MAJOR DEVELOPMENTS IN THE HISTORY OF THE CLARINET WITH A BRIEF LOOK AT A WORK WRITTEN AT EACH STAGE OF DEVELOPMENT

BY

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MAJOR DEVELOPMENTS IN THE HISTORY OF THE CLARINET WITH A BRIEF LOOK AT A WORK WRITTEN AT EACH STAGE OF DEVELOPMENT

A Research Paper

Presented to

the Graduate Council of

Austin Peay State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Music

in Education

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by

George Edward May

August 1972

To the Graduate Council:

I am submitting herewith a Research Paper written by George Edward May entitled "Major Developments in the History of the Clarinet With a Brief Look At A Work Written At Each Stage of Development." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Education, with a major in Music.

Thomas W. Cowan

Major Professor

Accepted for the Council:

Wayne C. Stamper

Dean of the Graduate School

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INTRODUCTION

A review of the literature gave the author a number of good books on clarinet history. The two most helpful were: Musical Wind Instruments by Adam Carse, and The Clarinet by O. Kroll. Other sources are listed in the bibliography. Most of these other sources primarily duplicated the information of Carse and Kroll. None of the sources cited discussed musical examples related to the clarinet at length. Discussion of musical examples by this author are taken directly from the score of music written for the instrument at major stages of development.

The purpose of this paper is to make the reader aware of the major developments of the clarinet throughout its history. A brief look at works written for the instrument at different stages help to show the limitation and abilities of the clarinet at that time.

This paper is limited to the major developments of the clarinet. Developments that did not gain wide acceptance are not mentioned. In this paper, the word clarinet refers only to the soprano instruments in C, Bb, and A. The larger clarinets are not discussed.

All writers on the subject of clarinet history are in general agreement that the instrument was invented by J.C. Denner (1655-1707) around 1690. According to Kroll, there is no definite proof that Denner was the inventor.[1] Adam Carse states that the only evidence that is available to support the assumption of Denner's invention of the instrument is found in a book of Doppelmayer published in 1730.[2] He adds that even if we have no definite proof, we have no reason to doubt the information given by Doppelmayer. There are early two-keyed clarinets that bear the name of J.C. Denner in existence. This, however, does not prove that he invented the instrument, only that he made them.

According to Carse, Kroll, and Schwartz, Denner's most vital discovery was that this instrument, when provided with a speaker-key near the upper end of the tube, would overblow not to the octave but to the twelfth above.[3] The clarinet behaves like a stopped pipe instead of an open pipe. Because of this, the clarinet has a range of well over three octaves. Geiringer believes that the overblowing of the twelfth is due to the almost cylindrical bore and the fact that the

[1] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 14.

[2] Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 150.

[3] Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 151; see also Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 18; see also H.W. Schwartz, The Story of Musical Instruments (Elkhart: Conn Band Instrument Division, 1938), p. 117.

instrument has only a very small number of even numbered harmonics.[4]

Denner's invention was based on an instrument called the Chalumeau. The Chalumeau was a small cylindrical instrument with only holes bored to produce different pitches. No keys were provided and it did not overblow. Because of this, its range of both pitch and tonality were limited. The reed was made from the small tube of cane that also served as the mouthpiece. The reed and the mouthpiece were one piece of wood and not two units tied together as is the case with the clarinet. Chalumeaus were very small, measuring only nine inches or so in length. Adam Carse does not believe that the instrument described above was necessarily in existence before the clarinet. He states, "There is no evidence which proves beyond doubt that a Chalumeau, previous to the 18th century, was necessarily an instrument with a cylindrical bore and a single reed. Only in the 18th century, after the invention of the clarinet, can such an instrument be associated with the word Chalumeau."[5] He also states that an illustration of the instrument described above does not appear until 1767. The instrument is shown in the Diderot and Alembert Encyclopedia published in 1767.[6] Mr. Carse does not say that the instrument did not exist in this form before 1700, but so many writers have assumed that it did and have said so in writing that it is being accepted as common knowledge

[4] Geiringer, Musical Instruments (London: George Allen & Unwin Ltd., 1943), p. 212.

[5] Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 149.

[6] Ibid., p. 149.

when no definite proof of it really exists. One must not look at his views lightly. Mr. Carse is considered by many writers and many wind players themselves as one of the best, if not the best, authorities on wind instruments alive today.

The tone of the Chalumeau must have been rather harsh and strident as well as high pitched and shrill. Kroll gives references by Laborde and Mattheson respectively. Laborde is rather kind in speaking of the instrument stating simply that it had "not a pleasing tone."[7] Mattheson believed that the Chalumeau should be allowed to voice their "howling symphony" on evenings in June or July and only from a distance. Never in January at a serenade on the water.[8] From these sources we may conclude that the tone of the Chalumeau and the early clarinet were not near the beautiful sound produced by the instrument today.

We have in existence a two-keyed clarinet made by J.C. Denner in the Bavarian National Museum in Munich. Eight holes are drilled in the instrument. The two lowest holes are bored near each other so that they may be covered by the right little finger. If only one of them is covered, the pitch is raised by a half-step. This same arrangement is also used on recorders. The two keys are located on the upper joint of the instrument and were worked by the thumb and the index finger of the left hand. The key for the index finger produced b' flat, while the thumb key produced a' and served also as the speaker key that made

[7]Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 15.

[8]Ibid., p. 15.

it possible to overblow the instrument to the twelfth. The barrel and the mouthpiece were made as one unit instead of the usual two pieces provided on clarinets of today.

Schwartz gives us two rather logical explanations for the instrument being called the clarinet. "The name clarinet was given to the Chalumeau because its tone resembled a small clarion (a small trumpet); hence clarionette, afterward shortened to clarinet."[9] He also states, "It is likely that Mozart helped establish the use of the name clarinet, because he rewrote clarion parts for the clarinet."[10] Mozart helped establish the clarinet as an accepted musical instrument. He wrote a number of divertimenti for two clarinets and bassoon as well as other chamber works that employed the instrument. It is used in a number of his operas and symphonies including the famous G minor. The Mozart Concerto for Clarinet is a standard work of the instrument and did much to give the clarinet its high rank as a solo as well as an subordinate instrument.

Peter Gradenwitz has found a concerto for clarinet and strings in Bb Major that he believes to be the work of Johann Stamitz. If his assumption is true, then this is the earliest clarinet concerto ever written.[11] Stamitz was one of the leaders of the great orchestra at Mannheim. This excellent orchestra also helped to establish the clarinet

[9]H.W. Schwartz, The Story of Musical Instruments (Elkhart: Conn Band Instrument Division, 1938), p. 121.

[10]Ibid., p. 121.

[11]Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 55.

as a concert instrument. This orchestra was one of the greatest the world has ever known and included the clarinet in its woodwind section.

By the time that Mozart started writing for the clarinet a few changes had taken place. Schwartz states that Jacob Denner, a son of J.C. Denner, moved the speaker key higher on the tube to make overblowing less difficult. He also provided the hole with a sleeve that went almost to the center of the bore to keep water from being trapped in the hole. This change made it impossible to produce a good sounding B natural. To cure this ill, Denner made the clarinet a little longer, drilled a hole near the lower end, and fitted it with a long key worked by the right thumb. By doing this, he increased the range downward a semitone, and provided a good b' natural that was produced by overblowing the new note, without a change of the previous scale. Schwartz speaks as if all the information given above in this paragraph were true.[12] Kroll, however, says that this is a good guess, but no definite proof that this idea belonged to Jacob Denner.[13] The low e natural added at this time remains as the lowest note on the clarinet today, making it well over two hundred years old.

In or about 1750, the g# and f# were added to the instrument. Credit for these keys are given to B. Fritz (or Fritze), an organ and clavichord maker of Brumewick. Kroll believes that this is an unlikely guess.[14] Carse and Schwartz offer no proof of this, simply

[12] H.W. Schwartz, The Story of Musical Instruments (Elkhart: Conn Band Instrument Division, 1938), p. 119.

[13] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 19.

[14] Ibid., p. 19.

stating that generally credit is given to Fritz.[15] All are agreed that this five-keyed instrument is the one for which Mozart wrote his clarinet concerto.

Adam Carse gives us an excellent description of the five-keyed clarinet. It was made in six pieces:

1. The ebony mouthpiece; rather narrow with a table for a short reed that was tied to the mouthpiece with string. The reed could be placed against either the upper or lower lip.

2. The barrel(s); varying in length for tuning.

3. The upper middle piece; three finger-holes and two keys.

4. The lower middle piece; three finger holes.

5. The lower piece; right hand little finger-hole and three keys mounted in a wooden bulge.

6. The expanding bell.[16]

There were a number of makers of the five-keyed clarinet and tutors advertised for it. The year 1791 saw the addition of a sixth key for the notes c# and g"#. Both Carse and Kroll credit a Parisian clarinettist J.X. LeFevre with this invention.[17] "The clarinet remained essentially at this stage of development until the reforms of Ivan Müller."[18]

[15]Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 154; see also H.W. Schwartz, The Story of Musical Instruments (Elkhart: Conn Band Instrument Division, 1938), p. 119.

[16]Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 155.

[17]Ibid., pp. 158; see also Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 22.

[18]Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 22.

Until the time of Müller, no one undertook a major reform of the clarinet. Many makers added keys here and there for trills and shakes, but the placement of the finger holes and bore remained basically the same. Because of the limited number of keys the instrument could play in only a limited number of tonalities. To overcome this problem, clarinets were made in different pitches. The most commonly used were those in C, Bb, and A. Many of the chromatics had to be produced by means of a forked fingering resulting in poor tone and intonation much of the time. Needless to say, this made performance quite difficult for the clarinet player between 1700 and Müller's reform in 1812. Until this time, consistency of tone and intonation could be expected only from the notes of the fundamental scale and its overblown twelfth.

THE CLARINET OF IVAN MÜLLER

Ivan Müller undertook the project of producing a clarinet that could produce both good tone and intonation in all tonalities. He decided on an instrument pitched in Bb (the pitch of the clarinet in common use today) because it was mid-way in range of the clarinets in general use at the time.

Müller made changes in the size and placement of the tone holes covered by the fingers that greatly increased tone and intonation. Another invention of Müller's made it possible for him to place a total of thirteen keys on his new instrument. His new pad was made by covering a small layer of wool with soft leather.[19] This is exactly the same type of pad used on the modern woodwinds of today. No other pad has proven any more satisfactory in terms of economy or playability, than these invented by Müller, circa 1812. The older pads were only a flat piece of leather glued to the key. No wonder makers of the days before Müller kept keys to a minimum. Trying to get these old pads to seal must have caused many frustrations on the part of the maker and the performer alike. With this new pad, Müller could add as many keys as he wished and be assured of a good, air-tight seal.

By making the changes mentioned above, Müller produced an instrument that could play in all tonalities without the use of any forked fingerings. He tried to utilize the old fingerings whenever possible,

[19]Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 27.

however, so many changes had been made that many new fingerings had to be employed. Because such a large change in fingering was required, many players would not use the new instrument. It was not generally adopted until circa 1850.[20] Another reason for its rejection may have been caused by the unfavorable report given by a committee of experts who studied the instrument. Members of this committee were fond of the different tone colors produced by the different clarinets and did not want to see them replaced by an instrument able to play in all keys.[21]

The following shows the thirteen keys of the Müller clarinet and how they were operated. The thumb is counted as first finger.

1.	e/b'	fifth finger, left hand
2.	f#/c"#	fifth finger, left hand and right thumb
3.	f/c	fifth finger, right hand
4.	g#/d"#	fifth finger, right hand and right thumb
5.	b flat/f"	fourth finger, right hand
6.	b/f"#	fifth finger, right hand
7.	c'#/g"#	fifth finger, left hand
8.	e' flat/b" flat	fourth finger, left hand
9.	f'/c"'	second finger, right hand
10.	g'#	second finger, left hand
11.	a'	second finger, left hand
12.	a'/b' trill	second finger, right hand
13.	Speaker key	left thumb [22]

This form of the clarinet, with a few additional keys, added to provide for alternate fingerings for certain notes, is the clarinet in general use in Germany today. It was on this type of instrument that

[20] Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 160.

[21] Ibid., p. 160.

[22] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), pp. 26-27.

the famous player Richard Mühlfeld performed the works of Brahms.[23]

Many smaller improvements were made during the time of Müller, however no exact dates can be given. The names of the inventors themselves are lost. Some of these improvements were: the addition of the thumb rest attached to the tube, instead of a slot carved in the tube itself; the metal screw ligature replaced the string as a means of securing the reed to the mouthpiece (still not accepted in Germany); the two pieces directly above the bell became one; keys were mounted in brass saddles instead of wooden blocks; and the square key cover used to cover the round tone holes were now made round.

Until the time of Müller, clarinettists had played with the reed on top of the mouthpiece. Müller, an excellent player himself, was one of the first to oppose this practice. Many other players soon followed his example, however, the old remained for a number of years. This writer has tried playing with the reed on the upper side of the mouthpiece and believes that with practice a player could learn to control the reed very well. However, it is no better than with the reed turned toward the player and controlled with the lower lip. The old practice has one major disadvantage. It is extremely difficult to tongue.

[23] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 37.

THE BOEHM CLARINET

The Boehm clarinet was not invented by Boehm. This instrument is the work of H. Klose' and L.A. Buffet Jr. of Paris. They incorporated only the ring key system and some details of Boehm's fingering.[24] The system of keys and fingering have been used on every modern woodwind at one time. The mechanism that Boehm used on his flute has been one of the greatest musical inventions of all times.

Klose' could not have chosen a better maker than Buffet to help produce this new instrument. He was completely familiar with the Boehm flute and had helped in the development of the rod-axle key. Buffet was also the inventor of the needle spring.[25] This invention, like the pad of Müller, is still in use today.

By using the pads of Müller, the key system of Boehm, and his own needle spring, Buffet was able to build the clarinet in general use today. As mentioned before, the Müller pad gave an airtight seal. The key system of Boehm made it possible to close more than one hole by pressing only one key. The needle spring made the use of end-pivoted keys possible. This made it possible for the tone holes to be evenly spaced. This helped improve the intonation.

In 1839, Buffet exhibited the basic model of the clarinet of today.[26] This instrument has not been preserved, however. He received

[24] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co.,1968), p. 37.

[25] Ibid., p. 31.

[26] Ibid., p. 31.

a patent for the instrument in 1844. "But the drawings in the letters patent and Klose's Tutor show that the first Boehm clarinets had the same number of keys in the same positions as of today."[27]

Klose' tried to retain the fingering of Müller whenever possible. The new clarinet had ten more keys than the instrument of Müller, for a total of twenty-three. With this many keys, some fingerings had to be changed. Almost all notes produced by the little fingers were supplied with alternate fingerings.

Needless to say, many of the old players resisted the change to the new instrument. A large number accepted the instrument for two very good reasons, however. The excellent tutor of Klose' was based on this system.[28] This method book is still used by many teachers today, this writer included. This instrument was officially accepted by the Paris Conservatoire where Klose' was the instructor.[29] The Conservatoire was and still is one of the best music schools in the world. The Boehm clarinet pitched in Bb is the standard instrument of orchestras and concert bands throughout the world. Germany is the only country where the instrument is not used almost exclusively.

In the Boehm clarinet, we have an instrument capable of playing chromatically over a range of almost four octaves. This is the largest range of any of the woodwind instruments. It is surpassed only by the flute in the ability to play rapid passages. It can play the softest

[27] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 32.

[28] Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 165.

[29] Ibid., p. 165.

piano and strong forte with ease. Its tone is gentle and pleasing to the ear. Because of these abilities, the clarinet is the most versatile of the woodwinds. It can be a beautiful solo instrument or it can be made to blend with almost any combination of instruments. It can depict moods that are happy and gay or sad and mournful. The instrument has become an indispensable tool in the hands of the composer.

Many attempts have been made to improve upon the Boehm clarinet and a number of people have produced reforms. None of the reforms have been generally accepted. The list of improvements and reforms is quite large. This writer owns a clarinet made by H. Selmer of Paris in the 1950's. It uses a system of keys that closes the speaker and opens a key near the speaker to produce an acoustically perfect Bb. The thumb, however, must be totally free of the F ring for this to occur. This makes crossing the register break very difficult in a Bb, which occurs immediately before the crossing. This fault and an extremely high price tag have caused this horn to be discontinued by Selmer.

REEDS AND MOUTHPIECES

Let us now take a brief look at two of the most vital parts of the clarinet and their development. The combination of the reed and the mouthpiece do more to alter the tone and intonation than any other part of the horn. This combination is always of constant concern with the performer.

This writer has mentioned the fact that the reed and the mouthpiece of the Chalumeau were made in one piece. The reed and mouthpiece for the clarinet are two individual units bound together in some manner.

According to Schwartz, the old mouthpieces were whittled from a block of wood or made from two blocks of wood held together by two pieces of metal tacked along the sides. They were of the same basic shape as the modern mouthpiece and the reed was tied on with string.[30] They were open down the length of the lay and only slightly larger than the modern bassoon reed of today.[31] In his book, The Story of Musical Instruments, Schwartz shows a picture of the old Chalumeau mouthpiece compared to the modern clarinet mouthpiece.[32] If this same size mouthpiece was carried over to the clarinet, then the mouthpiece of the old clarinet was indeed very small compared to the mouthpiece of today.

The lay of the mouthpiece must work in relation to the strength of the reed. The old mouthpieces must have had a very closed lay and used

[30] H.W. Schwartz, The Story of Musical Instruments (Elkhart: Conn Band Instrument Division, 1938), p. 126.

[31] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 29.

[32] Schwartz, p. 114.

a very hard reed. This writer makes the above statement because the curved lay mouthpiece was not invented until circa 1891. Oskar Oehler invented the curved lay mouthpiece that helped the reed vibrate more freely about 1891.[33] If this change did not happen until this time, then the reeds must have been hard because a closed lay requires a hard reed. F. Triebert, the greatest oboe maker of his time and founder of the firm that makes the famous Loree' oboe used by the majority of orchestral players today tried to help solve the lay and reed combination problem. In 1847, he patented a mouthpiece with an adjustable lay but this idea was not satisfactory.[34] He was placing the cart before the horse. Players find it much more convenient to fit the reed to the mouthpiece.

Our modern mouthpieces are much larger and wider than the older ones. New materials have been found from which to make them. The most common materials today are ebonite, certain plastics, and hard rubber. The old mouthpieces were made of ebony, glass, ivory and metal. (Klose' favored glass.)[35] All except glass have been discarded and only a small number of players use it today.

Reeds have been made in many different styles and strengths. The "V" style is the most common but can still be varied greatly in strength and general contour. The material from which the reed is made has always been cane. Others have been tried but none have been generally accepted.

[33] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 30.

[34] Ibid., p. 29.

[35] Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 166.

MATERIALS USED FOR CONSTRUCTION

The body and the keys of the clarinet have been made of different materials. "Early instruments were made of boxwood, sometimes pear or maple."[36] Keys were square and made from flat brass.[37] "From around 1840 German silver keys replaced the brass and were cupped instead of flat. Boxwood was discarded in favor of darker, harder woods such as cocuswood."[38] The modern clarinet is made of grenadilla wood. Clarinets have also been made of ebonite and metal primarily for use in military and other outdoor bands because they resist changes in temperature and moisture.

[36] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 30.

[37] Adam Carse, Musical Wind Instruments (New York: DaCapo Press, 1965), p. 155.

[38] Ibid., p. 161.

A BRIEF LOOK AT THREE WORKS

The clarinet has seen only three major stages of development from the time of its invention until the present day. There was the five-keyed instrument, the Müller, and the Boehm. Let us briefly look at a composition written for each of these instruments.

The Mozart "Concerto for Clarinet and Orchestra" in A Major, K622, was written for a five-keyed instrument pitched in A. It remains a favorite of performers today. It is scored for two flutes, two bassoons, two horns, strings, and clarinet.

The work opens with a lovely, song-like Mozart theme in the violins and clarinet, first piano and, when repeated, forte. However, the violins are so strong that the clarinet is completely overshadowed. This tutti continues until bar fifty-seven at which time the clarinet repeats the theme in harmony with the first violins, which are now given the part played by the second violins at the beginning of the piece. The second violins now take a light background figure. To state this theme, Mozart has placed the clarinet in its beautiful register and uses only the diatonic notes from b' to g", immediately above the break.

He moves briefly in the Chalumeau register in the last half of bar sixty-nine, only to make a jump of over two octaves into the clarion register in the latter part of the following measure. Bar seventy-three shows the ability of the broken chords.

In bars seventy-nine and eighty-one, something strange happens. An a" flat occurs in each of these measures. The first is of two beats duration and the second of slightly over four at an extremely expressive

spot in the music. Bar 217 has a c'# with a four beat duration at a very exposed spot for the clarinet, measure 225 has a two beat g"#, and again in bars 273 and 278. Many other measures contain these notes as well, but they are not of this long duration.

As I stated earlier, Kroll, Schwartz, and Carse all agreed that this concerto was written for the five-keyed clarinet on which no c'#/g"# key existed. This key was not added until 1791 by Lefevre. If the key did not exist, how was the note played? Kroll gives the date of Mozart's death as 1789, two years before the addition of the c'#/g"# key.[39] This is not correct. Other reliable sources, including Grove's Dictionary of Music and Musicians place his death at December 5, 1791,[40] late in the year of the addition of this key. This source also places the date of this concerto, written for Anton Stadler, at October of the same year.[41] Therefore, the possibility exists that this work was written for an instrument with six keys. No absolute proof of this can be given. Even if the c'#/g"# had been added before October, 1791, we have no way of knowing if Mozart was aware of the addition.

Throughout this entire movement, Mozart continued to show the solo abilities of the instrument. From the songful theme, he moves into rapid scale and broken chord passages from the lowest note on the horn to f"', covering a range of over three octaves. Light, bouncy

[39] Oskar Kroll, The Clarinet (New York: Taplinger Publishing Co., 1968), p. 60.

[40] Eric Blom, Grove's Dictionary of Music and Musicians (New York: St. Martin's Press, 1955), p. 923.

[41] Ibid., p. 976.

staccato are contrasted by smooth, flowing legato lines. Pianos are contrasted by fortes. He does not do much to show how well the clarinet can blend with other instruments; however, this is due to the nature of the work. In a concerto, the solo instrument is supposed to be prominent, not obscured.

Eight bars from the end of the movement, the light-hearted song-like phrase of measure fifty returns at a dynamic marking of piano. This moves into a series of brillant, rapidly arpeggiated chords of C, F, and G Major for two bars. The movement closes with a measure of arpeggiated C Major chord followed by the usual octave jumps for the three final notes. On hearing these last four measures, they sound extremely difficult. However, they fall quite nicely under the fingers.

The Brahms "Quintet in B minor" for clarinet in A and string quartet was written for the clarinettist Richard Mühfeld, whost tone was reported to have been the sweetest in existence at the time.[42] The work was written in 1891, almost fifty years after the Boehm clarinet had been patented. However, Mühfeld played the composition on a clarinet of Müller design. The Germans, even today, have not accepted the Boehm clarinet.

The Adagio of this composition is indeed one of the most beautiful moving pieces of music ever written for the clarinet. In this work, Brahms blends the clarinet to the quality of the strings so well that at times, one might think that he was listening to a composition written for five string instruments.

[42]Karl Geiringer, Brahms, His Life and Work (London: George Allen & Unwn LTD., 1948), p. 178.

The movement opens with a beautiful clarinet solo in the clarion register, accompanied by a muted string background. In measure nine, the first violin plays the melody first stated by the clarinet and the clarinet takes the harmony line with the other strings in their throat register. Here Brahms shows his great knowledge of the clarinet. This register is by far the weakest of the instrument, but Brahms has the dynamic marking pianissimo so that the clarinet blends so wonderfully with the other muted strings and it sounds like one of them.

In measure fifteen, the clarinet again takes the melody in the throat register, moving gracefully once again into the clarion register. Ten bars before the first change of key, the clarinet returns with the first theme, this time in octaves with the first violin, producing a charming sonority, showing once more how well the clarinet can blend with the strings.

Ten measures prior to the Piu' Lento, the clarinet moves from a key signature of two sharps to one of a single flat. At this point, the clarinet moves briefly into the Chalumeau register for almost four bars, only to climb rapidly into the clarion range on the last beat of the fourth measure of this section. It then falls slowly back into the Chalumeau range one bar before the Piu' Lento.

At the Piu' Lento, the meter changes from $\frac{3}{4}$ to $\frac{4}{4}$. The pace quickens for the clarinet. Rapid series of notes occur. In the second bar, the clarinet is required to play a flurry of thirteen notes covering two octaves in one half of one beat. After this rapid two bar interlude, the clarinet returns to the clarion register for another lovely melody. The first violin interrupts momentarily to add a short solo of its own. The clarinet returns, this time in

the Chalumeau register, and moves swiftly into the same flurry of notes as at the beginning of the Piu' Lento. This dialogue between the clarinet and the violins continues until a new section of $\frac{3}{4}$ time.

This new section of $\frac{3}{4}$ takes the clarinet into a new key of three sharps. In the first measure of the new key, the clarinet states a short motive in the upper clarion register and answers itself in the following measure in the lowest Chalumeau register, producing a kind of echo.

After only six bars of the new key, the piece moves once again into a meter of $\frac{4}{4}$. During the first three beats of the new meter, the clarinet fairly ripples with another wild flurry of thiry-second and sixty-fourth notes flavored by the use of many accidentals. The first violin continues the flurry on beat four only to have the clarinet take them again in the following measure. The lead violin again takes beat four and leads us back to the original key. After three beats, the clarinet now renders an A Major seventh chord that takes us back to the beautiful theme stated at the beginning of the work and continues in this manner until eleven bars from the end.

At this point, the clarinet takes over once again to the clarion register to state new musical material. This same statement is played in turn by the first violin in its lowest register.

On the last beat of the fifth bar from the end until the second beat four bars from the end of the movement, the clarinet sounds as if it were a viola. It than moves gracefully into the clarion register, speaking once again as a clarinet. Now a new drop back to the Chalumeau register to rise once again into the clarion register where it now

disguises itself and fades into a restful calm with the rest of the strings.

Throughout this movement, Brahms shows his great knowledge of the clarinet. It sings beautiful melodies in a slow dolce fashion and then catches one completely unaware by dazzling displays of technical virtuosity. Since the Müller clarinet could play in all keys, Brahms used three different key signatures in this movement along with a profusion of accidentals. He blends it so well that at times it sounds like a violin or a viola. His range of pitch is from low 'e' to high g''' above the staff, a span of over three octaves. The dynamics range from pianissimo to forte and include both sforzando and forte-piano. After hearing this work, it is hard to believe that the clarinet has ever had an unpleasant sound. However, the clarinet of Müller was a far cry from the early models of Denner.

The "Three Pieces for 'Clarinet Solo'" by Stravinsky will serve as the piece used to give an example of writing for the Boehm clarinet. Stravinsky indicates a preference for the 'A' clarinet on the first two pieces with the 'Bb' clarinet being favored for the third. All three pieces are quite short.

The first piece is very slow and never leaves the dark, Chalumeau register. With the exception of the last bar, the entire piece has a dynamic marking of piano. The work is flowing and graceful, containing only quarter and eighth notes. In measure nine, a sixteenth note occurs but is tied over from the preceeding eighth note to slightly lengthen the phrase. As is typical of Stravinsky, the meter changes often (in this case almost every bar) and almost every note is preceeded by some kind of accidental. This first of the three pieces

shows the ability of the clarinet to evoke a mood of rest, quiet, and tranquillity.

The second piece quickly breaks this mood. The clarinet moves swiftly from the Chalumeau register into the clarion register at a much faster pace. No meter signature is given and the only bar lines that occur are a double bar about mid-way of the piece and the final double bar at the end. Things move rapidly with scale-like and broken figures in sixteenth and thirty-second notes in all registers of the instrument. This section ends on a high g"' at the first double bar.

The pace slows somewhat after this double bar. Sixteenth notes and thirty-second notes are replaced by a passage consisting largely of eighth notes almost entirely in the Chalumeau register. This section is soon overcome by a quickening pace in the Chalumeau register that takes things back to the clarion and upper registers. Broken figures and wide leaps of up to an octave characterize this final section.

There is a wonderful contrast between the first and third pieces. The only thing that they have in common is the many changes of meter. The first piece was restful and quiet. The third is restless, hurried, and noisy.

This piece consists almost entirely of sixteenth and thirty-second notes at a tempo of MM 160 for the eighth note. With the exception of eight notes, the piece is in the clarion and upper registers. Syncopation is everywhere and it is almost impossible to find the beat. Dynamics are forte and fortissimo. The large number of accidentals are also present.

These three pieces require a clarinet capable of both warm tone and good technical ability. Due to the many accidentals, the clarinettist must also be able to play with good intonation in all keys. Different dynamics and articulations are other requirements of this work. In short, an instrument of the calibre of the Boehm clarinet must be used if the performance is to be of professional quality judged by the standards of today.

CONCLUSION

This paper has tried to show the clarinet development from the time of its invention until the present day in terms of its material and mechanical make-up, as well as its ability to play the music written for it at three stages of its development. These are by no means all of the developments that have taken place. They are the ones that gained general acceptance by a large number of performers throughout the world.

Developments in both materials and mechanisms are being made at the present time. They may or may not be accepted. Many advancements that have been made have not been greeted with open arms by performers. Today, as always, there is reluctance on the part of the old performers to put aside something with which they are familiar and replace it with something new.

By looking at music written for the instrument, one can see that composers have made use of the developments made through the years. The "Three Pieces" of Stravinsky could not have been played on the clarinet of Mozart's day.

The clarinet may be the youngest of the woodwinds in the Orchestra, to date, but it is certainly one of the most vital. Its range of both pitch and dynamics is unsurpassed by the other woodwinds. Its tone is clear and pure, able to evoke both joy and sadness. Only the flute can handle fast, rapid passages in all keys with greater ease than the clarinet. The clarinet serves well as a solo or accompaniment instrument. It would be hard to believe that a modern orchestra could function without them.

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