

Musical Notation.

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Musical notation of interest for the light which it throws upon music as for its own value.

History of musical notation divided into three parts; first used being the letters of the alphabet; next Hieratic characters, and last, we have the notes written on the lines and spaces of the staff.

The different forms of staves used with the various systems of notation. The invention of the Time-table. The values of notes fixed.

Modification of measured music by Mode, Time, and Prolation, besides, by position and rhythm. The division of the diatonic scale into the Authentic and Plagal Modes, each mode divided into Dominant, Mediant, and Participant.

The sharp, flat, and natural and when first used. The change of musical typography with the invention of printing. Change in the form of notes. Marks of Expression; Major and minor scales. Value and forms of notes - Measure, Time Signature, - Accent, Tie, Slur, Syncopation

Melody and Harmony, - The Four
Soh-fah-a system which requires
no staff, - when invented, Solfeggio.
Conclusion.

Musical notation is of interest not only for its own value, but also for the light which it throws upon music as a whole. This art, although progressing slowly at times, has never ceased to advance throughout its long existence, while each period of its development has called for a change and improvement in its written language.

For convenience the history of notation has been divided into three parts. In the first period, the letters of the alphabet represented the sounds; then, centuries later a species of Stenographic characters took their place, known to the Monks of the Middle Ages by the name *Neumes*, and last we have the notes written on the lines and spaces of the staff.

The Greeks used the letters of the alphabet with occasional Minuscules, placed in all positions and combinations, sometimes right side up, at others upside down, on the right or left side, or only a part of the letter was used, making over a hundred principal variations and several times as many minor ones. When Greece was overpowered by Western Europe, Roman characters came in to take the place of the older forms, making the notation much

simpler, by taking the letters in alphabetical order to represent the tones of the scale instead of combining them into Tetrachords as had been the custom of the Greeks. At first, fifteen of the letters were used, but later these were reduced to seven, and then nearly went out of existence, long before the invention of the staff, so that all that remains of the system is the naming of the notes by the letters of the alphabet.

Although this system was clear and the best of that time, it had one drawback which kept it from ever becoming very successful, and that was that it made not attempt to show the degrees of the scale by the position of the notes, so that could be no understanding about the tone to be sung. To overcome this difficulty, an entirely new system was made about the eighth century bringing into use, new characters in the form of accents, points, figures, hooks and numberless other signs known as neumes, which were placed over the syllables to designate the pitch, among which are the following: First the Virga a note of great value, which depended upon the sign above the text for its pitch; two called Bivirga,

and three, *Trivisga*. The *Punctus* was a note of less value having the pitch determined as in the *Virga*. These and a number of others, which it would not be worth while to mention, were combined into complex forms, probably used at first as accents to aid in speaking, rather than singing, but they afterwards indicated the number of notes to be sung to each syllable. This was a step in advance, but the system still had its defects, as it gave the singer no means of knowing whether the interval by which he ascended or descended was a whole tone, semitone, or something else, so that unless he was familiar with the melody, he could not sing it at sight.

About the end of the eighth century, some small letters were used with the *Neumes*, which made quite an addition to the notation, from which came our *Synthetic* signs, which are the first marks of expression and *Tempo* recorded.

The first of the tenth century brought an improvement from which our present system has probably grown. A red line was drawn horizontally across the paper, and all notes placed upon this line were to represent *F*, while the higher or lower tones were denoted by signs placed

above or below this line making the pitch more definite than before. This was found to be such an improvement that a yellow line was placed above the red to denote the letter G. In the manuscripts where only black ink was used these lines had the letter S or T placed before it at the beginning. From this came our F and G clefs, which like our more modern C clef are modifications of Gothic letters which have been changed to their present form.

In the first part of the tenth century a monk named Stucbaldus, invented a staff of many lines, which somewhat resembled ours, but in principle was more different than the preceding system. Only the spaces were occupied and instead of notes, the words were written in them, and the letter S or T was placed before them to show whether the pitch was to change a semitone or tone. This system had the advantage, that any pitch could be denoted, or any number of parts could be written to be sung at the same time.

A short time after this we find traces of a system in which only the lines were used, the notes being represented by points, the pitch being determined by Greek letters at the begin-

ning of the staff. A great improvement was now made by placing two black lines over the red and yellow ones, used before the great number of lines introduced by Hucbald. This last invention is usually attributed to Guido D'Arezzo, but there is no certainty, as we find the lines used before his time but not in combination.

The unsonorous Plain Chant needed rhythmic ictus only strongly marked for the correct pronunciation of the words; but the invention of the Measured Chant required a better system which should give the pitch and duration. Franco De Colonia proposed the first system probably, about the latter part of the eleventh century, and it seems to have been a combination of all forms then in use. He gave us the first Time Table also, but his greatest gift left us, was the notes beginning with the Large or Double Song which he made equal to two songs and so on down, making each note equivalent to two of the next lower, as far as the Semibreve or whole note, and the rest have been added since. These notes were called perfect if followed by another of the same kind and imperfect if followed by a different kind

of note. This rule was of great importance to the composer, enabling him to write in double or triple rhythm at will.

At first the notes of the Measured Chaunt were black, but afterwards red notes were used with these having three fourths the value, but these were both replaced by white notes with square or lozenge-shaped heads. These were always written upon staves having five lines, but this staff did not come to be universally recognized until after the invention of printing. Measured music was modified by Mode, Time, and Prolation as well as by Position and Rhythm.

The Mode was of two kinds Greater and Lesser, governing the relation of the Large and Long, and the Long and Breve. In the Greater Mode Perfect, three longs were equal to one Large and in the Imperfect, two Longs were equal to a Large. The Modal Signs indicating these varieties, differed in the different periods. Prolation concerned the proportion between the Semibreve and Minims, this also being divided into Greater and Lesser. The Greater was commonly indicated by a circle or semicircle having

a point of perfection in the center. In this the Semibreve was equal to three Minims. In the Lesser which had the same sign without the point, the Semibreve was equivalent to two Minims.

These signs have undergone many changes. About the last of the sixteenth century, the circle was used either in connection with the figure three, or the figure was used alone, from which probably came our time signature; the time 3-2 is equivalent to the Greater Prolation and the Alla Breve of the Lesser. The Proportion, Mode, and Time was intricately intermixed, but was simplified by the best Masters of Music. The semicircle and the figure two denoted imperfection.

A bar through the circle or semicircle, showed that the notes had one half their natural value, the same as if the figures were inverted.

The three rhythmic systems of this time were very complex, so that in difficult compositions there were often two or more Time Signatures at the beginning of the same staff.

The duration of the notes, and the perfection or imperfection, was affected by points

of different kinds, similar in form, but differing in effect with the position of the point. The point of Augmentation was the same as the dot in our music - it added one half the value of the preceding note in duration, but could only be used with imperfect notes and had to be followed by a short note to fill out the measure.

The point of Perfection had two uses: first to denote perfect time or Greater Prolation, but if it was placed after an imperfect note it made it perfect.

The point of Alteration or point of simplicity, was more complex. When it was used in triple rhythm, if placed before the first of two short notes between two longer, the second short note was doubled in length, and made the two larger ones perfect. This was placed a little above the note in order to distinguish it from the point of Augmentation. The point of Division had just the opposite effect; if two shorter notes were between two longer and a point placed between the two shorter, the two longer, were imperfect.

While the Virga and Punctus grew into the detached notes of measured music, the hummal

changed into ligatures, or two or more notes to be sung to one syllable. In Plainchant the notes were black and angular in form, while in Measured music they were white with square or diagonal shaped figures, sometimes having a stem to show the length. About the fifteenth century, any number of notes could be tied together and the time was controlled by complex laws, some of the following being strictly enforced by the Flemish School. If the first note of the ligature was a long, it had no hook, and the second note was a breve if it ascended, and had no hook. If the first note had a descending stem on the left side, it was a long, or if it ascended, a breve, the ligature being perfect in the first and imperfect in the second. The intermediate notes were usually brevis and sometimes a semibreve was used; but these were much simplified in the sixteenth century.

The F, G, and C clefs were used in the fifteenth century with a number of lines and if the notes were going off the lines the clef would be changed anywhere in the piece, to prevent it, and that being the

case no clef could be signed to the different parts except in a general way. The Polyphonic composers were very particular in selecting the clef so as to show whether the mode in which they wrote was in natural pitch or transposed.

One of the most prominent features of Greek music was the division of the diatonic scale into parts or modes, the musicians of the Middle Ages took up the same plan. St. Ambrose, a bishop of Milan about three hundred and eighty-four built a cathedral and decided to have as pure music as could be obtained, and accordingly gathered all the melodies together and gave orders for his choristers to follow. He allowed only melodies to be used which were written in one of four tonalities, The Dorian, Phrygian, Lydian, and Mixo-Lydian Modes. These four modes were known as Authentic, while the four of St. Gregory, added two hundred years later, were known as Plagal modes. The former extended from the Final or keynote to the octave above, and the Plagal from the fourth below to the fifth above the keynote. Each mode has three prominent notes be

sides the final - namely: - the Dominant, Mediant, and Participant named in order of their importance.

The Dominant is the fifth above the keynote unless it happens to come on B, when it is raised, a note, to be in the Authentic modes. The Dominant of the Plagal modes is a third below that of the Authentic unless it happens to fall on B when it is substituted as before, because B if sounded with F would make a discord.

The Mediant, so called from its position is always the third unless it falls on B, then it is changed to C in the Authentic, but in the Plagal it is not so constant. The Participant is near the Mediant in the Authentic and in the Plagal corresponds to the Dominant of the Authentic scales.

The flat and natural were used in very early times, but the sharp can only be traced back to the last half of the thirteenth century, and then only used occasionally as accidentals, so when needed the singer was expected to put them in by certain rules given.

The composers of the fifteenth and six

tenth centuries knew nothing of Tempo, Dynamic Signs, Marks of Expression, etc, only a few arbitrary signs were known. Their sign of repeat, consisted of two bars with dots on either side as it is now; if it was to be repeated three times, three lines were used, and a smaller sign indicated that the words were to be repeated.

The typography of music underwent very little change until the sixteenth century, when instrumental music came into use, and the staff as we have it, the notes beyond the stave, being written on ledger lines. The first bars were used about sixteen hundred, scored through the staff, giving us the name score for a certain section of a piece of music. These bars were a great help, but still with the Mode, Time, and Prolation so awkward, it was found very difficult to render productions in a new rhythm, clearly; so the Time Table was changed to give each note a certain value; the finer divisions of notes as quarter, eighth, and sixteenth notes came into use and certain ones were taken as beat notes, a certain num-

ber of notes of that value being allowed to each measure. If the number can be divided by two, it was called common or Double time, or if by three, Triple; if some multiple of these it is Compound.

The Time Signature was written in the form of a fraction, the denominator indicating the kind of a note to be used as a beat note, and the numerator, the number of such notes to a measure.

When faster music came into use the square and lozenge headed notes were replaced by the oval headed ones, and the hooks of the notes of the same value, written together, were made continuous. It was found necessary, when dramatic music became common, to have marks of Tempo, as Adagio, Allegro, Largo, and others which were quickly brought into use, until today we have almost an unlimited number, nearly all of which are written in Italian.

The Dynamic Signs or Marks of Expression, did not come into use until the

seventeenth century, but by the eighteenth, all common ones such as *f*, *p*, *cres.*, *dim.* were used, and others have been introduced later. The staccato marks, Slur, Trill, Swell, and some others, have been used for a longer length of time.

Musical ideas are always expressed by notes, placed on or between the lines of the staff, made up of five horizontal lines having their pitch regulated by the clef. These clefs may be placed on any line of the staff, that line bearing the name of the clef, but the G clef is nearly always placed on the second line of the staff, which is called the Treble clef. In the keyed instruments, the G clef is placed as above, the C clef is placed on middle C, or a fifth below G and the F clef a fourth below middle C.

The octave is made up of seven principal notes known by the first seven letters of the alphabet, after which the same letters are repeated in going above or below. Such a series of notes are called a scale, from their resemblance

to a ladder. All nations, at all times have had scales, although all have not selected the same sounds. The major scales, which are the most important, are so called because they are a major third above the Tonic, and are the natural diatonic series beginning with C. These scales are made up of tones and semitones, the intervals between the third and fourth, and seventh and eighth, are semitones, while those between the others are tones. The corresponding minor scale begins a third below the major, the semitones in the Harmonic form coming between the fifth and sixth, and seventh and eighth.

The value of the different notes is shown by their form, there being nine different ones altogether, but the three of greatest value are scarcely ever used now, though they are found in old manuscripts. Those in common use, are the semibreve or whole note, having an open head and no stem, the minim or half note having an open head and a stem, the crotchet or

quarter having a black head and a stem, the quaver or eighth having a hook in addition to the quarter, the sixteenth two hooks, the thirty second three, and so on. These hooks are often joined for convenience into groups, thus helping the performer to recognize the value of the notes quickly. The length of the note is measured in beats, a note of certain value being taken as a beat note and giving the other notes their relative length; while a dot placed after a note adds to it one half its value.

Music is divided into measures by vertical lines or bars, each measure containing the same number of beats. The Time Signature designates the number of notes of a certain value to be given to each measure, the numerator showing the number and the denominator the kind of notes used to each measure, or notes of any value may be used as long as their added value is equal to that required by the signature. The time may be either double or common, or triple. Common time is represented by

a letter placed so C. on the staff, or a perpendicular bar through it, shows that the time is faster; some of the other forms of time are shown in fractions, as: $2\frac{2}{4}$, $\frac{4}{8}$, $\frac{8}{16}$ etc. In triple time the measure can be divided into three equal parts, represented, $\frac{3}{2}$ or three half notes to the measure, $\frac{3}{4}$ or three quarter notes to the measure, and so on, or the numerator may be some multiple of three.

In each of these measures, some note or notes are given greater stress or are accented, the measure, thus being made up of accented and unaccented parts, giving the *sky* time; in common time the first and third beats are accented, the first receiving the primary and the third the secondary, or if there are but two beats in the measure, only the first is accented. In triple time the first note is accented, or if the time is compound, the first of the second half is given a secondary accent, and because of the accent, a piece of music often begins with only a part of a measure, but that

part and the first part at the end of a strain, or the piece, must equal a whole measure.

The Tie connects notes of the same pitch, the tone to be sustained the time of both notes. A slur connects notes of different pitch, the two notes to be closely connected by the performer. Syncopation is the tying of accented and unaccented notes, throwing the accent on the naturally unaccented note. Rests show that for the time designated, there shall be silence.

The major scales may be transposed for the benefit of the voice of the singer; if raised, a sharp is used as the accidental; or to lower, a flat and in either case a natural will give it its former pitch. The sharps or flats placed at the beginning of the staff, affects the music until the signature is changed.

A melody or tune is a succession of single notes which give a pleasing musical effect. It is thought that it started in declamation, as the early music was mostly recitative. Our modern melody is closely connected with harmony either

as taken from different chords or the different notes of the same, but by means of various embellishments, the harmony is more or less huddled, by passing notes especially chromatic. The melody is brought out prominent, but the harmony is covered by turns etc, while the different ways in which notes may be combined introduce new beauty and study. Melody has gone through many changes, each composer bringing new forms, but it has always been a prominent feature in music.

Harmony has to do with the combination of notes of different pitch, and has been known only to civilized nations. The early scales, although answering for making melodies were not fitted for harmony.

A musical notation has been tried at different times, to be introduced, which will not require the staff, lines, and spaces. Jean Jacques Rousseau proposed a method, which was afterwards done away with, of Arabic numerals which were to represent the notes of the scale. A similar

system, known as the Tonic Sol-fah, has come into use in many singing schools. The system was originated by a Miss Glover, a teacher in Norwich about eighteen hundred and forty; it proceeds as though there was but the one scale in music, which may be raised or lowered according the key. There are seven different syllables applying to the scale; namely doh, Ray, Me, Fah, Soh, Lah, and Ti, the first or doh always coming on the key note.

The early pupils were used to a diagram or modulator which showed the intervals between the different tones. When the music was written, the first letter was used, d, r, m, f, s, l, and t in the octave above the center, and in the octave higher d', r', and so on, or if in the octave below the first, d,, r,, m,. A perpendicular line was placed before the notes to be accented heavily, giving the rhythm, while those not to be accented so much had a colon, and a shorter line meant medium force. The note right after the accent line was sup-

posed to sound until the next accent. A horizontal line shows that the note shall hold another beat, a dot divides the beat into equal parts, a horizontal line and a dot, means that the note is to be held a half beat, while a comma in place of the dot gives the note one fourth the time.

In modulating into a new key, the syllable which would be used in the former key, and the one in the key to which it is to be changed, is combined, as for instance *me* and *lah*, would be *mi lah*. When this passing note as it is called, is written, the letter of the old key is placed in front of, and above, in smaller type, the new key as ^ml, but when it is only an accidental, the vowel is changed to *e* as *soh* would be pronounced *se* if it was sharpened, or if it was flatted, change to *a*, as *soh* is *sa*. In the minor scale, *lah* is the keynote, the sharpened sixth is *bah* and sharpened seventh *se*.

This is claimed to be a good system because it is quickly learned, for distinctness of representation of the keyboard,

the semitones, and also for its cheapness in printing. The Solfeggio originated as early as the eleventh century with the first six syllables, and in the seventeenth the last one or si was added. Singing by the use of syllables is known as solmisation. The syllables mean nothing, but give the vowel sounds, and were used by Guido, a monk in the tenth century, who got them from the first syllables of the words of a popular hymn.

Music, the universal language of the emotion once considered as a mere luxury and accomplishment, is now a necessity in giving us a symmetrical and harmonious culture. It refines the taste, purifies the heart, soothes in sorrow, intensifies love, in times of trial and discouragement, it inspires hope and courage to overcome difficulties, and when trouble as a dark cloud gathers about us, it is the mission of music to penetrate this darkness and gloom and let in upon the despondent soul the sunshine of hope and joy.