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The Tympani: Development and use to the present.

THE TYMPANI

DEVELOPMENT AND USE TO THE PRESENT

A Short Thesis in Lieu of a Second Recital

by

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Approved by . . . . . .

Hugo Sjoden

PREFACE

In presenting this material in the form of a short thesis, it is my sincere wish to expose the different types of tympani scoring from the "Classical Era" to the present. I have furnished substance chronologically how this instrument became part of the modern orchestra from the historical survey and excerpts extracted from scores shown in the bibliography. It also has been my earnest desire to trace the growth and development of this tonal membranic instrument from composers who knew its value to blend it with other choirs of our great ensemble, and play its part solo at the discretion of various composers. Through years of scientific research, our inventors have given us a proper instrument to work with, although it will be some time before nature's elements, humidity and temperature can be conquered by this sensitive instrument.

R.E.H.

THE TYMPANI

DEVELOPMENT AND USE TO THE PRESENT

Long before the dawn of civilization, primitive man was fascinated by the sound of the drum and believed it to be the voice of the spirit. In due time the cult grew, and the drum became a particular object of worship. Like the ark of the Hebrews, it was taken into battle to gain victory over the enemy. The warrior would rub it on his thighs, and he was immediately endowed with irresistable strength, while the voice of the spirit was found very effective in creating fear and dismay in his enemies.

The horn arrived and played its counterpart with the drum. Martial music becomes a separate function and the horn its first exponent, by virtue of its special value in "scaring the foe".[1]

With the Egyptians, military music had an important place, their chief instruments being the trumpet and drum, which, says Sir J. Gardner Wilkinson,[2] were utilized to regulate and enliven the march as is the custom in modern armies.

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1. Rawbotham, "History of Music", 1885
2. Wilkinson, "The Ancient Egyptians", 1833

The drum faded away from military music in the Roman, Saxon, and Dane armies. The horn was the chief warlike instrument in their armies. The Greeks employed the flute to march the army into battle.

It was not until the twelfth century we hear of the drum being used. It was not until this time, the era of the Crusades, when the soldiers of the Cross came in contact with the Saracens, they found a civilization vastly superior to their own; and that great intellectual ferment which succeeded those religious convulsions, leading to the revival of learning in Europe, had its roots in Saracenic culture. Even the renaissance of the military art was born of the Crusades. One factor at least -- the military band, which no doubt copied the Saracens[3] will claim attention here. The Hon. J.W. Fortescue tells us[4] that in the Saracen army minstrels were employed to indicate a rallying point. The musical display of the Saracens is described by one Crusader[5] as comprising trumpets, clarions, horns, pipes, drums and cymbals -- a prodigious array, creating a horrible noise and clamor.

One thing especially took the Crusaders' fancy, and that was the Saracen side drum and kettledrum, which were then unknown in European military music.

With the dawn of the sixteenth century came the renaissance of the art of war in Europe and soldiering was being

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3. Michaud, "History of the Crusades"
4. Fortescue, "History of the British Army," 1899
5. Geoffrey de Vinsauf, "Chronicles of the Crusades"

gradually consolidated into a system. In the companies of "foot" the side drum was retained for conveying commands, and in company with the bagpipe provided excellent marching music. The only musicians employed in the army were those attached to the suites of the great military officers.

Kettledrums, like trumpets, were aristocrats among instruments. Possession of them was the prerogative of royalty and nobility. Used at court functions, in the church, on important state occasions, a token of distinction permitted only to the life guards and mounted regiments which had won them on the battlefield, the drums always held a high position until social changes brought them down to the orchestra platform and the theatre pit.

It is almost certain that the kettledrums came from the Orient and were captured on the battlefield by Occidental people. There were three points of contact which brought the kettledrum into Europe. On the eastern shore of the Mediterranean they came into the possession of the Crusaders; in the Southwest they penetrated through the contact of the Spaniards with the Moors; and they came to western Europe through Russia, Poland, and Hungary.

The first evidence of the kettledrums is in the tenth century encyclopedia of the 'Ihwan-al-Safa'. The book enumerates the bowl drum 'qasa'. As far as we can tell, the kettledrums originated in two forms. The older one can be seen on a relief at Taq-i Bustan in Persia carved about 600 A.D. and

representing a drummer with a small shallow bowl drum which stands on the ground and is struck with one or two sticks. The other form, the larger drum, is found in Mesopotamian miniatures of the twelfth century A.D. The first of them gives an invaluable clue to their origin; instead of being rounded, the instrument has the flat bottom of a pot drum. Thus, it seems probable that the larger kettledrums were derived from the pot drums of the primitive man, which on a higher level are depicted on the Hindu-Javanese temple at Borobudor 800 A.D. Through many centuries the Persian miniatures depict them as preserving the same form. Later on, the kettledrum was rounded like an egg; this may have been an adaption to facilitate carrying the drums on the back of a horse or camel. In all the miniatures two drums of different size are used simultaneously. They are placed on the ground and inclined not towards the player, as in occidental orchestras, but away from him.

In Europe, the kettledrum can be traced back to the thirteenth century, but our latest and formal data on the history of the instrument is given to us by Nicholas Bessaraboff, who tells us, in western Europe the earliest traceable date is 1303, when the term "naccherone" was used. In 1304, Janino le Nakerer is mentioned in the list of minstrels of King Edward I, but no details or description is given until 1309. Through Jean, Sire de Joinville and chronicler of Louis IX, left us a description, "les nacaires", or "nakers" as they were called in England about the same period, were small kettledrums which

could be carried at the waist of the performer.

It is not known when exactly the larger drums associated with cavalry first came into Europe. Galpin[6] suggests that they were brought by the Hungarians from Scythia, and this seems probable, particularly, when one considers the movements of the nomadic Scythians and other wandering peoples in the early centuries of the Christian era.

The Arabian and Egyptian kettledrums are worth mentioning since they throw considerable light upon the early use of the cavalry kettledrums in Europe. These "naqqareh" are slung on either side of a camel, on which the performer is mounted. The drum on the right of the player measured about two feet in diameter, while that on the left about eighteen inches, i.e. they are placed opposite that of the orchestra.

Very important historical material is furnished us by Père Benoit who writes of the embassy sent by Ladislaus V, King of Hungary, to Charles VI, King of France, in 1457, to ask for the hand of his daughter Magdalen. He writes of "tabourins" which were large kettles. Dr. Sachs, commenting upon this, remarks that in the middle of the fifteenth century the large kettledrums were already known in Hungary, but not in western Europe.

In this connection it is an interesting fact that Henry VIII tried to procure from Vienna kettledrums which could be carried across the saddle, after the Hungarian manner. This is

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6. Galpin, "Old English Instruments of Music"

additional testimony that the Hungarian drums differed from those used in western Europe.

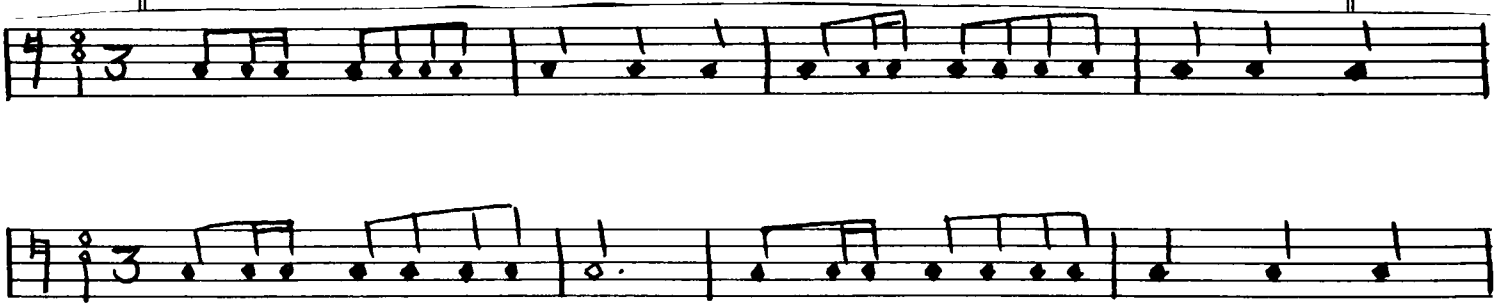
About 1500, those large drums were introduced to Germany. In his "Musica getulscht" (1511) Virdung writes that "now with us" the name tympana is given to the big army kettledrums of copper. It was during this time the kettledrums had undergone an essential change. Instead of laces, such as were used in Asia and eastern Europe, some screws were attached around and about the head which raised or lowered an iron hoop stretching the skin.

Germany had become the center of kettledrum playing. As early as 1384, Duke Philip of Burgundy had sent one of his drummers to Germany to learn the art of playing. Later, the kettledrum was considered a specifically German instrument.

In the seventeenth and eighteenth centuries German kettledrummers were celebrated throughout Europe. For a long time there had existed in Germany guilds of trumpeteers and kettledrummers, their privileges having been defined by imperial decrees issued in 1528, 1623, and 1650. Moreover, trumpets and kettledrums, being the prerogative of the nobly born, were forbidden to ordinary minstrels, and even the players attached to a nobleman's establishment, were not allowed to perform except on his requisition.

The introduction of the kettledrums into the orchestra took place around 1670. Lully is usually credited with the first use of the instrument in his opera, "Thesée", 1675,

being cited as the first score in which they appear.



The above example is taken from the prologue, accompanied by trumpets, hautbois, and strings. There was no definite pitch given to the drums at this particular time.

Evidence points to the fact that kettledrums figured in many of the masques which were produced in England from 1604 onwards. The earliest examples found occur in Jonson's "The Golden Age Restored" (1616) and in James Shirley's "The Trumpet of Peace" (1634). During this period the drums were played ad libitum.

In regard to tuning, the interval of a perfect fourth was the rule, having been derived from the technique of its companion, the trumpet. Before the close of the seventeenth century, composers had recognized that the kettledrums possessed certain artistic qualities that could not be overlooked. In 1692, Purcell used the drums, "solo" in the Symphony to Act IV of his "Fairy Queen".

With Bach and Handel, the use of the instrument was chiefly rhythmical, although the startling solo in Handel's "Semele" shows the dramatic possibilities were not ignored by this composer. The "roll" was not written to any extent at

this particular time, but there is no doubt whatsoever, that drummers did roll on long notes, particularly at the end of the composition.

It is not known when the actual written rolls began to appear in scores, but the fact remains, that composers in the late seventeenth century and early eighteenth century had difficulty with the notation. There is a theory that the word "tremolo" was written above the long note.

The compass was very restricted at this time, C and G, and D and A being the favorite tunings. Further, the kettle-drums were for the most part treated as transposing instruments. This writer found himself in the wrong key a few times, due to the fact the notation appeared written C and G, and the composition was in the key of D major, therefore quick changes on both drums were necessary. This difficulty was remedied by later Handel and Mozart, when the tympani parts were written in the actual key.

It is not until much later that we find the drummer expected to be able to change the tuning of his drums during the course of a movement. In the tympani part added by Mozart to Handel's "Messiah", the performer had to change from A and D to G and C, in eleven bars. There was just time to do this, the tuning being effected by means of a loose tuning key, and not by separate handles to each screw, as is the case today. But, although there was ample time available, Mozart did not require the player to tune the C back to D in order to obtain

the dominant of G in which key the chorus closes. Tuning in fifths was unusual in this period. Mozart, however, must have recognized the value of tuning in fifths as well as in fourths, since in his curious "Divertimenti" for two flutes, three trumpets in C, two trumpets in D, and four drums in G, C, A, and D, composed about 1773, the fifth is used, though between one drum of one pair and one of the other. The parts appear to have been written for one player performing on two pairs of drums.

Haydn,himself a tympanist, used tunings in fifths as well as fourths, and between them, Haydn and Mozart increased the compass of the drums. In his (Haydn) "Military Symphony" (1794) we find tympani tuned to fifths, G and D, with an entrance on G in the tenth measure in crescendo fashion which was quite rare at this particular time. The crescendo was founded in the Mannheim School, but not associated with the tympani. Also in this work, we find other percussion besides the tympani. Haydn scored for triangle, cymbals and bass drum, and this is considered the introduction of "hardware" into the orchestra.

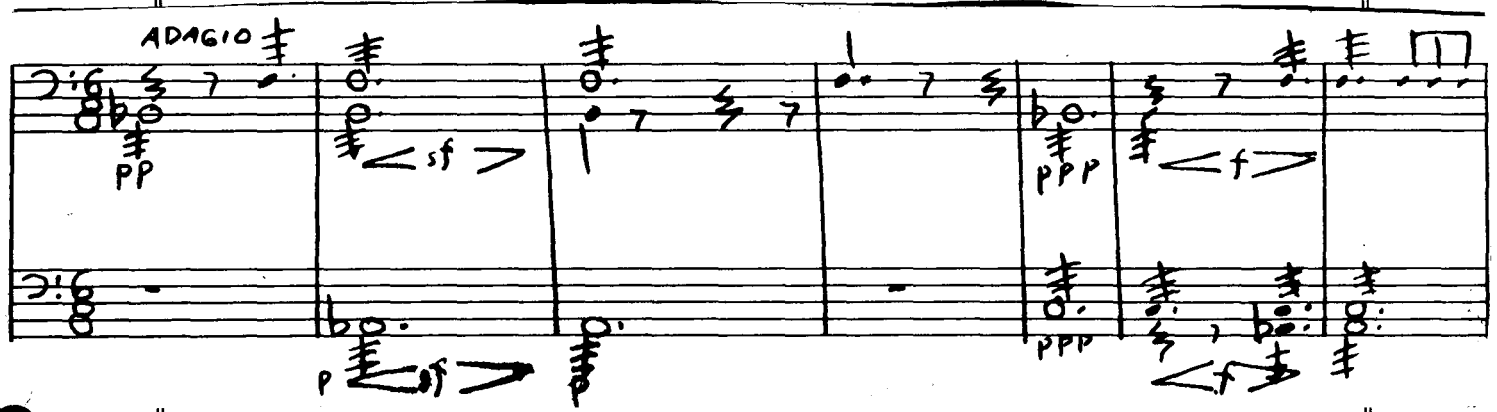
With Beethoven, we find a school of new tuning. He made the tympani play a major part in the construction of the orchestra. His recognition of "color" in the drums warrants notice especially in the effect which he achieves in the storm music of the "Pastoral Symphony". He makes use of a heavy roll, fortissimo, on a low F to reinforce the bassi and celli in the thunderous construction. In the first movement of the Fourth

Symphony, he makes use of a striking solo passage in which he uses the tympani as a pedal force instead of the lower strings. Beethoven made sure he could make use of the drum at any given moment. In "Fidelio", he has the tympani tuned to A and E flat which at that date was absolutely unique. In the Scherzo of the Seventh Symphony we discover the odd interval of a minor sixth scored. He makes use of the high F and the A below. This pitch interval limits the composer of the tonic dominant feeling as far as the root is concerned. As we study the score, Beethoven scores this interval to furnish himself added punch in the non-relative modulations, i.e. he goes from F major to A major, back to F major to D major, which the A drum furnishes the dominant in this key. At letter D, the recapitulation, he returns to the home tonic (F major), to A major again and then to tonic key. From here he goes to D major to A minor and A major, of which the low pitch drum gives us the root, and the dominant feeling to D major once more, and ends on the tonic of our starting key. Beethoven leaves us without any dominant feeling coming from the drums, as one would expect. The same thing prevails in the Finale of the Eighth Symphony and the Scherzo of the Ninth Symphony where the tympani are tuned to octaves. In these two works, the tympani are used in a most effective way. At rehearsal number 35, we find the tympani in solo with the bassoon, pianissimo, playing octaves, a difficult passage for the bassoon. The Scherzo of the "Choral Symphony" offers us a pause and then a cannon burst from the

tympani on the interval of the octave. This rhythmic is repeated throughout the movement with the accented note played on the high F and in certain places the inversion is played.

The techniques founded by Beethoven offered his contemporaries and later composers, as we shall hear about, the tonal as well as the rhythmic effect the tympani can produce.

Berlioz has given us the elaborate chord playing effect. In his "Symphonie Fantastique" (1830-1831) he set a new fashion by employing two pairs of tympani, although the idea was originally a Mozart foundation, but never exercised in a large orchestral piece. The score calls for four men (one man on each drum) but two men can actually execute the passage. At the end of the Adagio movement, we find the tympani in A flat, C, B flat and F. Berlioz makes use of these drums in solo with the English horn, and he employs two combinations in chordal form as shown in the example below.

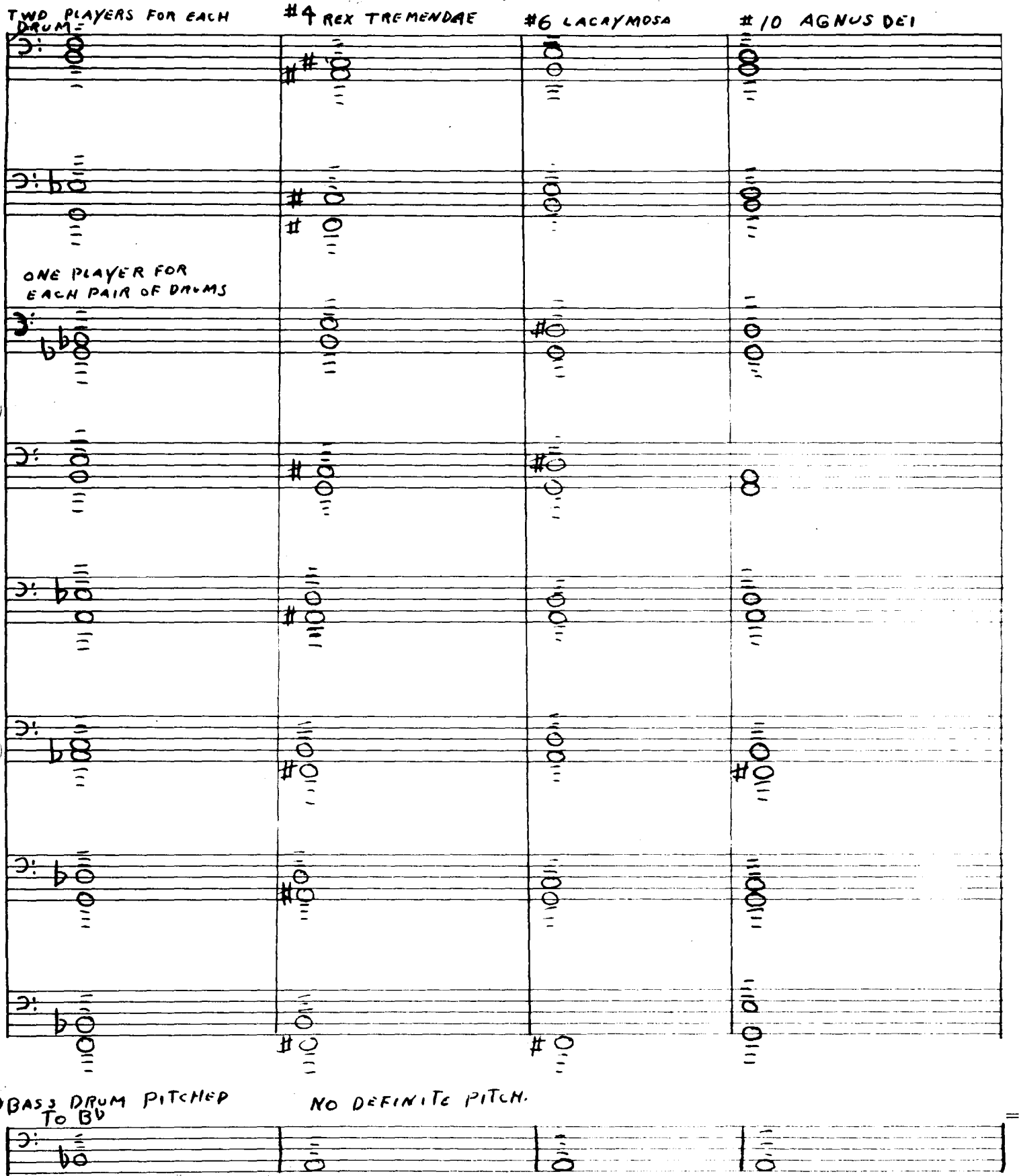


In the "March to the Gallows", Berlioz scores solo for tympani using the B flat drum of the first tympanist and the G drum of the second tympanist playing simultaneously, which creates quite an effect as the second tympanist alternates between the G and D, which produces a B flat and a G minor chord. Eleven measures after the first double bar, an effect is again achieved by Berlioz as the strings play pizzicato, and the tympani play rapid sextuplets solo in crescendo on the G, B flat, D and F drums returning to the B flat fortissimo, setting off a series of triplets and dotted eighth note rhythms throughout the large orchestra.

In the Overture to "Benvenuto Cellini", Berlioz instructs two players to perform on three drums, using wooden mallets. The tympani are pitched in G, B, and D, thus producing the tonic triad of the work. The three drums are employed in the chordal fashion throughout, with a few instances where one drum is used.

In contrast to the above mentioned work, Berlioz in his "Grand Requiem Mass" makes use of eight pairs of drums which are tuned in different pitches and ten players are needed to execute this huge orchestration. He has the bass drum player tune his drum to B flat and instructs him to lay the drum on its side, and play with two tympani mallets. The table which follows gives the various pitches of the tympani in different sections of the "Mass".

GRAND REQUIEM

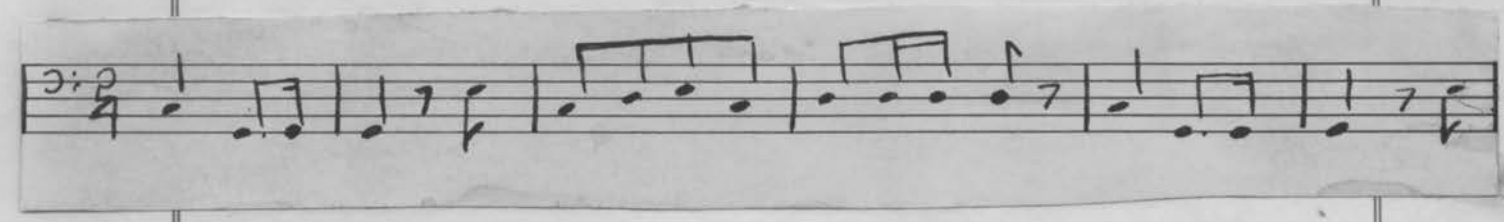


It is interesting to note that Berlioz made special emphasis that certain types of mallets are to be employed. He states in his "Treatise upon Modern Instrumentation and Orchestration" there are three types of mallets to be used: mallets with wooden ends, mallets with wooden ends covered with leather, and the type with ends made of sponge. He recommended that the sticks be made of whalebone. Since then, this type of stick has been replaced by bamboo and malacca cane. The modern tympanist has as many as six pairs of mallets at his disposal. The common design is either the "ball" or "wheel" type head with cork or sponge base covered with hard or soft felt.

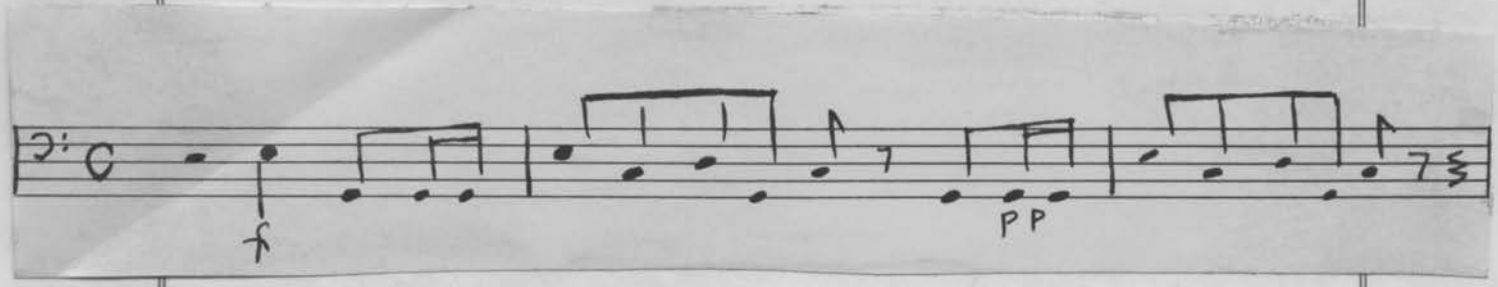
NAME OF STICK	TYPE OF USE
1. Small headed sticks of hard felt	Staccato and precise rhythmical effects
2. Wooden sticks	Specialized rhythmical effects as indicated by the composer
3. Cartwheel type sticks	General use and tone
4. Light, small headed sticks	Soft staccato work
5. Flannel headed sticks	Extremely soft staccato work
6. Ball type stick	All around general use

These mallets are made by most tympanists, to fit the conductor's taste and their own touch. It is safe to say that Berlioz revolutionized tympani playing. He had a deep insight and feeling for the tympanist which is rarely found among composers.

During this period, we find another composer busy. In his opera, "Robert le Diable" (1831), Meyerbeer, himself a tympanist, wrote a solo passage for a single player upon four drums tuned to G, C, D, and E. (Act IV, No. 17) This appears in the manuscript but in the printed scores the part is written for three tympani only, in G, C, and D, the celli and bassi playing the entire passage pizzicato, thus filling the gaps caused by the omission of the E from the drum part as shown below.



Later, with the completion of "The Prophet" (1849), we discover another solo, using the same pitches, but this time all the drums are printed in score. This solo appears in Act III.

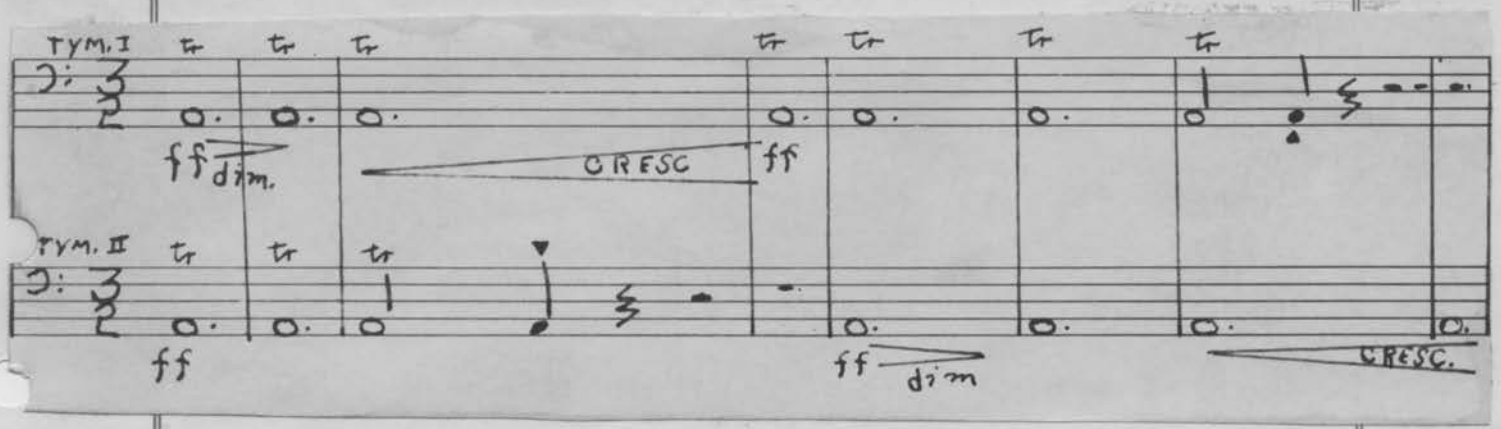


With this innovation, Meyerbeer opened the eyes of later composers and allowed the tympanist to be a soloist using thematic material instead of being part of the orchestra.

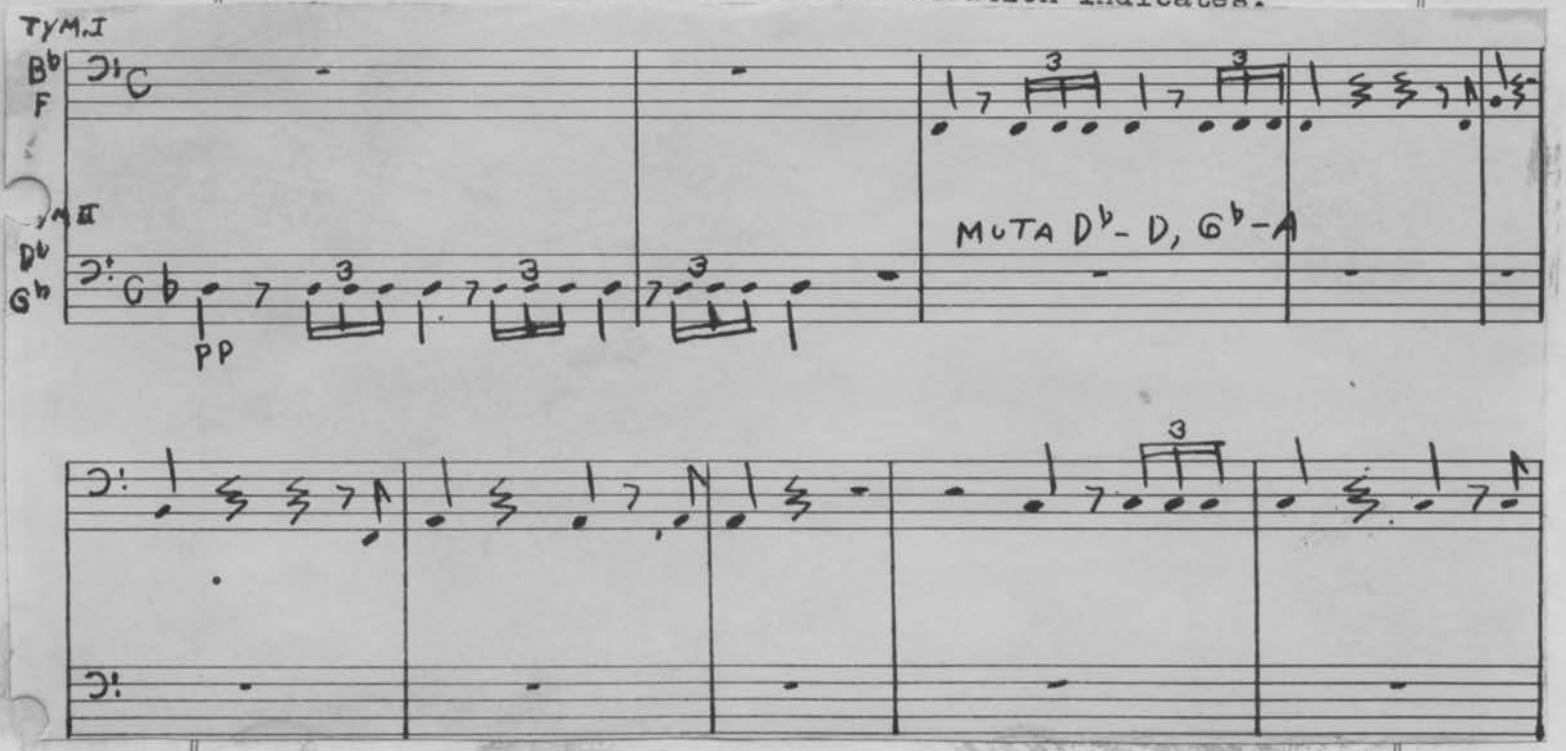
Before the middle of the nineteenth century was reached,

inventors in almost every country in Europe had tried their hands at a mechanically tuned tympani: Stumpff in Holland, Labbaye in France, Einbigler in Germany and Boracchi in Italy. At first, the mechanism did not prove entirely satisfactory, since perfect intonation would not be achieved owing to the lack of homogeneity of texture in the drum-heads. But by adding to the drum ordinary tuning-screws, over and above the rapid tuning mechanism which was operated by pedals, the difficulty was overcome, and parts specially designed for the machine tympani began to be written.

About this time, Wagner came into being with his tympani scoring. He makes use of two pairs of <u>machine</u> tympani throughout the "Ring" and"Parsifal". His use of the instruments is particularly interesting, for he not only took advantage of the presence of two players in order to obtain rapidly varied tunings, otherwise impossible in a short period of time, but also devised dynamic and complex rhythmic schemes. In "Die Walkure" (Act I scene 1), Wagner made use of dynamics in the following fashion.

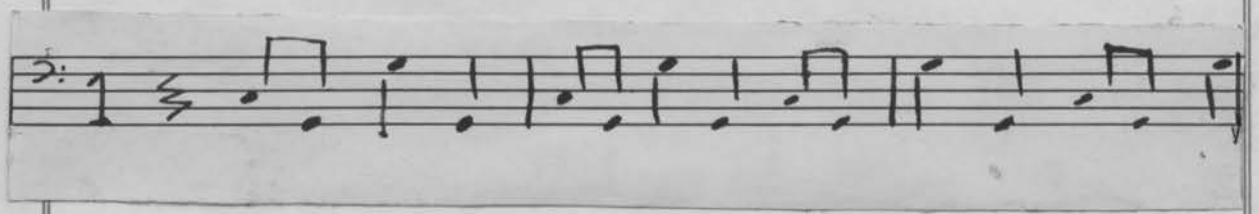


It is odd that Wagner did not follow Berlioz in notating the roll. All present composers notate in the Berlioz manner which is easier and simpler to read. Later in the same work, we discover (Act II scene 4) the famous Wagnerian scoring of tympani known to tympanists as "leap frogging". He has one player tuning to the written pitches while the other is busy performing on his drums as the illustration indicates.



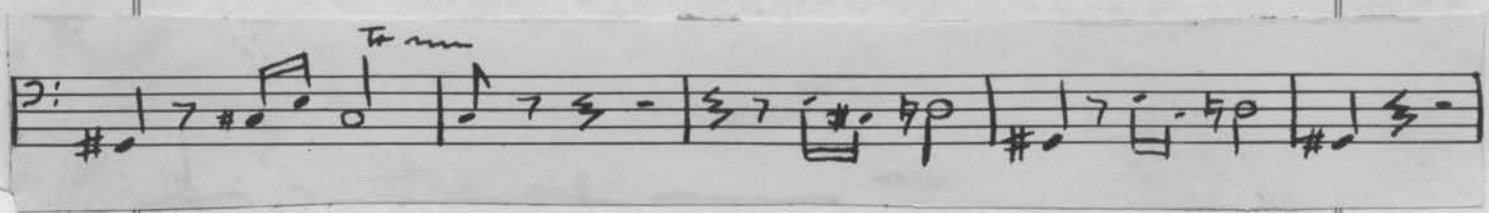
In all his music-dramas, his scoring for this instrument is effective and heavy. The dynamic employment was inherited from Beethoven, whom he deeply respected. Through Wagner, the tympanist is required to have a good sense of pitch in order to make quick changes while the orchestra is sounding around him, plus keeping his place in the score.

The "Enigma Variations" (1899) of Sir Edward Elgar offers us something new in the way of tympani scoring. In the seventh variation or Troyte section at rehearsal number 24, we discover the tympani pitched in G, C, and high G. This scoring is very odd, especially in the nineteenth century, with the use of the high G. This compass is very difficult to obtain on a twenty-six inch drum unless a twenty inch drum was used, which was not practical at that particular time. To obtain this pitch one would have to wait for a low percentage in humidity or perform in a cold and dry concert hall.



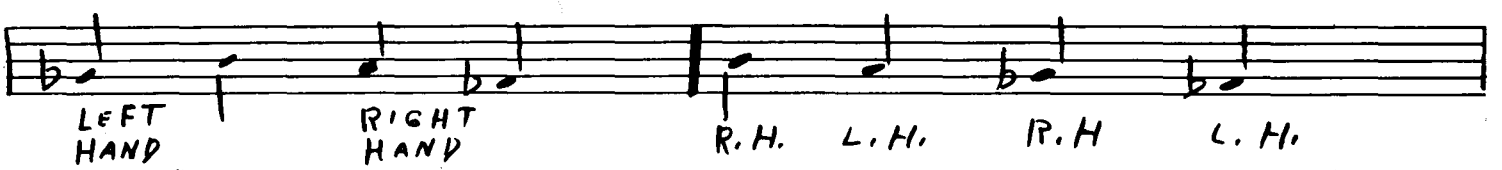
This rhythm appears throughout the variation both in solo and tutti. In the thirteenth variation Elgar instructs the tympanist to use side drumsticks to roll on the C drum, triple piano. This is difficult to execute in this particular dynamic, plus the fact that the articulation is of the double stroke variety instead of the standard single stroke roll used on the tympani. This original effect of Elgar suggests the stillness of the ocean in the Romance section of this work. This roll is repeated on the G drum, and the pitch cannot be heard because of the dynamic and use of hardsticks, leaving us with the feeling of calmness. This effect, without any hesitation whatsoever, can be claimed solely by Sir Edward Elgar.

In the works of Richard Strauss, especially "Salome", two pairs of machine tympani are required. Being a disciple of Wagner, his demands were greater than his great predecessor. In contrast to Wagner who scored for two tympani players on four machine drums, Strauss scores for one player only, on the like amount of instruments. Just before the third scene we discover a passage that could be played on <u>one</u> drum, using a pedal freely to attain the desired effect. Strauss starts a roll, piano, on E in crescendo fashion, and descends chromatically to E flat for four measures, to D for the like number of measures, and hence to C. If a player does not wish to make use of the above technique in executing this passage, he can prepare these pitches on four drums, which requires more time. At rehearsal number 87, Strauss creates quite a musical expression; as the voice of Jochanaan re-enters, we hear a solid blow on the A flat, low E, B flat, and C drums in triplet rhythm against a chord of A flat augmented with added sixth and ninth played fortissimo throughout the orchestra. Between number 141 and number 142 we have the below figure which lies comfortably in <u>fingering</u>, a term used by tympanists. This figure is played with the horns, lower woodwinds, and strings.

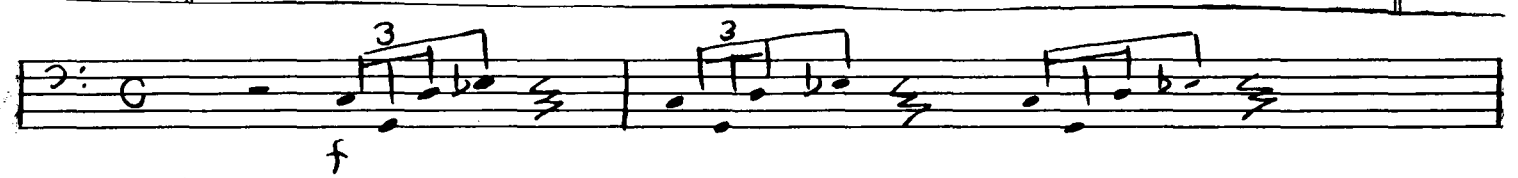


After we hear Salome's wild cry of "Jochanaan!" the tympani enters in a ferocious manner on a group of sixteenth notes requiring the utmost technique and traversing of the anatomy striking all four drums at lightning speed.

Beneath rehearsal number 298, Strauss has made note how to set up the tympani. This pattern is unorthodox in the way of the pitches of the drum order, but it is easier physically to execute. The illustration below shows how Strauss made note of this passage, and to the right of the example, the way this writer would execute this rhythm.

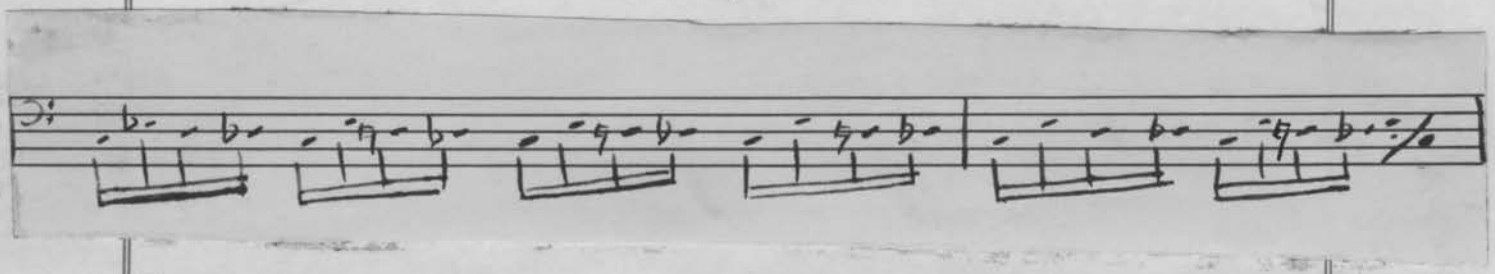


The above figure is repeated and then played in the inversion later at number 302, but this time in piano to fortissimo crescendo fashion. Strauss furnishes us with little drops of effect, such as found at number 331.



This figure requires speed in the right hand, because consecutive blows with the right hand are required, going from the D to the E flat drums.

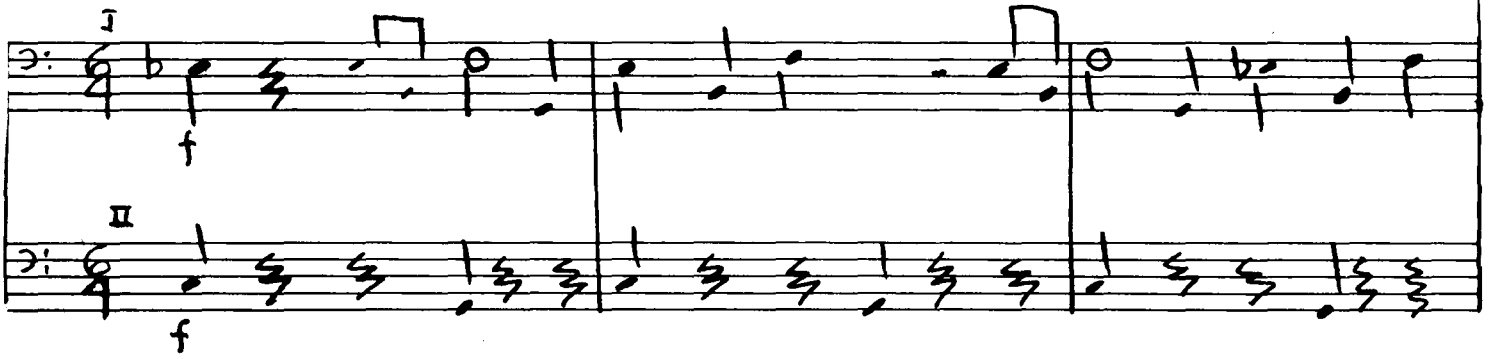
As this work comes to a close, we find another figure that requires speed and technique.



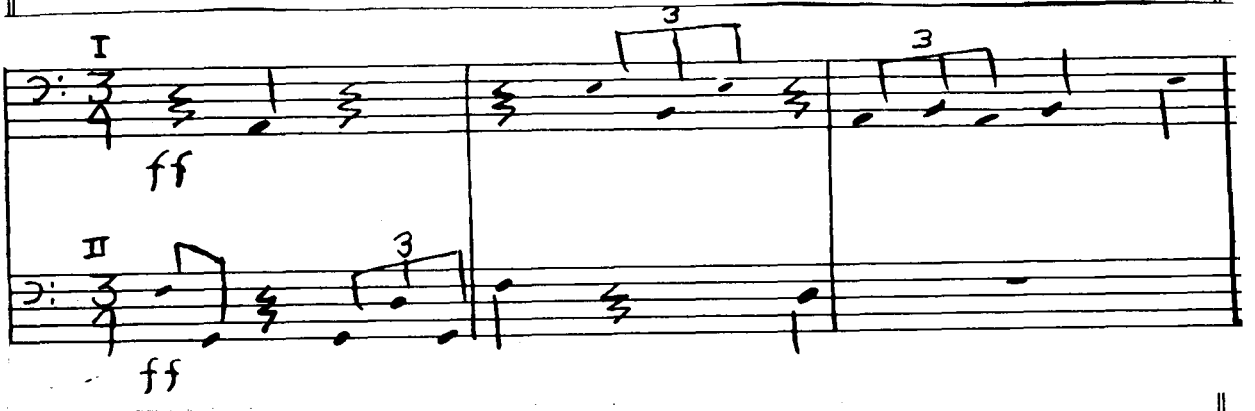
In performing this figure, one would have to encounter two consecutive cross-beats from the D flat to the D and C drums. This is awkward and very impracticable, so therefore one would have to make use of the D drum left of the D flat drum. The executant would have to make note of this, otherwise he would find himself in a tangled mess. Four machine tympani must be employed throughout, in order to execute this passage.

At the turn of the century we find an Englishman of Swedish descent by the name of Gustav Holst, who made use of six tympani in his orchestral suite "The Planets". The composition calls for two performers with at least four machine and two hand tympani. The drums are divided with each player using three drums except in the "Uranus" section of the work, which calls for the first player to make use of four drums pitched in G, B, E flat, and F, while the second player employs the remaining drums in F sharp and C. A few bars after

the F sharp is changed to another G at rehearsal number 5, the below figure takes place.



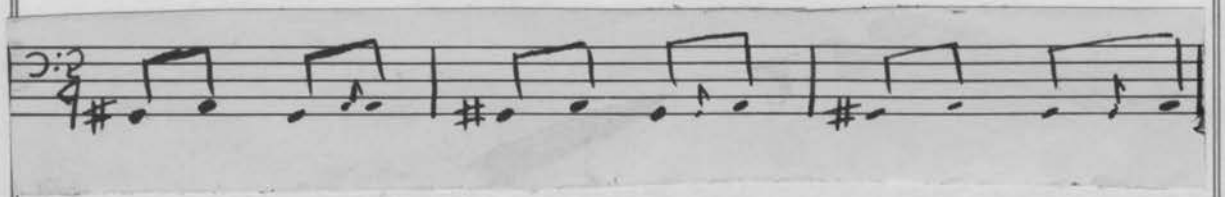
These tonalities are blended with the lower string and wood-wind choirs in unison and octaves. In part IV, known as "Jupiter", the bringer of jollity, all the drums blast forth in a fortissimo rage which can be heard distinctly over the orchestral tutti.



With Holst, we acknowledge his taste in usage of percussive sonorities.

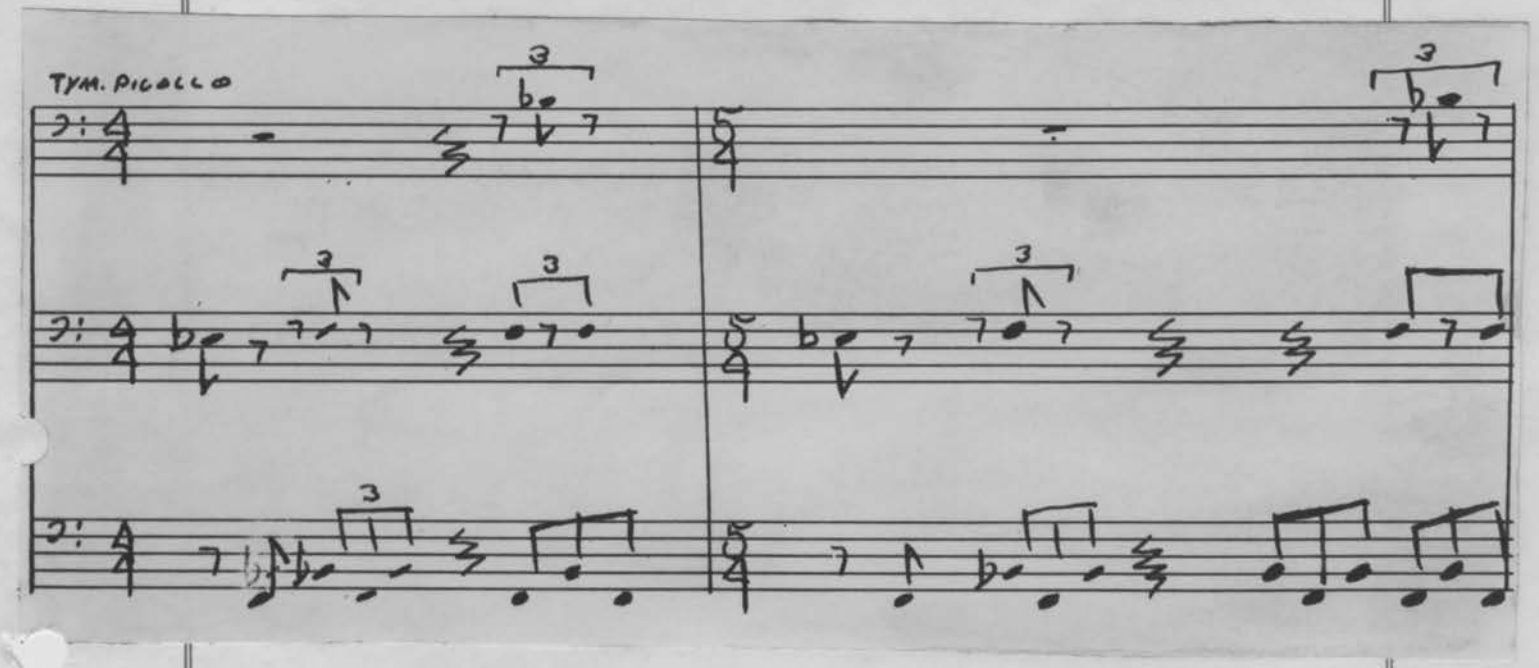
As we enter the era of impressionism, we discover a unique style in notation for tympani. Debussy in his "Gigues"

has furnished us with written acciaccaturas.

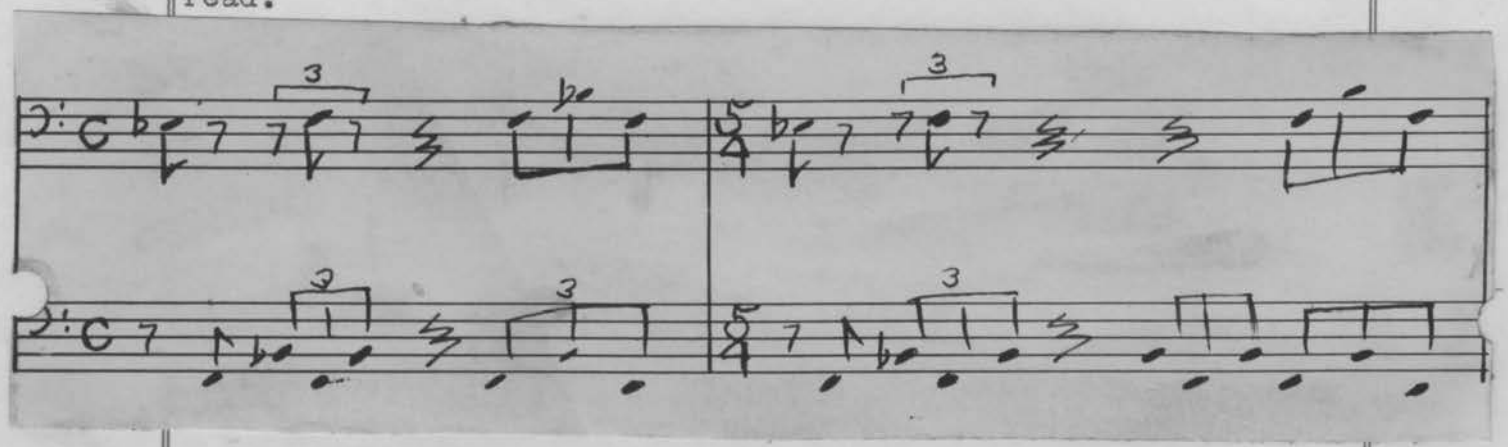


This type of notation produces a broad sound. The terminology used in the percussion section is referred to as a flam. It consists of a light stroke followed by a strong one, the stronger coinciding with the accent of the music, the lighter anticipating it slightly.

In Stravinsky, especially in the once rejected "Le Sacre du Printemps", the tympani play an important role, particularly in the Danse Sacrale of the ballet. The tympani are notated on three staffs.



For the performer, a revision must be made in order to make these passages playable without encountering any difficulty. The five tympani are divided among the two players, usually the tympanist of the organization playing three of the drums while the assistant or second tympanist performs on the remaining two drums including the "inkwell" or tympani piccolo as it is referred to by Stravinsky. For the good of the performer the parts are copied on one staff making it easier to read.



For best results in resonance it is best if the high F be played on a twenty-four inch drum, while the low F on a thirty inch drum. It is strange to note that Stravinsky scores the tympani to be in octaves and unison instead of making use of varied tonalities which he has at hand. At rehearsal number 193, known to tympanists as "nightmare alley", because of the constant meter changes, Stravinsky scores for both players in unison, after they have made quick changes. This doubling on a minor third (low A and C) produces a frantic paganistic effect which fires its way through the cacophony, in tutti, of

the orchestra.

Under the instrumentation Stravinsky makes note that all five drums should be used by both players. This would be quite awkward, because the performers would be in each other's way, also distracting one another which is detrimental in a composition of this sort. The paragraph also states when the second player is not occupied he should help the other in tuning the instruments so that the first can follow the conductor. As far as my knowledge is concerned, the tuning is limited to the individual performer on his respective drums.

The written high B and B flat are the highest pitches scored for tympani. Stravinsky is given credit for their use, and considered by most tympanists the father of modern rhythmical and tonal effect.

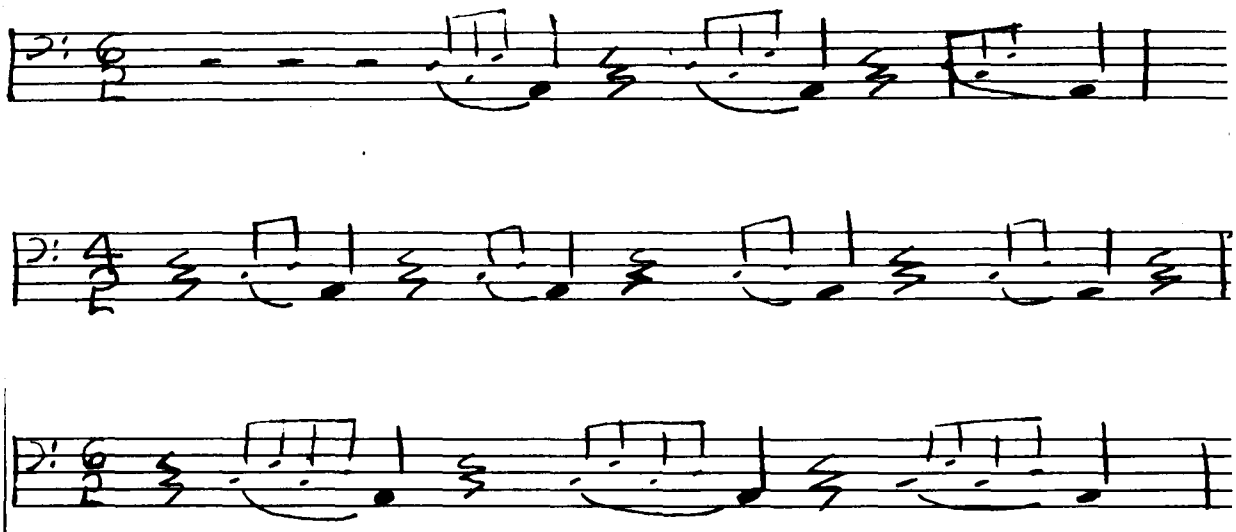
In contrast to these written high pitches, our attention is given to Mahler temporarily in his Ninth Symphony. Between numbers 38 and 39 in the "Rondo Burleske", Mahler scores for A on the first space, D on the third line, and then after a few bars, the tympanist is plunged into the depth of a low D, one octave below the higher drum. Except for an oversize tympani, correct intonation on such a low note could be reached and sound its best on a hot and humid day. The dry air of our concert halls is not conducive to a player's peace of mind in such a situation. There is definite feeling that Mahler's scoring for the tympani has characteristic trait, tonal rhythm

in color contrast to other choirs, particularly in the solo passages. The contrast in the tonal shading is as wide and greatly divergent as any composer has thus far achieved.

Back to Stravinsky, we notice a series of acciaccaturas in his "Les Noces" (1923). This type of notation and effect was introduced to us through Debussy as mentioned but not used in the same manner. Stravinsky has the performer strike the initial pitch, which is followed by an accent after the second drum is struck, which appears in a series at number 35.

Another example of note found in this work is at rehearsal number 90. Here, we discover an innovation in tuning, in which Stravinsky instructs the tympanist to change his drums to low F, and high G, an interval of a major ninth. This is the largest interval ever written for tympani, and through the daring manner in which Stravinsky wrote, the tympanist has had an opportunity to pitch his drums other than the conventional intervals plus the consistent meter changes.

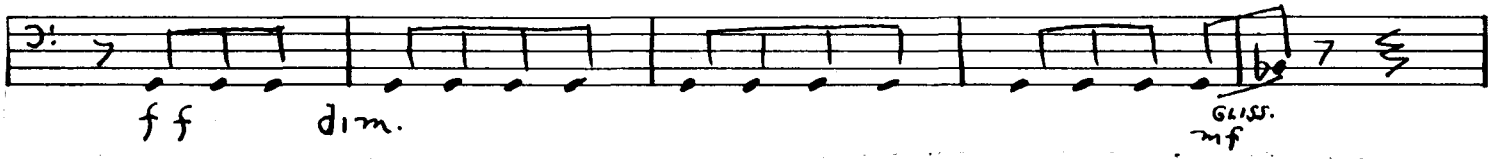
Later, with Hindemith, the acciaccaturas[9] are used with a broader expression in the first movement of his "Concerto for Violin and Orchestra" (1939); we find three different types.



The pitch of the drums, positioned in the correct manner, requires the speed as we found in the work of Strauss, to strike the respective drums. These figures can only be executed in a slow movement, otherwise the performer would be limited by the element of time to anticipate the beat, especially with the third example, because of the distance which lies between the drums. This style of scoring has never made its appearance in any other composition in the contemporary era.

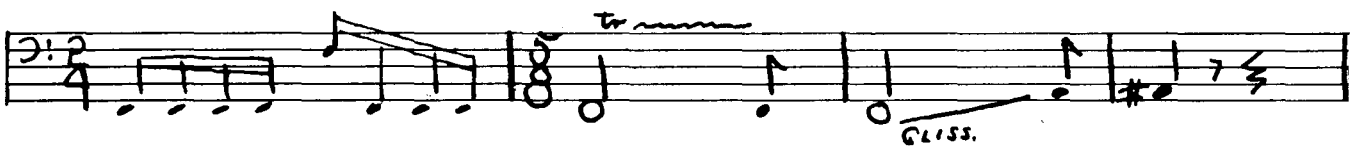
With the advent of improved machine tympani, a dynamic character enters the picture in the name of Béla Bartók. On completion of his "Music for String Instruments, Percussion, and Celeste" (1936), we notice in the score that if no chromatic tympani are to be had, the tympani part should be played on the piano in corresponding chromatic passages. This substitute would create a different effect altogether, because of

the sonorities the membrane will produce when struck and rapidly compressed, In order to perform such a work, a player must be very familiar with the mechanism of his drums. He must work with pedals that are free from locking, otherwise he will find himself in difficulty attempting to manipulate his instrument, i.e. he must be sure that the pedals are in good working order; such an example appears between rehearsal number 180 and 190.



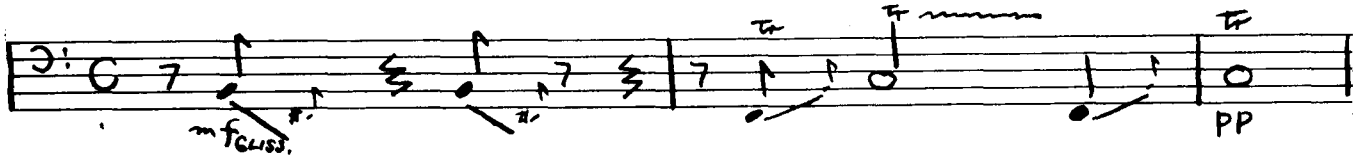
This is repeated by celli in the next bar, followed by the bassi in the third bar. Working with strings is a sensitive task because of the brilliant tone produced by this choir. If one is slightly out of pitch, the error can be detected very easily, as could be the case with the above example. On this figure the metronome is set to ♩= 144, requiring quick reflexes to press the pedal on the fourth pulsation of this measure. The B flat is not struck, the fourth blow or the last G is struck producing enough vibration so it (B flat) can be heard when the pedal is pressed down to obtain this minor third.

As we continue to study this score, our attention is drawn to another figure involving the glissandi between numbers 330 and 340.



The best results are obtained if one pulsation is given to each eighth note, therefore giving each chromatic the same value, requiring five half tones between G and A inclusive, in this five-eight measure. As far as the A sharp is concerned, it may be approached two ways, either by preparing this pitch on another drum, or continuing in the same manner as the A was reached. The latter is the easiest and the most logical choice.

As the third movement opens, we hear the tympani answering the xylophone which is played solo and rubato. The glissandi are written in the inversion.



In reaching the F sharp the dynamic is lost, so in turn in order to maintain this dynamic and prevent an unwritten diminuendo, a roll must be employed, because of the tempi, adagio and adagio molto. In a downward glissando, the membrane when struck has a tendency for its pitch to fade, because the vibrations are lessened when the tension is released on the head of the drum. One fascinating effect is found at one meas-

ure after number 30. The tempo is slowed down to al piu lento ♩=46 where the executant makes use of one drum on the following notation.

The descending and ascending glissandi on a perfect fourth are heard above the orchestra creating a feeling of one riding on the crest of a wave. This is the most difficult passage of this composition. It is best if number 3 drum is tuned to its lowest pitch on a B flat, i.e. the mechanism adjusted to where B flat will be the lowest note obtainable on that particular drum, otherwise there will not be any guarantee of returning to the B flat, as such is the case in the second measure. Beneath this figure, the celeste and piano are playing chords in series of tritones, non-relative to the pitch used in the tympani, causing greater difficulty in the performance. At the end of this third movement, Bartók employs the descending glissandi again on a perfect fourth ~~this time~~, going from D down to A as the tempo is retarded to ♩=42. Bartók really favored this sound, because whenever he feels for this effect, he retards the orchestra by degrees so that this sound becomes the most prominent, allowing the tympanist enough time to execute the figure well, through the use of a quarter rest

between the glissandi, so the performer can pitch the drum to a D before descending again.

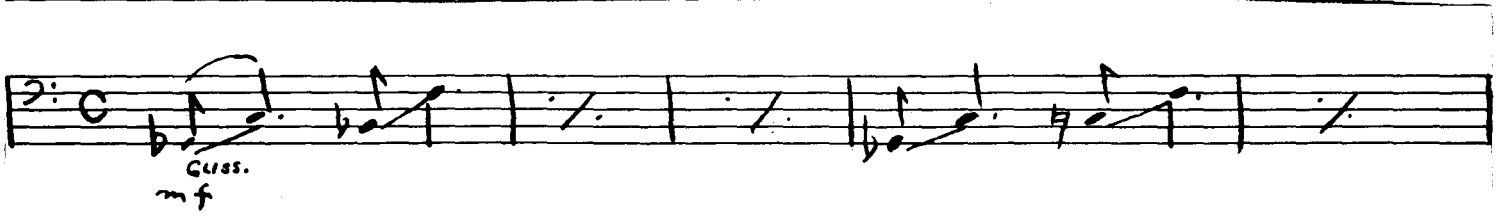
As soon as the figure of a glissando is completed, Bartok instructs the conductor back to tempo primo.

In the "Sonata for Two Pianos and Percussion" (1941), Bartók leaves us with a plan how to set up the various percussion instruments. This work requires at least three machine tympani to make a fraction of a second change in pitch demanded by the composer. The tympanist and percussionist must depend on the first pianist who is also the conductor, for tempo changes. The first movement is well organized from a meter standpoint. The whole movement except for two measures in the beginning is in nine-eight meter.

In studying this score, a noteworthy example makes its appearance at rehearsal number 133. Here, Bartók gives the tympanist a continuous roll for twenty-eight measures, with a written glissando in each measure. This passage is performed on one drum. The performer enters on low F sharp for a measure pressing a glissando to A, for the same value, and back. This interval of a minor third is repeated four times, and then Bartók has the player execute an interval of a perfect fourth, F and B flat in the same manner, which is repeated twice, end-

ing with an interval of a diminished fourth, F sharp and B flat, pressed and released five times. This requires a sensitive ear to obtain the true pitches in a short space of time, plus the fact that one must be familiar with the feel of the pedal. In the latter part of this movement and throughout the rest of the work the tympanist is called upon to assist the percussionist in the rhythmic support to the composition.

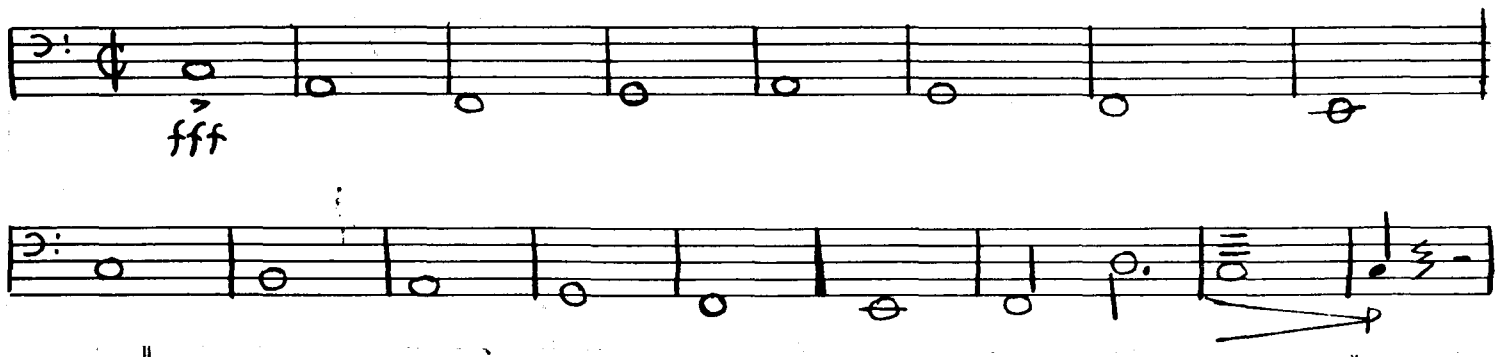
In the following year (1942), Samuel Barber, a young American, completed "A Stopwatch and an Ordnance Map", a work for a full chorus of men's voices and three kettledrums. Strangely, this mixture blends well, and creates a very dramatic atmosphere. Mr. Barber takes us deeper into the realm of tympani playing. His demands are greater than any of his predecessors. His new application of tympani occurs about half way through this short composition.



This is a very complex figure to perform due to the physical aspects one has to undertake in executing this particular passage. The executant must be seated on a chair raised to the height of the drums, allowing his feet to be

free, so that he may be able to make use of two pedals. The tympani are operated in the style as one would pedal a bicycle. After the G flat is struck and the C flat is reached, the pedal is raised with the left foot, while the right drum is struck a single stroke as the pedal is pressed to F. It is very wise to practice with the mechanism before the performer makes use of the mallets. This will give the player more security in timing, after he has learned to coordinate his feet in rhythm. For best results, two of the drums should be adjusted to where the pedal, when fully released would sound the lowest pitch written, leaving the executant to concentrate on the interval of the glissandi and rhythm. When the fourth measure is reached, the C natural must be reached and sounded through the feel of the pedal, i.e. where the C would lie in relation to the B flat.

With Aaron Copland in his "Appalachian Spring" (1944), the tympani are scored in a purely melodic style.



This passage also requires technique with the pedal and the ability to stop one tone from sliding into another. This is

exercised by use of a muffle with the left hand laid lightly on the drum to stop the vibrations. The above passage is doubled in the basses, piano, harp, bass trombone and bassoons. With this combination, the sonority of the tympani is the most prominent. It is wise for the performer to play this passage just before concert time, in order to test his drums, and adjust them in the right manner. Oddly enough, only two machine tympani and two hand tympani would be required to execute this passacaglia. This writer would tune the drums to E, A, C, and D, using the A drum to obtain G, F, and B. The leading tone or B must be pressed while the D and C drums are sounding in the eighth and ninth measures. Achievement can only be carried out through the versatility in mastery of the pedal tympani in this case, because the ear cannot be employed.

A deferential bow must be taken in the direction of our modern and contemporary composers for allowing the tympanist to display his musicianship and distinguish him from the drummer in the percussion section, also inviting other composers to make use of all sonorities offered by this instrument in any form of tonality or dynamic. The future shall tell what is in store for us.

CONCLUSION

To many musicians the appearance of a tympani part is somewhat startling; in fact, relatively few realize the enormous difference that there is between the appearance of music that is placed before the tympanist to that, for example, of the concert-master of an orchestra.

The late English tympanist, Gordon Cleather, once said in a lecture that "a large proportion of the mistakes made by tympanists are really due to the conductor, or the way in which the music is written, and to absence of cues, or cues that are useless and only misleading or refer to instruments of the orchestra which the tympanist may be quite unable to hear".

Most of the instruments have before them, as a guide, the melodies of the work, or at least suggestions of the harmonies, together with key signatures; the tympanist is frequently furnished with an almost cue-less part with no key signature or thematic aids, and must depend on his arithmetical sense and feeling for form.

Every one must realize that, since the number of bars in the average work which the tympanist has to play is comparatively few, much of his part will necessarily consist of rest. Accordingly, the player, unless he knows his part, must count through every group of rests, in order that he may make his

entrance with c ertainty.

Often the player has to alter the tuning of his drums while counting rests, and at times this is rather difficult. This is especially the case when, during many bars rest, the time signature changes, for the player has to keep an eye on the conductor as well as his part (which is a long distance from his eyes), count the silent bars and tune his drums at the same time.

For this reason, it would be well if composers would insist on copyists and publishers cueing the tympani parts adequately, and arranging rests in them in such a way as to correspond with the rhythmic structure of the work, so that the player would have a definite check on his counting from time to time.

Some contemporary composers have adhered to this, relieving the player of added tension so that he may perform with relaxation. We shall look to the future with a light of hope that this realization will come true.

Terms Used in Tympani Playing

ACCORDATO (It.).....Tuned
ACCORDATO PER QUINTA.....Tuned to the fifth. Used when alternative tunings are possible, e.g. F,C
BACCHETTA (It.).....Tympani mallet
BACCHETTE.....Mallets
BACCHETTE DI LEGNO.....Mallets with wooden heads
BACCHETTE DI SPUGNA.....Mallets with sponge heads
BAGUETTES (Fr.).....Mallets
BAGUETTES DE BOIS.....Mallets with wooden heads
BAGUETTES DURES.....Mallets with hard sponge heads
BAGUETTES D'ÉPONGE.....Mallets with sponge heads
BAGUETTES ORDINAIRES.....Ordinary mallets
BLOUSER (Fr.).....To beat the tympani
COPERTO (It.).....Covered or veiled. Plur."COPERTI"
COUVERTE (Fr.).....Covered or veiled. Plur."COUVERTES"
DAMP.....To check the vibrations of the drum head
GEDÄMPFT (Ger.).....Muted or muffled
GEDÄMPFTE PAUKEN.....Muted tympani
GEWÖHNLICH (Ger.) .....Usual
GEWÖHNLICHER SCHLAGEL.....Ordinary mallets
MIT GEWÖHNLICHEN PAUKENSCHLAGEN...With ordinary mallets
GRIFF (Ger.).....Grip the knob at the end of the handle of the mallet
HOLZSCHLÄGEN.....Mallets with wooden heads
JEI DREI PAUKEN.....Three drums each
MUTA (It.).....Change, e.g. Muta C in D, change C to D
PAAR (Ger.).....Pair
FÜR JEDES PAAR EIN SCHLÄGER.One drummer for each pair
PEAU (Fr.).....A drum head
SANS ÉTOUFFER LE SON.....Without damping the sound
SCHNELL ABDÄMPFEN (Ger.)....Damp quickly
SCHWAMMSCHLÄGEL.....Mallets with sponge heads
SORDINO (It.).....A mute
TABALLO (It.).....Tympani. Old Italian term
TIMBAL (Span.).....Tympani
TIMBALES (Fr.).....Tympani
TIMBALES COUVERTES.....Muted tympani
UMSTIMMEN (Ger.).....Alter the pitch
WIRBEL.....A drum roll
ZURÜCKSTIMMEN.....Retune, e.g. C nach D, Tune C back to D
ZUSAMMEN.....Together
ZUSAMMEN DREI SCHLÄGER.....Three drums in all

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