American Wind Music

American Wind Music:

Its Origin and the Instrumental Tutors

By

Barry Araújo Kolman

Cambridge Scholars Publishing



American Wind Music: Its Origin and the Instrumental Tutors

By Barry Araújo Kolman

This book first published 2018

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data A catalogue record for this book is available from the British Library

Copyright © 2018 by Barry Araújo Kolman

All rights for this book reserved. No part of this book may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright owner.

ISBN (10): 1-5275-0780-7 ISBN (13): 978-1-5275-0780-7

In Memory of my Mom;

whose inner strength, generosity, and love of family were evident by her immense pride for her children and grandchildren.

TABLE OF CONTENTS

Foreword	xi
Acknowledgments	xiii
List of Figures	XV
List of Musical Examples	xvii
Chapter One	1
Introduction	
Background Information	1
Purpose and Scope of Study	5
Method of Investigation	6
Chapter Two	9
Early American Instrument Makers and their Instruments	
The Instrument Makers	9
The Instruments	
The Clarinet	
The Flute	
The Flageolet	
The Oboe	
The Bassoon	
The Serpent	
The French Horn	
The Trumpet	
The Bugle	
The Kent Bugle	
The Trombone	

Chapter Three	27
The Authors and the Works	
Samuel Holyoke	27
Joseph Herrick	36
Oliver Shaw	38
Timothy Olmsted	41
William Whiteley	44
Ezekiel Goodale	
Henry E. Moore	56
Chapter Four	59
Woodwinds	
The Clarinet	59
The Flute and the Flageolet	63
The Oboe (Hautboy)	68
The Bassoon	71
Chapter Five	75
Brass	
The French Horn	75
The Serpent	77
The Kent Bugle	82
The Bugle and the Trumpet	
The Trombone	85
Chapter Six Ensemble Music	87
Chapter Seven	111
Appendix A	115
Appendix B Selections Found in more than One Tutor	117
Appendix C	123
Annotated List of Significant Pieces Found in the Tutors	123
- · · · · · · · · · · · · · · · · · · ·	

Appendix D	127
Selected Bibliography	129
Selected Discography	133

American Wind Music: Its Origin and the Instrumental Tutors

ix

FOREWORD

Since the American Revolution, amateur music making has continuously been prevalent in small towns as well as in larger cities. The evening musical *soirée* was a common form of family entertainment and an enjoyable way of socializing with relatives, neighbors, and friends.

Instructional books were becoming readily available and those interested were now given a choice, for the first time in the new Republic, of learning to play woodwind and brass instruments. This gave rise to wind ensemble music (already common in Germany as *harmoniemusik*) scored for various combinations of winds performing together.

Until the early 20th Century, "school bands" were relegated to providing music for parades, and athletic events. In spite of this relatively slow acceptance into the curriculum, instrumental music making was alive and well in homes across the new America. In fact, there were volumes of music now available, some from Europe but also much written by the new American composer as we learn from Dr. Kolman's informative book.

The present volume meticulously traces the beginnings of this new musical phenomenon. Dr. Kolman painstakingly and logically explains to the reader which instruments were available at the time following the American Revolution. Each instrument is described in great detail, including original fingering charts. In addition, we are given a detailed insight into the instructional methods used at the time to teach the playing of these instruments. With this background, and knowing the limitations of these wind instruments, we are able to understand better this new repertoire.

With such a large amount of music written, Dr. Kolman astutely focuses his attention on seven prolific, but influential, composers of wind music. This music is found mostly in their instructional tutors. The composers are Samuel Holyoke (*The Instrumental Assistant*), Joseph Herrick (*The Instrumental Preceptor*), Oliver Shaw (*For the Gentlemen*), Timothy Olmsted (*Martial Music*), William Whiteley (*The Instrumental Preceptor*), Ezekiel Goodale (*The Instrumental Director*), and Henry E. Moore (*Merrimack Collection of Instrumental and Martial Musick*).

xii Foreword

Copies from the original scores show us firsthand how these pieces were composed and, specifically, for what instrumentation. By including copious examples, we are brought back in time to the latter part of the 18th Century.

Though publications do exist regarding the history of wind music on the world stage, this book examines in detail the origins of American wind music. It is clearly demonstrated that, in spite of winning political independence, the new nation was still influenced by the musical culture of their former enemy. It would take almost another century before the "American sound" would finally evolve.

Dr. Kolman's book, *American Wind Music: It's Origin and the Instrumental Tutors*, is a first of its kind in its subject matter and scope. Included are extensive footnotes, and both a bibliography and discography. The book is written in a clear and intelligent fashion. Facts are reinforced by examples and we gain an insight into the earliest beginnings of what would eventually become an influential musical national movement.

By studying this book, we learn how important wind music was to the cultural tapestry of 18th Century America. As a result, we can now have a better appreciation of American wind and band music and its importance in today's daily life whether we are an amateur or professional musician or just a lover of good music.

Terry Oxley, D.A. Director of Bands, Professor Emeritus Bloomsburg University Bloomsburg, Pennsylvania

ACKNOWLEDGMENTS

A special debt of gratitude is on order for the extremely courteous and prompt music library and inter-library loan staff at the University of Northern Colorado at Greeley. Many thanks to the following UNC Professors: Dr. James Upton, Dr. Richard Bourassa, Mr. William Jamieson, and Dr. Norbert Van Dinter, for their advice, impeccable proofreading abilities, invaluable assistance, and enthusiasm.

Grateful acknowledgment to the staffs of the following institutions: the New York Public Library at Lincoln Center, the Yale University Library, the Utica Public Library, the Foger Library at the University of Maine-Orono, and the University of Washington-Seattle Library.

A debt of thanks to Synthia Smout for her editorial suggestions and for meticulously producing the first draft of the manuscript.

LIST OF FIGURES

Figures

1.	Holyoke's The Instrumental Assistant, Vol. I, title page	31
2.	Holyoke's The Instrumental Assistant, Vol. II, title page	34
3.	Holyoke's The Instrumental Assistant, Vol. II, frontispiece	
4.	Herrick's The Instrumental Preceptor, title page	
5.	Shaw's For the Gentlemen, title page	
6.	Olmsted's Martial Music, title page	
7.	Whiteley's <i>The Instrumental Preceptor</i> , title page	
8.	Goodale's The Instrumental Director, 3 rd edition, title page	
9.	Holyoke's, The Instrumental Assistant, Vol. I,	
	"Dictionary of Musical Terms"	54
10.	Goodale's The Instrumental Director, 5 th edition,	
	"Dictionary of Musical Terms"	55
11.	Moore's Merrimack Collection of Instrumental	
	and Martial Musick, Vol. I, title page	58
12.	Whiteley's The Instrumental Preceptor,	
	"A Diatonic Scale for the Clarinet"	62
13.	Goodale's <i>The Instrumental Director</i> , 5 th edition,	
	"Scale of Notes Affected By Additional Keys" (Flute)	65
14.	Goodale's <i>The Instrumental Director</i> , 5 th edition, "Scale of the	
	Different Ways of Fingering Many of the Notes, When the	
	Learner is Far Advanced" (Flute)	66
15.	Goodale's <i>The Instrumental Director</i> , 5 th edition, "Plain Scale"	
	and "Scale of Flats and Sharps" (Flageolet)	67
16.	Holyoke's The Instrumental Assistant, Vol. I,	
	"Plain Scale" (Hautboy)	70
17.	Whiteley's Preceptor, "A Chromatic Scale for the Bassoon"	73
18.	"Scale for the Serpent without Keys"	80
19.	"Complete Scale for the Serpent with Keys"	81
20.	"Diatonic Scale of the Kent Bugle"	84
21.	Chromatic Fingerings for the Kent Bugle	84

LIST OF MUSICAL EXAMPLES

Examples

1.	"A Scale of the Natural Notes of the Horn"	22
2.	Whiteley's <i>The Instrumental Preceptor</i> ,	
	"The Different Degrees of Time Explained"	48
3.	Goodale, Notes on the French Horn	79
4.	The Harmonic Series for the Trumpet/Bugle	85
5.	"Quick March in the Battle of Prague,"	
	Goodale's <i>The Instrumental Director</i> (5 th edition)	90
6.	"Handel's Water Piece," Holyoke's	92
	The Instrumental Assistant, Volume I	
7.	Excerpt from Handel's "Water Music"	94
8.	"President's March," Herrick's	
	The Instrumental Preceptor	
9.	"President's March," Holyoke's	100
	The Instrumental Assistant, Volume I	
10	. "Hail Columbia," Goodale's	
	The Instrumental Director (3 rd edition)	101
11	. "Kennebec March," Goodale's	
	The Instrumental Director (3 rd edition)	103
12	"Jolley's March" by Herrick	107
13	. "Air No. 2" by Shaw	108

CHAPTER ONE

INTRODUCTION

Background Information

During the half century following the end of the American Revolution (the Treaty of Paris was signed in 1783), a period of time referred to by some as the Federal Era¹, many instrumental instruction books, called tutors, were published by American printers. Samuel Holyoke, Oliver Shaw, Joseph Herrick, and Ezekiel Goodale are typical authors of these publications. These instrumental tutors, though usually addressed to the beginner, include instructions for and descriptions of instruments that were played by both the amateur and the professional. These include woodwinds (German flute, clarinet, oboe, bassoon), brasses (horn, trumpet, bugle, trombone, serpent), strings (violin, on occasion viola or tenor, violoncello or bass viol, double bass), percussion (drum, cymbals, tambourine, triangle), and piano.

Most of the music and instruments used in late 18th Century America were European exports. After the turn of the century, there were a few American woodwind makers like Jacob Anthony in Philadelphia and William Callender in Boston. Very few brass instrument makers were active during the early years of the 19th Century. One of the few surviving brass instruments is a crude forester's horn made by John Dash of New York in 1783. By the 1830's, a number of American wind and string makers, including George Catlin, Asa Hopkins, Abraham Prescott, and William Whiteley, became very active in instrumental production. During these first three decades of the new century, amateur musicians were able to purchase instrumental tutors published in such places as Exeter, New Hampshire; Hallowell, Main; and Utica, New York.

_

¹ Richard Crawford, jacket notes, *Music of the Federal Era*, New World Records, NW 299, 1978. Charles Hamm, in his *Music in the New World* (New York: W.W. Norton and Company, 1983), on page 83, calls the new republic, Federal America.

Though the pianoforte and other keyboard instruments seemed to be the favorite of the "ladies", the gentleman amateur was encouraged to play other instruments, especially the violin or German flute (the term used for the transverse flute to distinguish it from the recorder, or "common flute").² He could study privately with music teachers, who were usually members of the theater orchestras, or other newly arrived European professionals. This opportunity to learn to play a musical instrument was afforded to only those persons living in cities and larger towns boasting one or more "professors of musick", and to wealthy planters, merchants, and professional men with means to hire instructors for their children. Those who could not pay for private teachers could try to learn from instructions in the tutors and from playing in musical groups sponsored by the local militia or school.

Late in the 18th Century, however, a group of musicians, mostly from New England, began offering instruction in instrumental music in America's towns and villages. Perhaps the most important pioneer was Samuel Holyoke (1762-1820). A graduate of Harvard in 1789, he taught at singing schools in Massachusetts and southern New Hampshire for most of his life, was a prolific composer of hymns, psalms, and sacred songs, and brought out several of the largest collections of vocal music published in Federal America. Late in the 18th Century, he began offering instruction in various instruments in such New England towns as Salem, Essex, and Exeter, and organizing groups of instrumentalists for church and community performances.

Holyoke was among the first in America to attempt to provide instruction and music for amateur instrumental groups. With the publication of the first volume of *The Instrumental Assistant*, he announced in the "Oracle of the Day" (November 29, 1800):

In this work, the compiler has attempted to give some assistance to beginners upon musical Instruments. —As a book of this kind has been much wanted, he hopes that the design will meet approbation. . . . ⁴

² Adam Carse, *Musical Wind Instruments* (New York: Da Capo Press, 1965), p. 107.

³ Mauer Mauer, "The 'Professor of Musick' in Colonial America," *Musical Quarterly* XXXVI (October 1950):511.

⁴ Louis Pichierri, *Music in New Hampshire* (New York: Columbia University Press, 1960), p. 187.

Even though most instrumental groups--professional or amateur--played from parts copied out by hand, Holyoke pointed out how unsuccessful this could be:

Learners, when attempting to perform in concert, have been continually embarrassed by the disagreement of the copies, errors in transcribing their pieces, and the want of seconds and basses, etc. Those inconveniences, should this work meet acceptance, will be remedied....⁵

This tutor was designed particularly for the instructors who would "find some abridgement to their labors, should they see proper to introduce this book among their scholars." According to Willhide, this manual was the most comprehensive volume of its kind published in America up to 1800. In addition, it was the first graded instrumental primer printed in this country.

Later instruction books are addressed to the private gentleman, to schools, instrumental clubs, musical societies and associations, and to field and full military bands. The number of such books that appeared in 1807 and after reflect the influence of both the Embargo Act of that year (which made it difficult if not impossible to obtain European publications and instruments) and the growing number of military bands formed as a result of the War of 1812.

A note at the end of Ezekiel Goodale's introduction to *The Instrumental Director* indicates clearly the audience for whom these instruction books and collections of arrangements were intended:

The preceding instructions having been intended particularly for those who learn music merely as an amusement, and who can devote but a small proportion of their time for the acquisition, the most simple directions only are given, therefore when we say of an instrument that it is imperfect and little used, we would not be understood as saying that these imperfections *cannot* be overcome; but a person, who has perhaps not more than an hour

⁶ Samuel Holyoke, *The Instrumental Assistant*, 2 vols., (Exeter, New Hampshire: Ranlet and Norris, 1800)

⁵ Pichierri, p. 187.

⁷ J. Lawrence Willhide, "Samuel Holyoke: American Music Educator," (Ph.D. dissertation, University of Southern California, 1954), pp. 258-59.

or two in a week to spare, for the purpose of learning, had better choose a more simple instrument.⁸

In other words, Goodale suggests that those music dilettantes with little spare time should choose the flute or clarinet, the "simpler" instruments, rather than the oboe or bassoon, the "imperfect instruments" which require "the assistance of a good musical ear to blow it in tolerable tune."

Along with lists of band personnel and the few available published scores and parts, the tutors record the change in the instrumentation of bands in this period from the Harmoniemusik ensemble typical of Mozart's time (usually two each of oboes, clarinets, bassoons, and horns) to an ensemble with more brass, like that called for in the "Kennebec March" found in Goodale's tutor.¹⁰

Most of these instrumental collections contain new pieces, such as Herrick's "Jolley's March", Shaw's "Governor Arnold's March and Air", and "Kennebec March". These simple marches and dances mark the true beginning of indigenous instrumental ensemble music in America. ¹¹

The many small local instrumental ensembles that were formed to satisfy the strong interest in amateur music making were the start of a long tradition of community bands in America. Local militia bands¹² such as the Salem (Massachusetts) Brigade Band (established 1806) and the 11th Regiment Band of New York (established 1810) as well as civic bands such as those formed in Hallowell (organized around 1820); Portland, Maine (organized in 1827); and Allentown, Pennsylvania (organized in 1828)¹³ were to be a central part of the musical education of so many Americans in the 19th and early 20th Centuries.

⁸ Ezekiel Goodale, *The Instrumental Director*, 3rd ed. (Hallowell, Maine: Glazier, Masters and Co., 1829), p. 28.

⁹ Goodale, p. 9.

¹⁰ Goodale, p. 40. The instrumentation for this march is: 2 clarinets or oboes, F clarinet, 2 F flutes, C clarinet, 2 horns, trumpet in F, bassoon, trombone, and serpent.

¹¹ Hamm, p. 110.

¹² These bands, overall, were relatively independent units and should probably be considered civilian bands, since their personnel were not regularly involved in military duties.

¹³ The Allentown Band is the oldest civilian concert band still performing in the United States today.

Introduction 5

Purpose and Scope of Study

The Purpose of this study is to examine and analyze a group of American publications as to their historic and musical significance. These publications fall into two categories: (1) those books containing instructional information on several instruments (woodwinds, brass, percussion, and strings) with accompanying musical ensemble selections and, (2) those tutors that deal solely with one instrument or with one family of instruments.

Several studies concerning the latter have already been made. For example:

Elizabeth Abbey. "The Bassoon in the American Colonies and the United States to 1800." Michigan State University, in progress.

Kenneth Gene Evans. "Instructional Material for the Oboe." State University of Iowa, 1963. This study includes information on American works.

Georgia Kay Peebles. "The Bassoon in America, 1800-1840, As Depicted in Contemporary Pedagogic Sources." University of Maryland, 1981.

Charles Edmond Sollinger. "The Music Men and the Professors--A History of String Class Materials in the United States, 1800-1911." University of Michigan, 1970.

However, in examining bibliographies by Adkins and Dickinson, ¹⁴ and by Mead, ¹⁵ no doctoral studies were located dealing with general method and ensemble books published during the Federal era. The cumulative keyword title indexes of *Dissertation Abstracts International* provide further proof that no advanced research has been completed concerning the origins of American wind music and general instrumental tutors.

In searching for these early American general method tutors, several sources were consulted. In Camus' book, 16 several instrumental collections were listed including those by Holyoke, Shaw, and Goodale.

¹⁴ Cecil Adkins and Alis Dickinson, ed., Doctoral *Dissertations in Musicology* (Philadelphia, Pennsylvania: The American Musicological Society, 1984).

¹⁵ Rita H. Meads, *Doctoral dissertation in American Music* (Brooklyn, New York: Institute for Studies in American Music, 1974).

¹⁶ Raoul F. Camus, *Military Music of the American Revolution* (Chapel Hill: University of North Carolina Press, 1967), p. 190.

Georgia Peeples, in her synopsis in *Dissertation Abstracts International*, ¹⁷ mentions Herrick, Moore, and Whiteley as three other compilers. According to Charles Hamm, similar instrumental collections were published by Amos Albee, Daniel Belknap, and Uri K. Hill. ¹⁸

By using the Online Computer Library Center, a computerized book search system of holdings in libraries around the country, and Wolfe's bibliography, ¹⁹ the following 19th Century volumes may be located: *The Instrumental Assistant*, Volumes I and II, by Samuel Holyoke; *The Instrumental Preceptor* by Joseph Herrick; *Martial Music* by Timothy Olmsted; *For the Gentlemen* by Oliver Shaw; *The Instrumental Preceptor* by William Whiteley; *The Instrumental Director*, 3rd and 5th editions, by Ezekiel Goodale, and *Merrimack Collection of Instrumental and Martial Musick* by Henry Moore.

Though other early 19th Century American musicians may have written general instrumental method books, only the above mentioned tutors were found. These eight manuals are the main focal point of the dissertation. Since they span a period of thirty-six years, the selected instruction primers served as a good representation of the type of band music that was available as well as the kind of instrumental instruction that was common during the Federal era.

Method of Investigation

The instructional and musical content of the method books were studied for the purpose of gaining insight into early American teaching techniques and wind literature. A comparative examination was made of the manner in which each manual treated the instruments in the area of instruction, noting the similarities and discrepancies in the instrumental lessons. Areas of comparison included: embouchure, fingering charts, breathing techniques, hand position, and reeds. Contemporary teaching strategies were cited in an effort to demonstrate to the modern teacher and student the relevance of this information.

Georgia Kay Peeples, "The Bassoon in America, 1780-1840, as Depicted in Contemporary Pedagogic Sources," DAI 43 (1982): 13A (University of Maryland).
 Charles Hamm, *Music in the New World* (New York: W.W. Norton and Co., 1983), p. 109.

¹⁹ Richard J. Wolfe, *Secular Music in America, 1801-1825: A Bibliography* 3 vols. (New York: New York Public Library, 1964).

Introduction 7

The immense popularity of amateur music making in Federal America is apparent when one discovers the huge quantity of ensemble scores included in the tutors. Selected representative works from this large aggregation were studied in terms of genre, instrumentation, form, style, and pedagogic and musical significance. As a result of this analysis, several observations were made concerning general musical taste, typical band/wind ensemble repertoire, and the musical acumen of the amateur musician.

CHAPTER TWO

EARLY AMERICAN INSTRUMENT MAKERS AND THE INSTRUMENTS

The Instrument Makers

Though instrument making in America at the start of the 19th Century was in its infancy, there were several local artisans producing finely crafted musical instruments. A steady increase in demand for domestic wind instruments by militia bands, amateur music clubs, and school organizations caused a rise in the number of instrument makers. A brief description of these early pioneers, who supplied woodwinds and brasses to a growing musical public, follows

Jacob Anthony (Germany, 1736--Philadelphia, Pennsylvania, December 29, 1804) was one of the earliest European-born woodwind makers to bring his skills to the New World. He arrived in Philadelphia in about 1764 and remained in business as a musical instrument maker until his death. An ebony flute, which he made, can be found in the Dayton C. Miller collection at the Library of Congress. The flute has three graduated upper joints, a foot joint for low C, and five silver keys. His son, Jacob Anthony, Jr. until 1811, continued Anthony's business.

William Callender was one of the first musical instrument makers in Boston. Few details are known about his life except that he manufactured instruments from 1796 to at least 1820. The Lexington Historical Society has in its possession a wooden fife of his.

William Whiteley (Lebanon/Goshen, Connecticut, 1789-Knoxboro, New York, March 25, 1871) may well be the first American woodwind maker. He sold bassoons, clarinets, flageolets, flutes, bugles, serpents, and fifes in Utica, New York from 1810-1853. It is of some historical significance that Whiteley's Utica workshop, almost entirely intact, was discovered in 1965. According to a paper read at the 36th Annual meeting of the American Musicological Society in Toronto, Canada, in November

of 1970,¹ the Whiteley workshop contained items that show the actual process of manufacture of pre-industrial boxwood instruments from raw materials to the finished product. An inventory of this find included: pine models, lathe mandrels, unfinished blanks in various stages of finish, brass key models, brass keys and springs, a key anvil, assorted ivory and bone mortise rings, the maker's metal stays, miscellaneous tools, and three unfinished instruments (a clarinet, flageolet, and guitar). Finished Whiteley instruments are in the Dayton C. Miller Collection and the Deansboro, New York Musical Museum. Unfinished instruments, parts, tools, and models are in the Deansboro Musical Museum and in the private collection of F. R. Selch, New York.

While working in Hartford, Connecticut from about 1799 to about 1813, George Catlin (1777--Camden, New Jersey, May 1, 1852) made a wide variety of instruments including woodwinds, strings, harpsichords, pianos, and organs. By 1815, Catlin had moved to Philadelphia, where he continued his business on a smaller scale. Examples of his work are found at the Smithsonian Institution and in the collection of Phillip Young in Victoria, British Columbia.

A clockmaker from 1810 to 1825, Asa Hopkins (Litchfield, Connecticut, 1779--New Haven October 27, 1838) began making woodwind instruments in 1829 in a section of Litchfield, Connecticut later known as Fluteville. Some of his finely crafted instruments are at the Library of Congress (Dayton C. Miller collection), the Smithsonian Institution, and the Yale University Collection. These instruments are usually made of boxwood with ivory rings. The clarinets often have five flat brass keys. His flutes have four to six flat brass or cupped silver keys.

One of the earliest American brass instrument makers was Nathan Adams (Dunstable, New Hampshire, August 21, 1783--Milford, New Hampshire, March 16, 1864). According to educator David Hamblen:

-

¹ Victor Fell Yellin and Frederich R. Selch, "William Whiteley's Workshop," *Abstracts of Papers Read at the Thirty-sixth Annual Meeting of the American Musicological Society, Toronto, Canada* (Richmond, Virginia: William Byrd Press, November, 1970), pp. 7-8.

. . . the rotary valve was invented by Nathan Adams of Milford, New Hampshire in 1824, and it was first made in Lowell, Massachusetts . . . Adams used a gut string wound on a drum to activate the valve. 2

Adams also developed a "permutation trumpet" which had three valves with moveable tongues or flaps within the windway. Eliason refers to this valve system as Adams Twinvane valves.³ An Adams trumpet of this type, dating from about 1830, is on display on board the USS Constitution. In spite of Adams' work, no lasting progress toward a brass instrument industry in the United States was made until the mid-1830's.

Samuel Graves (New Boston, New Hampshire, July 2, 1794--Wells River, Vermont, November 18, 1878) began making woodwind instruments in West Fairlee, Vermont in the early 1820's. From about 1837 through the 1840's Graves and Company, after moving to Winchester, New Hampshire, produced both brass and woodwind instruments. James Keat, a known London instrument maker, evidently introduced brass instrument making to the well-established musical instrument firm. Keat immigrated to the United States and settled in Winchester in the mid-1830's

Graves' water-powered factory was the largest in the United States for many years. By 1842, his products included flutes, clarinets, key bugles, ophicleides, and several sizes of brasses with Vienna twin-piston valves. Graves named his larger valve brasses trombacellos. His business was moved to Boston, where he and two of his sons continued manufacturing brass instruments until the 1870's.

Graves' well known E flat and B flat-keyed bugles were produced in large quantities. He manufactured eight-key flutes and twelve- and thirteen-key clarinets that were well made and quite popular. Several examples of his instruments are now housed in the Henry Ford Museum (Pilsbury Collection) in Dearborn, Michigan.

³ Robert E. Eliason, "Early American Valves for Brass Instruments," *The Galpin Society Journal XXIII* (August 1970):86.

² David Hamblen, "Rotary Valves Are American," *Music Journal XX* (March 1962):58.

⁴ Robert E. Eliason, *Keyed Bugles in the United States* (Washington, D.C.: Smithsonian Institution, 1972), pp. 16-19.

The Instruments

In order to understand fully the contents of the tutors, a basic knowledge of the musical instruments played in this era is important, especially the instrumental lesson portions. To this end, the physical and musical attributes of those wind instruments mentioned in the manuals are overviewed below

The Clarinet

The classical five-key clarinet, with eight finger holes, was the most common type of clarinet manufactured during the Federal era. The thumb of the left hand operated the speaker key and first open hole located on the underside of the instrument. The left first finger was for the upper key ("A" key) and the first open hole on top. The fourth finger of the left hand played the two lowest keys, the open-standing "E/B" key and the closed "F sharp/C sharp" key. The fourth finger of the right hand covered the lowest open hole and was used to depress the short "A flat/E flat" key located near the bottom of the clarinet. Some clarinets, resembling English models, had a long sixth "A/B" trill key found on the upper side of the instrument for the right hand. Other American-made clarinets were equipped with a "C sharp/G sharp" key operated by the left little finger thus copying those clarinets found in continental Europe.

The five-key clarinet was commonly in six pieces, namely:

- (1) The boxwood or ebony⁵ mouthpiece was small and tapered, with a very narrow aperture, a long lay, and a short table.⁶ The reed was correspondingly small, narrow, and hard, and was tied on with string.
- (2) The barrel or socket.

⁵ Boxwood is the hard, fine-grained, compact wood of the box evergreen shrub or tree. Ebony is a hard, heavy wood that comes from various tropical trees. Various types of rosewood, including grenadilla, are often mistakenly called ebony. Today, most mouthpieces are made of ebonite (a hard rubber substance), crystal (glass), or plastic.

⁶ In this study, the table of the mouthpiece refers to the flat part below the opening on which the thick bottom part of the reed is placed. The lay or facing is the opening from the tip of the mouthpiece to the point of contact the reed makes with the mouthpiece.