears in the medieval times and continues into the sixteenth century. Lang commented on the popularity of the instrument with the early composers.

Dufay, Ockegham, Obrecht, Josquin, La Rue, Brumel, and their contemporaries were all fond of this splendor of instrumental sonority, the organ always being employed in the accompaniment of their orchestral works, and trumpets, trombones, and kettledrums often being included in their instrumental equipment. These instruments . . . were especially prominent in the Sanctus of the Mass.<sup>663</sup>

Blades, Apel, Geiringer, and Carse disagree on the first orchestrated use of the kettledrums. Blades cited Psyche ed Amore (1565) as prescribing kettledrums in the multimedia.<sup>664</sup> Geiringer credited Orazio Benevoli (1605-1672) with the first orchestration for two pairs of trumpets and kettledrums in Festival Mass (1628).<sup>665</sup> In addition, Benevoli scored for fifty-three parts through five choirs of voices and instruments, organ, and a basso continuo. Willi Apel credited John Locke as the first to designate kettledrums as early as 1670.<sup>666</sup> Apel, however, appears to be in error. The other sources recognize Matthew Locke (c. 1630-1677) with the first independently scored part for kettledrums in Psyche (1673). Two years later, the same scholars agree Jean-Baptiste Lully (1632-1687) designated kettledrums in his opera Thésée (1675).<sup>667</sup> One of the more popular examples of sixteenth-century orchestration for the kettledrum is from Henry Purcell. Purcell (1659 - 1695) scored for kettledrums in the fourth act of The Fairy Queen (1692).<sup>668</sup> Purcell's score actually specifies the use of kettledrums unlike his contemporaries who often confuse

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<sup>663</sup> Lang and Spivak, 306.

<sup>664</sup> Blades, 236.

<sup>665</sup> Ibid.

<sup>666</sup> Apel, 564.

<sup>667</sup> Geiringer, 188.

<sup>668</sup> Blades, 208, pl 118.



the instrument with military drum or large side drum. In addition, Purcell wrote what appears to be the first rhythmic one-measure timpani solo.<sup>669</sup>

With the continued acceptance in orchestration, the kettledrum maintained solo status during the seventeenth century. Percussion historians disagree, however, on the first kettledrum solo in orchestration. Andrea Philidor (d. 1730) and Jaques Philidor (1657-1708) scored for kettledrums in Le mariage de la Grosse Cathos (1688).<sup>670</sup> The scoring provides for soli kettledrum passages with recorders and shawms. In addition, the kettledrum is given soloistic rhythms to accompany sustained notes occurring in the other instruments. While this example does not include unaccompanied solo lines, the music demonstrates a previously unscored independence and experimentation in color. The first written kettledrum solo is attributed to Frenchman Manesson Mallet. Henry Farmer included the timpani solo in an excerpt from Mallet's Travaux de Mars (1691).<sup>671</sup> Farmer made note of Mallets' remarks:

Whilst the solo music for the kettledrums is a most engaging feature, more especially, if we take cognizance of Manesson Mallet's remark in his Travaux de Mars (1691) that the kettledrummer should have "a pleasing motion of arm, an accurate ear, and take delight in diverting his master [the Colonel] by agreeable airs."<sup>672</sup>

Andrea and Jaques Philidor extended the musical capacity of the kettledrum by performing a duet on kettledrums for King Louis XIV at Versailles in 1683.<sup>673</sup> The March for Two Pairs of Kettledrums was later transcribed by Andre Philidor in March of 1705 during his tenure as Royal Music Librarian. Gangware commented on this march:

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<sup>669</sup> Gangware, 139-40.

<sup>670</sup> Carol Marsh, Unpublished facsimile of the march received in conversation in Greensboro, NC in April 1991. ,

<sup>671</sup> Farmer, 42.

<sup>672</sup> Ibid., 24.

<sup>673</sup> Bowles, Musical Ensembles, 65.

By the seventeenth century, playing solo music for the kettledrums was a highly specialized type of performance, since the music for such solos was quite difficult to perform, demanding a spectacular method of execution much to the delight of the audience.<sup>674</sup>

A distinct use of the kettledrum is recorded in a ballad from seventeenth-century England. The kettledrums apparently were used in connection with festivals and social gatherings “where trumpets and bagpipes, kettledrums, and fiddlers were all at work.”<sup>675</sup> Gangware attributed the significance of this observation by writing that the fairs of this period were of considerable magnitude for all persons.<sup>676</sup>

According to the information discovered by Bowles, the first “orchestral” drums were crude. “Producing less resonance and volume of sound, these drums were ideally suited to the smaller instrumental ensembles of the period, when timpanists were often required to play indoors with a lower level of sound.”<sup>677</sup> The smaller bowl did not allow the full resonance. As a result, the quality of sound was affected by providing for a restricted overtone series and an unemphasized fundamental.

Mechanical developments occurred during the sixteenth and seventeenth century. Blades contended that a laced-head system was universally accepted during the sixteenth century.<sup>678</sup> As seen below, Mersenne is the latest extant source to portray a kettledrum with laced heads (1636). Several iconographic depictions suggest that screw-tensioning methods were applied and developed. One of the first icons depicting a head-tensioning mechanism is portrayed in Leonardo da Vinci’s experiments in acoustics (c. 1487-90).<sup>679</sup> A

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<sup>674</sup> Gangware, 105.

<sup>675</sup> Kinsky, 85.

<sup>676</sup> Gangware, 111.

<sup>677</sup> Bowles, *Early Music*, 419.

<sup>678</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).3: 593. s.v. “Timpani, § 4: From c1600,” by James Blades.

<sup>679</sup> Pamela Taylor, *The Notebooks of Leonardo da Vinci* (NY: New American Library Press, 1960), 160; Blades, 234: Blades cited da Vinci’s experiments concluded that the drum should have a tensioning device consisting of a lever to accommodate different pitches from the same drum.

subsequent illustration is represented in Hans Burgkmair's *The Skill of Music* (c. 1550). A kettledrum taken from the Battle of Lutzen (1632) with ring-topped screws for tensioning the heads is on display in the Kungl Armé-museum in Stockholm.<sup>680</sup> Blades adds that screw-tensioning was adopted in Germany at the beginning of the sixteenth century. In addition, the screws were to have been turned by a loose key method.<sup>681</sup>

Some literary firsts came during the seventeenth century. Stage directions to the English masque by Ben Johnson in The Golden Age Restored (1616) included references to timpani.<sup>682</sup> The first orchestrated part for two timpani is in Orazio Benevoli's (1605-1672) Festival Mass written for a cathedral in Salzburg in 1628.<sup>683</sup> In the 1660s, Heerpauken is designated in the title pages of three sacred vocal works with instrumental accompaniment by Malachias Siebenhaarm.<sup>684</sup>

As the practice of using timpani increased, the sizes too, began to increase. And while this growth in dimensions was no doubt due in a large measure to an empirical sense of the timpani's acoustical inadequacies, by liberating them from their major equestrian role, instrument makers could increase their sizes (and weight) without having to make compromises.<sup>685</sup>

The practice of using the larger timpani in orchestral settings became common. The larger instruments were made simultaneously, in England referred to as "double drums," to insure a consistency in sound.<sup>686</sup>

There is a large degree of size variance from country to country and from instrument maker to instrument maker. England appears to have had the largest of the

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<sup>680</sup> Blades, 230.

<sup>681</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).3: 593. s.v. "Timpani, § 4: From c1600," by James Blades.

<sup>682</sup> Gangware, 88.

<sup>683</sup> Peters, 25.

<sup>684</sup> Blades, 236.

<sup>685</sup> Bowles, Early Music, 421.

<sup>686</sup> *Ibid.*

drums, with France portraying similar sizes. Most of the German timpani are depicted as a smaller version, perhaps due to their use in the calvary during the Thirty Years' War. By the scales in the pictures, "the German timpani measure twenty, twenty-three, and twenty-five inches."<sup>687</sup> Modern drums measure approximately three to four inches-per-drum larger than the drums above.

Mention should be made of a phenomenon still not . . . explained: the appearance, mainly in German drums, of a small metal funnel inside the kettle, shaped like a horn or trumpet bell, affixed with its small end around the air hole at the bottom of the instrument. Eisel (1738) wrote, . . . 'Today there are also manufactured in the current fashion in the drums which, when they are beaten, vibrate, thus producing a humming sound as resonance.' Thus it would seem this device serves as an amplifier.<sup>688</sup>

Tuning continued to be difficult, requiring the player to tighten laces or screws. Since trumpets were in "D," and the drums were frequently used together, the two drums would be tuned to tonic and dominant (D and A). For this reason, the most energetic choruses of Handel are written in the key of D with only occasional modulations to closely related keys. Most composers using timpani rarely departed from D or A for any length of time.<sup>689</sup>

The timpani does not achieve a permanent place in the orchestra until the mid-eighteenth century. As exhibited in the plates of this document, the timpani is generally employed as a military instrument and as a musical instrument concurrently. Although considered one of the more popular percussion instruments to be used in seventeenth-century visual art, the inclusion of the timpani in other art forms was very slow.

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<sup>687</sup> Ibid.

<sup>688</sup> Ibid.

<sup>689</sup> Gangware, 88.

Virdung is the earliest of the extant sources containing a depiction of a timpani (PLATE 9.1). Virdung's illustration is of four drums, two of which are identified as *Herpauken* [kettledrums]. The instruments are hemispherical shells with screw-tensioned heads. Each drum has ten screw devices visible on the perimeter of the head. A single beater rests against the vellum of each drum.

The material composition of the instruments is addressed in the accompanying text of *Musica getutscht* (1511). Virdung described the drum as a large "copper cauldron with calfskin drawn over it."<sup>690</sup> In a previous passage, Virdung suggested the size of the drum to be approximately two feet in diameter. Blades supported this by including a list detailing the changing diameter of the bowls in this era and including Virdung's illustrations among the instruments with twenty-four inch diameters.<sup>691</sup>

The musical applications of the kettledrums also are described in the accompanying text. Although Virdung claimed to have scant knowledge associated with the instruments, an observation pertaining to the use is included. Virdung observed that the drums are performed when "the royal court summons [soldiers] to the [battle]field with the trumpets, when trumpets are sounded at the table, or when a prince rides into a city, or musters for war, or marches into the [battle]field."<sup>692</sup> The implications from this text are in association with martial applications and possibly services of state or royal regalia.

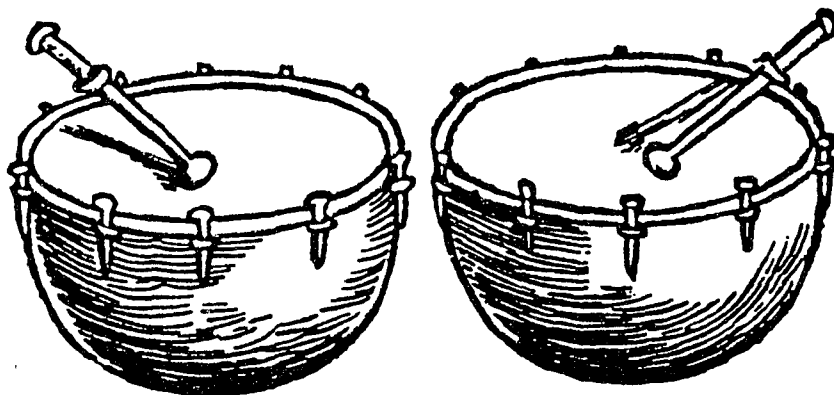
The kettledrum is absent from Agricola's text. The kettledrum appears to have been treated like the other drums omitted in Agricola's duplication of Virdung's document. Hettrick explained that "in keeping with the avowed pedagogical emphasis in his book, Agricola omitted portions of Virdung's work that would have little practical

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<sup>690</sup> Virdung, 114.

<sup>691</sup> Blades, 231.

<sup>692</sup> Virdung, 114.



**PLATE 9.1 Kettledrums** Virdung 1511. Two rope-tensioned kettledrums of indeterminate size are displayed with scant accompanying text. Virdung felt expounding on these instruments was beneath him.

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Virdung, Sebastian. *Musica getuscht: a Treatise on Musical Instruments* [1511]. Translated by Beth Bullard. New York: Cambridge University Press, 1993, Sig.D.

applications for his own readers: the pseudo-Jerome instruments, folk instruments, and drums.”<sup>693</sup>

Arbeau omitted an illustration of a kettledrum in Orchesographie (1585). The text, however, includes references to the kettledrum among descriptions of military matters. The first reference to the kettledrum occurs in the list of instruments employed as recreational devices or in military matters. Arbeau included “drums and others resembling the said drums”<sup>694</sup> in reference to kettledrums. Although not specifically identified as such, the double reference of “drums” implies various types employed. Given the universally established function of the kettledrum as a martial instrument, certainly one of the drums is a kettledrum. Blades supported this conclusion by including characteristics of the kettledrums described in Arbeau’s text.<sup>695</sup>

Arbeau described the varieties of kettledrums currently employed. “The Persian drum (used by Germans who carry it at the saddle bow) consists of a half-sphere of leather closed with strong parchment, about two and a half feet in diameter, and it makes a loud noise like thunder when the skin is struck with the sticks.”<sup>696</sup> The subsequent text describes the French military drum. The French drum, however, is characteristically similar to the snare drum. While drums are addressed frequently in the text, the type of drum is difficult to discern without an illustration. Additional references to the kettledrum may exist, but are obscured by virtue of the random application of the term *tabor*.

Praetorius included three varieties of kettledrums in the plates accompanying Syntagma musicum (1619). Kettledrums are a frequent subject of Praetorius’ text on percussion instruments. The first reference appears in the “Second Volume,” section XII. Praetorius categorized the kettledrum with “those instruments which are struck in order to

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<sup>693</sup> Ibid., xv.

<sup>694</sup> Arbeau, 18.

<sup>695</sup> Blades, 231.

<sup>696</sup> Arbeau, 18.

sound.”<sup>697</sup> Among those instruments listed is the word *tympanum* or timpani. A subsequent reference is provided in section XVII regarding the tone production. Praetorius suggested the timpani is an instrument capable of a fixed pitch by stating that “some instruments have a constant pitch . . . into this category come those which we have termed ‘struck’ instruments.”<sup>698</sup> The three varieties are a pair of screw-tensioned kettledrums (PLATE 9.2), a small naker with a tacked parchment (PLATE 1.13), and a small timpani (PLATE 3.2). All of the drums except the timpani are drawn to the Brunswick scale.

Praetorius included a description of the material composition of the illustrated drums. In addition, the accompanying text offers a perspective into the application of the instruments.

Nowadays, however, “tympanum” refers to the large military drums made from copper kettles, with heads of stretched calfskin, which are played with sticks. They are used in princely and noble courts, to signal the beginning and end of a repast, or a dance, as well as in campaigns, in time of war.<sup>699</sup>

Praetorius supported the previous information regarding the various uses of the kettledrum. The implication includes court settings, dances, as well as martial applications.

The kettledrums in PLATE 9.2 are identified as item number one and labeled “Heerpauken” or literally “army timpani.”<sup>700</sup> A pair of circular-headed drum sticks and a detachable tuning key are located between the two instruments. The significance is that screw-tensioning parchments had been in existence for the previous one hundred years and Praetorius was the first to include this detail.<sup>701</sup> Although only four of the mechanisms are

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<sup>697</sup> Praetorius, 23.

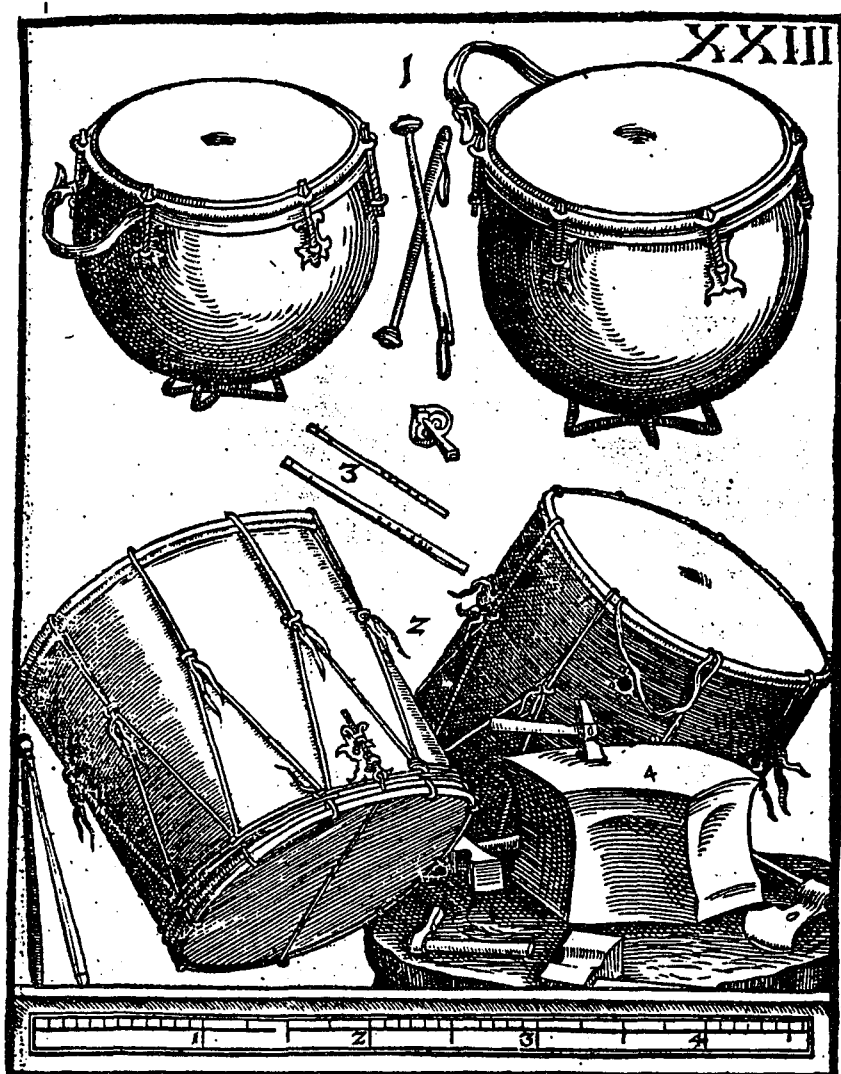
<sup>698</sup> Ibid., 25.

<sup>699</sup> Ibid., 77.

<sup>700</sup> Lang, 59.

<sup>701</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).3: 593. s.v. “Timpani, § 4: From c1600,” by James Blades.

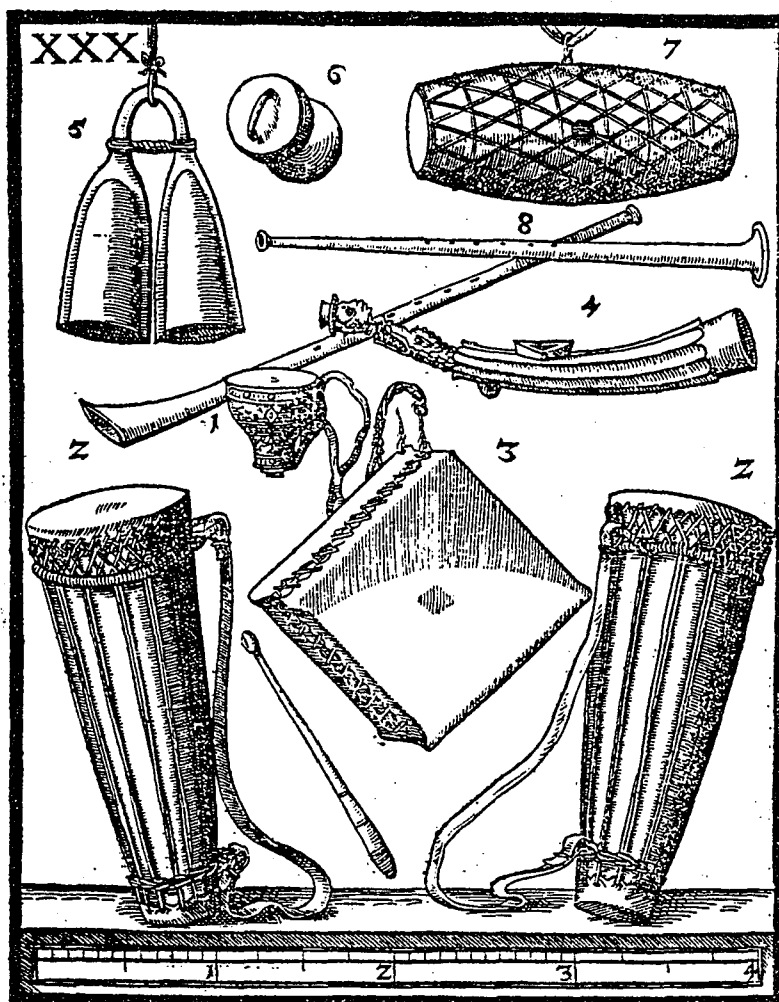




1. Heerpaucken. 2. Soldaten Trummeln. 3. Schweizer Pfeifflin. 4. Amboss.  
E. iij.

PLATE 9.2 **Kettledrums** Praetorius, 1619. Two screw-tensioned kettledrums are depicted with mallets. The object beneath the mallets is the tuning key.

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Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford:  
Clarendon Press, 1986, pl. 23.



1. Ein Türkisch Trümlein oder Päcklein. 2. 3. Mesopotamische Cymbel oder Schellen.  
 4. Indisch Horn von Helffaren. 5. Ist von Eisen gemacht, wird darauff geschlagen wie bey uns  
 auf der Resaleumlein. 6. 7. 8. Jüdische Trummeln und blasende Instrumenta.

PLATE 1.13 Naker Praetorius, 1619. Taken from Praetorius' list of "various exotic" instruments that includes a scale drawing of a small Indian drum resembling the Middle-Eastern naker.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbüttel, 1619]. Translated by David Crookes. Oxford:  
 Clarendon Press, 1986, pl. 30.

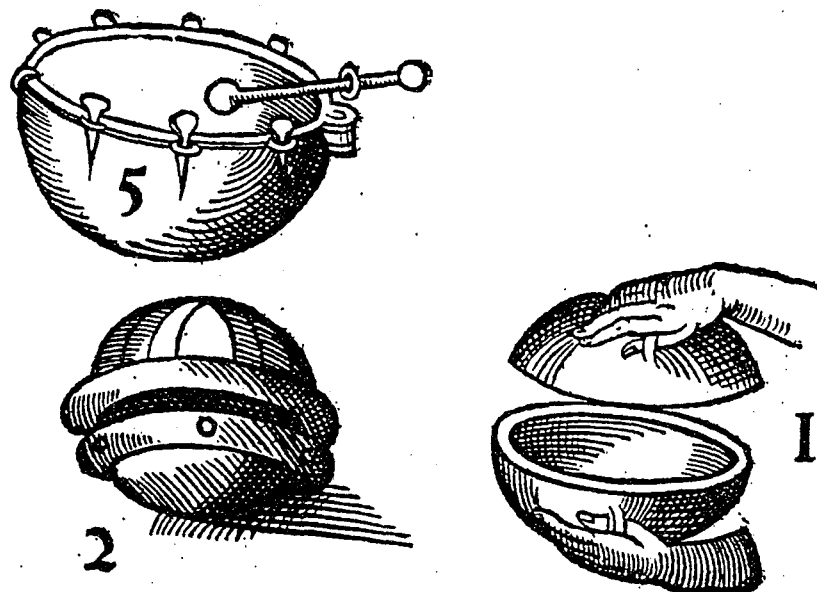


PLATE 3.2 Naker Praetorius, 1619. An etching taken from Praetorius and includes a drawing of a small naker.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford:  
 Clarendon Press, 1986, pl. 40.

visible, a logical conclusion is that the screws are equidistant around the perimeter of the head. As previously addressed, the tops of the screws are square consistent with the majority of depictions from this era.

The drums depicted in Praetorius are smaller in comparison to the kettledrums described in Arbeau. Praetorius' kettledrums measure seventeen and one half inches and twenty and one half inches in diameter.<sup>702</sup> The depth of each drum is approximately twelve inches.

The addition of a counterhoop also is significant. Although frequently displayed with snare drums, this detail is the first application of counterhoop technology to the kettledrum in the extant sources. In this century, the use of a counterhoop had not been universally accepted. The inclusion of a counterhoop within a kettledrum representation was noted by Blades.

Throughout that [the sixteenth] century and onwards, there are numerous representations of kettledrums with 'side screws' varying in number, and applying pressure directly to a flesh hoop, or indirectly to it through the medium of a counterhoop.<sup>703</sup>

The portrayal of a counterhoop in Praetorius' woodcut supports the possibility that the German kettledrum is in an advanced state of development.

A stand and carrying strap are visible on each drum. The appearance of both items implies the kettledrums were employed in both stationary and movement-oriented performances. The appearance of both, in turn, supports the previously discussed martial applications of the instrument. Blades addressed the function of these additions by stating

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<sup>702</sup> Ibid., 3:593; Blades suggests the diameters as 44.5 and 52 cm or approximately 17 1/2 and 20 1/2 Brunswick inches.

<sup>703</sup> Ibid., 3: 593.

the straps were for “affixing to the saddle and feet for resting the instrument on the ground.”<sup>704</sup>

The presence of a stand for the kettledrums also reflects the duality in the application of the drum. As mentioned previously, the kettledrum had established itself among the orchestral percussion instruments. The inclusion of the stand implies that the same instrument was readily applied to the art music of the era.

PLATE 1.13, number thirty, contains a small naker in the center of the illustration. The instrument is further identified as item number one. The instrument appears to be a small goblet-shaped vessel with a parchment tacked directly to the side. The drum measures seven inches in diameter by six inches in depth.

The citation accompanying the plate indicates the drum to be a small Turkish drum or timpani.<sup>705</sup> While the title is appropriate, the visible physical characteristics suggests that a more precise reference to the instrument is *naker*. Naker is the term referring to small bowl-shaped bodies of wood, clay or metal with a parchment covering that originated in the Near East. The word *naccheroni* and *nacaires* appear in thirteenth-century European manuscripts while the term *naker* is recorded in fourteenth-century English literature.<sup>706</sup> Blades provided a foundation regarding the identification of this particular instrument as the precursorial naker.

From the numerous representations of the instruments of this period it is clear that nakers were small kettledrums, more or less hemispherical in shape, from fifteen to twenty-five cm in diameter, and with a common feature of a single skin. The heads were attached in various ways: nailed, braced with cords or neck-laced. The

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<sup>704</sup> Blades, 231.

<sup>705</sup> Ein Türklich Trümliein oder Püklein.

<sup>706</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).2: 744. s.v. “Naker,” by James Blades. The fourteenth-century manuscript is an old Cornish drama entitled “Ordinale de origine mundi” which includes the term *nakrys*.

bowls, which seem to vary little in diameter, were of wood or metal, or in some cases clay.<sup>707</sup>

There is a likelihood that the small instrument, associated by the label *timpani*, was generically classified by virtue of the shape and developmental relationship as opposed to the style of performance techniques.

Beyond the classification of the drum as an exotic instrument, Praetorius omitted specific references to the applications or performance techniques for drums in this illustration. Secondary sources, however, provide information relative to performance techniques and applications. The sources suggest the naker was used as a hand drum, or in combination with a striking implement, and employed as accompaniment to dance and festivals. Blades observed that the drums were “suspended from the player by a strap round the waist or from the shoulder. With isolated exceptions, the player has a stick in each hand.”<sup>708</sup> Holbein’s *The Dance of Death* (1528) portrays a skeleton “Nakerer” with the drum strapped below the waist and striking the instrument with two bones.<sup>709</sup> Notably, this work contains a plate of a skeleton timpanist accompanying trumpets in an early association of the trumpeters and kettledrummers. Blades summarized the application of the naker in European society.

Until the seventeenth century we have widespread evidence, pictorially and otherwise, of small kettledrums [nakers]. From this it can be seen that their purpose was two-fold. Played by men, they were used mainly for martial purposes. In the hands of angels and women they appear as delicate instruments, and are associated with soft-toned instruments and chamber music.<sup>710</sup>

More elaborate rhythms must have been used on the nakers than on the tabor, partly because two sticks were used, and partly because with two contrasting sounds

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<sup>707</sup> Ibid., 2: 744-45.

<sup>708</sup> Blades, 244.

<sup>709</sup> Kinsky, 81.

<sup>710</sup> Blades, 224.

possible, the player would not be restricted to using different note values to mark the strong beats, and so forth.<sup>711</sup>

PLATE number 3.2 is a representation of an instrument labeled as a “type of small timpani.”<sup>712</sup> The instrument, identified as number five, appears to be a small hemispherical kettle with a vellum affixed to the open end. Eight tensioning devices are visible around the perimeter of the parchment. A double-ended striking implement is illustrated to the right of the instrument. A small loop is detectable beneath the drum stick. Praetorius described this instrument as the “type of drum seen on old coins.”<sup>713</sup>

Although a counterhoop is visible, discerning the method of applying pressure to the playing surface is difficult. Pegs are positioned equidistantly around the circumference of the parchment. Cords, lacings, and screw mechanisms are absent from the detail in this illustration. The pegs appear to penetrate the counterhoop but are not attached to the bowl of the drum. Attributing the function of the pegs as a tensioning device is logical, but the extent of the method is indiscernible from the illustration. Blades cited a reference by Galpin suggesting the pegs are actually tuning wedges.<sup>714</sup>

Performance techniques are addressed in the accompanying citation. Praetorius commented that the drums are to be played with switches [tongs?] and by hands.<sup>715</sup> Possibly the reference is made to the double-ended implement illustrated with the instrument. In addition, the drum is small enough to have been suspended from the loop in the counterhoop and beaten in similar fashion as the previously described tabors. Text related to the musical applications of this instrument is scant. A single line explains the drum is heard in conjunction with the other subjects in the plate.<sup>716</sup>

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<sup>711</sup> *Ibid.*, 226.

<sup>712</sup> “Ist eine Art Pauken.”

<sup>713</sup> “Wie aus der alten Münke zuersehen.”

<sup>714</sup> Blades, 230.

<sup>715</sup> “Welches mit einem Klüpfel, bißweilen auch wol mit der Hand geschlagen worden.”

<sup>716</sup> “Hierzu gehören auch das Num: 4.6.7.”

Mersenne included an illustration of a small kettledrum bearing a striking resemblance to the Praetorius illustration (PLATE 3.4). As with the instrument previously described, this instrument also appears to be a small hemispherical kettle with a vellum affixed to the opening. Eight tensioning devices are visible around the perimeter of the parchment. A double-ended striking implement is illustrated to the right of the instrument with a small loop beneath the drum stick.

Mersenne provided additional text regarding the attributes of this instrument. Unlike the previous sources proposing copper as the popular choice of kettle material, Mersenne described the bowl of the drum as iron.<sup>717</sup> The vellum is affixed to the instrument by means of being “tied to the drum with the pegs.”<sup>718</sup> Musically, Mersenne contended the drum is “beaten with a stick to add noise to the sounds of the cymbals.”<sup>719</sup> This quote is probably in reference to the Janissary processions where both instruments were employed.<sup>720</sup>

Mersenne hypothesized about the proportion of the drum being relative to the pitch. The lengthy explanation states the ratio of widths is to remain consistent with that of bells. That is, a drum one foot wide would sound one octave above a drum with a diameter of two feet.<sup>721</sup> The significance in noting the attribution of this antiquated instrument as being capable of producing a pitch with a definitive fundamental supports an application of the drum in art music. In addition, Mersenne added commentary regarding the limited range of the drum due to the scarce availability of skins.

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<sup>717</sup> Mersenne, 548.

<sup>718</sup> Ibid.

<sup>719</sup> Ibid.

<sup>720</sup> Blades describes the Janissary effects of timpani and cymbals in various orchestrations by Mozart, Haydn, and Beethoven (p. 261). In addition, Peters, in *The Drummer: Man*, describes the instrumentation of the Janissary bands as having various percussion instrumentation that included kettledrums and cymbals (p. 25).

<sup>721</sup> Mersenne, 554.



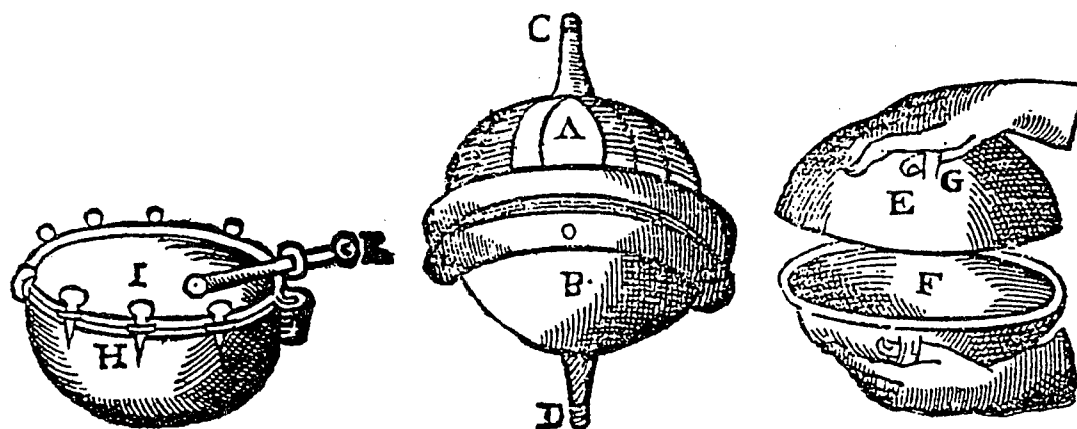


PLATE 3.4 **Kettledrum** Mersenne, 1635. A representation of a small kettle drum.

Reprinted by Permission from Kluwer Academic Publishers.  
 Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands:  
 Nijhoff, 1957, fig. 110.

It must be noted further that the greatest skins that can be found to put on the cases are only two and a half feet wide, and consequently one is forced to be reduced to this size, when one wishes to make many parts of music with the drums, which are easily put into tune by means of the running knots, which make them rise and drop in pitch, as I have said. That is why it is necessary to have three, four, or five of different sizes, so that they are used mutually and that through the relation they have altogether, one judges the highness and the lowness of all.<sup>722</sup>

This passage also suggests applications which included melodic and harmonic functions in music. The timpani, however, exists in orchestrations by the time of Mersenne's writing. Possibly during this period, the bass sounds of the drums have been the subject of compositional experiments in which the instruments were employed for melodic and harmonic functions within the score.

Three types of kettledrums are evidenced in Bonanni: a large pair of hemispherical drums, a pair of nakers, and a small set of laced kettledrums. Each instrument is portrayed in pairs and includes a male figure in performance. The representations are included with PLATES 9.3, 9.4, and 9.5, respectively.

Two large drums, labeled *timballi*, are the subject of PLATE 9.3. The term *timballi* appears to be a derivative of the French and Italian word for kettledrum or *timbales*.<sup>723</sup> As previously described, the drums are hemispherical with parchments covering the openings. The sizes of the drums are equal to the diameter. A different material is visible around the circumference of the playing surface possibly suggesting a counterhoop or similar device for head tensioning. Due to the nature of Bonanni's illustrations, the exact detail is uncertain. The drums are bound on one side with straps and mounted over a pedestal. The figure is seated on a pillow and is grasping two mallets with a similar grip, apparently mid-stroke. The ends of the striking implements display a hemispherical object larger in diameter than the shaft.

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<sup>722</sup> Ibid.

<sup>723</sup> Stanley Sadie, ed., *The New Grove*: 3:586. s.v. "Timpani," by James Blades.



PLATE 9.3 **Timballi.** Bonanni, 1716. A generalized depiction of small kettle drums. Typically, the late sixteenth-century instrument included screw-tensioning mechanisms.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 75.

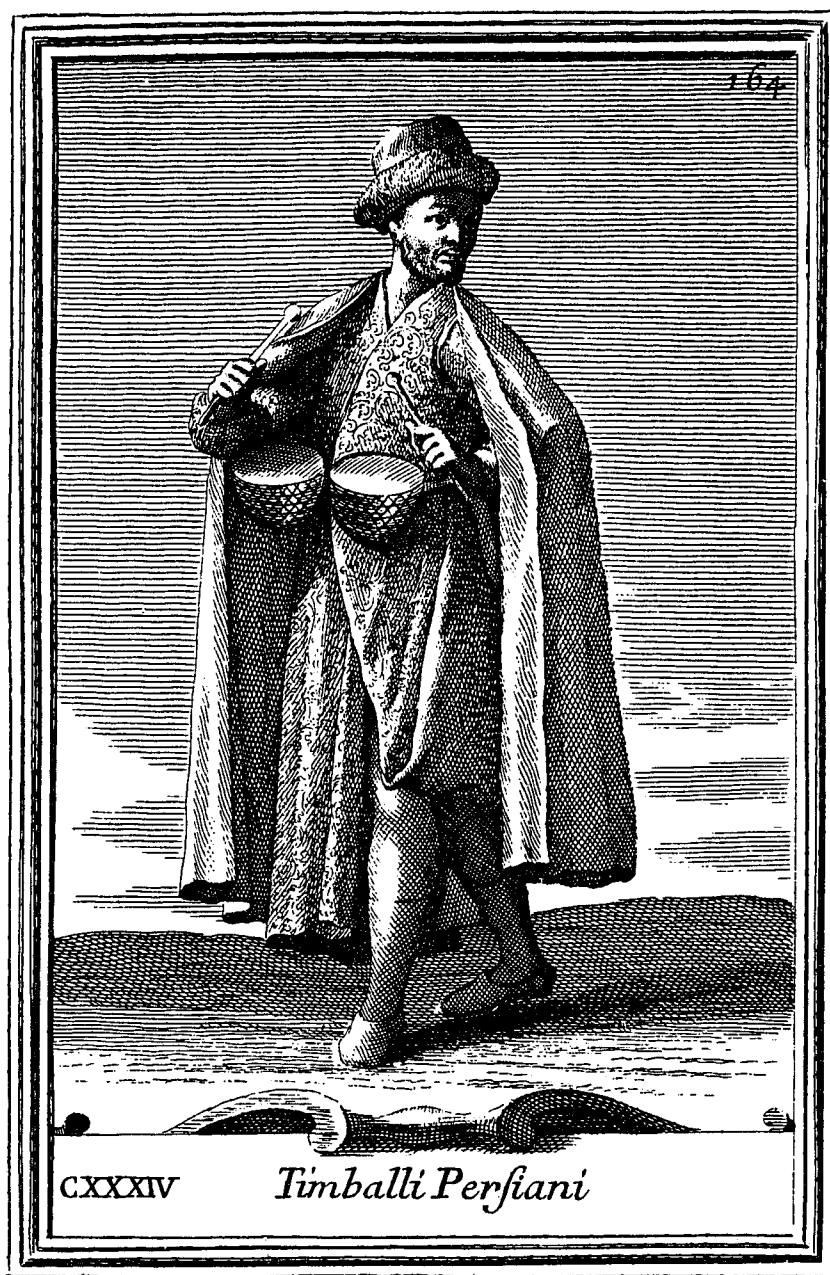


PLATE 9.4 **Timballo Turchesco.** Bonanni, 1716. The nakers in this depiction have been attributed to a Turkish illustration of a bride arriving at her husband's house, attended by a drummer beating on two nakers hung on a servant's shoulders.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 76.



PLATE 9.5 **Timballi Persiani** Bonanni, 1716. Small nakers [timbali] credited with signaling to Persian birds of prey for their return.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 134.

The accompanying citations omit specific detail regarding the plate, but instead offer an overview of the European development of the timpani. A possible conclusion is that the illustration is consistent with the previous descriptions. That is, the drums appear to be approximately two feet in diameter relative to the player. The representation of the instruments in a pair reinforces the previous descriptions of the martial applications to this instrument. The appearance of two mallets, the hemispherical shape of the body, and a suggestive representation of a counterhoop remains consistent with previous portrayals of this type of drum.

Bonanni addressed the application of the drum in association with trumpets. The citation states, “Their imposing sonority made them exclusively aristocratic instruments, and although they were played with trumpets in the first place, by the end of the seventeenth century elaborate music was being written for three or four kettledrums alone.”<sup>724</sup>

PLATE 9.4 is a representation titled “Timballo Turchesco” or Turkish timpani. The illustration includes a figure playing on a pair of nakers suspended over the shoulder of a second figure. The second drum is obscured by the drum in the foreground with only a portion of the counterhoop visible. These drums are smaller than the instruments portrayed in PLATE 9.3 and appear to have the heads attached by means of cords. While a rim is evident on the perimeter of the parchment, the lack of illustrated detail hampers the positive identification as a counterhoop. The citation accompanying this illustration includes a description of the musical applications associated with this particular instrument. Harris stated that, “Bonanni’s illustration is taken from a plate showing a Turkish bride arriving at

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<sup>724</sup> Bonanni, 75.

her husband's house, attended by two drummers beating on two nakers hung from the shoulders of a servant."<sup>725</sup>

The depiction is, again, congruous with previous accounts. This representation portrays a pair of drums suspended over the shoulder of a carrier. The drums, smaller than the instruments identified as kettledrums, are played with two sticks.<sup>726</sup> In this case, the sticks are bulbous-ended striking implements. The material composition and dimensions of the drum have been omitted. Although the illustration is representative and not a technical drawing, a possible conclusion is that the sizes are relatively proportional. The application of this type of kettledrum is unique. The use of nakers and kettledrums has been well documented in Ottoman cultures. No reference, however, specifically includes wedding processions.

PLATE 9.5 contains instruments identified as Persian timpani.<sup>727</sup> The two small drums are suspended around the waist of a figure in similar fashion as the previously described nakers. The drums are covered hemispheres of comparable size. The parchments are affixed with crossed laces with no visible counterhoop. Although these instruments are depicted frequently with hand-drumming performers, the player is holding two sticks resembling those illustrated in PLATE 9.3.

A different application of this drum is noted in the citation accompanying the plate. Harris stated the drums are "falcon drums" employed by Persian falconers to recall the preying birds.<sup>728</sup> A similar reference is located in Bessaraoff's Ancient European Musical Instruments. Bessaraoff concurs by describing the use of small kettledrums as engaged in the signaling for the return of hawks during the hunt.<sup>729</sup>

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<sup>725</sup> Ibid., 76.

<sup>726</sup> Previously cited as a description in Blades, 244.

<sup>727</sup> "Timballi Persiani."

<sup>728</sup> Bonanni, 134.

<sup>729</sup> Bessaraoff, 35-36.

Although omitting specific references to material composition and dimensions, the instruments appear to be consistent with the above information. The lacings resemble those illustrated in Praetorius. The use of sticks, previously described by Blades, is clearly represented. The absence of contradictory details supports the accuracy of the representation.

Additional sources containing text references of the timpani also are available. These sources include, but are certainly not limited to, Kriegsbuch (1566) by Fronsberger, Five Decades and Epistles of Warre (1622) by Francis Markham, The Complete Body of the Art Military (1650) by Elton, and Palas Armatta (1683) by Sir James Turner.

Readily available material exists regarding the sixteenth- and seventeenth-century European timpani. The timpani has been the focus of exhaustive studies that have resulted in the discovery of court records, guild mandates, and iconographic references. The monitoring of the guild practices, and the concurrent renaissance of scholarly writings contributed to the availability of documents from this period. A certainty is that of all the percussion instruments from this era, the timpani is the most widely studied with the majority of available material. The possibility exists that, since other instruments were devoted to peasant merry-making and less crucial to the safety and success or survival, the timpani was elevated in importance. In addition, the rules governing the timpani were associated with social status and performance mandates. Unfortunately, the other percussion instruments associated with this era did not receive the same consideration.



### Triangle and Sistrum

The triangle and the sistrum developed in ancient civilizations. Although prevalent in sixteenth- and seventeenth-century European society, the musical applications of these instruments were limited. While the sistrum diminished in popularity and eventually disappeared in the seventeenth century, the triangle maintains relative popularity and is slightly developed in this era.

The European instrument known as the sistrum originated before antiquity. The term *sistrum* comes from the Greek word for shaken instruments or *seîstron*.<sup>730</sup> Sachs suggests the instrument originated with ancient Summerian and Babylonian civilizations dating back to 2500 BC.<sup>731</sup> The migration of the sistrum into Europe is attributed to early Egyptian trade routes. The earliest musical applications of the instrument, until the sixteenth century, appear to have a genesis in martial music and Janissary traditions. Montegu contended that the triangle and sistrum coexisted through the sixteenth century.

The triangle makes its first appearance at this time [twelfth century], sometimes as plain three-sided or trapezoidal instrument, but more often with rings on the horizontal bar. The rings prolong the sound into a buzzing jingle quite different from the ting that we hear today. Both triangle and trapezoidal forms survived into the fifteenth and sixteenth centuries . . . . The triangle shape has continued into modern use, but the rings vanished in the early nineteenth century.<sup>732</sup>

The sistrum does not occur in sixteenth and seventeenth-century icons except in reference to the development or history of the triangle.

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<sup>730</sup> Sachs, 89.

<sup>731</sup> Ibid, 70.

<sup>732</sup> Jeremy Montagu, The World of Medieval and Renaissance Musical Instruments (New York: Overlook Press, 1976), 48.

The medieval sistrum is the precursor to the triangle. The sizes and shapes of the sistrum varied considerably: an equilateral with closed or open ends, trapezoid, or in the shape of medieval stirrups.<sup>733</sup> Galpin suggested the difference between the triangle and the sistrum was the addition of the ring-shaped jingles possibly as early as the tenth century.<sup>734</sup> The sistrum merits inclusion in this study due to the frequent citation by the sources.

A triangle is an idiophone consisting of a steel rod bent into the shape of an equilateral triangle, open at one end. The triangle is played by striking with various size beaters, or on occasion, a wooden drum stick. When struck, the triangle produces a wide spectrum of overtones resulting in an indefinite pitch. If the instrument were to be formed with all closed ends, the overtones would travel in two directions, resulting in a definite pitch.<sup>735</sup>

The first European iconographic reference to a triangle is included in Blades.

The first mention we find of a triangle in a tenth-century manuscript is of an instrument without rings. A triangle without rings is depicted in the King Wenceslas IV Bible (late fourteenth century) and again on a mid fifteenth-century window in the Beauchamp Chapel, St. Mary's Warwick. This latter triangle with its open corner has a curiously modern appearance, except at the top angle the steel bar is twisted into a loop through which the thumb of a performer (an angel) passes.<sup>736</sup>

While Blades omitted the title of the tenth-century manuscript, the significance lies in the early reference to an instrument without jingles.

The frequency of the triangle in sixteenth- and seventeenth-century Western European visual art, and its variety of artistic representations, suggests the triangle is one of

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<sup>733</sup> Gangware, 119.

<sup>734</sup> Galpin, *Old English*, 256.

<sup>735</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).3: 624. s.v. "Triangle," by James Blades.

<sup>736</sup> Blades, 191.

the more popular percussion instruments during this time. The triangle appears with musical performers, as decorative additions, with muses, and in military themes. Geiringer credits the re-introduction of the triangle to European society with the Crusades returning from the Middle East where the triangle had been used for centuries. Geiringer claimed that the acceptance of the triangle was a logical occurrence due to “the tendency to supplement the natural tone of the percussion instruments with a rattling or jingling sound . . . evidenced in the triangle.”<sup>737</sup>

An augmented application of the triangle is credited to the Crusaders. The use of the triangle was influenced through the popularity of this instrument with the Janissary corps that occupied Europe until the fifteenth century. Although previously discussed in the “Bells” and “Tambourine” sections, the Janissary corps was a significant presence in the European continent and was the impetus for percussion organization in European military bands.

Although the type of instrument used by the Turks was different in shape and style (a crescent), the sound emitted was similar to that of the triangle and this may well be the sound that the Europeans were trying to imitate. It must be remembered that the triangles of the fifteenth and sixteenth centuries were almost all found with several rings attached to the lower side which would create a distinctive jingling sound much like that of the “Jingling Johnny” of the Turks.<sup>738</sup>

Musical depictions including the fifteenth-century triangle are found in Kinsky. A figure performing with the pipe and triangle appears in the “Concert of Angles” by Stephano di Giovanni.<sup>739</sup> The triangle is approximately five inches per side. The triangle in this example appears with a pipe. The usual depictions of these figures were minstrels performing on the popular pipe and tabor. The illustration including a triangle with the pipe

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<sup>737</sup> Geiringer, 109.

<sup>738</sup> Gangware, 118.

<sup>739</sup> Kinsky, 70.

suggests the equally universal popularity of the triangle with the minstrel show. A similar theme appears in Scholes in which a person playing on the hurdy-gurdy is accompanied by a small boy holding a triangle.<sup>740</sup> Kinsky's other triangle depictions appear without minstrels and include larger triangles with rings on the lower side.<sup>741</sup>

Iconographic references to the triangle also occur in the sixteenth century. The triangle appears as an ornamented decoration in the title pages of works by Animucca and Palestrina. Giovanni Animucca's Canticum Mariae Virgins (1568) and Palestrina's first Book of Masses (1554)<sup>742</sup> appear to have the same title page except for the script bearing credits to the work and composer. Equally important is the triangle in an encyclopedia assembled for King Henry III of France by François Merlin and Jacques Cellier titled Recherche de Plusieurs Singularités (1585). Although the authors label the depiction as a *cymbale*, the illustration is clearly a closed-ended triangle.<sup>743</sup> None of the other extant sixteenth-century sources for this study contain a depiction of a sistrum or triangle.

In the seventeenth century, Syntagma musicum (1619) by Michael Praetorius is the earliest source including graphics of triangles. Praetorius' work contains three plates of five different sized and shaped triangles and sistrums. As with the previous graphics in Praetorius, the illustrations are drawn to scale, included with the recommended consort, and labeled accordingly.

The presence of jingles on the triangles in Praetorius' treatise has little impact on the label assigned to the instrument. Praetorius was consistent in delineating the triangle from the sistrum primarily by shape. All the instruments labeled as *triangles* are merely the triangular instruments regardless of jingles. Although the triangle in plate twenty-two is

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<sup>740</sup> Percy Scholes, The Oxford Companion to Music (London: Oxford University Press, 1955), 401.

<sup>741</sup> Kinsky; Three separate triangle appear in this collection. Page 91 depicts a seven-inch triangle; 112 depicts a nine-inch triangle; 152 is an illustration of a large fourteen-inch triangle.

<sup>742</sup> *Ibid.*, 102 and 103 respectively.

<sup>743</sup> Montagu, 111, pl. 83.

traditionally considered a sistrum by virtue of the jingles, Praetorius has chosen to label the instrument as a *triangle*. The sistrum, as well, is identified as a stirrup-shaped instrument with jingles.

PLATE 1.12 is an illustration of Praetorius' first triangle in plate twenty-two. The triangle is centered in the illustration. The open-ended instrument is suspended by a strap and has the customary five rings around the horizontal bar. A beater is positioned to the left of the triangle.

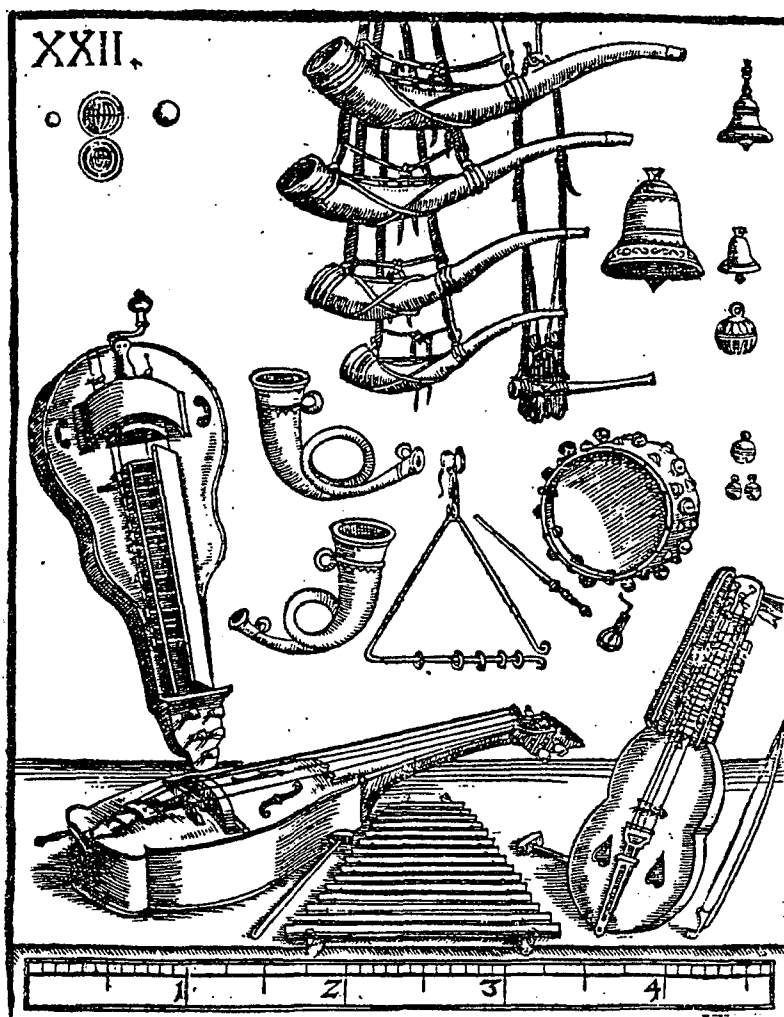
The instrument in PLATE 1.12 is an equilateral triangle metallophone approximately one foot in length per side.<sup>744</sup> The accompanying beater is approximately nine inches in length. Five jingles encircle the bottom horizontal bar of the triangle. Each of the jingles appears to be the same material of the triangle. While the exact metallic composition is indiscernible, the text and graphics support the categorization of the triangle as a metallophone.

The functions of the triangle are implied through the association in the illustration. The triangle is included with various instruments associated with Janissary and folk traditions. The hurdy-gurdies, keyed fiddles, and hunting horns are typically associated with folk music of this era. The tambourine, bells, and xylophone have been identified with those instruments in martial or Janissary music traditions. An instrument grouped with these other instruments would suggest folk-music applications or those functions not associated with the art music of the time.

Praetorius' description of the triangle is limited. Praetorius labeled the triangle as a *crepitaculum*. and writes that the instrument is to be classified as an instrument "without

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<sup>744</sup> Praetorius includes the Brunswick Foot with each of the illustrations. According to Francis Galpin in the notes accompanying Nicholas Bessarhoff's *Ancient European Musical Instruments* (New York: October House, 1964), p. 353, One Brunswick foot equals 11.235 inches or 285.36 millimeters. A Brunswick inch (one-twelfth of a Brunswick foot) is equal to .93625 English inch or 23.78 millimeters.



1. Allerley Davoren Lyren. 2. SchlüsselFiddel. 4. StrohFiddel 4. Jagel-  
hörner. 5. Triange. 6. Singelugel. 7. Morespaucllin.  
8. Blower 9. Cimbela: Schellen.

PLATE 1.12 **Triangle** Praetorius, 1619. The triangle with jingles is center in this etching.

Reprinted by Permission from Oxford University Press.  
Michael Praetorius, *Syntagma musicum*. [Wolfenbützel, 1619]. Translated by David Crookes. Oxford:  
Clarendon Press, 1986, pl. 22.

strings [that] is struck in order to sound including those with a beater of iron or wood.”<sup>745</sup>

The second reference, however, provides the most insight into the musical applications. While Praetorius did not imply the triangle is necessarily a musical instrument, the artistic validity as a folk instrument is reinforced. Praetorius did not disregard the possibility of the triangle as having musical potential, but avoided endorsing the instrument for immediate application to art music.

There are also a great many uncouth instruments which are regarded as having a musical function: drums, bells, triangles, . . . cowbells, [and] pot-and-sticks . . . There are even more instruments of various kinds, depicted in the plates – little cymbals and bells, straw fiddle, tambour de Biscaye [tambourine], military drums or kettle-drums, side drums, anvil, as well as exotic Moorish instruments. Some of them deserve Sebastian Virdung’s name of “uncouth instruments,” namely devoid of all art and refinement. We will not need to give any account of these, since they are all familiar to everyone and fall outside the boundaries of art music – except for the anvil.<sup>746</sup>

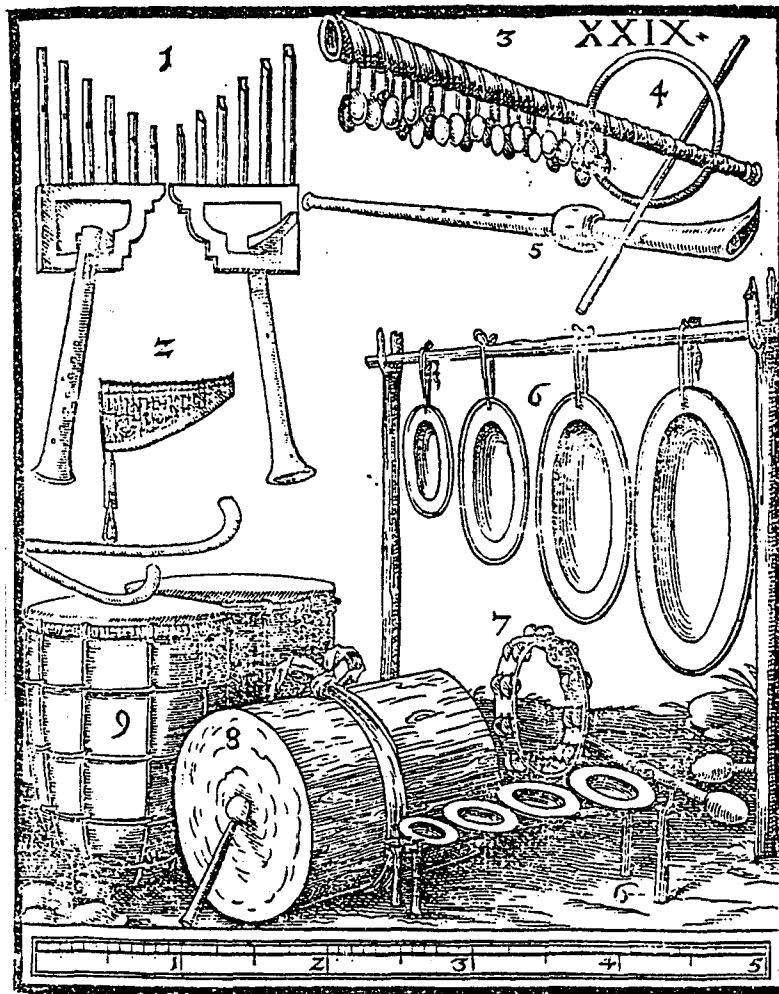
The second of three plates, number twenty-nine, contains a circular object Praetorius labeled as a *triangle* (PLATE 3.1 ). The object is identified as number four and is located in the upper right corner. Relative to the scale, the instrument appears to be approximately ten inches in diameter with a twenty-four inch striker. Although circular in shape, the instrument is labeled as a *triangle*. A consistent attribute, however, is that the instrument is a metallophone. A logical conclusion is Praetorius would have included references to any compositional variation. This plate is the only representation of a circular instrument to be categorized as a triangle.

The musical applications and performance techniques are derived from a number of sources. Performance techniques are revealed in the citation at the bottom of this particular

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<sup>745</sup> Praetorius, 23.

<sup>746</sup> Ibid., 78.



1. 2. Sind Sarys Pfeffen. 3. Americanisch Horn oder Trommet. 4. Ein Ring so bey den Americanern gleich wie ein Triangel geschlagen wird. 5. Americanische Schellen. 6. Becken/ darans die Americaner/ wie bey uns auff Glocken/ spielen. 7. Ein Ring mit Schellen/ die sie in die hö/ aufwerffen und wiederfangen/ etc. 8. 9. Americanische Trummeln.

**PLATE 3.1 Circular Triangle** Praetorius, 1619. Taken from Praetorius' list of "exotic" instruments, that includes a scale drawing of a circular steel rod played in the same manner as a triangle.

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Michael Praetorius, *Syntagma musicum*. [Wolfenbuttel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 29.



plate. The citation is translated as “a circle from the Americas beaten in the same manner as a triangle.”<sup>747</sup> The difficulty exists in discerning whether the long pole accompanying the instrument is for carriage, performance or for both purposes. Information regarding the length or nature of the illustrated striker is omitted. By virtue of the categorization among “Moorish” and “various exotic instruments,”<sup>748</sup> Praetorius implied that the circular triangle is considered a martial instrument maintained either with Janissary traditions or an ethnic folk instrument.

The third plate, Praetorius’ number forty-two, contains a woodcut of a sistrum and a triangle among the “various early instruments,” (PLATE 10.1). The sistrum is located in the upper right corner and numbered as thirteen. The traditional shape of a hoop with horizontal ringers is a trademark of this instrument. The triangle is centered in the cut, and assigned the number fifteen. Although not a traditional triangular shape, the horseshoe-shaped instrument with jingles is unmistakably an ancient triangle.

Praetorius did not include a scale with this particular plate. The absence of a figure likewise makes estimating relative sizes difficult. In addition, a means to assess whether the instruments have been drawn in relative size to each another or independently depicted as space allowed has been omitted. Praetorius gave reasons for these omissions.

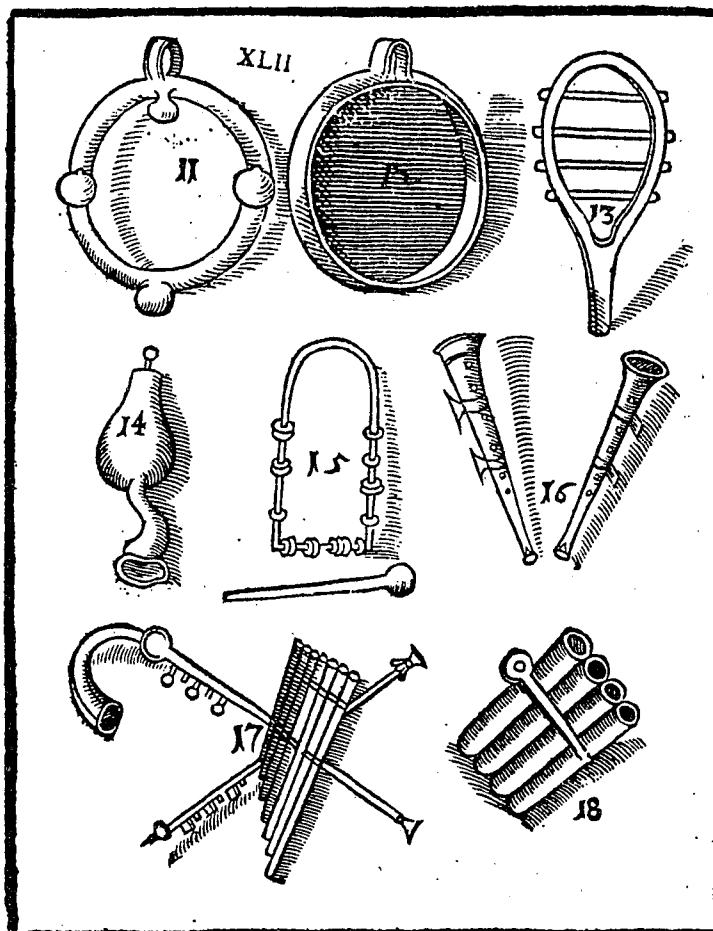
Since we have so little information about the appearance of ancient instruments – their shapes and dimensions – and about their strings, fingerholes, and playing techniques, I have, in my simplicity troubled to show in this second volume the design and construction of modern art-music instruments in common use in Germany, Italy, France, and England in addition to dealing with their playing techniques, how high or low they can sound, and so on.<sup>749</sup>

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<sup>747</sup> Ibid., pl. 29. The citation says “Ein Ring soben den Americanern gleich wie ein Triangel geschlagen wird.”

<sup>748</sup> Ibid., 78 and pl. 29.

<sup>749</sup> Ibid., 6.



11. 12. Sambuca, Organi genus, in quo chordæ intendebantur. 13. Sistrum.  
 14. Vtrculus. 15. Crotalum, vulgò ein Triangel. 16. Tibiz, Fistulz.  
 17. Ist die Fistula oder Hirten-Pfeiffe/ davon Virgilius in Bucolicis: Fistula di-  
 sparibus Septem compa&a Cicuris. 18. Cicura.

**PLATE 10.1 Sistrum and Triangle.** Praetorius, 1619. Taken from Praetorius' list of "various early" instruments. An etching including a drawing of a horseshoe-shaped steel rod with four crossbars and a triangle with jingles (numbers 13 and 15 respectively).

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbüttel, 1619]. Translated by David Crookes. Oxford:  
 Clarendon Press, 1986, pl. 42.

I have also thought fit to include illustrations of the barbaric folk instruments used in Muscovy, Turkey, and Arabia, and of those used in India and America, so that we Germans may become Acquainted with them as well; not of course in the sense of using them ourselves! – simply knowing what they look like.<sup>750</sup>

In regard to these instruments, Praetorius' writings are consistent with the above observations . The first reference is associated with the “material used for trumpets.”<sup>751</sup> Editor David Crookes commented that Praetorius “properly begins with the sacred trumpets of Moses, [but] chose to ignore both Tubal, a descendant of Cain (Gen. 4), and Miriam, a mere woman percussionist (Exod. 15).”<sup>752</sup> The next reference occurs in the description of the instruments of Jerome, including an instrument described as having a shape like a Greek *Deltonton*. Crookes notes the word *deltonton* is the Greek word for triangle and that Praetorius may have intended to indicate the Greek letter delta.<sup>753</sup> Praetorius referred to satanic bells and drums from Palestine and Asia Minor as instruments employed during circumcision rituals.<sup>754</sup>

As with the absence of a relative scale for describing the size of these instruments, the materials used for the construction of the triangle and sistrum are not discernible from this plate. Most likely, however, these instruments consisted of metal ringers and jingles. The technology of molding and shaping metal was available. The triangle and sistrum are instruments entirely of metal. The sistrum traditionally consisted of metal crossbars activated by shaking. While the possibility exists that the frame could have consisted of wood, the traditional combination is metal ringers striking against the metallic frame. The triangle, as well, consisted of a metal body with metal jingles encircling the perimeter.

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<sup>750</sup> Ibid.

<sup>751</sup> Ibid., 3.

<sup>752</sup> Ibid., 83. This reference is the first footnote commentary provided by David Crookes.

<sup>753</sup> Ibid.

<sup>754</sup> Ibid., 6.

References to the music associated with this instrument are found in the first section of the Volume II portion of Syntagma musicum. Praetorius made few direct references to musical applications of the instruments in plate forty-two. Because the information Praetorius provided is consistent with percussion instruments in the sixteenth and seventeenth centuries, a historical review of ancient instruments is unnecessary. The musical applications Praetorius mentioned also are consistent with the uses of the sixteenth and seventeenth-century instruments. Instead, Praetorius wrote about biblical citations of the “very early instruments,” Greek music-making, and Turkish music associated with festivals, rites, and rituals. A congruous conclusion is the instruments in this plate served the same musical functions as the triangles previously mentioned.

Mersenne’s Harmonie universelle provides the most detail of the seventeenth-century extant sources. In the section pertaining to percussion instruments, Mersenne includes a detailed plate and descriptive text of a triangle with the customary five rings. In addition, Mersenne provided commentary regarding the various functions of the instrument in this era.

The triangle is located within “Proposition Twenty-four” of the “Seventh Book of Percussion Instruments,” (PLATE 10.2).<sup>755</sup> Mersenne depicted a closed-ended equilateral triangle with five jingles. The top of the triangle has two intertwined rings for suspending the instrument. A curved beater is included in the middle of the graphic. Notably, this graphic is the first depiction of the instrument with four jingles on the bottom horizontal bar, and one jingle on the right side. The only relative commentary states the rings “are round, although they appear in an oval shape because of perspective.”<sup>756</sup>

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<sup>755</sup> Mersenne, 546-48.

<sup>756</sup> *Ibid.*, 548.

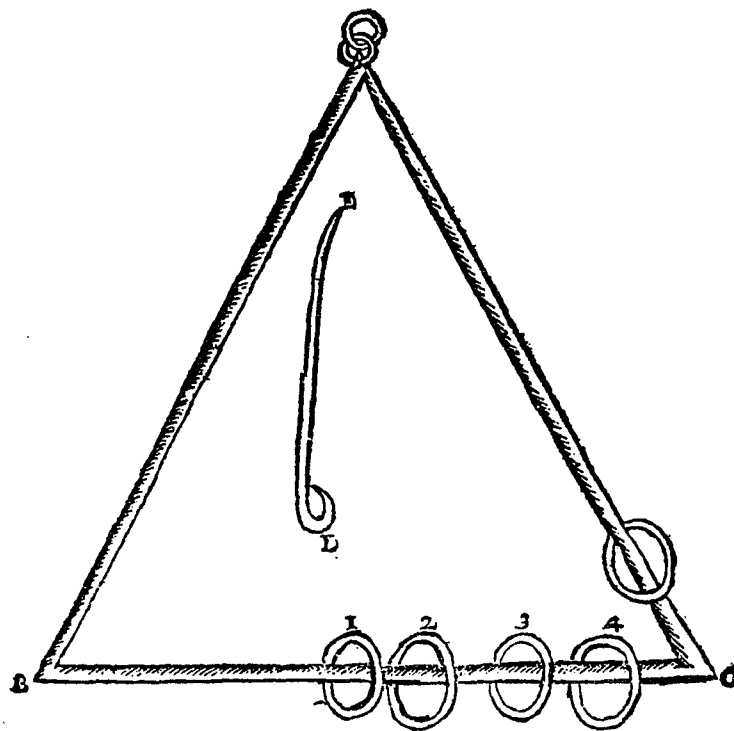


PLATE 10.2 Cymbale Mersenne, 1635. A closed-ended triangle with jingles.

Reprinted by Permission from Kluwer Academic Publishers.  
Mersenne, Martin. Harmonie universelle. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 109.

The size of the triangle in Mersenne's plate is indiscernible. As with plate forty-two in Praetorius' *Syntagma musicum*, no figure or relative scale has been included. Mersenne does make an indirect reference to size in mentioning that the instrument is suspended by one hand and played with the other.<sup>757</sup> Beyond Mersenne's written reference, the only size standard from this era is provided by Praetorius.<sup>758</sup> Because Mersenne's writing occurs approximately twenty years after Praetorius, logic dictates that the size of the triangle would not have dramatically changed. Remaining consistent with this information, a reasonable conclusion is that since the triangle is small enough to be suspended by one hand, the instrument ranges from six to twelve inches per side.

Unique performance techniques were briefly addressed by Mersenne. Mersenne is the only source to include directions pertaining to the rings. Previously, the rings were believed to be an applied tradition originating from the buzzing sound associated with shaking the sistrum. The triangle was considered to be a struck instrument by Blades and Montegu as supported by Praetorius' other sources. Mersenne, however, suggested that the triangle is scraped as well as struck. Mersenne implied the scraping performance technique by writing that "now this instrument is sounded by bringing forward the five rings with the stick."<sup>759</sup>

While all of the sources containing triangles have alluded to the instrument as a metallophone, the specific metallic composition has been omitted. Mersenne provided the only insight into the materials used in constructing the instrument. "It [the triangle] can be made of silver, brass, and of all the other metals, but it is ordinarily made of steel, so that it

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<sup>757</sup> Ibid. Mersenne writes the beater is "held in the right hand by the loop 'D,' while one holds the triangle with the left hand, by suspending it by the ring 'A' so that it moves freely and resounds better."

<sup>758</sup> Praetorius, pl. 22.

<sup>759</sup> Mersenne, 548.

have [sic] a sharper, greyer, and more brilliant tone. The rod [beater] 'DE' is of the same material or whatever other one [sic] wishes."<sup>760</sup>

Mersenne associated the triangle with sacred musical functions. The sacred association is supported by mention of rabbis, the Holy Scripture, and references to the Psalms.

If the rabbis had given us the figure of the cymbals that are spoken so often of in the Holy Scripture, I should compare it with that which is now in use among us, as to determine whether they were more suitable for giving pleasure and jubilation, which is spoken of in the last Psalm, than are ours, of which ABC gives the form, which makes the equilateral triangle.<sup>761</sup>

While Mersenne's reference does not include other possible functions, another perspective is added to the applications of the triangle. Additionally, this passage supports the theory that triangles also were in use for religious purposes during this era.

A sistrum is the first of two entries in Bonanni's Gabinetto armonico (PLATE 10.3). As is consistent with all of Bonanni's depictions, this plate is a representation. Since Bonanni updated Kircher's collection from written text, the depictions should be viewed as artistic concepts rather than a technical detail.

A standard for the crossbars, however, has yet to be established by any of the sources. Bonanni's depiction displays an instrument with three horizontal bars. Praetorius' depiction has a sistrum containing four horizontal crossbars. The shape of the sistrum has been consistent as seen in PLATE 10.3. This sistrum is the traditional horse-shoe-shape with horizontal ringers.

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<sup>760</sup> Ibid., 548.

<sup>761</sup> Ibid., 547.



PLATE 10.3 *Sistro*. Bonanni, 1716. A representation of the sistrum.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 84.



The musical applications of the sistrum are inferred by the citation accompanying Bonanni's plate. "The sistrum, like the aulos, was used for several thousand years among the Mediterranean peoples. In Egypt the sistrum associated with the rites of certain deities such as Hathor and Isis and their symbols often appear on the instruments."<sup>762</sup> The association with the ancient Greek aulos implies the sistrum was applied in accompaniment functions. The aulos is referred to by Homer as a common instrument used with percussion instruments to accompany poetry.<sup>763</sup> Blades observed that the sistrum, "like all percussion instruments . . . [was] used for three main purposes: religious ceremonies, military signals and encouragement, and the dance."<sup>764</sup> Frank Harrison supported this theory by writing "the instrument is still used in the Coptic Church, and simpler forms exist in West Africa, Malaya, and North and South America."<sup>765</sup>

The Bonanni sistrum, although an artistic rendering, appears to be compositionally consistent with the descriptions in Praetorius and Mersenne.<sup>766</sup> The sistrum appears to be a metal strap bent into a horse shoe shape and affixed to a wooden handle. Three metal ringers are placed horizontally through the body of the metal strap. A woman is holding the instrument at an angle as if to suggest a shaking motion.

The second Bonanni contribution is a triangle as the subject of plate eighty-five (PLATE 10.4). The triangle is shown suspended on a strap in the hands of a female figure. The figure is holding a striking implement and appears to be dancing.

Bonanni has labeled the plate with the Latin derivative *crotalo*. The Latin root-word *crot*, in this case, has been generically applied to these metallophonic percussion

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<sup>762</sup> Bonanni, 84.

<sup>763</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).1: 86. s.v. "Aulos," by James McKinnon and Robert Anderson.

<sup>764</sup> Blades, 190.

<sup>765</sup> Bonanni, 84.

<sup>766</sup> Mersenne, 547. Praetorius, pl. 29, 22, & 42.



PLATE 10.4 **Crotalo** Bonanni, 1716. An etching of the fifteenth-century triangle. This representation, however, incorrectly displays several crossbars.

Reprinted by permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 85.

instruments. The various forms of this word also have been applied to percussion instruments such as the crotale, crotal, and crotalum. A crotale is a small definite-pitched cymbal originating from the first millennium BC. Crotal and crotallum are metallophones resembling the castanet. Praetorius and Mersenne each had a label of *crotalum* and *cymbale*, respectively, for their illustrations of triangles. Bonanni's application is a generic reference to the bell-like jingles attached to a triangular-shaped metallophone.<sup>767</sup> Harrison made a similar observation. "The triangle was not always triangular in shape when it first appeared in the fifteenth century, and it was known by many names."<sup>768</sup>

Although the instrument in this graphic resembles the sixteenth-century triangle, the illustration contains major discrepancies. The instrument is actually an inverted "V-shape" with five crossbars. Each of the crossbars has a set of jingles. Coincidentally, the illustration has five cross-bars. Possibly, Bonanni misinterpreted a Kircher representation and illustrated the jingles on separate bars instead of the five rings traditionally placed on one bar. Harrison made a similar statement in Antique Musical Instruments and Their Players under the citation accompanying the plate. "Until the nineteenth century it carried several jingling rings on the lower bar. Bonanni incorrectly shows five bars with rings, having confused it with the sistrum and the crotale."<sup>769</sup>

In summary, the triangle has consistently appeared as a metallophone with and without varying numbers of jingles. The most consistent representations of these instruments with jingles, however, are those appearing with five jingles encircling the bottom bar. The size of the instrument ranges from five to twelve inches per side. Graphics display instruments of varying shapes including a V-shape in Bonanni, to a circle in one of Praetorius' plates, and an equilateral triangle in Mersenne.

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<sup>767</sup> Stanley Sadie, ed., The New Grove Dictionary of Musical Instruments 3 vols. (London, England: Macmillan, 1984).1: 518. s.v. "Crot," by James McKinnon and Robert Anderson.

<sup>768</sup> Bonanni, 85.

<sup>769</sup> Ibid.

Another consistent attribution of the triangle in sixteenth- and seventeenth-century Europe appears to be in musical application. All the sources that contain a triangle have made reference to the application of the triangle in martial, Janissary, and folk traditions. The acceptance of the triangle into art music did not occur for another fifty years. The earliest orchestral use of the triangle was by the Hamburg Opera (1710) and in the Dresden Opera (1717).<sup>770</sup> The late application does not suggest that the triangle had no other use, but does support the theory that the instrument was so popular that the triangle was recognized as possibly having musical value much earlier than some of the other percussion instruments.

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<sup>770</sup>Blades, 191.

### Xylophone

The name *xylophone* is derived from the Greek *xy'lon* meaning “wood.”<sup>771</sup> The instrument generally is defined as a “percussion instrument consisting of two or more bars of graduated length.”<sup>772</sup> The various forms and types of construction of the xylophone for this study are limited to those instruments depicted in sixteenth- and seventeenth-century Western European graphics from the extant sources.

The sixteenth- and seventeenth-century Western European xylophone resembles the modern instrument. The depictions contain instruments of six to twenty-five bars supported at two nodal points. The illustrations typically include hammers or mallets as an indication of how the instrument is to be struck. Although the text of *Virdung* and the illustrations in *Agricola* and *Praetorius* contain instrument representations with bars arranged vertically, horizontal arrangements and keyboard-xylophones are exhibited in *Mersenne* and *Bonanni*.

The specific origin of the sixteenth- and seventeenth-century Western European xylophone is difficult to determine. Four geographic locations claim to be the originator of the modern European xylophone: Indonesia, Guatemala, Africa, and China. Each country or continent developed an instrument closely resembling the modern xylophone. While the European instrument resembles the precursors of Indonesia and Africa, no significant documentation supports the cultural intercourse between these societies leading to the European adoption of these cultures' instruments. *Gangware* endorsed this claim with the following:

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<sup>771</sup> Sachs, 53.

<sup>772</sup> Stanley Sadie, ed., *The New Grove Dictionary of Musical Instruments* 3 vols. (London, England: Macmillan, 1984).3: 869. s.v. “Xylophone,” by James Blades.

There seem to be only two areas of primitive society in which the marimba [xylophone] was used in a form resembling that of the present, namely Indonesia and that portion of Africa below the Sahara Desert. It is known that the Moslem travelers reached this area of Africa before the year 1,000 AD, and it is entirely possible that caravans were also in contact with the Indonesian area by this time. If Arabians were not in direct contact with the Indonesian area at this time, they were in contact with India, which has developed social intercourse with the Indonesians over a period of many centuries.<sup>773</sup>

The xylophone-marimba type of musical instrument is one which was found to some extent in the Middle Ages and in later periods, but whose background is almost without trace of ancestry. None of the musical historians even attempt to give the background of this instrument with the exception of indicating that it was used in the Indonesian geographical area at an early date.<sup>774</sup>

Vida Chenowith further contended the xylophone lacks ancestry and is itself the form of the original instrument. Citing biblical references to an instrument of similar construction, Chenowith stated the precursor to the xylophone is "the oldest pitched musical instrument known to man."<sup>775</sup> Sachs supported this statement by listing the xylophone among the instruments from the late stratum excavations.<sup>776</sup>

Geiringer stated that the European xylophone originated with the instruments resembling the Eastern xylophone. Geiringer contended that the xylophone, in various forms, originated in eastern cultures and migrated into Europe with the pilgrims.<sup>777</sup> Gangware, however, offered another opinion on the migration of the xylophone into Europe.

Although an isolated specimen may have made its way to Europe in this manner [trade with the East], the fact that the appearance of this instrument in the early sixteenth century was noted by a number of persons highly interested in music at about the same time would have attributed to more than an isolated specimen. It

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<sup>773</sup> Gangware, 128.

<sup>774</sup> Ibid., 127.

<sup>775</sup> Vida Chenowith, "The Marimba Comes Into its Own," Music Journal 15:12 (May-June, 1957), 12.

<sup>776</sup> Sachs, 64. Sachs continues to explain that the xylophone was discovered in neolithic artifacts confined to certain geographic regions of the Near East.

<sup>777</sup> Geiringer, 1145.

would appear more logical that this instrument would have entered from Africa, a country old to civilization; however, that portion of the Sahara Desert had not been explored to any great extent until the last quarter of the fifteenth century. Between 1448 and 1482, the following areas were explored on the West coast of Africa: Arguin, Cape Verde, Gambia, Sierra Leone, Gold Coast, Po, and the South of the Congo River. While the interior still had not been explored to any real extent, it was not necessary to penetrate the African coast in order to observe the fanatical display of rhythm and melody so characteristic of the xylophone playing of the African people, especially those of the Congo area.<sup>778</sup>

Coleman, also, attributed the migration of European xylophone by way of Africa.

Africa is the country that has given us the name "marimba" for an instrument made of slabs of wood. Such instruments are also called mahimbi, Timpali, and Balafo . . . It is one of the most common instruments in Africa, and has been there for hundreds of years.<sup>779</sup>

Bruno Nettl provided a comprehensive perspective of the migration of the Indonesian xylophone into Africa and, subsequently, to Western Europe. The similarities in the tuning of the African and Indonesian instruments, cultural practices, and language parallelisms support a theory that Indonesian peoples brought the xylophone to Africa.

Approximately fifteen hundred years ago, a group of Malayo-Polynesian speaking peoples migrated to Africa, probably Madagascar, and carried it [a xylophone] with them. This fact has been generally accepted since certain tribes in Madagascar speak Malayo-Polynesian languages and since Kunst has found some correspondences in the tuning of Indonesian and African xylophones. The highest development of the xylophone is in the area nearest Madagascar, and further evidence for its importance lies in the similarity of the East African xylophone orchestras to the gamelon orchestras of Java and Bali.<sup>780</sup>

Sachs made a similar statement in The History of Musical Instruments.

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<sup>778</sup> Gangware, 130.

<sup>779</sup> Satis Coleman, The Marimba Book (New York: The John Day Company, 1930), 12.

<sup>780</sup> Bruno Nettl, Music in Primitive Culture (Cambridge: Harvard University Press, 1956) 100-101.

The similarity [tuning and language] is probably not a coincidence. Many implements, tools, weapons, and instruments in a well-defined area of African Bantu districts are so closely connected with the corresponding objects of southeastern Asia that an early communication across the Indian Ocean through the Zambezi valley can be assumed. Certain accordances in the tuning of xylophones in Asia and Africa confirm this statement.<sup>781</sup>

The origin of the Western European xylophone may, in fact, be the result of a number of concurrent events. As previously stated, xylophones had been discovered along the coast of Africa that had been explored approximately thirty years before Virdung's document and fifty years before Agricola. An assumption that an isolated specimen returned with the African explorers to various parts of the European continent is reasonable. The possibility of the xylophone, or an instrument closely resembling the xylophone, being indigenous to the area has been suggested by Grove.<sup>782</sup> The readily accessible trade with Indonesia or knowledge of the instruments may have enticed music scholars, such as Virdung, to acquire xylophones for study. The listings in the extant sources also may have resulted from knowledge of the African instrument, the similar but readily available Indonesian instrument, and illustrations or descriptions of previous documented accounts. Blades supported this theory in The New Grove Dictionary of Musical Instruments.

In general, however, the European xylophone before modern times was a simple instrument, the wooden slabs loosely strung together, or resting on ropes of straw, giving rise to the name "straw fiddle" (*Strohfiedel*). It was very much an instrument of the itinerant musician until the nineteenth century, when it rose to prominence as a solo instrument and attracted the notice of Mendelssohn, Chopin, and Liszt.<sup>783</sup>

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<sup>781</sup> Sachs, 239.

<sup>782</sup> George Grove, ed., "Xylophone," A Dictionary of Music and Musicians 5th ed., (New York: 1954).

<sup>783</sup> Stanley Sadie, ed., The New Grove: 3: 871. s.v. "Xylophone," by James Blades.



The primitive percussion music of the late fifteenth- and early sixteenth-century Western Europe probably regarded the xylophone as a novelty and retarded its application to what was then serious art music. Developments in string, brass, and woodwinds possibly further delayed the application of the xylophones into composition. The gradual introduction of the xylophone for musicological study appears to have resulted from an acceptance of the instrument first as a folk instrument. Subsequently, after hundreds of years of continued exposure, composers included the xylophone in the same manner as all the percussion instruments: a novel addition to create a mood or effect and eventually a soloistic instrument.

The first evidence of the xylophone in Western Europe is found in medieval iconography. A xylophone is included in an Anglo-Saxon psalter dating from the eleventh century. The depiction “attains an unmerited prominence . . . where it appears hanging with the harps upon the Babylonian windows.”<sup>784</sup> In 1511, Arnold Schlick made reference to an organ register labeled as *hültze glechter* or “wooden sticks” in his Spiegel der Orgelmacher und organisten.<sup>785</sup> The register was omitted in organs manufactured after 1517.

Another reference occurred in 1511. Sebastian Virdung included the xylophone in the first important study of European musical instruments. The xylophone is presented with the various musical instruments of the day.<sup>786</sup> Virdung, a member of the court chapel in Heidelberg since 1500, included a reference to the xylophone in his reference to the Anglo-Saxon icon in his study of percussion instruments. Virdung considered the xylophone void of musical potential and more suited for “tomfoolery.”<sup>787</sup>

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<sup>784</sup> W. L. Hubbard, The American History and Encyclopedia of Music (Toledo, Ohio: Irving Square, 1908) vol. IV, 52.

<sup>785</sup> Marcuse, 591.

<sup>786</sup> Virdung, 119.

<sup>787</sup> Ibid.

The Syntagma musicum by Praetorius included the first depiction of a flat-barred xylophone in 1620.<sup>788</sup> Similar to Agricola's *stro fidelen*, Praetorius labeled the fifteen-barred instrument as a *stroh fiddel*. James Blades provided details of the Praetorius plate.

Praetorius shows an instrument with a series of fifteen bars from six inches to twenty one inches in length, arranged diagonally in a single row pyramid fashion . . . Praetorius includes a pair of conveniently shaped hammers.<sup>789</sup>

While no European country can make the claim as having a part in the origin of the instrument, many have contributed to its development. The majority of the xylophones depicted in this collection are from Germany. The instrument is shown in a number of shapes and sizes, yet the type of instrument is still clear.

Agricola, another important sixteenth-century musicologist, included a graphic of a cylindrical-barred xylophone in his work of 1528.<sup>790</sup> Special note of Agricola's xylophone should be made in reference to the literal translation of Agricola's applied German term *Stro fidelen*" [straw-fiddle]. Agricola's observation is in direct reference to the twenty-five wooden bars mounted on a frame with straw insulation. Geiringer challenged the timing of Agricola's writing by claiming that the first iconographic reference to the xylophone appears in 1525.

The instrument – which achieved a moderate distribution only in Eastern and Central Europe – hardly developed at all, since no place was found for it in serious music . . . . The twenty-five rods which in 1528 (three years after the earliest trace of the instrument, in Holbein's Dance of Death) Martin Agricola attributed to the xylophone.<sup>791</sup>

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<sup>788</sup> Praetorius, pl. 22.

<sup>789</sup> Blades, 203.

<sup>790</sup> Agricola, 60

<sup>791</sup> Geiringer, 145.

The illustration in reference is the *Dance of Death* by Hans Holbein the Younger (c. 1525) and is included in Kinsky.<sup>792</sup> The illustration depicts Death carrying a xylophone in a horizontal fashion toward an old woman among a group of human skeletons. The skeletons are playing instruments resembling xylophones.

Martin Agricola included a xylophone with an assortment of illustrations as well. Two woodcut illustrations of a xylophone are credited to Agricola. One example is from his original study of 1528, and one from his expanded and subsequent reprint in 1545. Due to the exact replication, only the woodcut from the 1528 edition is included.

Agricola's 1528 xylophone illustration (PLATE 11.1), similar to the xylophone plate mentioned in Virdung's text, is an instrument with twenty-five rounded bars. Each bar is labeled with pitch names. The pitches, from highest to lowest, are as follows: f, e, d, c, b, b-flat, a, g, f, e, d, c, b, b-flat, a, G, F, E, D, C, B, B-flat, A, G, and F. The underline is added to indicate register; this pitch on the lowest bar, however, is not underlined in the illustration. Agricola's xylophone utilizes the same tuning as the keyboards in his treatise: diatonic with the exception of both B-natural – in German typically designated as “H” and B-flat designated as simply “B”. Two relatively small drumstick-like hammers accompany the depiction. The actual size, gradation of the bars, and physical construction of the instrument are difficult to discern due to the simple line-drawn representation.

The accompanying text contains limited information regarding the illustration. William Hettrick, the translator and editor of the reprinted editions, commented on the sparse text: “By comparison with the first four chapters, the fifth is so short as to appear to be an afterthought.”<sup>793</sup> Agricola wrote:

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<sup>792</sup> Kinsky, 81.

<sup>793</sup> Agricola, xvii.

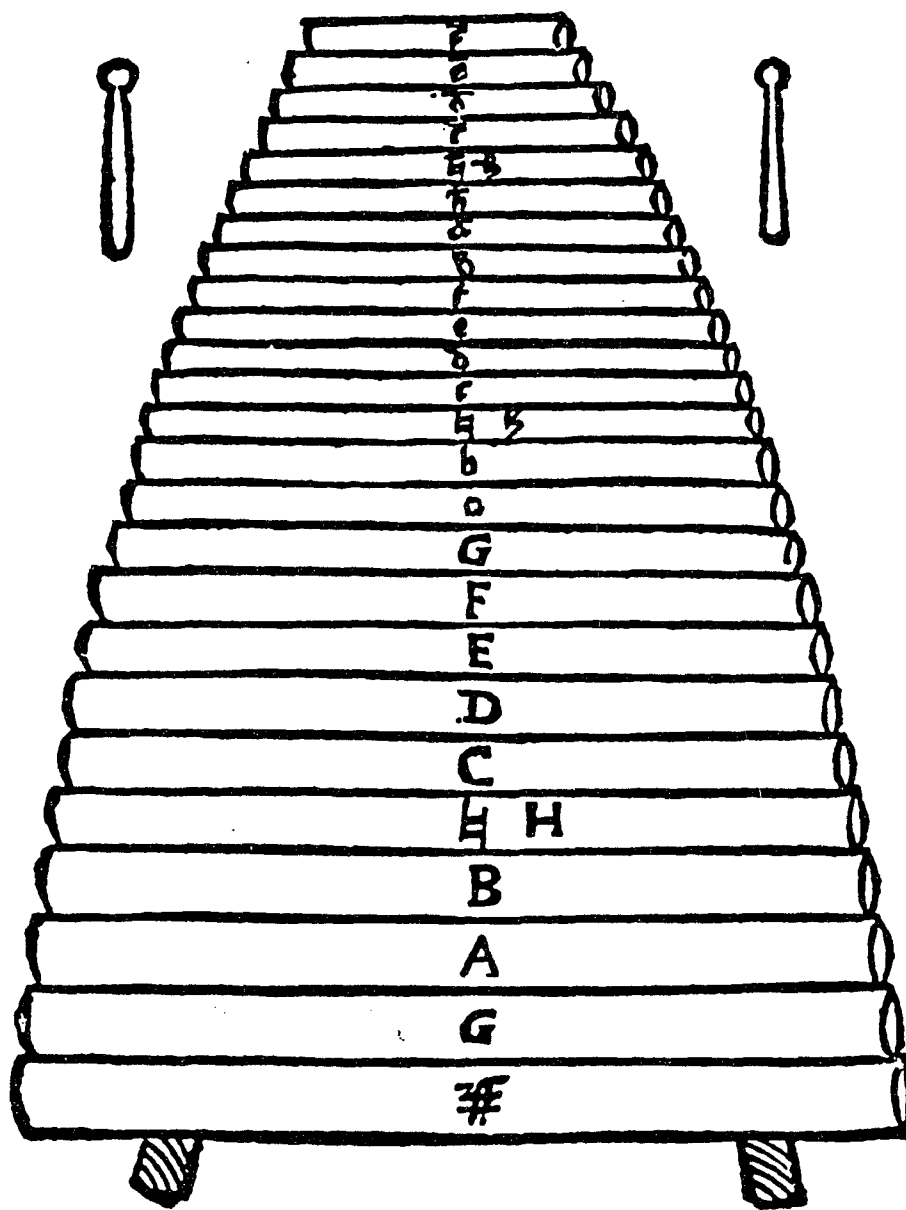


PLATE 11.1 Xylophone Agricola, 1529. An illustration of a vertical xylophone.

Reprinted by Permission from Oxford University Press.  
 Agricola, Martin. *Musica instrumentalis deutsch*. [Germany 1539]: Reprint translated by John Trowell.  
 Leittenberg, Germany: Broude Brothers, 1965, sig. H3<sup>V</sup>.

I will not explain them [xylophone et al.] or teach a complete foundation for them at this time; rather, I will concentrate only on how one is to write for the above mentioned instruments according to the correctly established tablature, derived from music and vocal notation.<sup>794</sup>

Aside from labeling the instrument as a *strofidelen* (straw-fiddle) and providing the tablature of the bars, no other original information is available.

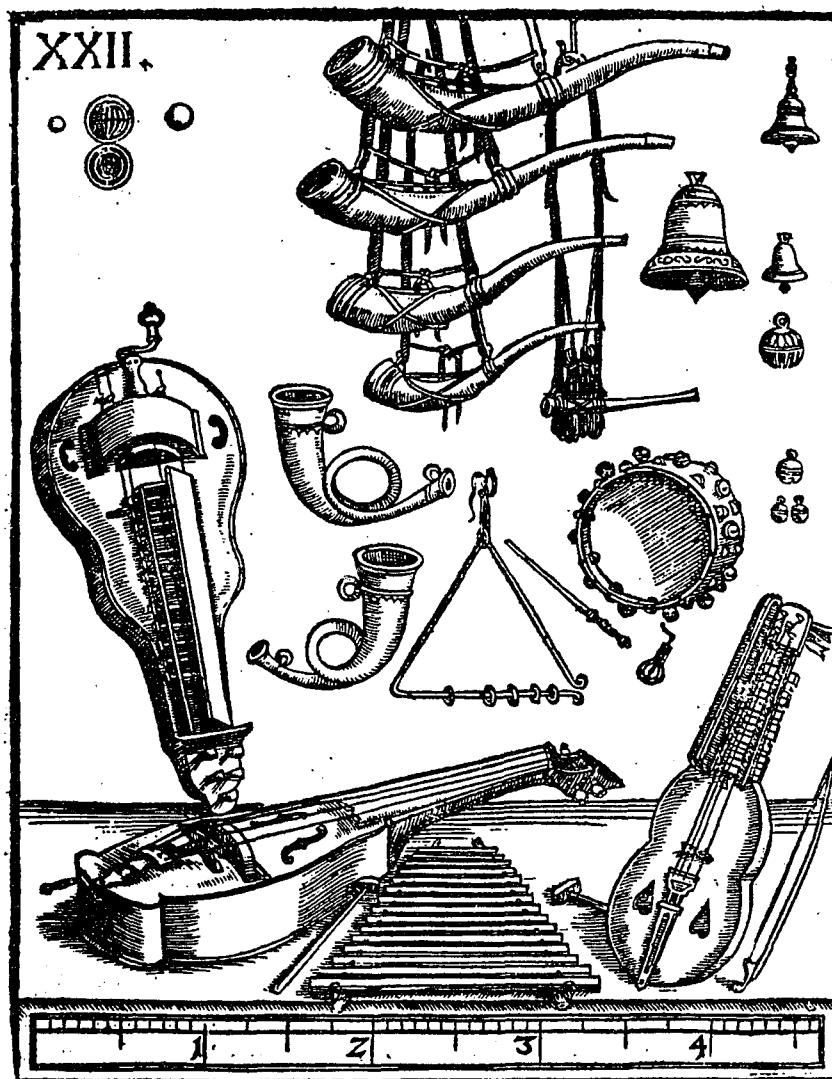
The scant information is a detriment to establishing the possible musical function of the instrument. While definitive examples are not available, logical associations and presumptions are applicable. For example, like Virdung, Agricola avoided explanation about percussion instruments. Yet, unlike Virdung, Agricola avoided dismissing any musical applications for percussion instruments. In addition, his inclusion of diatonic tablature similar to the keyboards and two mallets indicate musical applications with possible harmonic functions. The relation of the tablature shows a definite connection in perceiving the xylophone as having a similar function to the keyboards. The accompanying text suggests the correct way to score for the xylophone according to vocal notation. This statement alone suggests previous applications in various musical settings.

PLATE 1.12, untitled except as XXII, contains a depiction of a flat-barred xylophone in the *Syntagma musicum* (1619) by Michael Praetorius. The fifteen-bar instrument is contained in a plate among hunting horns, fiddles, hurdy-gurdies, and Janissary percussion instruments. Two xylophone hammers are among the items in the plate. As stated previously, this plate is the first depiction of a xylophone with flat bars. The musical writings by Agricola and Mersenne have only included round-barred instruments in various formations.

The xylophone in Praetorius' plate is displayed without a player. As a result, the player's position relative to the instrument is difficult to discern. The xylophone appears to

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<sup>794</sup> Ibid., 29, fol. 28<sup>v</sup>: sig. D4<sup>v</sup>. This text is omitted in the 1545 edition.



1. Allerley Sawren Lyren. 2. Schlüssel Fiddel. 4. Stroh Fiddel. 4. Jägerhörner. 5. Triange. 6. Singefugel. 7. Worenpaucklin. 8. Glocken. 9. Cimbeln : Schellen.

PLATE 1.12 **Xylophone** Praetorius, 1619. A scale drawing of a xylophone with tubular bars. The strikers are located on either side of the depiction.

Reprinted by Permission from Oxford University Press.  
 Michael Praetorius, *Syntagma musicum*. [Wolfenbützel, 1619]. Translated by David Crookes. Oxford: Clarendon Press, 1986, pl. 22.

be playable from either a vertical or horizontal position. The practice of portraying the instrument vertically by Agricola one hundred years earlier appears to have influenced Praetorius to present a xylophone in a similar manner. The appearance of two hammers, however, suggests the instrument should be played in a horizontal position. A vertical arrangement is less conducive for two hammers due to the necessity for one hand to support the instrument.

As with most of Praetorius' plates, the xylophone is drawn to scale.<sup>795</sup> The length of the bars extends gradually from six Brunswick inches to eighteen inches in length. The widths of the bars increase slightly from one-half inch of the smallest bar to a full inch width in the longest bar. The xylophone hammers are eleven Brunswick inches in length with a mallet-head of approximately two inches long by one inch in width. The entire length of the instrument is approximately thirteen inches.

While the majority of wind, brass, and stringed descriptions are specific in regard to function, construction, and design, the references to percussion instruments are scant or omitted. Praetorius wrote, "We will not need to give any account of these, since they are familiar to everyone, and fall outside the boundaries of art music – except for the anvil."<sup>796</sup> The contents of Praetorius' plate twenty-two are instruments described as "uncouth instruments which are regarded as having a musical function . . . namely instruments devoid of all art and refinement."<sup>797</sup>

Examination of Praetorius' methodologies and consorts, associated by performance technique or tuning applied to other instruments, provides the basis for determining the function of the xylophone. For example, Praetorius carefully detailed each of the sketches.

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<sup>795</sup> Praetorius includes the Brunswick Foot with each of the illustrations. According to Francis Galpin in the notes accompanying Nicholas Bessarhoff's *Ancient European Musical Instruments* (New York: October House, 1964), p. 353, One Brunswick foot equals 11.235 inches or 285.36 millimeters. A Brunswick inch, one-twelfth of a Brunswick foot, is equal to .93625 English inch or 23.78 millimeters.

<sup>796</sup> Praetorius, 78 (reference is from the reprint edition).

<sup>797</sup> Ibid.

Within each detail are size, shape, and other related instruments. Special attention is given to association of other related instruments by consort or function.

The appearance of the xylophone in this plate suggests that the use of the instrument is a function other than art music. By including the xylophone with Janissary bells, tambourine, and triangle, Praetorius suggests a less formal musical application. The additional hunting horns, fiddles, and hurdy-gurdy implicate the xylophone in a folk instrument capacity.

Two xylophones are included in the instrumental depictions by Mersenne in 1636. The graphics present an instrument with seventeen bars and another with twelve (PLATES 11.2 and 11.3).<sup>798</sup> Mersenne offered advice on construction, tuning, and preference of materials. Mersenne included the xylophone within the “Third Book of String Instruments” instead of the “Seventh Book of Percussion Instruments.” The only rationale for including the xylophone within the third book is the association of the playing techniques. Harps, hammer dulcimers, and various struck or plucked instruments also are entered into this classification. Although one of the xylophones is portrayed as a keyboard-activated instrument, the graphic does not appear among any of the other books of instruments.

In PLATE 11.2, Mersenne included an instrument with more bars than those in depictions of Praetorius and Bonanni, but less than a twenty-five barred instrument Agricola included in Musica instrumentalis deudsch. Like Agricola and Praetorius, Mersenne offered tuning suggestions with the illustrations as well. Beyond reference to the range of the instrument, Mersenne omitted specific dimensions to PLATE 11.2.

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<sup>798</sup> Mersenne, 227-28.



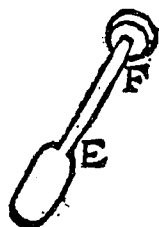
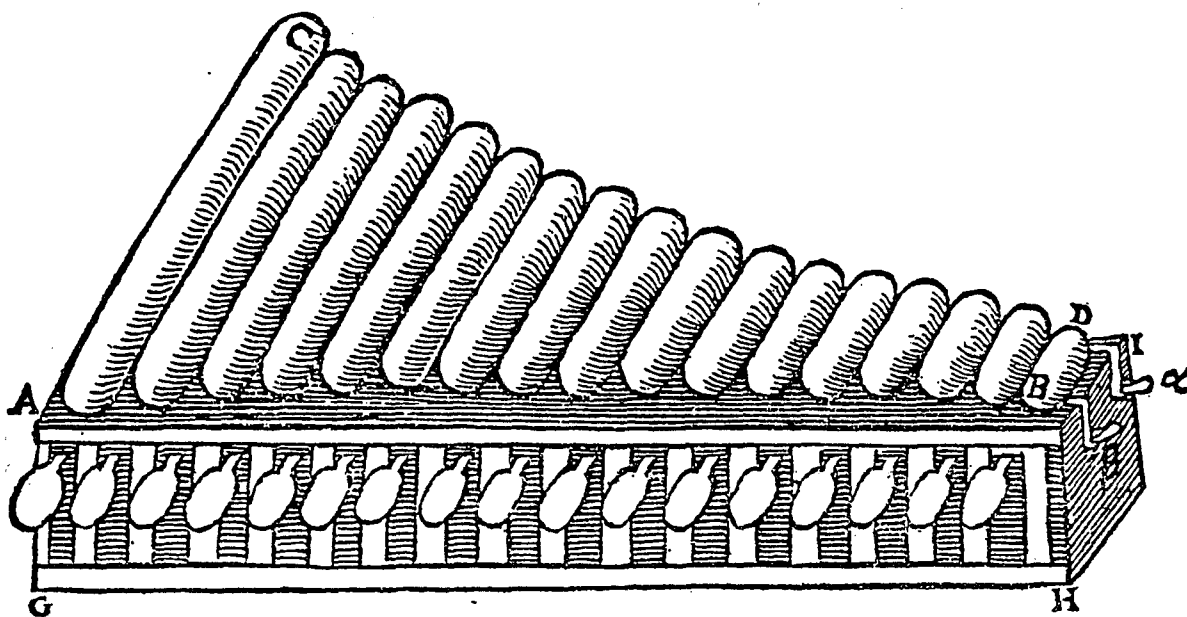


PLATE 11.2 **Keyed Xylophone** Mersenne, 1635. A seventeen-pitched keyboard xylophone.

Reprinted by Permission from Kluwer Academic Publishers.  
 Mersenne, Martin. Harmonie Universelle. Translated by Roger Chapman. The Hague, Netherlands:  
 Nijhoff, 1957, fig. 32.

In the case of the instrument with seventeen bars . . . it must have a range of a seventeenth, and the lowest bar should be five times as long as the bar with the highest sound, since their two pitches follow a ration [sic] of five to one. The instrument with twelve bars should follow a ration of three to one, but the length is being compensated for by the thickness. This instrument gives as much pleasure as any other . . . when played to the full effect.<sup>799</sup>

The rendering is not drawn to scale or relative proportions. Aside from the relatively proportional relationship of the bars, determining the remaining dimensions is difficult.

The first graphic is of a wooden-barred keyboard-activated instrument that has rounded bars. The bars are suspended on strings over a wooden frame. The frame appears to house a tone-producing system activated with a series of keys. Each bar corresponds to a key.

Mersenne included a detail of the mallet-end of the key and addressed the physical action associated with depressing the key.

[The diagram] shows the parallelogram which contains seventeen steps of the keyboard, each of which is similar to the key EF, which I have placed to the side, so that one understands how the head F strikes the stick of this xylophone, when one lowers the pallet E. Now the sticks are attached to some studs, or to some pegs  $\approx$  and  $\beta$ , and under A and C, so they hold fast when they are held in the air.<sup>800</sup>

While specific references to musical applications have been omitted, Mersenne did make inferences regarding similarities of timbre and consort. Mersenne commented regarding the materials of the bars in association with musical applications of the xylophone.

Made of steel, brass, or silver, [the bars] would render a more agreeable harmony . . . Although those who use them are content in the pleasure they receive from the

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<sup>799</sup> Ibid.

<sup>800</sup> Mersenne, 227.

sounds, or in apprenticeship they do with this instrument in order to play later the carillons of bells, which are used . . . to play all sorts of songs and concerts.”<sup>801</sup>

Descriptions of xylophone tuning are presented in mathematical ratios and weight. Mersenne stated the lowest bar should be five times the length of the shortest. The individual bars are to maintain the ratio of five-to-one to maintain intervalic relationships. Mersenne suggested the addition of as many bars as there are strings on a piano to increase the range of the xylophone. In addition, Mersenne advised the tuning is a result of the ratio of the weight as being proportional to the pitch.<sup>802</sup>

The second illustration, PLATE 11.3, is a xylophone, vertically-arranged, common to the other extant sources. In this graphic, Mersenne portrayed a twelve-barred instrument with round bars. The bars are suspended freely on a string independent of any frame or carriage. The bars are separated with a bead or knot Mersenne described as “a small ball.”<sup>803</sup>

The only reference to the size of the second xylophone is in reference to the longest bar. The physical descriptions of tuning and ratios applied to length offer insight into the total dimensions. Mersenne described the longest bar as being “ten inches in length.”<sup>804</sup> Mersenne, however, does allow for a variation in length by adding that the manufacturers diminish the ratio slightly to compensate for the thickness of the bar.<sup>805</sup> The detail of thickness is addressed as a ratio as well. Mersenne described:

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<sup>801</sup> Ibid.

<sup>802</sup> Ibid., 227-28.

<sup>803</sup> Ibid., 228.

<sup>804</sup> Ibid.

<sup>805</sup> Ibid.

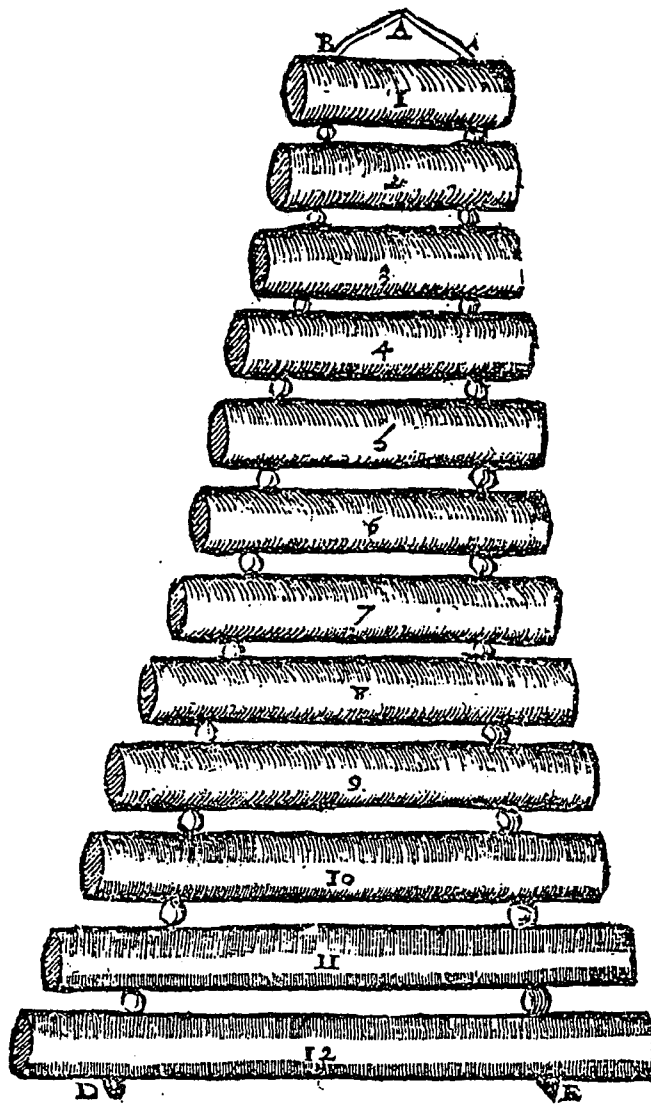


PLATE 11.3 **Cylindrical-barred Xylophone** Mersenne, 1635.  
Mersenne's representation of a twelve-barred vertical xylophone.

Reprinted by Permission from Kluwer Academic Publishers.  
Mersenne, Marin. *Harmonie universelle*. Translated by Roger Chapman. The Hague, Netherlands:  
Nijhoff, 1957, fig. 33.

One can know the volume of each stick by finding the area of the ellipse of their ends, the greater diameter of which is the ninth or tenth part of the length, and the smaller is sesquialtera the larger, for the height or length of the cylinder multiplied by its base will give its volume, and consequently the volume of the stick.<sup>806</sup>

With the ratio in mind, a logical deduction is possible. The dimension of the instrument is ten inches in width at the widest end by approximately eighteen inches in length.

Mersenne's ratio, given as three-to-one with the largest bar is ten inches, the sizes of the bars range from ten inches to approximately three inches in length and from one inch to three-quarter inch in width.

As with the previous illustration, a ratio system is offered as a means for tuning the second xylophone. Mersenne described the tuning as a three-to-one ratio as opposed to the five-to-one ration in the previous example. While a reference to weight occurs in the statement "[manufacturers] compensate for the length by thickness,"<sup>807</sup> no other accounting of tuning relative to weight is offered.

Additional references to performance technique are included. The techniques, however, are associated with the instrument as opposed to a means for tone-production. Mersenne described striking the bars as a technique employed by Turkish traditions. The technique involves striking the bar with a small ball-covered stick.<sup>808</sup>

The musical function of the second xylophone is difficult to determine. While the xylophone does appear in the same chapter as the previous illustration, no account is given for the different design. Mersenne does, however, summarize a general description relative to the xylophone. As a result, a possible deduction is that this instrument, as well as the one in the previous illustration, served the same musical function. The second instrument does fall short of a carillon performance technique by virtue of the hammers directly

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<sup>806</sup> Ibid., 229.

<sup>807</sup> Ibid. 228.

<sup>808</sup> Ibid.

striking the bars versus a keyboard activation system. The association of the playing technique with that of the Turks implies the instrument served in some form of martial music other than signaling.<sup>809</sup>

Consistent with Bonanni's previous illustrations, the xylophones in Gambinetto armonico are considered representations or impressions. Bonanni's graphics serve as additional references to the development and distribution of the instrument. Any detail attributed to dimensions, musical application, or function of the instrument is conceptual resulting from the written details of Athanasius Kircher contained in Musurgia universalis.

The xylophone represented in Bonanni's collection titled "Zilorgano" (number ninety-eight, PLATE 11.5) is unique. Like Praetorius and Agricola, the instrument is displayed in a vertical position. Bonanni's instrument, however, contains only seven rounded bars in graduating lengths. The tuning, mode inferences, and other characteristics included with the other extant sources have been forsaken with this representation. The figure in the depiction is a woman, and on the surface, bears no discernible purpose for performance other than leisure. In relation to the figure, the xylophone measures approximately eight to ten inches in length and approximately eight inches across at the widest point. The figure is suspending the instrument in her left hand, while a bulb-headed mallet is held in the right hand. No space or material has been included to suggest a separation of the bars is needed or a part of the instrument. Bonanni failed to provide justification for including only seven bars or any information regarding tuning. The instrument appears to consist of wooden bars suspended on a string. Bonanni credited Tuscany [Italy] as the location where musicians frequently employed the xylophone as a

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<sup>809</sup> The written material from this era gives numerous accounts of drums and cymbals serving as signalling instruments in battle. No mention is made of a xylophone in this capacity. The possibility exists, however, to imagine a xylophone as an instrument strictly for entertainment of troops between battles.



PLATE 11.4 **Instrumento Africano** Bonanni, 1716. A representation of an African xylophone with resonators.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 120.



PLATE 11.5 **Xilorgano** Bonanni, 1716. A depiction of the sixteenth-century vertical Western European xylophone.

Reprinted by Permission from the publisher for Bonanni's Antique Musical Instruments (New York: Dover, 1964), pl. 98.



musical instrument. No other surviving sixteenth or seventeenth-century record, however, supports this observation.

Resonators are depicted with the Bonanni depiction “Instrumento Africano” (PLATE 11.4). Unlike other extant depictions, this xylophone has wooden bars in a horizontal position resting over oval resonators. This version of the xylophone is credited<sup>810</sup> with extensive use in musical ensembles in Batavia.<sup>811</sup> Possibly the distinctive modification to this instrument was out of necessity. In order to function within the musical activities of the credited geographic area, the acoustical tone needed amplification.<sup>812</sup> Bonanni’s attributes distinctive ethnic features to the figure in this representation. The lack of surviving musical examples tends to imply that the inspiration for this depiction was the result of traders, missionary travel, or the result of his impression from Kircher’s writings. Aside from the attributed native Indonesian functions, no Western European applications have been found within this era.

Again, Bonanni chose to depict the instrument with seven wooden bars. As is consistent with Bonanni’s two other depictions, no tuning key or mode has been identified. This example, however, separates each bar by virtue of the individual resonator. Relative to the figure, the resonators appear to be approximately six inches in diameter and ten to twenty inches in length. The bars are flat and graduate from about six to eight inches in length by two inches in width. Each bar is approximately one-quarter to one-half inch thick.

A unique characteristic is the various heights of the playing surface resulting from the length of the resonators and the table supporting the instrument. Of the other sources

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<sup>810</sup> Bonanni, 120.

<sup>811</sup> Batavia is known today as Djakarta or Jakarta, Indonesia. Peters and Eyer credit Indonesia as the originators of the modern xylophone and marimba.

<sup>812</sup> Located near the Java islands, the Batavia [Djakarta] area has a rich historical tradition of gamelon and other percussion music. Modifications of the resonators are applied to amplify the sound.

containing xylophones, all are consistent in displaying the bars at a consistent height and in a vertical position. The other sources, however, do not include a xylophone in a horizontal position or resonators.

Similar to the xylophone in PLATE 11.4 is Bonanni's "Instrumento detto Marimba," PLATE 11.6. The distinction between the xylophone and marimba is credited to the inclusion of these particular resonators.<sup>813</sup> The reason Bonanni has chosen to label these instruments with resonators as simply an "African instrument" relates to the figure and the carriage of the instrument.<sup>814</sup> Bonanni continued, however, to describe the instrument as a "sweetly . . . and delicately tuned xylophone."<sup>815</sup> As in the "Instrumento Africano," Bonanni also applied distinctive ethnic features to the figure in this representation. Again, while this representation is included in a Western European collection, Bonanni appears eager to grant some credit to the origin of the instrument. As implied by the title, the origin of this instrument is credited to Africa.

This representation has six bar-blocks suspended over a series of resonators. Each bar appears to span three separate resonators. The resonators graduate slightly from approximately three to four inches in width and five to eight inches in depth. The bars are consistent in length, approximately twelve inches, and vary in width from one to one and one-half inches. The frame is rectangular and, relative to a six-foot tall figure, measures approximately eighteen inches in width and forty inches in length.

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<sup>813</sup> The term xylophone is a generic term for wooden-barréd instruments. A logical implication is that Bonanni's application is loosely applied to this in order to give each of the three xylophone subjects some manner of distinction.

<sup>814</sup> According to David Eyster "The History and Development of the Marimba Ensemble in the United States and its Current Status in College and University Percussion Programs" (DMA Dissertation, Louisiana State University and Agricultural and Mechanical College, 1985), p. 9, the terms "xylophone" and "marimba" are used interchangeably by ethnomusicologists with no regard for structural differences between the instruments currently being manufactured in the United States.

<sup>815</sup> Bonanni, 121.

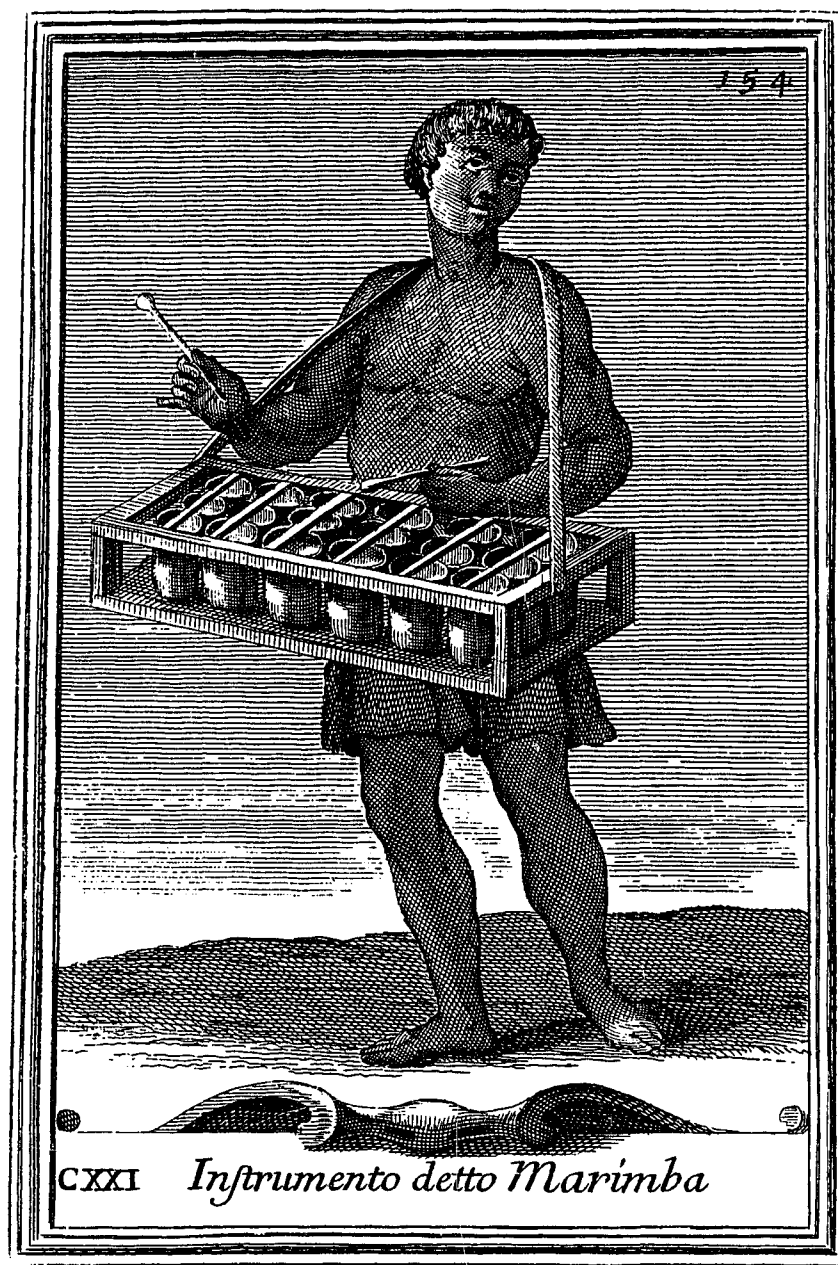


PLATE 11.6 **Instrumento detto Marimba.** Bonanni, 1716. Although labeled a *marimba*, the depiction actually is a gourd xylophone.

Reprinted by Permission from the publisher for Bonanni's *Antique Musical Instruments* (New York: Dover, 1964), pl. 121.

The striking implements and the positioning of the player's hand are unique. While other depictions contain two mallet representations, this player is using a "traditional" snare drum grip.<sup>816</sup> Bonanni omitted any justification for this grip. Bonanni did, however, have experience illustrating other publications on militaristic orders and applied this grip as an association to all mounted percussion instruments.<sup>817</sup> Therefore, the difficulty lies in determining if the representation is a result of loosely applied experience, an accurate representation, or an implication resulting from insufficient detail.

In summary, the xylophones from this era differ slightly in form and construction. The available models have appeared most frequently in a vertical position, with variations of horizontal positions and keyboard-activated mechanisms. The trough, resonator, and gourd-type construction support an African and Indonesian influence. The method of supporting the bars varies from a vertical suspension to placement above a set of resonators. All of the instruments were portrayed as wooden-barred xylophones.

The early illustrations portray the xylophone as an instrument ranging from seven to twenty-five bars. The width of the bars is the most consistent characteristic at approximately one and one-half inches. While the most popular form of bar is round, a variation portraying a flat-barred instrument also exists.

Although none of the sources supply definitive information, the musical inferences are given. Each author grouped the instrument by consort or performance technique. The most consistent reference implies a folk instrument association by virtue of the graphic depiction and written commentary regarding the sound. Sources support this theory by describing the instrument as being absent from Western art music. In addition, the xylophone is described as an instrument of wandering minstrels.

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<sup>816</sup> Traditional grip is generally associated with snare drum playing. The snare drum grip consists of a variation of each hand in holding and manipulating the sticks consistent with what is depicted in Bonanni's representation.

<sup>817</sup> Bonanni, v.

Most important, the xylophone subsequently did become a permanent inclusion in the orchestra by the nineteenth century. The fact that the instrument was attractive to later composers supports the notion that the xylophone remained a common instrument independent of the absences or applications in sources.

## CHAPTER IV

### SUMMARY AND CONCLUSIONS

The sixteenth- and seventeenth-century Western European extant sources containing percussive icons also are the first instrumental studies. With the exception of a few military documents and court records regarding martial percussion from this era, no other written information exists. Because of the limited sixteenth- and seventeenth-century written documentation, percussion instrumental research is dependent primarily upon icons.<sup>918</sup> As a result, the extant sources that include percussion instrument graphics have an amplified importance in percussion instrumental research. Percussion historian James Blades offers additional rationale for the reliance on iconography:

As yet, archaeologists have done little investigation of the Middle Ages, and as a result we have few surviving percussion instruments of that period. We have a number of instruments of all sorts of the eighteenth century, a few of the seventeenth, some medieval ivory horns (almost all of which on the Continent are said to be the horn that Roland blew at Roncevaux to recall Charlemagne), and a good many instruments from the Roman, Greek, Egyptian, Bronze, and Stone Ages. For the Middle ages, and to some extent for the Renaissance, our main source of information are a few treatises – at times inaccurate where percussion is concerned – and numerous paintings and sculptures, and a few stained glass windows.<sup>919</sup>

The information concerning percussion instruments derived from such works of art is doubly valuable since, until the end of the sixteenth century, there was a decided reticence on the part of authoritative writers to include drums of any description in the categories of musical instruments.<sup>920</sup>

Emanuel Winternitz, Curator of Musical Collections at the Metropolitan Museum of Art, suggests the scant material relating to this era is the result of misplaced foci.

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<sup>918</sup> Gangware, 70.

<sup>919</sup> Blades, 188.

<sup>920</sup> *Ibid.*, 189.

The history of music has concentrated, ever since its beginning, and for obvious reasons, on the most immediate and reliable embodiment of music, its notation. Therefore, those times and regions and forms that had no written music, or from which no written documents have survived, have been greatly neglected. One might hope to find more reliable information in the musical treatises of the time, yet these latter too often focus on the problem of theory and pedagogy and give us little idea of what the music sounded like. In short, these treatises take for granted many things that to later times are by no means obvious or self-evident.<sup>921</sup>

Instruments themselves are, of course, most valuable documents, but from many periods few, or none at all, have survived. Moreover, . . . when they [instruments] fall from public favor, they are likely to disintegrate. In view of this situation, musical representations in painting, sculpture, and many other branches of visual art are of supreme documentary value to musical history.<sup>922</sup>

Research on percussion instruments from this era incorporates six sources that contain icons.<sup>923</sup> Sebastian Virdung (1465-c. 1520) authored the first important document including illustrations of percussion instruments in Musica getutscht (1511).<sup>924</sup> As described in the “Status of Related Research”, Virdung clearly categorized some percussion instruments and provided justification for the omission of others. Virdung’s list of percussion instruments, however, includes an anvil and hammers, chime bells, clapper bells, military kettledrums, drums, small drums, xylophones, and cymbalum [cymbals]. A total of thirteen illustrations are devoted to percussion. All of the instruments are illustrated with the exception of the xylophone.

Agricola’s illustrations, in both the 1528-29 and the “clarified” 1545 editions of Musica instrumentalis deudsch, bear striking resemblance to those contained in Musica getutscht by Virdung.<sup>925</sup> While the documents support Agricola’s expansion on Virdung’s original treatise, accounting for the similarities in the illustrations is difficult. William Hettrick offered an explanation for the similarities:

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<sup>921</sup> Winternitz, 25.

<sup>922</sup> Ibid., 25-26.

<sup>923</sup> Gangware, 70.

<sup>924</sup> Virdung.

<sup>925</sup> Agricola.

A direct connexion [sic] between Musica getuscht and the 1529 edition of Musica instrumentalis deudsch can be seen in the latter's many woodcut illustrations derived from Virdung's book. These were not printed from the original wood blocks, which were surely not accessible to Agricola, but rather give every indication of having been copied free-hand from the earlier work, which served as a convenient source of usable pictures of musical instruments. In the process, Agricola's artist simplified or coarsed many of the details of the originals, rendering a number of the wind instruments, for example, with thinner profiles. He also reversed most of the original illustrations (probably the result of simply applying his drawings directly over the surfaces of the new wood blocks as patterns for cutting), although he was very careful to retain the configuration of Virdung's harp and already-backwards keyboards, thus perpetuating the error in the latter case.<sup>926</sup>

The translators of the extant sources agree on the similarities between Virdung's Musica getuscht and Musica instrumentalis deudsch by Agricola. William Hettrick, translator for the 1528-29 edition of Agricola's documents, assessed the similarities:

The most popular book of Martin Agricola during his lifetime, and the one for which he is best known today, is his *Musica instrumentalis deudsch* (1529 and 1542). The title of this work is an almost unmistakable allusion to the *Musica getuscht* of Sebastian Virdung, published in Basil in 1511.<sup>927</sup>

David Crookes, the translator of the 1986 edition of Syntagma musicum, offered a similar observation:

Martin Agricola's Musica instrumentalis deudsch (Wittenberg, 1529; final edition 1545) is a work of much less originality than Virdung's. Agricola draws so heavily on Virdung for his subject matter that we would not be far wrong in seeing the later work, to a certain extent, as a popular or school edition of Virdung.<sup>928</sup>

Agricola did provide text not found in Virdung regarding tuning ratios, weights, and proportions.

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<sup>926</sup> Ibid., xiv-xv.

<sup>927</sup> Agricola, xiv.

<sup>928</sup> Praetorius, xvii.



Written sources including percussion instrument graphics continued to be produced at the end of the sixteenth century. Jehan Tabourot (1519-1595), under the pseudonym Thoinot Arbeau, wrote a fictional dialogue focusing on dance under the title Orchesography in 1589.<sup>929</sup> Although Arbeau included percussion graphics, the importance of this document is underscored by the application of the instruments in dance, martial music, and ancient notation. The graphics in Arbeau's text detail performance practices of the pipe and tabor as well as martial movement.

Michael Praetorius (1571-1621) provided percussion instruments drawn to scale in the second volume of Syntagma musicum (1615).<sup>930</sup> Praetorius included contemporary instruments as well as representations of ancient precursors. A categorization of instruments is provided according to construction and sound production. The classification into categories of instruments with similar performance technique provides insight into early seventeenth-century practices. The standard of the Brunswick foot among the majority of Praetorius' woodcuts, the unique detail of the percussion instruments, and the number of percussion subjects makes this treatise historically invaluable.

Twenty years later, Marin Mersenne (1588-1648) produced Harmonie universelle (1636) with an exhaustive study of metallophones.<sup>931</sup> The unique characteristic of Mersenne's treatise, supplementing the previous sources, is the classification of percussion and the detailing of the instruments in a separate chapter. In addition, Mersenne was the first to dedicate an entire chapter to percussion instruments. Although eighty percent of the text deals with the subject of bells, the remainder of the document supplies valuable information regarding percussion instruments from the early seventeenth century.

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<sup>929</sup> Arbeau

<sup>930</sup> Praetorius, pl., 9, 22, 23, 29, 30, 31, 33, 40, 41, and 42.

<sup>931</sup> Mersenne.

The end of the seventeenth century witnessed a renewed interest in written documentation with regard to musical instrument icons. Athanasius Kircher's Musurgia universalis sive ars magna consoni et dissoni (Musica universalis, 1650) contains illustrations of tabors, cymbals, and triangles. Jesuit priest Filippo Bonanni, born in Rome in 1658, succeeded Athanasius Kircher as curator of a collection of writings, icons, and other artifacts of music belonging to the Jesuit College. The collection, named after its originator Athanasius Kircher, contained the two volume Musica universalis. Bonanni was inspired by the engravings and other items in this book to develop a comprehensive list of the Kircher collection which he named Gabinetto armonico (1723).<sup>932</sup>

The percussion instrument graphics from these extant sixteenth- and seventeenth-century sources were presented and examined for the same information. The examination involved recording visual observations, evaluating relative sizes, deciphering physical composition, the presence of striking implements, and determining obvious or inferred uses. Additional citations identify the artist, country of origin, type of graphic, title of the graphic, and date of the graphic if different from the date of publication. Included with each plate is information provided by an artist, editor, or publisher. Plates containing subjects derived from an artistic concept, as opposed to an actual representation, are identified accordingly. All textural references regarding these plates are the collective result of a visual examination and the correlation of information from secondary sources. As a result of this process, three main conclusions are possible.

One of the conclusions of this study is that numerous and varied percussion instruments were distributed through Western Europe during the sixteenth and seventeenth centuries. The sixteenth- and seventeenth-century icons in this study suggest many different percussion instruments were used by persons from all echelons of society. The

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<sup>932</sup>Bonanni, v.

acquisitions inherently resulting from trade routes, artifacts from Crusaders, local military bands, guilds, and the developing orchestras had exposed Western Europeans to various percussion instruments since the first century. The universal existence of percussion instruments contributed to their frequent application in many areas. Judging from frequent themes in thirteenth- through fifteenth-century European visual art, percussion instruments were becoming increasingly popular. The sixteenth- and seventeenth-century icons reflected this trend as well. The etchings and illustrations from this era depict percussion instruments in a variety of themes with as many settings.

Of real note, however, is a sharp increase in the interest and use of percussion instruments in Europe of the thirteenth through fifteenth centuries. This interest continued with perhaps an occasional interruption until these percussion instruments assimilated into the orchestras of the classical period of music in Europe. One of the most obvious positive results of this increased interest is the increased use of musical instruments, including percussion, as the central objects or background subjects in various works of art.<sup>933</sup>

The ninety-nine plates for this document were taken from six extant sources and only begin to portray the available representations from this era. In addition, a number of plates from the extant sources were omitted. The primary reason for omitting a plate or subject was the lack of modern descendants for the extant portrayal.

The extensive acceptance of the percussion instruments is equally significant and is reflected in the origins of the names for each. For example, the French referred to the snare drum as the *taborcillus* or *tabornum*. The English applied the term *drumslade* to the player as well as the instrument. Reese makes the observation that “the terms Drumplayer, Timpanist, and drumslade alternate and are often to be found in reference to one and the

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<sup>933</sup> Gangware, 70.

same performer."<sup>934</sup> The origin of other names for percussion instruments are expanded in the appropriate sections of this document. The variety of names reflects the universal acceptance of the instruments.

A second conclusion drawn from the icons in this document is that percussion instruments from this era did not serve a single primary function. Percussion instruments were used in religious services, secular life, royal orchestras, as solo instruments, in chamber ensembles, in military signaling, as subjects in visual art, and as decorative additions to manuscripts and title pages. Gangware observed a similar trend by stating:

In general the contact between and the interest concerning percussion instruments and the average persons gradually shows more awareness until this interest of the people reached an all-time peak late in the eighteenth century. It is most important to note that during these centuries when the percussion instruments were used entirely outside of the orchestra, the prototype of every basic contemporary percussion instrument [can be] found being used in society.<sup>935</sup>

Percussion instruments were a popular theme in decorative schemes. Title pages of books, title pages of music, churches, public buildings, and Bibles frequently included images of percussion instruments. Religious themes customarily emphasized groups of angels performing on musical instruments often including percussion.

In addition to artistic subjects and depictions, percussion instruments were frequently depicted in ceremony. Paul Lacroix, in his Arts in the Middle Ages and at the Period of the Renaissance, made a statement supporting the percussion use often in connection with festivals, ceremonies, processional music, and occasionally musical scores.<sup>936</sup> Lacroix contended that the application of the drums to military matters led to

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<sup>934</sup> Pulver, 73; Reese, 409.

<sup>935</sup> Gangware, 71.

<sup>936</sup> Paul Lacroix, Arts in the Middle Ages and at the Period of the Renaissance (London: Bickers and Son, 1870), 207.

orchestral scoring. Lacroix's statements reflect practices cited in earlier portions of this study. A logical conclusion is that the practice of using percussion instruments established in the fifteenth century would have certainly continued and become common practice in later centuries. This practice would have contributed to the universal acceptance of percussion instruments and benefited their inclusion in orchestration.

The icons in this study show sixteenth- and seventeenth-century Western European military bands also made extensive use of percussion instruments. Henry Farmer included numerous descriptions of visual art from this era.

The instrumentation of early sixteenth-century military bands is portrayed quite vividly in the woodcut entitled *The Triumph of Maxmilian* [1512]. Firstly, there is a stately mounted band of five trumpeters and five kettledrummers; secondly, another horsed group of five trombones and five bombard players; and thirdly, a charioted band of performers on a shawm, two bombards, two oromorones and a trombone.<sup>937</sup>

Apel supplemented this statement by including additional references. Apel's passage underscored the importance of percussion instruments in band functions:

The mercenary of the Austrian Emperor Karl V and the French King Francois I had large bands of trumpets and Kettledrums, and when they met in the battles of Marignano (1515) and Pavia (1525) the clash of the instruments was as fierce and famous as that of the weapons.<sup>938</sup>

Military bands were not the only band setting in which percussion instruments were used. During the Renaissance, European communities organized wind bands. Even though the main impetus for the band originated with military use of similar groups, the

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<sup>937</sup> Farmer, *Military Music*, 14.

<sup>938</sup> Apel, 446.

bands functioned primarily in a nonmilitary capacity.<sup>939</sup> Margaret Glyn supported the prevalence of these groups by stating, “All of these drums and also cymbals and bell-chimes were in constant use in European bands as portrayed in medieval sculpture.”<sup>940</sup>

Icons reveal that theatrical productions included some of the earliest records of the use of percussion instruments. Incidental music, sound effects, and impressions of battle scenes involved the use of percussion. These types of utilizations are credited with prognosticating the inclusion of the percussion instruments into the orchestra of the Baroque period. In addition to the icons from the extant sources, Edmund Chambers, author of a comprehensive work on medieval drama, supported the early theatrical beginnings of percussion instruments. “The drum (tympanum, tabour) was, as we have seen, somewhat despised and was relegated to the mimes.”<sup>941</sup>

Battle scenes, popular in the Medieval theater, made extensive use of the timpani and Janissary batterie. Gangware endorsed this observation by stating:

In the course of development of drama, the percussion instruments became more important as this art form grew in stature. A scene from a medieval mystery play The Martyrdom of Apollonia, which is illustrated in an article by Edmund Bowles, portrays a whole stage filled with personnel needed to produce the various parts of the play. Although no performers on percussion instruments are evident, musicians are pictured playing the trumpets and woodwind instruments. Since this type of production was popular in the fifteenth and sixteenth centuries, although the exact date for this play is not given, it is possible that kettledrums would be available to accompany the trumpets on occasions.<sup>942</sup>

Reese also made specific references regarding the use of percussion in medieval theater:

“In the Mystère de saint Louis (1472) (three days to perform) at the coronation of the

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<sup>939</sup> Gangware, 107.

<sup>940</sup> Margaret H. Glyn, Theory of Musical Evolution (London: J. M. Dent and Sons, Ltd., 1934), 149.

<sup>941</sup> Edmund K. Chambers, The Medieval Stage 2 vols.: (Oxford: n. p., 1903) 1: 73; as quoted in Gangware, 107.

<sup>942</sup> Gangware, 108. Edmund Bowles article relating to this quote is “The Role of Musical Instruments in Medieval Sacred Drama,” The Musical Quarterly 45/1 (January 1959): opposite page 76.

Sultan's son the rubric sings 'Los trompectes, menestrez, tabours et tous instrumenz c'on oeut deivent sonner'.<sup>943</sup> Reese made a more specific reference in writing that, "During banquet scenes 'hoboyes' sounded and a drum beated either on or off stage. For each phase of a battle there was a special music . . . played by trumpet and drum."<sup>944</sup>

Willi Apel suggests the earliest application of percussion to theater is in Jannequin's vocal chanson La Guerre (1539) about the battle of Marignano in 1515.<sup>945</sup> This type of music would become known as "Battaglia" later in the sixteenth century. Apel gave detailed descriptions of fanfares, drum rolls, and battle effects performed by percussion instruments. Contemporary composers continue the practice of scoring sound effects to be performed by percussionists.

The most important conclusion is that icons from this era provide a valuable resource worthy of additional study. The primary sources of information regarding sixteenth- and seventeenth-century Western European percussion instruments are works of visual art. Musical notation, artistic trends effecting images, and folk music from this era have been included but with less detail since the primary focus is on the instruments in the graphics. Paintings, bas-reliefs, tapestry, murals, and sculpture involving percussion instruments also may provide valuable information. This study presents plates depicting percussion instruments from the sixteenth and seventeenth centuries from the Western European extant sources. In addition to presenting plates, the musical applications and pertinent information relative to each graphic are included. The collection of Western European percussion iconography from extant sources provides the basis for visual evaluation, establishes a sense of prominence relating to the frequency of the subjects in

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<sup>943</sup> Reese, 152.

<sup>944</sup> Ibid., 879.

<sup>945</sup> Apel, 80.

visual art, supplies information on the musical applications of the instruments, and furnishes insight into pedagogical traditions. Additional study expanding the findings of this document, as well as icons from this era, is recommended.



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APPENDICES

APPENDIX A  
LETTERS OF REQUEST

January 16, 1995

Cambridge University Press  
40 West 20th Street  
New York, New York 10014

Dear Sirs:

I am interested in obtaining permission to use parts of Sebastian Virdung's Musica getutscht: a treatise on musical instruments (1511), translated and edited by Beth Bullard, ISBN 0-521-30830-5. This information is extremely important to my dissertation topic.

My dissertation is entitled "Percussion Instruments In Graphic Arts in Sixteenth and Seventeenth Century Western Europe." I am intending to use references to playing practices and reproduce the percussion graphics on the same pages. Specifically, the plates on pages 110, 114, and 118 would be crucial to this project. Each use will include complete reference to author, editor, title, date, and publisher.

Thank you for considering this request. I will be happy to supply any additional information should you so desire. Please advise me accordingly. I look forward to receiving a reply very soon.

Sincerely,



Douglas R. Overmier

February 6, 1995

M.P. Anderson  
Manager  
Rights and Permissions Department  
Cambridge University Press  
40 West 20th Street  
New York, New York 10014


Dear M.P. Anderson:

I am interested in obtaining permission to use parts of Sebastian Virdung's Musica getutscht: a treatise on musical instruments (1511), translated and edited by Beth Bullard, ISBN 0-521-30830-5. This information is extremely important to my dissertation topic. Attached, please find my original letter, your response, and copies of the materials you requested. Please accept these in partial fulfillment of the permission process.

My dissertation is entitled "Percussion Instruments In Graphic Arts in Sixteenth and Seventeenth Century Western Europe." I am intending to use references to playing practices and reproduce the percussion graphics on the same pages. Specifically, the plates on pages 110, 114, and 118 would be crucial to this project. Each use will include complete reference to author, editor, title, date, and publisher.

Thank you, again, for considering this request. I will be happy to supply any additional information should you so desire. Please advise me accordingly. I look forward to receiving a reply very soon.

Sincerely,



Douglas R. Overmier



# North Carolina State University

Department of Music  
Division of Student Affairs

Price Music Center  
Box 7311  
Raleigh, NC 27695-7311  
(919) 515-2981  
FAX (919) 515-4204

September 25, 1995

Ms. Berondina Van Strallen  
The Hague  
Netherlands

Dear Ms. Van Strallen:

Thank you for your time on the telephone. I am interested in obtaining permission to use parts of Marin Mersenne's Harmonie Universelle: The Books on Instruments, translated by Roger Chapman. This information is extremely important to my dissertation topic.

My dissertation is entitled "Percussion Instruments In Graphic Arts in Sixteenth and Seventeenth Century Western Europe." I am intending to use references to playing practices and reproduce the percussion graphics on the same pages. Specifically, the plates on pages 505, 506, 523, 540, 546, 547, 548, 550, 552, and 553 would be crucial to this project. Each use will include complete reference to author, editor, title, date, and publisher.

Thank you, again, for considering this request. I will be happy to supply any additional information should you so desire. Please advise me accordingly. I apologize for this type of request, however, I have searching for a correct address for some time (see attached letter).

I look forward to receiving a reply very soon.

Sincerely,

A handwritten signature in cursive script, appearing to read "Douglas R. Overmier".

Douglas R. Overmier

**APPENDIX B**  
**LETTERS OF RESPONSE**



NOV 25 1994

4021 Grimstead Lane  
Raleigh, North Carolina 27613

November 17, 1994

Director  
Direct Marketing  
Dover Publications  
31 East 2nd Street  
Mineola, New York 11501

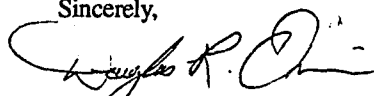
Dear Sirs:

I am interested in obtaining permission to use parts of the book Antique Musical Instruments And Their Players by Filippo Bonanni, ISBN is 0-486-21179-7, in my dissertation. This information is extremely valuable to my topic.

My dissertation is entitled "Percussion Instruments In Graphic Arts in Sixteenth and Seventeenth Century Western Europe." The 152 plates from the 18th-century "Gabinetto Armonico" contain numerous depictions of percussion instruments from this era. The plates will be reproduced and included with text. While I realize the book gives limited permission for reproductions, my document will include all of the plates containing percussion instruments credited to Western Europe during the sixteenth and seventeenth centuries.

Thank you for your assistance in this matter. I hope this request is acceptable. I will be happy to supply any additional information should you so desire. Please advise me accordingly. I look forward to receiving a reply very soon.

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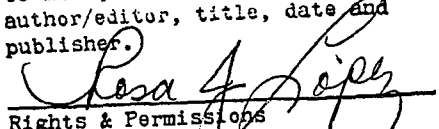
  
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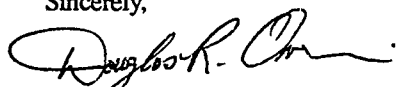
Dear Sirs:

Please accept this second request for permission to use plates from the book Antique Musical Instruments And Their Players by Filippo Bonanni, ISBN is 0-486-21179-7 in my dissertation. Attached, please find a copy of the first request. This information is extremely valuable to my topic.

My dissertation is entitled "Percussion Instruments In Graphic Arts in Sixteenth and Seventeenth Century Western Europe." While I realize the book gives limited permission for reproductions, my document will include all of the plates containing percussion instruments credited to Western Europe during the sixteenth and seventeenth centuries. The plates from the 18th-century "Gabinetto Armonico" contain approximately fifty depictions of percussion instruments from this era. The plates will be reproduced and included with text.

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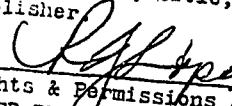


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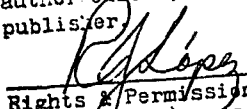
  
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