

# An Historical Lineage of the Modern Baritone Horn and Euphonium

by

Earle L. Louder

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## **I. THE PURPOSE:**

The purpose of this treatise is to trace the heritage of the baritone horn and euphonium as far back in history as is necessary to establish a correlation to the type of conoidal bore which the instrument now possesses. Also, a comparison to its voice in the brass family, regardless of nomenclature, is necessary to establish a line of ancestry.

## **II. THE NEED:**

Presently we are involved in an exciting time in the development of the instruments of the tuba family of which the baritone horn and euphonium are a part. In 1973 the international organization called T.U.B.A. [Editor: Now called [ITEA](#)] (Tubists Universal Brotherhood Association) was set in motion at Indiana University in Bloomington, Indiana. The aim of T.U.B.A. is "to maintain a liaison between those who take a significant interest in the instruments of the tuba family... their development, literature, pedagogy and performance." In May, 1975 at the First North American National T.U.B.A. Symposium at the University of Illinois in Champaign-Urbana, Illinois the author was elected National Euphonium Coordinator for the years 1975 through 1977. Since there has been no substantial paper written to date giving a detailed historical lineage of the baritone horn and euphonium, it is assumed that the information this treatise presents in one compilation will be of benefit nationally and internationally in redefining the image of the two instruments. These findings will be made available through T.U.B.A. to help in the fulfillment of its aims.

## **III. PROBLEM AREAS:**

1. Today the baritone horn and euphonium nomenclature is, to an extent, standardized. In earlier centuries, however, the two names have been applied to various kinds of instruments, some of which were not even wind instruments. This study attempts to clarify and define these differences in a chronologically oriented manner.
2. There is much difference of opinion, technically speaking, as to the generic family from which the baritone horn and euphonium actually have evolved. In this study an attempt has been made to explore these differences through investigation of the various generic families of wind instruments and to arrive at a conclusion based on this research.

## **Introduction**

### **Definition of Nomenclature**



As an introduction to the Baritone Horn and Euphonium it is important that the two terms be defined first and then classified. According to Webster's Dictionary the name "baritone" is derived from the Greek word "barytonos", whose root words are "barys" (deep) plus "tonos" (tone); hence, the baritone horn is a "deep toned horn."<sup>1</sup> The name "euphonium" is derived from the Greek word "euphonos" plus (harmon)ium; reconstructed, "eu" (well) plus "phone" (voice or sound) plus "ium" (harmonium -- a small kind of reed organ); hence the euphonium is a "well sounding instrument."<sup>2</sup> In the hands of a competent performer either horn truly is a "deep toned well sounding" instrument. Since in 1973 the name "euphonium" was adopted as the universal collective name of the two instruments by the membership of T.U.B.A., this terminology shall be used for future references in this paper.

### **Lip-Vibrated Aerophones**

The euphonium belongs to the family of brass wind instruments, partly because it is constructed of brass metal and also because it belongs to that group of wind instruments (aerophones) in which the lips of the player serve as the vibrator. The classification of lip-vibrated aerophones is a complex and uncertain task. The uncertainty is with respect to both the lower and higher registers of the natural scale (open overtone series).

The true playing technique of lip-vibrated aerophones is based exclusively on overblowing. This principle of overblowing is not affected by the existence of lateral hole instruments such as the cornetts and serpents, which produce a scale in the same manner as the transverse flute and recorders. Such technique is not true brass technique. The cornetts and serpents will be cited in this paper because of other similarities which may or may not have kinship with the euphonium. As valves were gradually perfected the lateral hole instruments eventually went out of use. Therefore, it appears that the normal method for producing tones on the lip-vibrated aerophones is by overblowing.

### **Classification of Lip-Vibrated Aerophones**

In general there are two classifications of lip-vibrated aerophones: 1) specific classification - based on the presence or absence of the pedal tone, and 2) generic classification - based on the upward limitations of the instruments.

### **Specific Classification**

In 1854 Dr. Carl Schafhautl noticed that the proportions of a tube had a decisive influence upon the ability of the instrument to produce a pedal tone (fundamental). The wide bore tubes produced the pedals easily while the narrow bore tubes were unable to produce the pedal or it was very unstable, depending upon whether a player had a lip for producing pedal tones. Consequently, he divided

brass-wind instruments into two groups: 1) Ganginstrument, whole-tube group with pedal tone, and 2) Halbinstrument, half-tube group without pedal tone, using the second partial of the overtone series as the lowest note possible thus using only one-half of the actual length of the tube.

The principal families of the lip-vibrated aerophones are as follows: 1) the Bugle-Tuba-Flugelhorn-Saxhorn Family, 2) The Horn Family, 3) The Trombone Family, and 4) The Trumpet Family. Note that the first family has a somewhat complex name. All these names are equivalent and designate only one type of instrument, the bugle.

The specific classification is as follows:

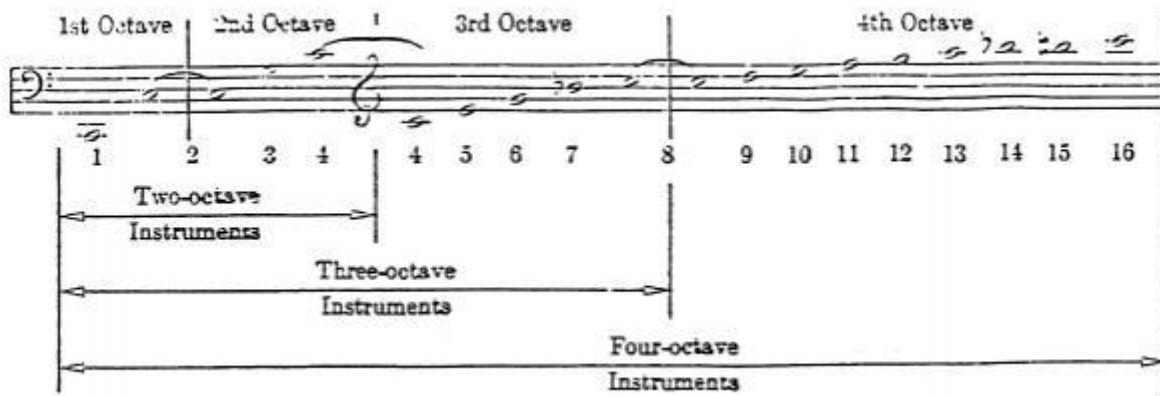
1. The instruments of the bugle family are without exception whole-tube instruments with pedal tone.
2. The instruments of the horn family are in two specific groups:
  - the lower horns (Bb basso through F) are half-tube instruments without pedal tone.
  - the upper horns (beginning with G) are whole-tube instruments with pedal tone.
3. The trombone in the higher positions (1st through 3rd approximately) is a whole-tube instrument with pedal tone, while in the lower positions (approximately 4th through 7th) it tends to be a half-tube instrument without pedal tone.
4. The instruments of the trumpet family are divided into two groups similar to the horn family:
  - the lower trumpets (Bb basso through E) are half-tube instruments without pedal tone.
  - the higher trumpets (F to Ab) are whole-tube instruments with pedal tone.

NOTE: Only the true trumpets are referred to here and not the modern trumpet in Bb or higher.

To summarize the specific classification as it relates to the euphonium, it is possible to say that the bugle family has the pedal tone on all of its members from whence the euphonium has evolved.<sup>3</sup>

### **Generic classification**

The generic classification of lip-vibrated aerophones is based on their upper register. The upper limit of partial tones on brass instruments depends upon the ability of the player and current practice. There are, however, certain well established facts which may be taken as a guide for the generic classification of lip-vibrated aerophones. There are three clearly recognizable groups of lip-vibrated aerophones: 1) Two-octave instruments, 2) Three-octave instruments, and 3) Four-octave instruments. These groups are based upon the following ranges of partial tones of the natural scale (overtone series) produced by various types of lip-vibrated aerophones:



1. The first group, the two octave instruments, is composed mostly of primitive conoidal bore (cone shaped) instruments producing a pedal tone and a limited number of partials up to and including the fourth partial tone. Instruments made from animal horns, tusks, and even tree bark belong to this group.
2. The second group, the three octave instruments, is composed of cylindrical (cylinder shaped) and conoidal bore instruments normally producing partial tones up through the eighth partial. There are two sub-groups of these instruments:
  - the whole-tube instruments with pedal tone consisting of the bugle family.
  - the half-tube instruments without pedal tone consisting of the cornet (post horn) family.

The slide trombone also belongs to this group of three octave instruments and fits into both sub-groups as was indicated earlier. It is possible by exceptional physical accomplishment for a player to obtain partial tones above the eighth partial on instruments of this group.
3. The third group, the four octave instruments, is composed of cylindrical and conoidal bore instruments, normally producing partial tones up through the sixteenth partial. There are two sub-groups of these instruments:
  - the majority of four octave instruments belong to the half-tube sub-group with no pedal tone. The low horns and trumpets mentioned in the specific classification presentation belong to this sub-group.
  - the whole-tube sub-group with pedal tone consists of the higher pitched horns and trumpets also mentioned earlier.

In the generic classification the descriptions, conoidal (cone) and cylindrical (cylinder), are used. The instrument which has a distribution of two-thirds of its tubing conoidal and one-third cylindrical is classed as a conoidal bore instrument. The bugle family fits into this classification.

The instrument which has the reverse proportion is classed as a cylindrical bore instrument. The trumpet and trombone families fit into this classification. It appears, therefore, that there are no purely conoidal or cylindrical tube instruments. The relative proportion of one shape or the other determines to which sub-group an instrument is assigned.<sup>4</sup>

At this point it is possible to say that the euphonium is a lip-vibrated aerophone specifically belonging to the whole-tube bugle family having a pedal tone, generically evolving from the second group of lip-vibrated aerophones (first sub-group), a three-octave conoidal bore instrument producing up through the eighth overtone partial.

On the following two pages is a condensed pictorial ancestral tree showing an outline history of the "euphonium" which will be pursued in depth through the rest of this treatise. As an appendage to this

treatise there are included additional selected illustrations of the various instruments and information presented herein. (see Appendix)

PLATE A

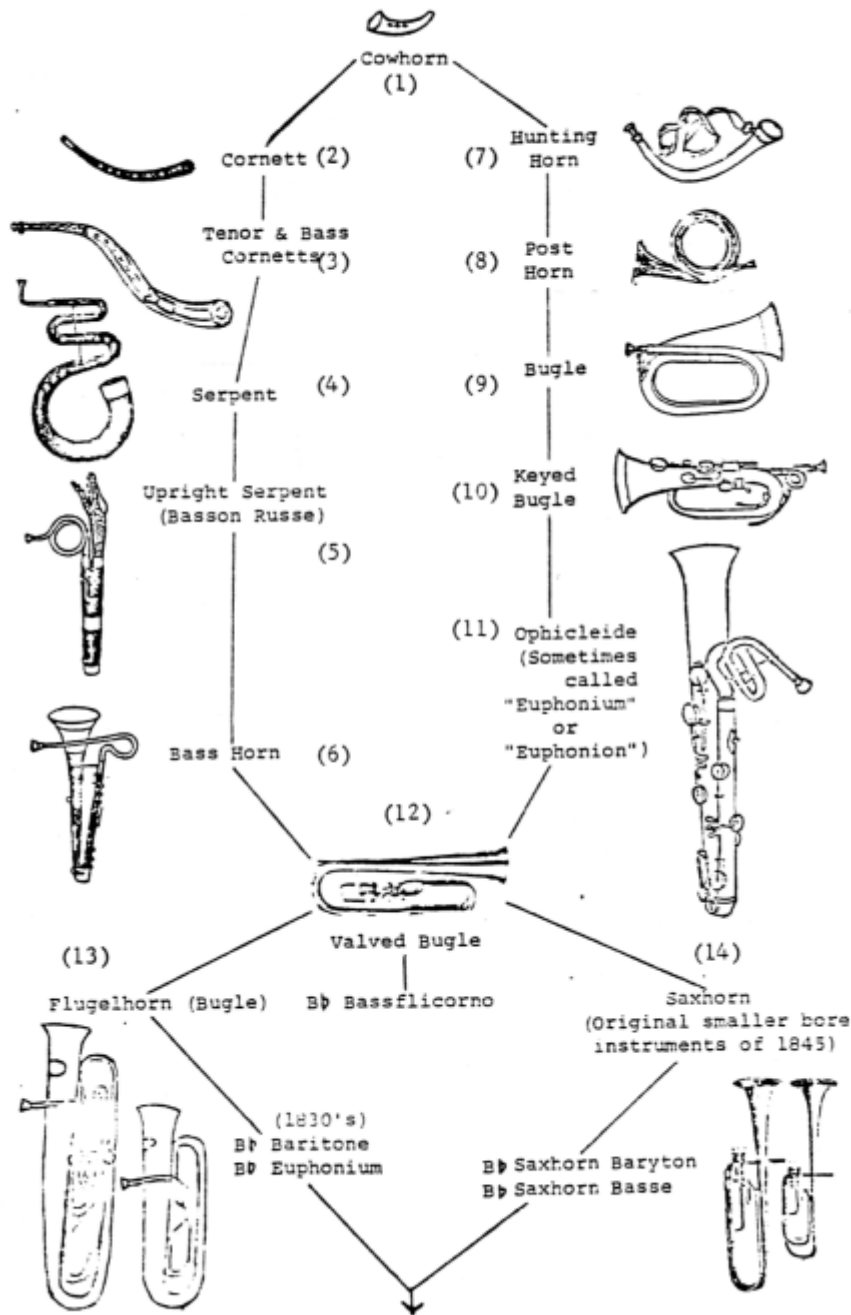
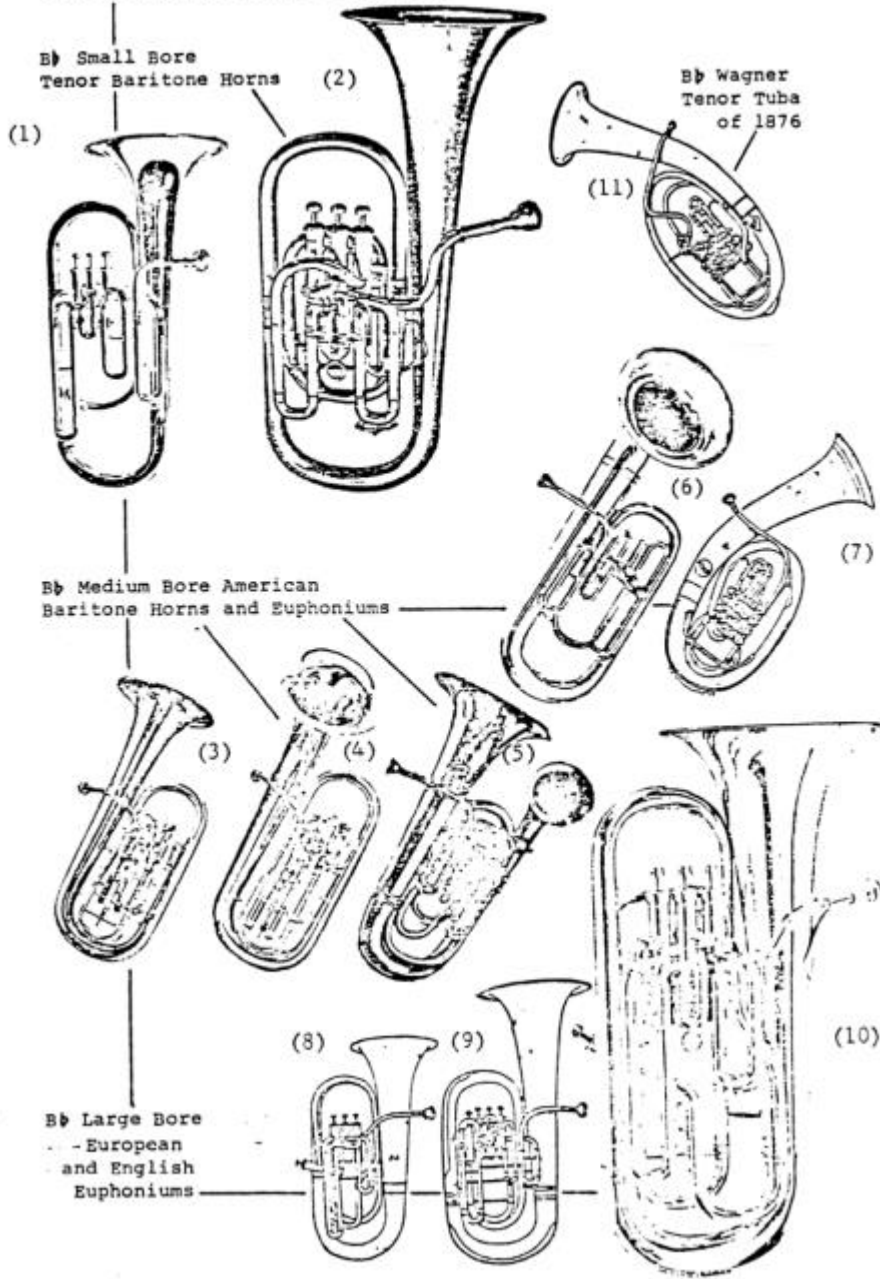


PLATE B

TODAY'S BARITONE HORNS & EUPHONIUMS



Chapter I

Open Hole Instruments



Fig. 1

### Animal Horns

This study must begin or rather continue from the "cowhorn" (Fig. 1) of the late Saxon times. These were cow, goat, or oxen horns pierced with holes, usually 3, so that tunes could be played on them. Scandinavian shepherds were still recently making this instrument.<sup>5</sup>

Anthony Baines, in his book entitled *European and American Musical Instruments* states: "The cornett and serpent are two specialized post-medieval manifestations of this finger hole horn. The cornett was perfected during the 15th century and ranked high among professional wind instruments through the next two centuries. The serpent appeared at the end of the 16th century, but came into wide use towards the end of the 18th century and was generally obsolescent after 1850."<sup>6</sup>

The slender curve of the cornett suggests this relationship to the "cowhorn".



Fig. 2

### Cornetts

The cornett family, although perfected in the 15th century, shows early evidence in the 13th century with pictures in a collection of Cantigas (Spanish Monophonic Songs) for Alphonso X, 1221-1284.<sup>7</sup>



Fig. 3

The two most used names were the German, Zinck and the Italian, Cornetto. The Spanish name is Corneta and the French name is Cornet a bouquin. There are two types of cornetts, straight (Fig. 2) recti and slightly bent (Fig. 3) curvi.<sup>8</sup> The regular cornett was a curved tube of wood, occasionally ivory, octagonal in cross section (round bore in the center), sometimes covered with leather, and with a cup shaped ivory or wood mouthpiece. It usually had six finger holes and a thumb hole. The cornett had a gentle sound which blended with both strings and voices. It was widely used in church music. Bach used the cornett in support of chorale melodies.<sup>9</sup> There were various sizes of

the curvi cornetts pitched as follows:

Soprano Cornett (Kleiner Zinc, Cornettino) pitched from e' to e",

Treble (ordinary) Cornett (Zinc, Cornetto) pitched from a to a",

Tenor Cornett (Grosser Zinc, Cornone) pitched from d to d"



Fig. 4

(The Cornone is S shaped).<sup>10</sup>

In the 16th and 17th centuries there were also added alto and bass cornetts of various shapes. The recti cornetts (Gerader Zinc, Cornetto Dritto) had ivory or wood mouthpieces while the recti muted cornetts (Fig. 4-) (Stiller Zinc, Cornetto Muto) had no mouthpiece, but rather were straight tubes of wood or ivory with funnel shaped openings carved out at the top which served as mouthpieces. It possessed a much softer tone, hence, the term muto.<sup>11</sup>



Fig. 5

### Serpents

Towards the end of the 16th century, around 1590, a French canon, Edme Guillame of Auxere, developed an instrument called "Serpent" (Fig. 5) which was so named because of its serpentine shape which was necessary in order for the hands to reach the fingerholes. This instrument was made of wood (pearlwood), carved out in halves, glued together in three U shaped bends, and wrapped in leather. There were six finger holes and no thumb hole and it was played with a brass or ivory mouthpiece on a metal crook.<sup>12</sup> This instrument was pitched in C, that is, its lowest tone was C an octave lower than the tenor cornett, and was regarded as the bass to the cornett family although its bore was comparatively a much wider radical cone. The serpent was used until around 1850 and during this period took on many shapes. The serpent d'eglise was keyless with six finger holes and no thumb hole. The German Military Serpent had two keys and a double bend in the mouthpiece crook

which brought it into the center line of the instrument. The bell was also slightly tipped forward for projection. Keys were added and generally included two or three. Thomas Key c. 1841 built a keyed model on which all the holes were covered with a network of keys (approximately 12). An attempt was first made c. 1806 by Piffault, in Paris, France, to bend the serpent to the more comfortable handling form of a J. This instrument had a double loop in the mouthpiece crook and was also named "Military Serpent".<sup>13</sup>



Fig. 6

Next, several models of the "upright serpent" appeared. These instruments consisted of two slightly diverging tubes connected at the bottom by a butt joint. Frichot, a French refugee in England, c. 1790, invented the "Bass Horn" (Fig. 6) also called "Serpent Anglais". This instrument had a narrower bore than the serpent, made of metal, and was played in English bands alongside of the serpent up until the 1830's. In 1806, Frichot returned to France and produced a more compact metal model called "Basse-Trompette" which more closely resembles the shape of the modern-day tuba. This instrument was also made of wood. In 1810, the French inventor, Coeffet, produced a "Contra-Sass Horn". In 1823, the "Serpent Forveille", produced in Paris, reverted back to leather covered wood. In 1820, a "chromatic Bass Horn" was produced by Steitwoif in Gottingen, Germany which consisted of two separately turned wooden tubes connected at the bottom by a metal bow and contain brass keys. There was also a similar all-metal chromatic model called "Bombardone" made in 1825.

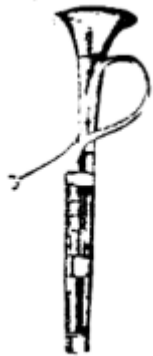


Fig. 7

An instrument more common on the continent was the "Serpent Basson" or "Russian Bassoon" (Fig. 7). This instrument was modeled on the bassoon with three wooden joints including wing and butt joints and with a metal bell. Sometimes the bell was a replica of the head of a serpent or an open jawed dragon-head complete with scaly skin and wagging tongue. The "Serpent Basson" is thought to have been derived from an instrument introduced in 1789 by a musician named Regibo in Lille, France and was played until c. 1840.<sup>14</sup>

## Chapter II

### The Early Bugle Family



Fig. 8

### The Ordinary Bugle

At this same juncture in wind instrument development an instrument called "Ophicleide" (Fig. 8) partially took over the baritone and bass position in bands and in due time superseded the serpent's domination of the baritone and bass voicing. Although this instrument seems to have evolved from the serpent and bass horn, in reality it came from the "Bugle" family. The "Bugle" should properly be called "Bugle Horn," that is, the horn of a "bugle" (in old French, a young "bull"). Eighteenth century copper and brass bugles were still in the form of the old oxborn (Fig. 9), while others had a coil in the middle (Fig. 10). They were used as watchmen's horns, post horns, etc. Hanoverian and English Light Infantry Regiments used them as duty horns and signal horns around 1814. The bugle assumed the folded shape (Fig. 11) around 1800.



Fig. 9



Fig. 10



Fig. 11

### Keyed Bugles

Around 1810 Joseph Halliday developed what was to be the Royal Kent Bugle (Fig. 12) which was made by Matthew Pace of Dublin in honor of the Duke of Kent. This instrument contained five keyed holes (later six, five closed and one open nearest the bell), and was pitched in C with a Bb crook, and was reported to be capable of producing a two octave chromatic scale. It had a wide conical bore and



Fig. 12

was much more accurate than the Viennese Keyed Trumpet produced approximately nine or ten years earlier. Around 1817 Halary (Jean Hillaire Aste) of Paris produced a family of keyed bugles of which the "Ophicleide" was the bass member. This family included the Clavtube (bugle), the Quinticlave (alto), and the Ophicleide (bass). The "Ophicleide" was reported to be an improved "Bass Horn" and was at times called the "Keyed Military Serpent". Although it resembled the "Bass Horn" (Serpent), it contained a much wider conical bore and rightfully belongs to the "Bugle Horn" family which in a similar way parallels the "Cornett" and "Serpent" family. The "Bass Ophicleide" was probably the most important of the keyed bugles. It may rightfully be called the "Bass Keyed Bugle". There were parts written for this instrument in Spontini's 1819 opera "Olympie". There is also record of Ophicleide solos in Jullien's Promenade Concerts of the 1850's. These

instruments were usually pitched in C or Bb and contained eleven keys with the one nearest to the bell open. There is an account of one called a "Bombardone" made by Wenzel Riedl around 1820 which had twelve keys. The "Ophicleide" had its heyday in England from 1830 through 1890.<sup>15</sup> To this aforementioned family of keyed bugles was added still another member around 1827; the "Contra-Bass Ophicleide". Now the family had a soprano, an alto, a bass, and a contra-bass voicing to it. The bass ophicleide pitched in C or Bb is properly the baritone by virtue of its position of registration and was even at times called "Euphonion" or "Euphonium". The contra-bass ophicleide pitched in Eb or F is properly the "Bass".<sup>16</sup>

### **Chapter III**

#### **Valved Bugles**

During the first part of the 19th Century various types of valves were developed which were first introduced in many primitive forms before any particular one or another was considered reliable. With the advent of the valve came a gradual shift from the keyed bugles" over to the "valved bugles" and the beginning of a development towards the somewhat standard instrumentation of the bugle family which we employ today.

At this point it is necessary for a discussion of two families of brasswind instruments concerning which there seems to be some misunderstanding: The "Horn-Tuba" and the "Bugle-Tuba (Flugelhorn-Saxhorn)" families.<sup>17</sup>

#### **Horn-Tuba Family**

The "Horn-Tuba" family consists of conoidal (conical) bore instruments with medium taper tubes and bells of various sizes and are played with a funnel shaped French Horn type mouthpiece. Instruments belonging to this family are the Wagner Tubas ("Waldenhorntuben", "Ringtuben"), the Prim Horns and Cornons built by Cerveny in 1872, and the Cornophones built by Fontaine-Besson in 1880 and patented in 1890. Of the latter there are complete families of each. The "Wagner Tuba is sometimes mistaken for the tenor tuba of the "Bugle-Tuba" family, namely the "Euphonium", even though it has a smaller bore and taper than the Bugle-Tuba. This instrument was originally developed with left-handed rotary valves and was played in the French Horn section by horn players as a lower extension of the horn quality, There were two instruments: a tenor in Bb and a bass in F. Richard Wagner originally had these instruments built for the first performance of the "Ring of the Nibelungen" in 1876 and today these parts are sometimes performed on the modern double horn or given to tenor and bass tubas of the "Bugle-Tuba" family. From this information the author has drawn the conclusion that the "Euphonium" did not evolve from the "Horn-Tuba" family but, on the contrary, did evolve from the "Bugle-Tuba" family which will be evident from the following information. <sup>18</sup>

### **CHAPTER IV**

#### **THE BUGLE-TUBA-FLUGELHORN-SAXHORN FAMILY**

The "Bugle" is a conoidal bore instrument with wide taper tubes and bells of various sizes and is played with an elongated cup mouth-piece. It is a three octave whole tube instrument with a pedal tone. It has from three to six valves depending on the size and pitch of the bugle. "The Bugle-Tuba-Flugelhorn-Saxhorn family consists of members each of which could be called, in a generic sense, with equal justification a bugle, tuba, flugelhorn, or saxhorn."<sup>19</sup> At this point we have come chronologically from the "Bugle-Horn" to the "Keyed Bugle" to the "Ophicleide" to the "Valved Bugle". Within this family there are basically three divisions. They are: the "Saxhorns" containing the narrowest taper; the "Flugelhorns" with a medium taper; and the "Bugle-Tuba" group with a wide taper.<sup>20</sup>



Fig. 13

### The Flugelhorns

The "Flugelhorn" family is essentially a valved bugle (Fig. 13) since it does contain a wider conical bore than does the cornet family. The flugelhorn is

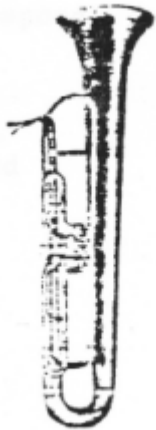


Fig. 14

generally only used in Brass Bands in England while on the continent it is a leading instrument in Military Bands. Here the alto (Eb) and soprano (F or Eb ) flugelhorns are used as well as the ordinary Bb. It was in Vienna in 1830 that the old flugelhorn, or hunting horn, was first given valves. During this same time, Wieprecht introduced to the military band world valved instruments including cornets, tenor horns, euphoniums (Fig. 14) and bombardons (basses). Except for the cornet, these instruments also belong to the Bugle-Tuba family. Although they may all (except the cornet) be considered Flugelhorns, the name "Flugelhorn" seems to have been reserved for the soprano instruments. Apparently there were many hybrid models of the so-called tenor horns, euphoniums and bombardons which were called by various names from country to country with no standard nomenclature.

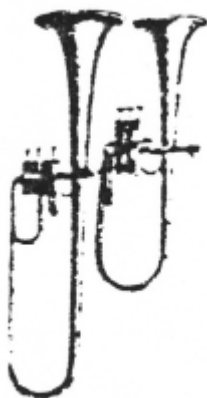


Fig. 15

### The Saxhorns

At this opportune time in history (1845) Adolphe Sax developed and patented his uniform family of "Saxhorns" (Fig. 15) of which there were seven.<sup>21</sup> These original saxhorns were much smaller in bore than the like instruments being manufactured today and possessed a more brilliant timbre than the flugelhorns. The saxhorns manufactured today differ in the width of bore from the original and are now closer to the flugelhorn.<sup>22</sup> According to the Concise Oxford Dictionary of Music by Percy Scholes

the saxhorn family consists of the following:

### I. The higher saxhorns

Sopranino saxhorns in (F) - very similar to Eb cornet

Soprano saxhorn in Bb (c) - very similar to Bb cornet

Alto saxhorn in Eb (F) - also shaped like a French Horn and called Tenor Cor

Bass saxhorn  
(Saxtuba) in Eb  
(F) - practically  
identical to  
British Bb Bass  
Tuba or Eb

Tenor saxhorn in Bb (c) - similar to Baritone

### II. The lower saxhorns

Bass saxhorn in Bb - practically identical to Euphonium

NOTE: This box and others that follow isolate the instruments of the baritone and euphonium range from other instruments in the same family.

Bombardon

Doublebass saxhorn in Bb (c) - practically identical to the  
BBb Bass Tuba but with the complete range at the bottom.<sup>23</sup>

These instruments are still being used in France today but with a larger bore. They were originally made in the upright (bell up) form. However, some of the higher saxhorns were made in the bell-to-the-front manner.

Sax quickly adopted the use of the Perinet valve and therefore had a uniform set of instruments with good valves which were readily acceptable. His complete set could be made with three or four valves like the trumpet. In the 1830's there is evidence of a set of bell-over-the-shoulder models with rotary valves being used by the Dodworth Band in the United States.<sup>24</sup>

### The Flicorni Family

In Italy there was being made a similar series of instruments (alternately in Eb and ) of which those of higher pitch correspond to the saxhorn family and those of lower pitch to the flugelhorn family. They were called "Flicorno" and the tuba sizes were called Flicorno Basso or Bassflicorno, Flicorno Basso Grave and Flicorno-contrabasso.<sup>25</sup>

### The Baritone Horn and Euphonium

Of the Bugle-Tuba-Flugelhorn group Bessaraboff lists what appears to be the most accepted and standardized instrumentation showing the relative position of the instruments of the baritone register. It is as follows:

Sopranino-Bugle-Flugelhorn in E b or F

Soprano-Bugle-Flugelhorn in Bb or G

Alto Bugle-Althorn (Tenor Flugelhorn) in E b

Baritone Bugle - Baritone in Bb

- Euphonium in Bb

- Bass in Bb (also called Prim Bass, Baroxyton, Tenor Bass)

Bass Bugle - Bass Tuba in Eb or F

Contrabass Bugle - Contrabass Tuba-in BBb

Sub-Bass Bugle - Sub-Contrabass Tuba in BBBb or CC.<sup>26</sup>

Another authority, Robert Donnington, indicates the following similar list with a few changes:

Flugeihorns - ("the highest bugles are generally known as flugelhorn, made in various pitches of which the lowest and most important is in Bb

Tenor Horn in Eb -medium bore

Baritone in -medium bore ,

Tenor Tuba or Euphonium in -wide bore

"These are all in fact of baritone register, but the Euphonium has the most solid and bass-like timbre..."

Bass Tuba or Bombardons in Eb or F

Contrabass Tuba or Bombardons in BBb

Sub-Bass Tuba in EEb

Sub-Contrabass Tuba in BBBb or CC

Donnington makes two statements. First: "The Tubas can legitimately be regarded as Ophicleides with valves instead of keys". As commented earlier, the author believes the Tubas to be "valved bugles" because they possess wider tapered conical tubing than the "keyed serpent" (Ophicleide]. Second: "The Tubas (Euphonium and Bombardons) are among the most important brass units in the modern symphony orchestra, where, in addition to other functions, they often provide a weighty bass to the Trombone family."<sup>27</sup> (Comment later).

At this point attention should be directed to the three pre-ceding lists by:

1. Percy A. Scholes - The Concise Oxford Dictionary of Music
2. Nicholas Bessaraboff - Ancient European Musical Instruments
3. Robert Donnington - The Instruments of Music

Among the individual groups of the Bugle-Tuba-Flugelhorn-Saxhorn family there are similar placings of the instruments which are in fact or similar to the Baritone Horn and Euphonium of today. Although the bore sizes and nomenclature may differ from instrument to instrument, the instrumentation in terms of pitch sequences remains fairly constant and standardized. According to Bessaraboff there are four bugles in Bb which, by their tonal positions, are Baritones- They are as follows:

1. The narrow bore bugle called "Tenor Horn" (not the small bore tenor horn of the cornet family)
2. The medium bore bugle called "Baritone"
3. The wide bore bugle called "Euphonium"
4. The still wider bore bugle called "Bass Tuba" (also called Tenor Bass and Baroxyton).<sup>28</sup>

Baines indicates other names for each of these four instruments named above as follows:

1. Bb Tenor Horn (American and French, alto; German, althorn)
2. Bb Baritone (American, tenor; French, baryton; German, tenorhorn)
3. Bb Euphonium (American, baritone; French, basse; German, baryton)
4. Eb Bass or Bombardon (French, contrabasse).<sup>29</sup>

Again notice the difference of nomenclature and yet similarity since they center around the name "baryton". There is not much known about the earliest of these instruments. However, there is reference to these instruments in certain price lists. Following are a few known examples:

1. An 1828 price list of Stolzel in Berlin includes a "Tenorhorn oder Tenortrompete in B (Bb)" which is the equivalent of the "baritone" and a "Basshorn oder Basstrompete in F oder Es (Eb)" which is the equivalent of a small bore bass in F or Eb .
2. An 1830 (July issue of *Harmonium*) indicates a "chromatic bass folded like a buglehorn with three movable stops" seen in the St. Jamesf Street Manufactory of Percifal.
3. In 1835 Wieprecht and Moritz produced a bass tuba in F with improved Berliner-Pumpen valves.
4. In 1845 Adolphe Sax produced his saxhorn family of which the Tenor and Bass Saxhorns were the equivalent of the Baritones and Euphoniums.
5. The French have their own special kind of orchestral tuba which is similar to the Euphonium. It is called the "French Tuba" or "Tenor Tuba" in C. I believe this instrument to be an outgrowth of the early "bass saxhorn" and/or "bass in B> " produced in C for use in orchestras. It really is a very large bore "Euphonium in C" with six valves allowing it to play a full octave below the fundamental. It has a phenominal range of from CC to c". The valves produce the following tones:

1st valve lowers the pitch by one tone

2nd valve lowers the pitch by a semitone

3rd valve lowers the pitch by two tones

4th valve lowers the pitch by two and a half tones

5th valve lowers the pitch by a semitone

6th valve lowers the pitch by three and a half tones

Baines states that this six valve instrument is a development of the five valve tuba used at the Paris Opera between 1880 and 1892. It was this six valve instrument for which Ravel wrote the "Bydlo" solo in his orchestration of Mussorgskyfs "Pictures from an Exhibition". Today the ordinary Euphonium is used for the Tenor Tuba parts in orchestra compositions.<sup>30</sup>

At this point comment on the earlier second statement by Donnington (page 26) is appropriate. The author believes that the bass tuba and/or contrabass tuba are the important bass voices in the orchestra; however the Euphonium is used only sparingly by composers. The author, however, agrees with the statement as it stands and therefore would like to see the Euphonium really become a full-fledged member of the orchestral brass in addition to the tuba.

## CHAPTER VI

### THE MODERN BARITONE HORN AND EUPHONIUM

Bessaraboff calls attention to two particular instruments: "Euphonium in Bb - The term TEuphoniumf or !Euphonionf originally referred to the bass Ophicleide. F. L. Schubert, op, cit., p. 53, pictures and describes 'das Euphonium' or 'Euphonion' with three valves, pitched in C, Bb , and A, with a comparatively narrow bore. In German and Russian military bands this instrument, in the middle of the nineteenth century, was used instead of the bassoon. The modern instrument is a wide-bored bugle with four or five valves, the busiest and most useful instrument in the band; an excellent solo instrument. Bass in Bb - F. L. Schubert, op. cit. p. 52, describes it as a large-bore bugle which replaces the tenor bass trombone and is intended to play 1 the deep tones of the bass tuba one octave higher in the low tenor position1.

On Page 53 he adds: 'It heightens the strength of the deeper basses by its assistance'. ...In the Russian army bands this type of instrument was, at one time, officially adopted for its bass section. Nomenclature: the bass in Bb ; the tenorbass; the Primbass; the baroxyton."<sup>31</sup> The English have an instrument called "Baritone" which was called "Tenor Horn" in the early days of bands in the United States.<sup>32</sup> The English "Euphonium" is a much larger bore instrument than the Baritone and most generally is played in a four valved model. The American "Baritone Horn" is a hybrid which is about midway in bore size between the English model Baritone and the Euphonium. Although the term "Euphonium" has been used in America the bore size is still the same as the American Baritone Horn. Most of the baritone range instruments manufactured in the United States have the unique distinction of having upright bodies but with bells-to-the-front and valves in front on a bias. Today many varieties of names are given to these instruments. The American Baritone Horn is called in German, tenorhorn; in French, bugle tenor; in Italian, flicorno tenore; in Spanish, baritono; in Australian, bass flugelhorn. The British Euphonium is called in German, baryton; in French, basse a pistons; in Italian, eufonio; and in Spanish, bombardino.<sup>33</sup>

Lilia M. Fox, in her book *Instruments of Processional Music*, defines the brass family instrumentation as follows. (I have included a brief derivation for each member.)

Bb Cornet - outgrowth of the 2 valve cornopean of the 1820's, a valved cornet-de-poste;

Bb Flugelhorn - outgrowth of valved bugle of the 1830 s, a valved flugelhorn or hunting horn;

Eb (F) Tenor Horn - outgrowth of a patented Alto Saxhorn of 1845.  
(French Horns substituted in U. S.),

Bb (C) Baritone	outgrowth of Tenorhorn and Euphonium of
Bb (C) Euphonium	Wieprecht of the 1830's
	and the tenor and bass saxhorns of 1845;

(F) Bass - outgrowth of 5 valve bass tuba patented by Wieprecht and Moritz in 1835;

BBb (cc) Bass - outgrowth of contra bass of Cerveny and double bass saxhorn of 1845.<sup>34</sup>

This list is true of the brass band instrumentation. However, the military bands as well as the school band movement of today have substituted the French Horn for the Tenor Horn and in some cases left the flugelhorn out all together. The Baritone Horn and Euphonium (the names have become almost synonymous in the United States) have assumed one voice in the band of today. The English, however, still produce the wide bore Euphonium in a four valve compensating system which enables the instrument, in the hands of a competent performer, to play approximately four and one half octaves. (An octave below the fundamental up to fff) . This instrument can still be considered as a wide bore valved baritone bugle.

## SUMMARY

As a result of this research the author is convinced that the small bore tenor baritone horn, the American baritone horn, the American euphonium, the English euphonium, the bass tuba, and the contrabass tuba are all valued bugles and are derived from this specific and generic family of instruments. The evidence thus further indicates that there is still no international or national standard for manufacturing the "baritone" or "euphonium". The wide bore euphonium is the one presently becoming more preferred than the narrower bore tenor baritone. The name "euphonium" instead of tenor tuba" is becoming more universally used and was even adopted as the official name for the instrument at the First International Symposium of the T. U. B. A. (Tubists Universal Brotherhood Association) in May, 1973 at Indiana University.

An expanded pictorial lineage of the "euphonium" is presented following the Bibliography. Many pictures of the other Instruments mentioned in this research are also included here.

## **OBSERVATIONS AND RECOMMENDATIONS**

Although the main performance areas for the euphonium in the past have been the brass and wind bands, several composers have included the euphonium in their orchestral instrumentation under the name tenor-tuba (not tenor tuben of Wagner referred to on pages 19-20). "The Tenor-Tuba parts, such as that in Strauss's 'Don Quixote' (1897) are generally played on the euphonium in England."<sup>35</sup> Ravel's orchestration of Mussorgsky's *Bydlo* from *Pictures From An Exhibition* (1922) was written for the higher French Tuba in C.<sup>36</sup>

Gustav Holst used the tenor tuba in his suite for large orchestra entitled *The Planets* (1914-16).<sup>37</sup>

Stravinsky wrote for two tenor tubas and two bass tubas in his ballet *The Firebird* (1909-10).<sup>38</sup>

All of these prominent composers intended for the tenor tuba part to be played on an instrument of the bugle-tuba family similar to the instrument which today is called "euphonium".

As a result of these observations and the information contained in this treatise, the author recommends the inclusion of the euphonium as a regular member of the brass family of the orchestra. Further, the author encourages composers to write for this instrument in this medium with the same import and enthusiasm as other composers have done in the field of wind instrument music. In addition to the already established position of importance that the euphonium holds in wind music, it is the author's contention that the euphonium can and should be the tenor voice to the orchestral tuba and thereby compliment and strengthen the low brass choir of the orchestra.

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## ILLUSTRATION CREDITS

## Plate

- **A**  
(1,2,4,5,6,10,11) Fox, Instruments of Processional Music,  
(9) W Apel, Harvard Dictionary of Music.  
(12 ,14) Baines , Musical Instruments Through the Ages.  
(3,7,13) Drawings by the author.  
(8) Bessaraboff, Ancient European Musical Instruments.
- **B**  
(5,8) Bowman, "You Play a What?" Fanfare - A U. S. Navy Band Publication.  
(7,9,11) Apel  
(3 ) C. G. Conn Company Pamphlet, "The Conn 24-1 Euphonium".  
(4) C. G. Conn Instrument Catalog.  
(1,6) DEG Music Products Catalog.
- (10) Besson Instrument Catalog Number 125.
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## Figures

- (1,5,6,7,8,13,14,15) Baines , Musical Instruments Through the Ages .
- (2,3,4,10) Bessaraboff, Ancient European Musical Instruments.
- (9) Drawings by the author.
- (11,12) Apel, Harvard Dictionary of Music .

## Appendix Illustrations

### Plate

- 1,2,5 Fox, Instruments of Processional Music.
- 3 Bessaraboff, Ancient European Musical Instruments ,
- 4 a,b,c,d,e Bessaraboff
- 4 f,g,h,i,j,k,l Baines, European and American Musical Instruments.
- 6 a,b,c,d,e,f,g Baines, European and American Musical Instruments.
- 7 Fox
- 8 Baines European and American Musical Instruments.
- 9 a,b,c..... Baines, European and American Musical Instruments.
- 9 d Baines, Musical Instruments Through the Ages.
- 10 a,b,c Baines, European and American Musical Instruments.
- 10 d Baines, Musical Instruments Through . the Ages.
- 11 Fox
- 12 a,e,f Apel, Harvard Dictionary of Music .
- 12 b,c DEG Music Products Catalog.
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- 13 Brasch
- 14,15,16 Baines, European and American Musical Instruments.
  
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## End Notes

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- 2 Webster, p. 483.
- 3 Nicholas Bessaraboff, *Ancient European Musical Instruments*, (New York, October House, Inc., 1964), pp 135-138.
- 4 Bessaraboff, p. 139-140, 146-148
- 5 Anthony Baines, *Musical Instruments Through the Ages*, (New York: Walker and Company, 1966), p. 254.
- 6 Anthony Baines, *European and American Musical Instruments*, (London: B. T. Batsford, Ltd., 1966), p. 119.
- 7 Willi Apel, *Harvard Dictionary of Music*, (Cambridge, Massachusetts: The Belknap Press of Harvard University Press, 1973), p. 206.
- 8 Nicholas Bessaraboff, *Ancient European Musical Instruments*, (New York: October House, Inc., 1964), p. 153.
- 9 Apel, p. 206.
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- 12 Bessaraboff, p. 162.
- 13 Baines, *European and American Musical Instruments*, pp. 119-122.
- 14 Apel, p. 206; Bessaraboff, pp. 163-164; Baines, *European and American Musical Instruments*, p. 122.
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- 16 Bessaraboff, p. 406, Note 333.
- 17 Bessaraboff, p. 152.
- 18 Bessaraboff, pp. 405, Note 325.
- 19 Bessaraboff, p. 152.
- 20 Bessaraboff, p. 406, Note 329.
- 21 Fox, pp. 46-47, 86-88.
- 22 Apel, p. 106 (f) Saxhorn.
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- 25 Scholes, p. 591.
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