TRANSPOSITION

By Prof. H. KLING

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TRANSPOSITION

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A PRACTICAL AND AUTHORITATIVE GUIDE FOR ALL INSTRUMENTS, WITH SPECIAL REFERENCE to the CLARINET, CORNET, TRUMPET, FRENCH HORN AND PIANO - FORTE

TRANSLATED FROM THE ORIGINAL GERMAN EDITION AND AUGMENTED BY

GUSTAV SAENGER

Carl Fischer Inc.,
BOSTON NEW YORK CHICAGO

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Preface

TRANSPOSITION unquestionably presents great and extremely perplexing difficulties to many performers. The difference in pitch and notation of our various instruments present conditions which, to the beginner, are nothing short of chaotic. In addition to the technical difficulties encountered in mastering any individual instrument, the player, as a rule, finds himself hopelessly bewildered by the fact that the same note on paper will sound entirely different on the majority of our instruments, and that notes producing the same sound when played are placed in entirely different positions upon the staff when scoring the individual parts for the respective instruments.

PROF. H. KLING

Aside from these difficulties, however, there is no branch in the entire study of music which will benefit and advance a musician as much as the study of transposition. A thorough understanding of this subject will impart to the student a complete understanding of how to write for the respective instruments, the exact notation of the different instruments, including the usage and significance of the various clefs, how they are read and written for. It will also clear up the many perplexing questions in regard to our system of accidentals, showing how it is that sharps must often be changed into flats and flats into sharps—how in some cases a natural will become a sharp and in other cases a flat; explaining the nature of double sharps and double flats and the necessity for their use under certain conditions. In a word, it brings about a thorough and intimate knowledge of our entire tonal system as applied to the requirements of instrumental execution.

In the following work this difficult and perplexing branch of music has been taken up and carried through in as careful, thorough and practical a manner as it is possible to do in print. Adherence to the instructions here given will lead to an ultimate mastery of the entire subject, and as fundamental training is essential to success, abundant material has been provided in the subsequent chapters of this new and authoritative work.

These few introductory words are offered in the hope that this Practical Method of Transposition may prove a trustworthy guide to the final mastery of the least understood, but most important of all musical accomplishments.

Gustav Saenger

Contents

CHAPTER I.

General preparatory Exercises for the Notes and Keys.

The designation of the notes:-

Without accidentals: C-D-E-F-G-A-B.
With sharps (♯): C sharp, D sharp, E sharp, F sharp, G sharp, A sharp, B sharp.
With flats (♭): C flat, D flat, E flat, F flat, G flat, A flat, B flat.

Explanatory Table of all the Major and Minor Keys and their Names.

Without signature: C major. A minor.	1 sharp(♯) G major. E minor.	2 sharps(♯) D major. B minor.	3 sharps(♯) A major. F♯ minor.
4 sharps(♯) E major. C♯ minor.	5 sharps(♯) B major. G♯ minor.	6 sharps(♯) F♯ major. D♯ minor.	7 sharps(♯) C♯ major. A♯ minor.
1 flat(♭) F major. D minor.	2 flats(♭) B♭ major. G minor.	3 flats(♭) E♭ major. C minor.	
4 flats(♭) A♭ major. F minor.	5 flats(♭) D♭ major. B♭ minor.	6 flats(♭) G♭ major. E♭ minor.	7 flats ♭) C♭ major. A♭ minor.

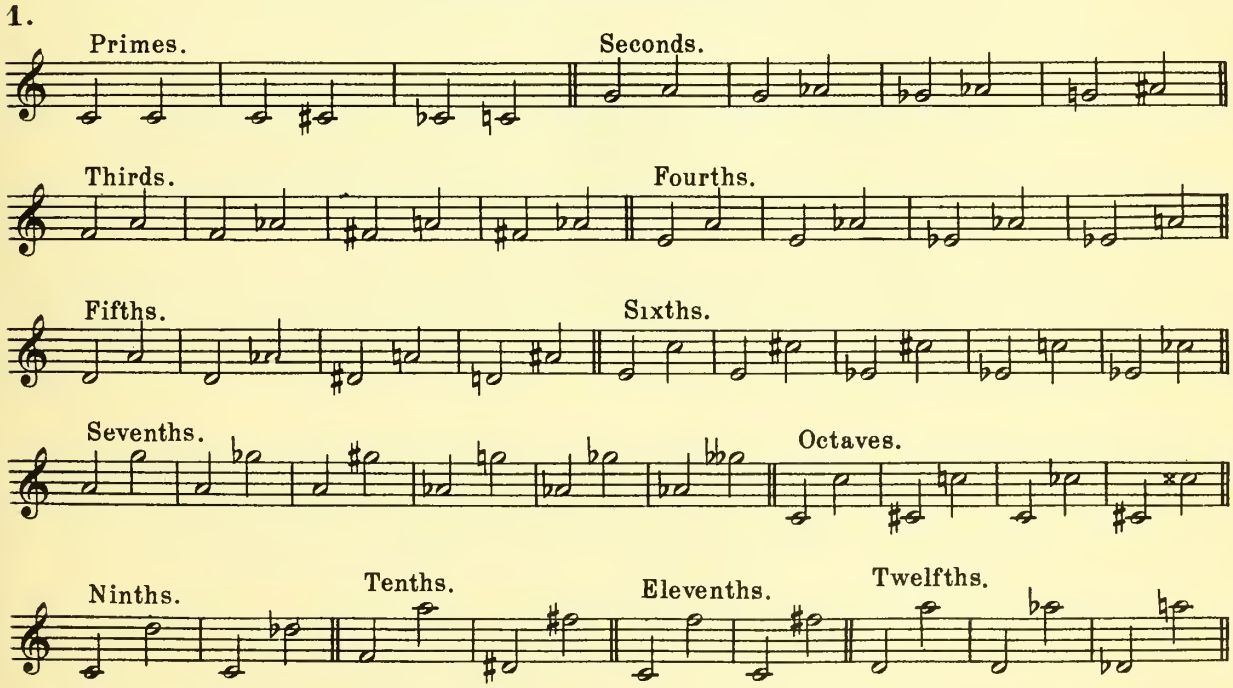
CHAPTER II.

Intervals. (difference in pitch, position.)

An Interval is the distance between two tones, or their difference as regards pitch. The lower of the two tones is the fundamental tone of the interval; the higher is designated as the interval proper.

Names of the Intervals.

1.



Inversion of the Intervals.

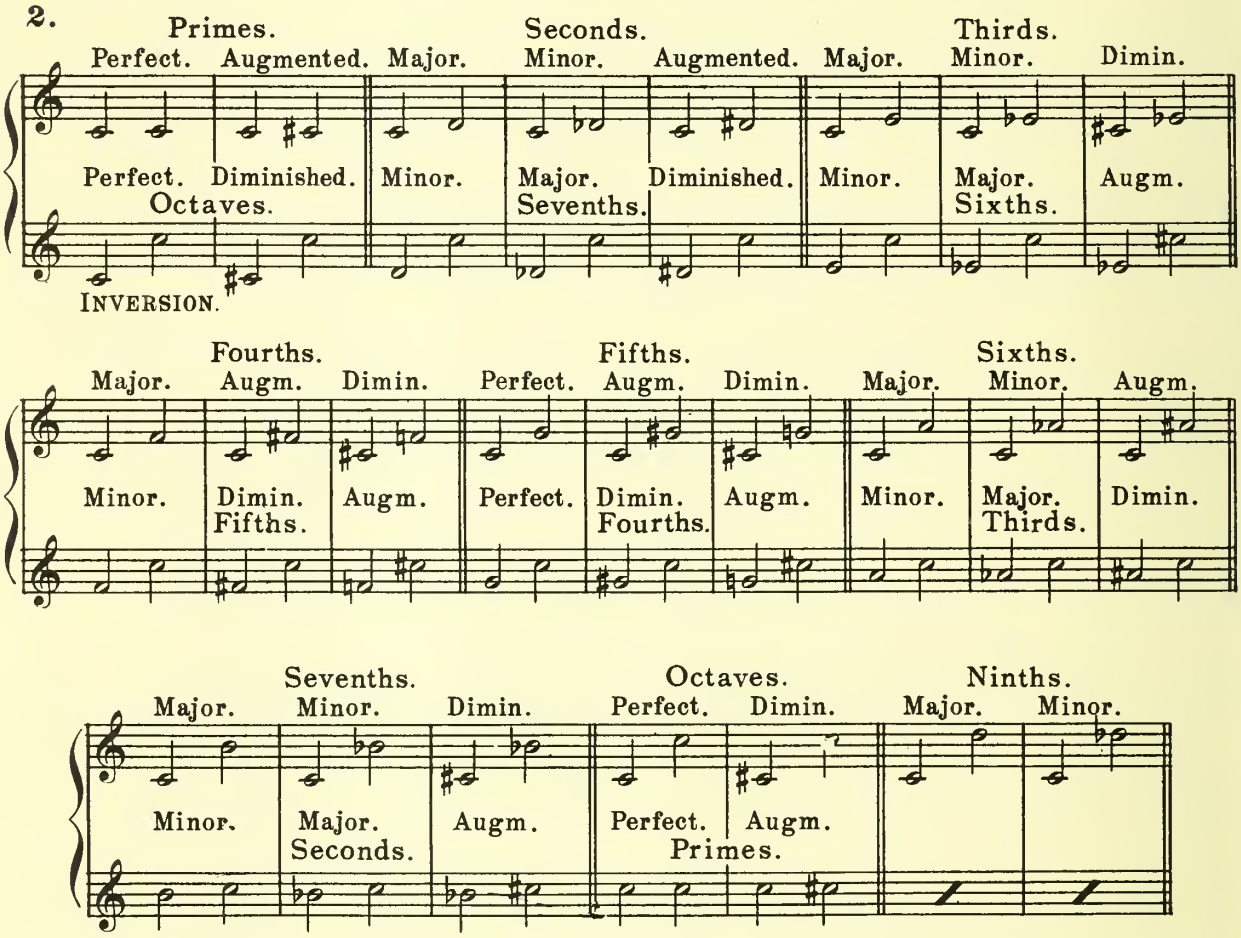
All intervals at no greater distance from each other than an octave can be inverted. Through this process, and by means of the inversion of the octave, the lower note is transformed into the higher and the higher into the lower. This inversion may be brought about and illustrated as follows:-

1-2-3-4-5-6-7-8 will produce through inversion
8-7-6-5-4-3-2-1.

From this it may be seen that through the inversion of the intervals a prime is transformed into an octave, a fifth into a fourth, a second into a seventh, etc

Table of the Intervals, together with their Inversions.

2.



An interval is designated as an augmented interval when its limit is extended one half-tone beyond that of the natural interval of the same name which appears in the major scale.

An interval is designated as a minor interval when the distance between its two tones is one half-tone less than in the interval of the same name which occurs in the major scale.

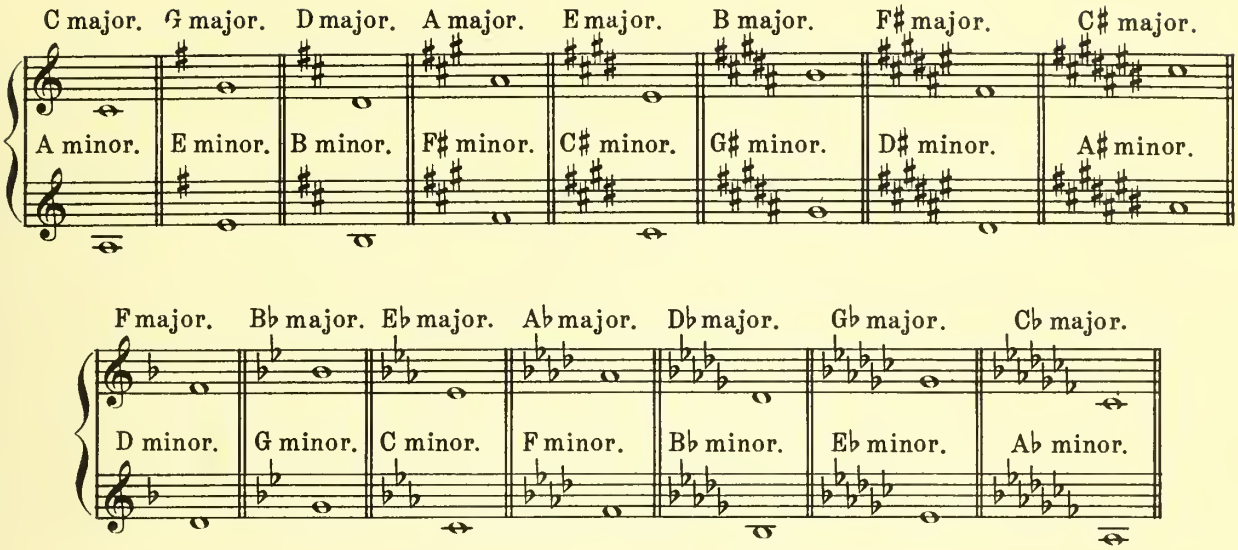
An interval is designated as a diminished interval when the distance between its two tones is one half-tone less than in a minor interval.

Through inversion an augmented interval becomes diminished, a minor becomes major, and a diminished interval is changed into an augmented.

CHAPTER III.

Keys and their Signatures.

3.



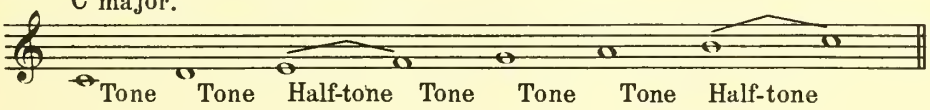
The fundamental note of a minor key is found a minor third lower than the fundamental note of the respective major key having the same signature.

CHAPTER IV.

The Scales.

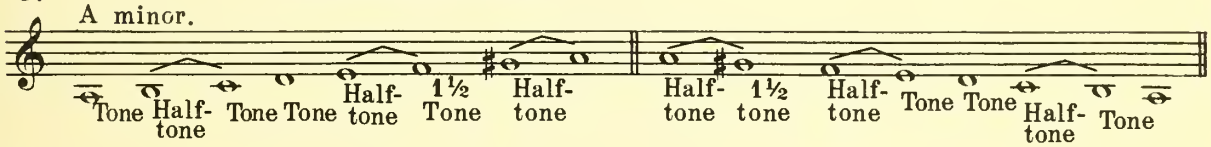
The Diatonic major scale.

4. C major.

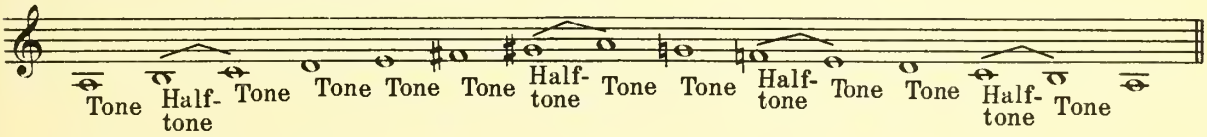


5. The Modern or Harmonic minor scale.

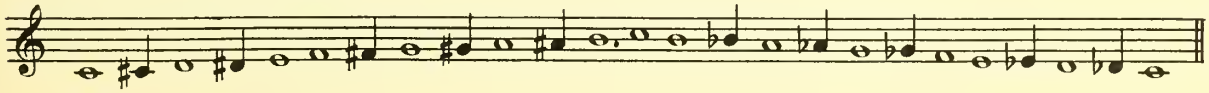
A minor.



6. The Old or Melodic minor scale.



7. The Chromatic scale.



8. The Enharmonic Scale.

C C sharp. D flat. **D** D sharp. E flat. **E** F flat. **F** E sharp. F sharp. G flat. **G** G sharp. A flat. **A** A sharp. B flat. **B** C flat. **C** B sharp.

Additional designation of the notes of the Chromatic-enharmonic Scale:-

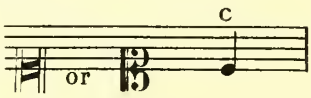
B sharp **C** D double flat	B double sharp **C** sharp D flat	C double sharp **D** E double flat	E flat **D** sharp F double flat	D double sharp **E** F flat	E sharp **F** G double flat
E double sharp **F** sharp G flat	F double sharp **G** A double flat	—— **G** sharp A flat	G double sharp **A** B double flat	B flat **A** sharp C double flat	A double sharp **B** C flat

The scales of all the other keys of our musical system are formed exactly alike; that is, their intervals follow in the identical manner shown in examples 4 – 8.

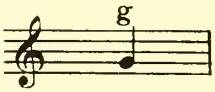
CHAPTER V.

Clefs most frequently employed in Musical Notation.

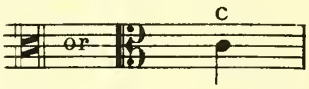
1. The Soprano (C) clef, written on the first line.



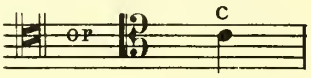
2. The Violin or G clef, written on the second line.



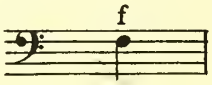
3. The Alto (C) clef, written on the third line.



4. The Tenor (C) clef, written on the fourth line.



5. The Bass or F clef, written on the fourth line.

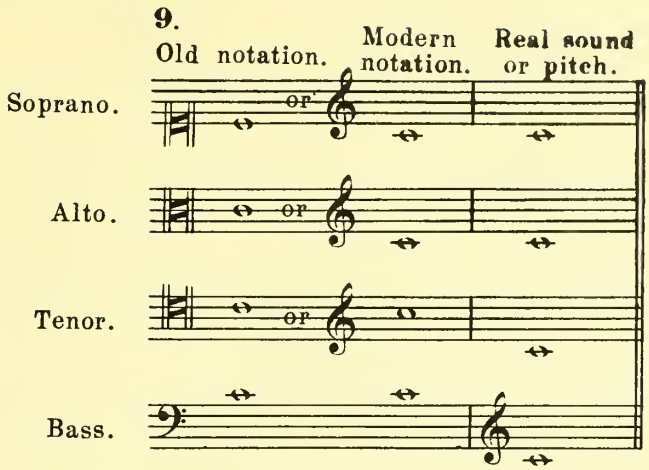


CHAPTER VI.

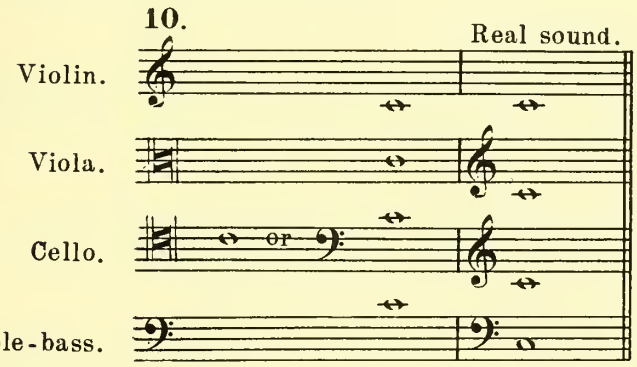
The real Tonal Pitch of the Voices, and of the Stringed and Wind Instruments.

Transposition, in its strict sense, means the conveyance of a composition into another key, or its execution higher or lower as necessity might demand, but with strict adherance to the original tonal relationship of its intervals. Above all, it is most necessary to be thoroughly acquainted with the exact tonal range of the voices, and of all the instruments.

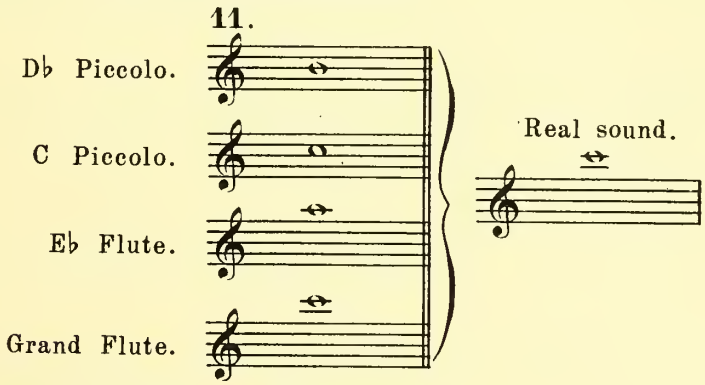
Tonal pitch of the various voices.



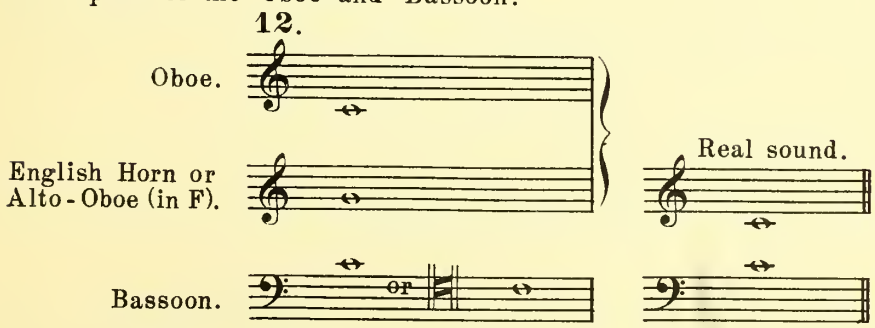
Tonal pitch of all the stringed instruments.



Tonal pitch of the Flutes and Piccolos.

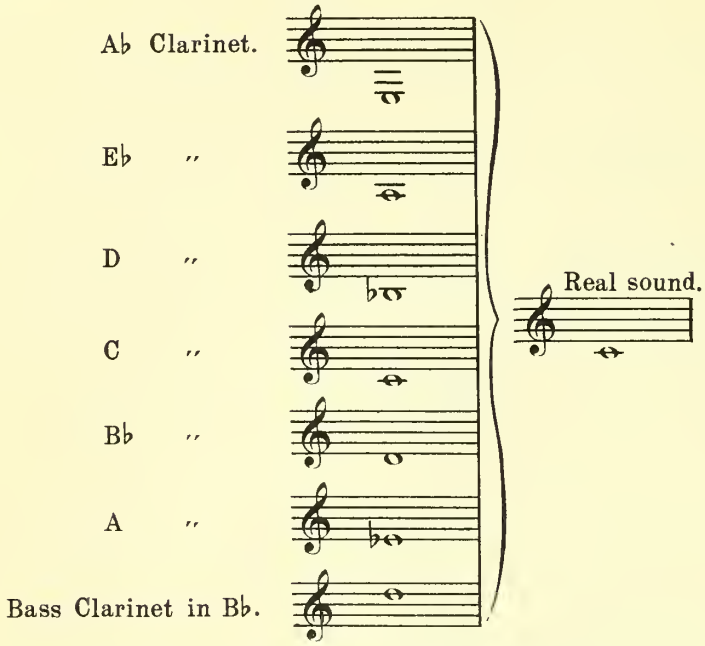


Tonal pitch of the Oboe and Bassoon.



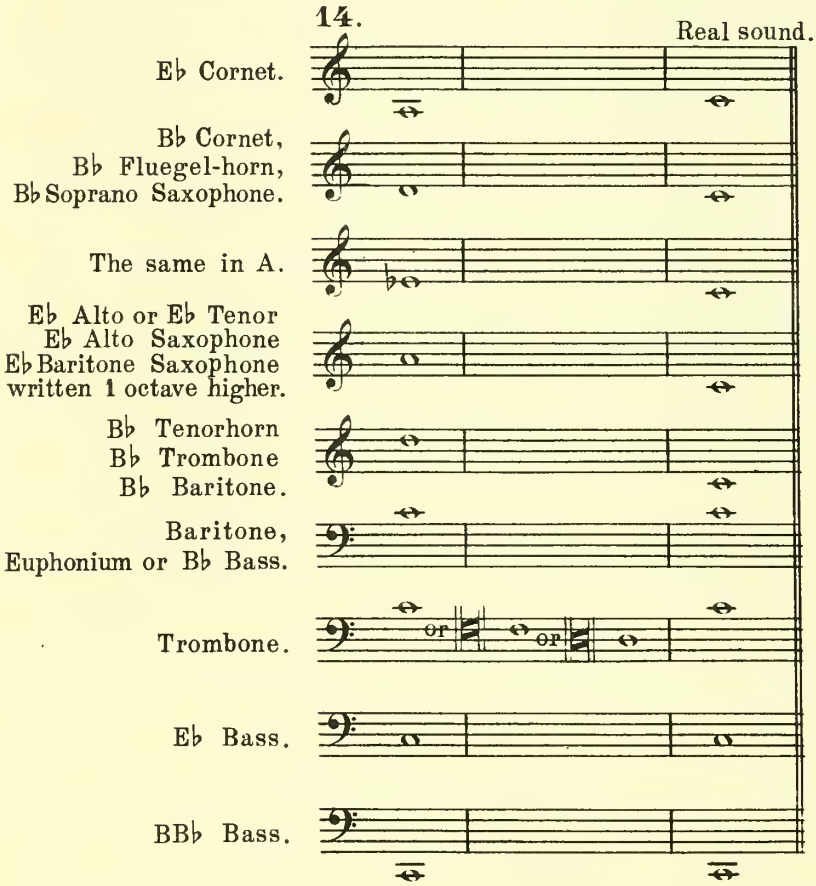
Tonal pitch of the most frequently employed Clarinets

13.



Tonal pitch of the following brass instruments:- ★)

14.



★) For more detailed and complete information on this subject, see Prof. H Kling's "Modern Orchestration and Instrumentation" published in a special American edition, by Carl Fischer, N.Y.

CHAPTER VII.

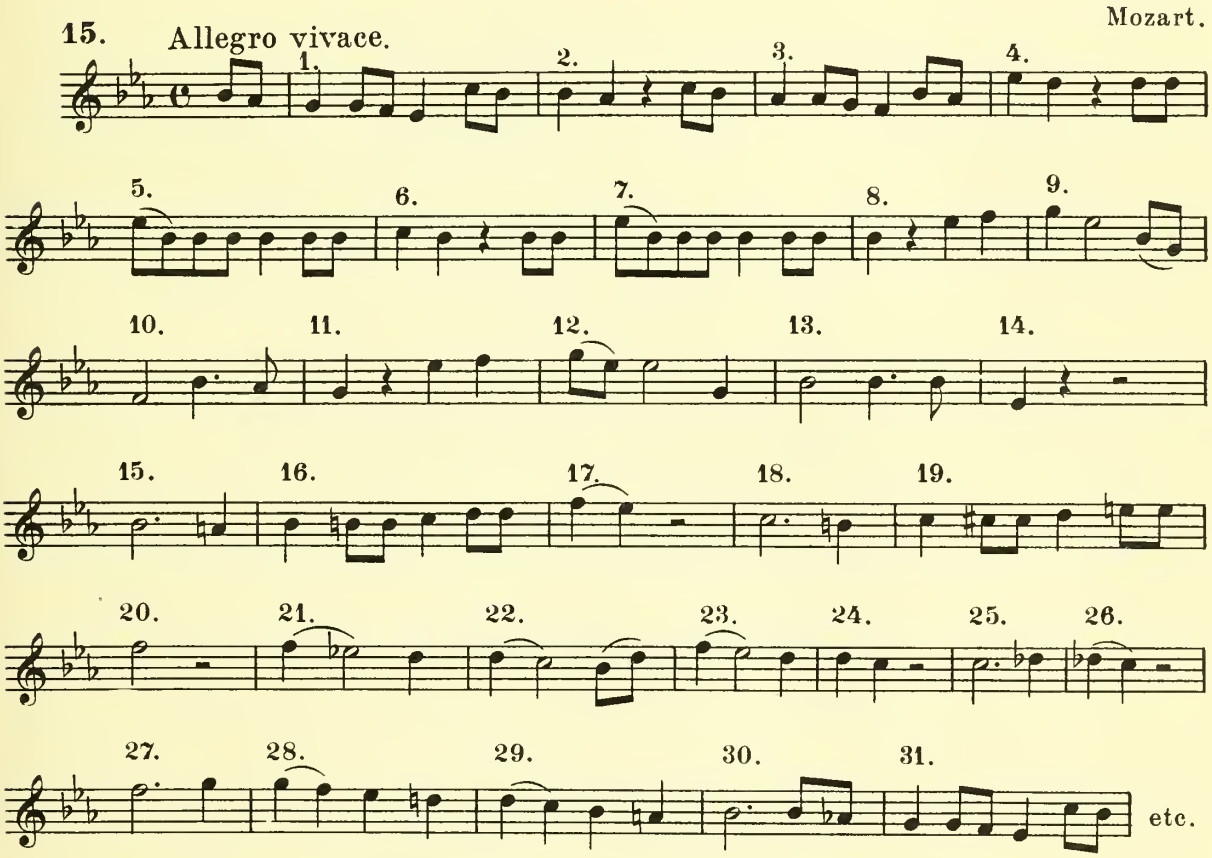
Transposition.

Transposition may be divided into two principal classes:-

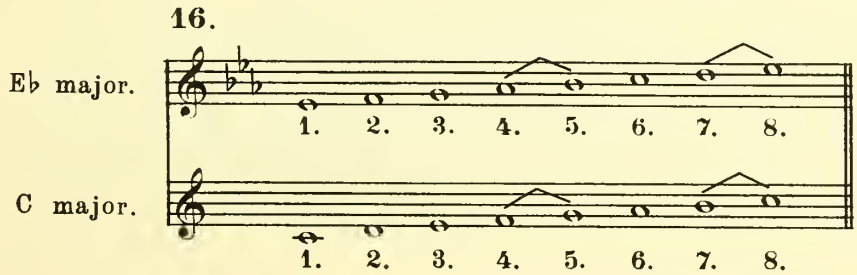
1. Written Transposition. 2. Transposition at sight.

The first must be practiced continually in order to arrive at mastery of the second; and to obtain satisfactory results in both, the following proceeding is suggested:

As a practical example the following melody is to be transposed from E♭ major to C major.

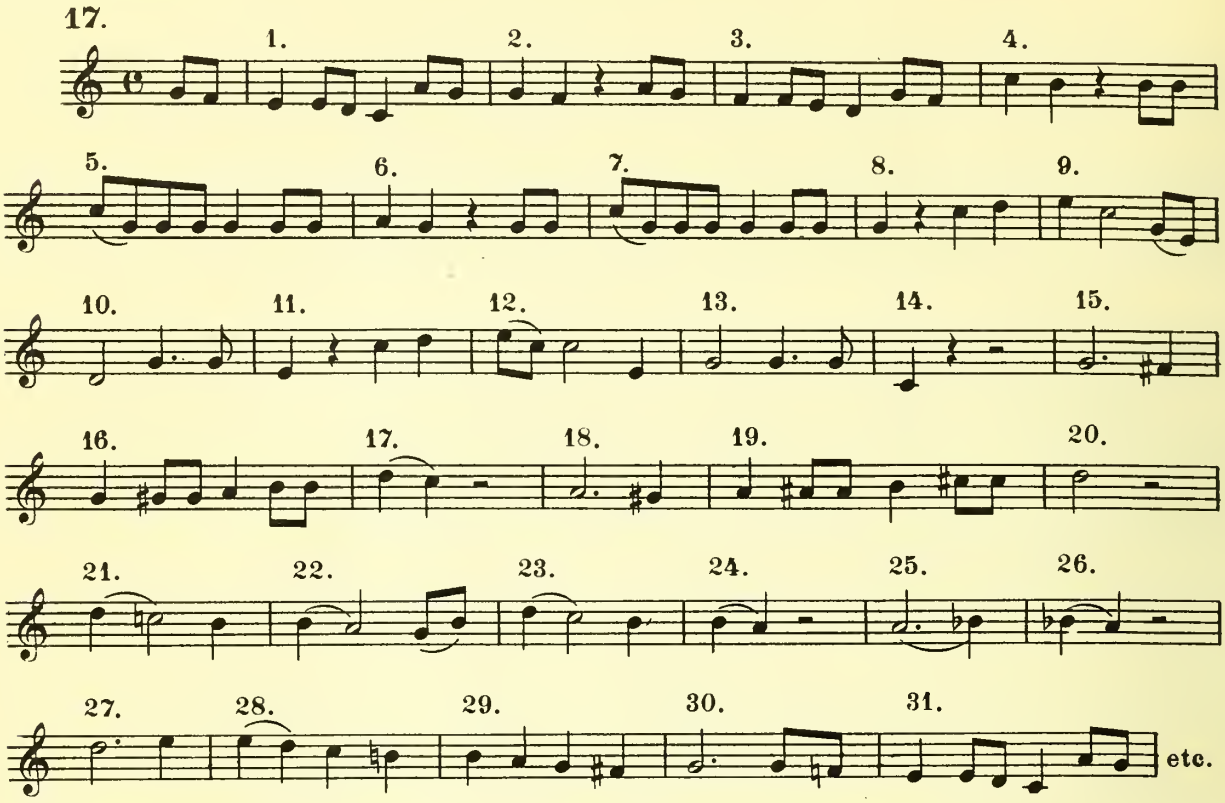


In order to illustrate this transposition in as simple a manner as possible, it will suffice to write the scale of the key in which the piece was originally written, and also the one into which the transposition is to be made, one above the other, in the following manner, through which we will become aware of the relationship in which the intervals of both keys stand to each other, at a glance:-



From this plain illustration we will be enabled to see at once how the numbered intervals of the E flat major scale must sound in C major, and the transposition of Mozart's melody can be done without the slightest difficulty, as shown herewith:-

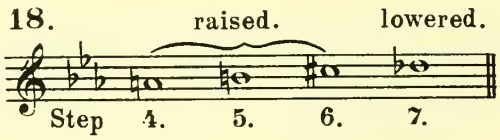
17.



The following remarks should be carefully considered:- While the key of a composition may be transferred through transposition (that is, to one or more intervals higher or lower) the character of the key is never changed - that is, a major key remains major, and a minor key minor. As to the accidentals (♯, ×, ♭, ♭♭ or ♮) particular attention must be paid to them in transposing. In measures 15, 16, 19 and 25 of example 15, we find the following alterations:

18.

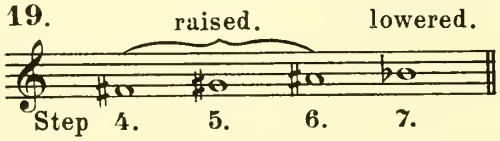
E♭ major.



which affect the same intervals when transposing to C major in an identical manner:-

19.

C major.

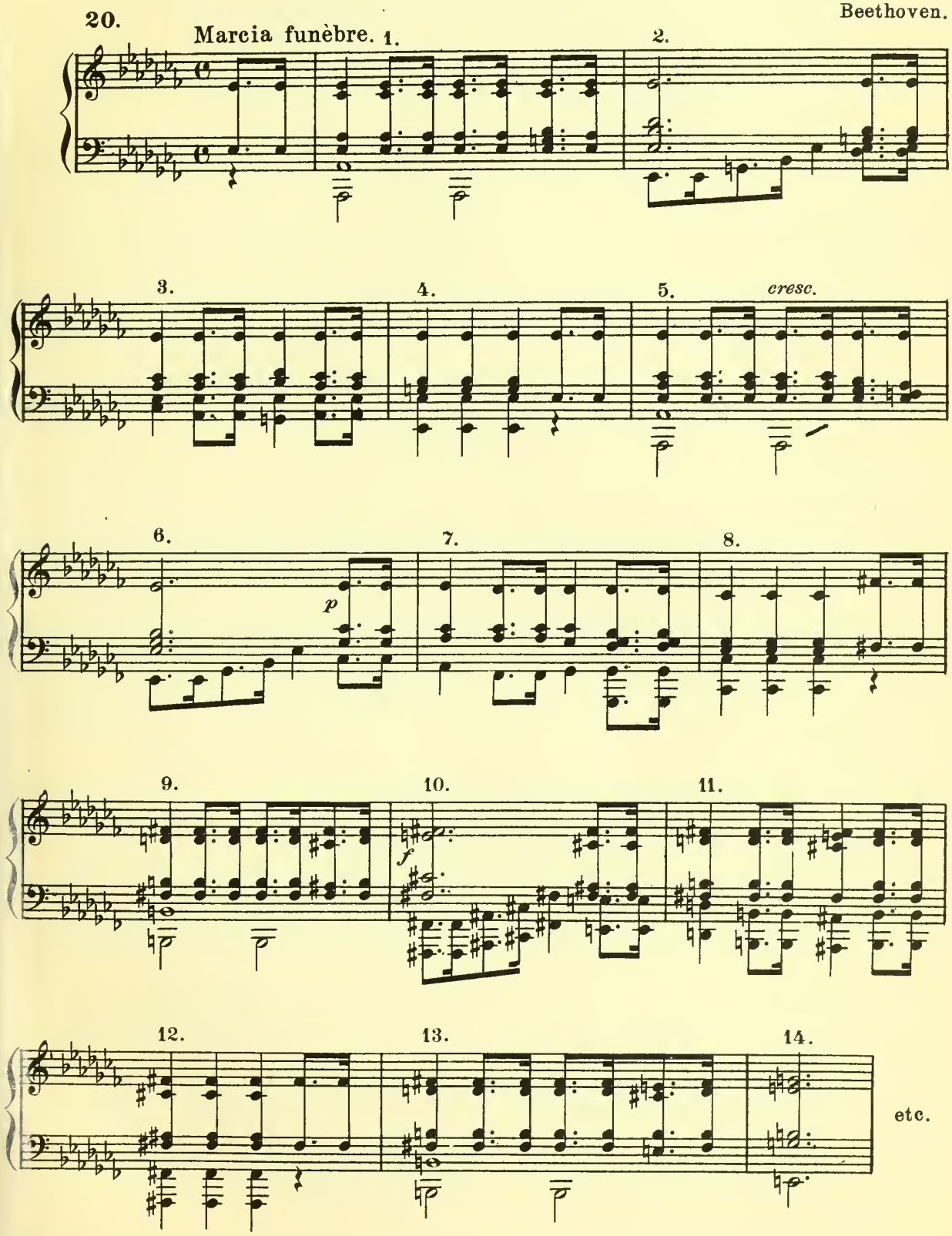


If a natural (♮) dissolves a flat (♭), the transposition will change it into a sharp(♯), and if a natural(♮) dissolves a sharp(♯), the transposition will change it to a flat(♭). This proceeding must now be observed in every possible key.

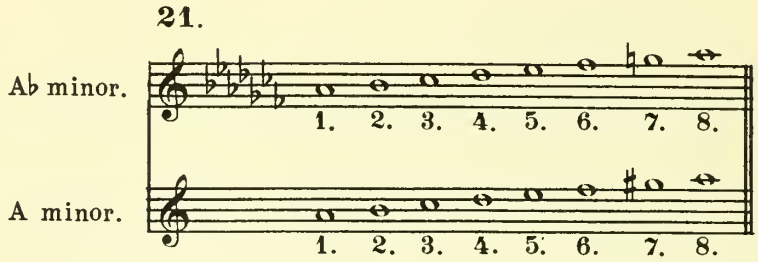
The same rule holds good in the transposition of compositions in a minor key, as shown in the following example:-

From the Piano Sonate op. 26.

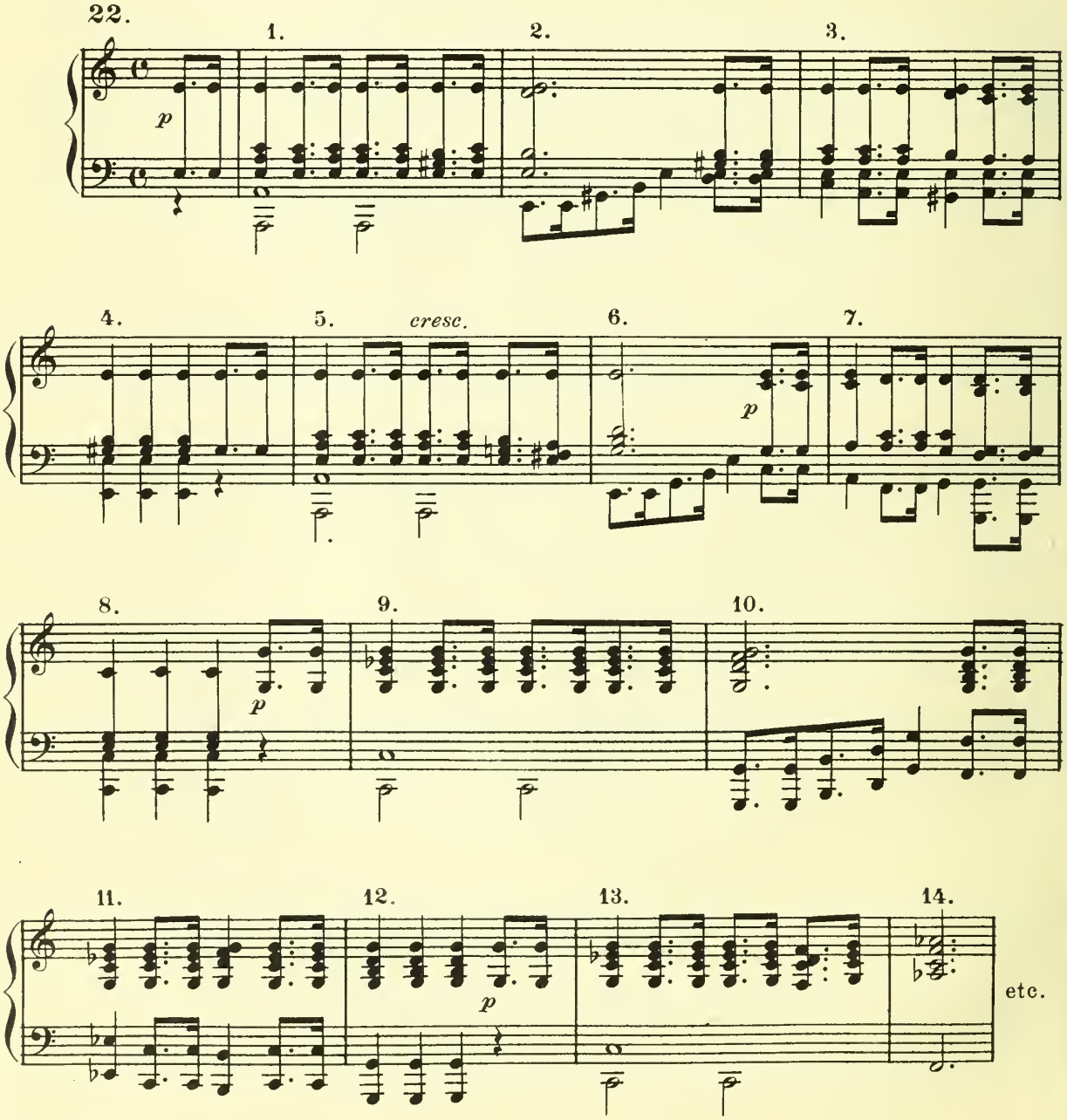
Beethoven.



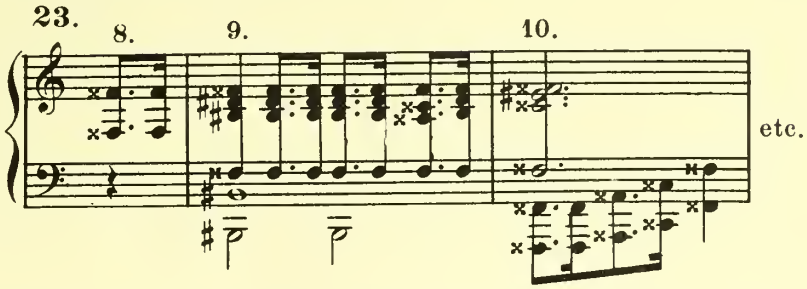
The preceding example is to be transposed from A-flat minor to A minor; that is, only one half tone higher. This is done in the same way as with Ex. 15:-



Transposition of Ex. 20. to A minor would therefore present itself as follows:-



Starting from the end of the eighth measure, through the ninth and tenth, the transposition really should be written as follows:-



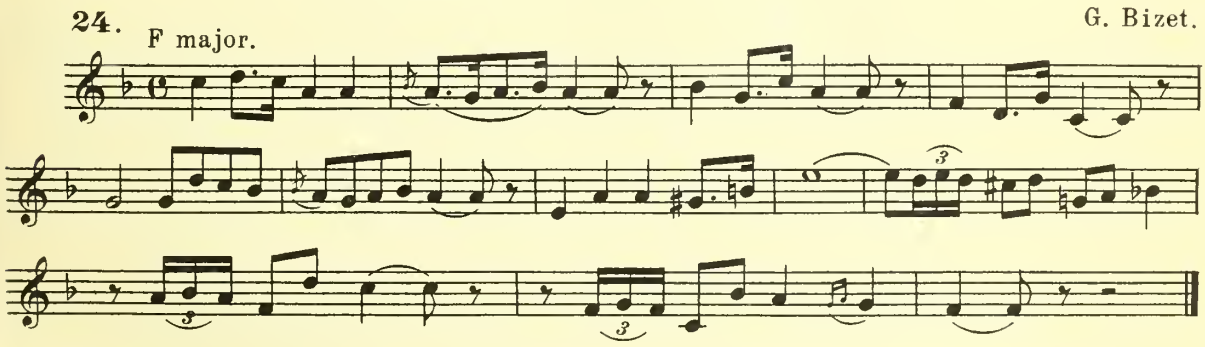
But in order to simplify the reading of these measures, it is advisable to write them as shown in Ex. 22; in writing them in this manner the advantages of the chromatic-enharmonic tonal system, as illustrated in chapter IV of this work (The Enharmonic scale) will be seen.

As in so many other cases, practical and constant application alone will lead to mastery in this particular field, and it is urgently necessary to transpose as many different movements as possible into distant keys; this should be done exactly as indicated in the various examples given, and the results will surely repay the trouble of so doing. *)

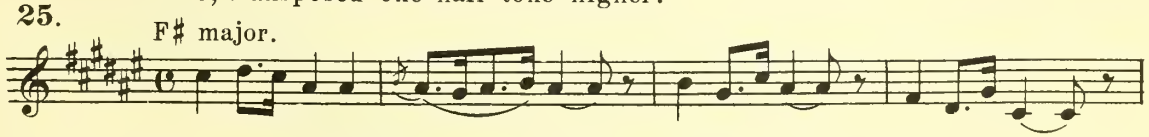
CHAPTER VIII.

Transposing at Sight.

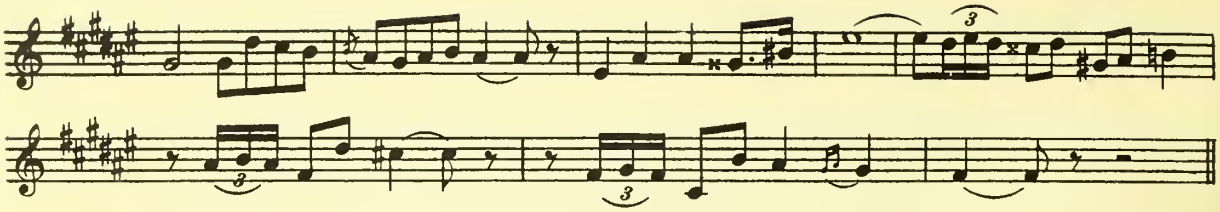
It is an every-day occurrence that a singer, for one reason or another, will want a song or an aria transposed; if the aria is with piano accompaniment the pianist will be expected to transpose and accompany it *a prima vista* - that is, at sight, which very few, however, can do skillfully. If the aria is to be accompanied by an orchestra or a band, the conductor simply announces the key in which the aria is desired to be transposed, and the members of the organization are expected to transpose their respective parts at sight. Consequently, it is an absolute necessity for every musician who desires to become an accomplished orchestra or band member, to study transposition at sight as early and as thoroughly as possible. In order to illustrate transposition of this kind in a practical way, the following melody (Toreador Song by Bizet) has been transposed into many different keys. Other melodies and compositions are to be taken up and transposed in like manner.



The same, transposed one half-tone higher:-

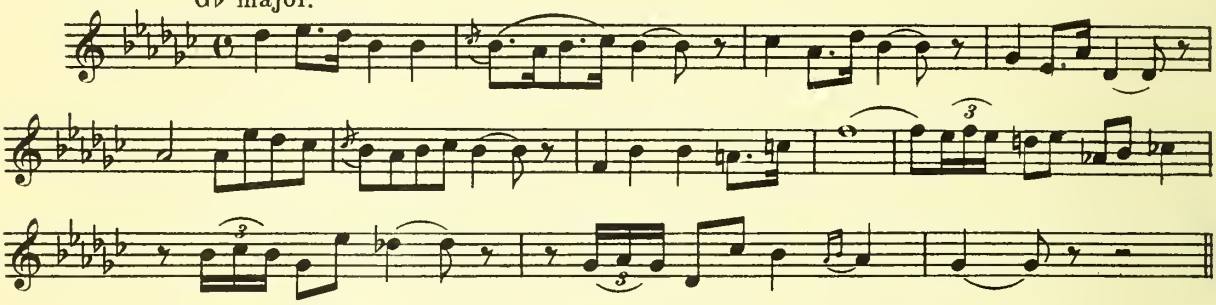


*) Naturally it will be of great benefit to write such transpositions in different clefs; it is very important to become proficient in the change of clefs, as the latter accomplishment is of great use in transposing at sight.



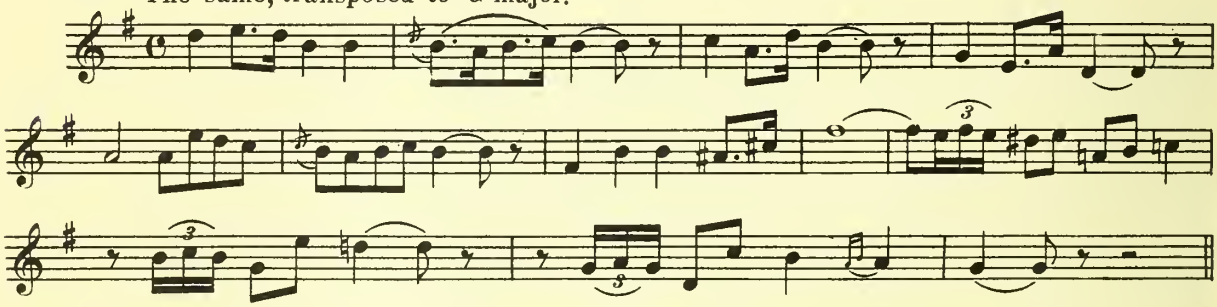
As may be seen from the above example, the notes are identical with those in F major, with this exception, that some of the accidentals have been changed. But instead of F-sharp major, the transposition could also be made to the enharmonic key of G-flat major, as shown in the following example:-

26. G♭ major.



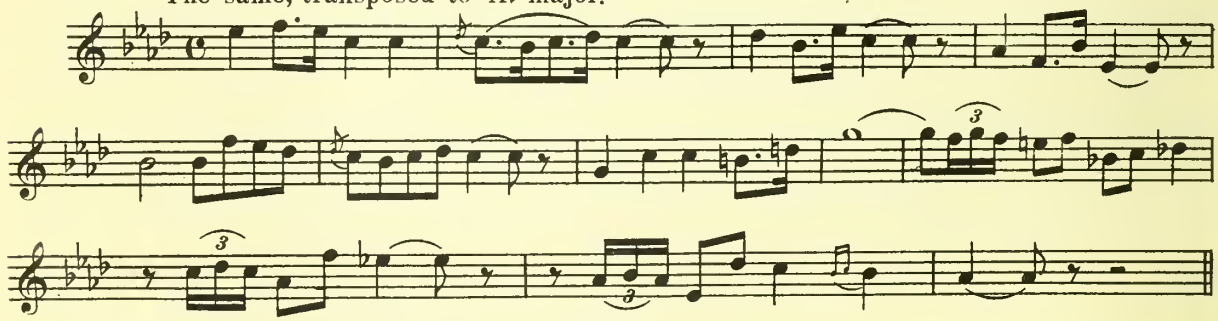
Transposition from F major to G major, one whole tone higher:-

27. The same, transposed to G major.



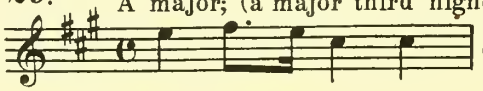
Transposition from F major to A-flat major; one and one half tone higher:-

28. The same, transposed to A♭ major.



To transpose to A major the same notes are to be read as in Ex. 28, only the signature should be changed as follows:-

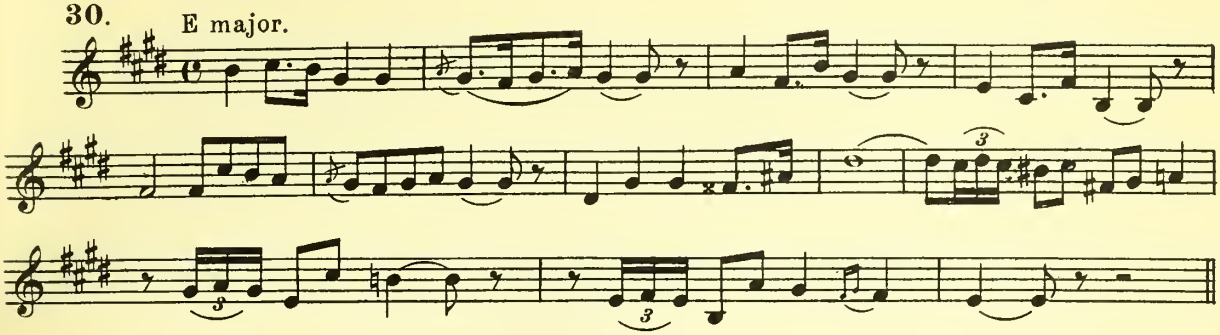
29. A major; (a major third higher than F major.)



etc.

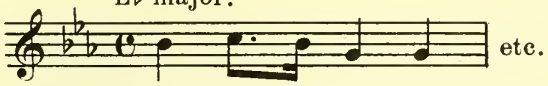
Transposition from F major to E major; one half-tone lower:-

30. E major.



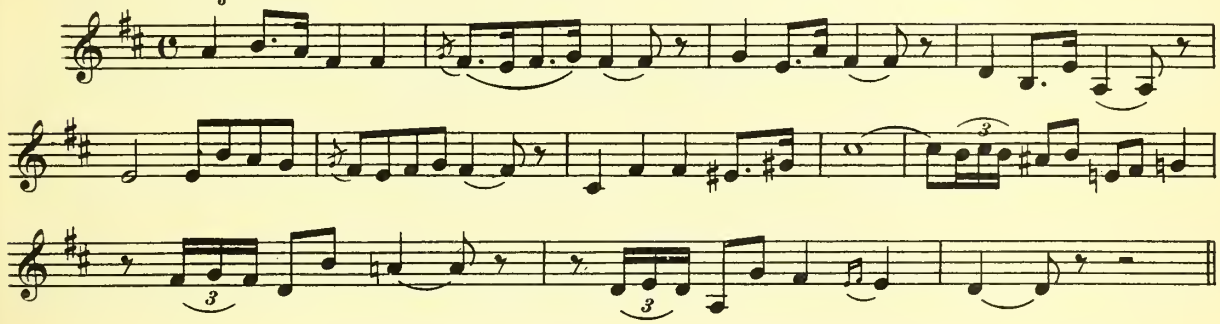
To transpose to E flat major the same notes as in Ex. 30 are to be read, changing the signature as follows:-

31. E♭ major.

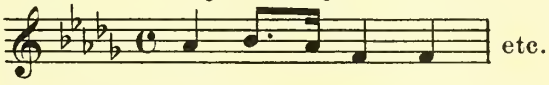


Transposition from F major to D major, one and one-half tone (a minor third) lower:-

32. D major.

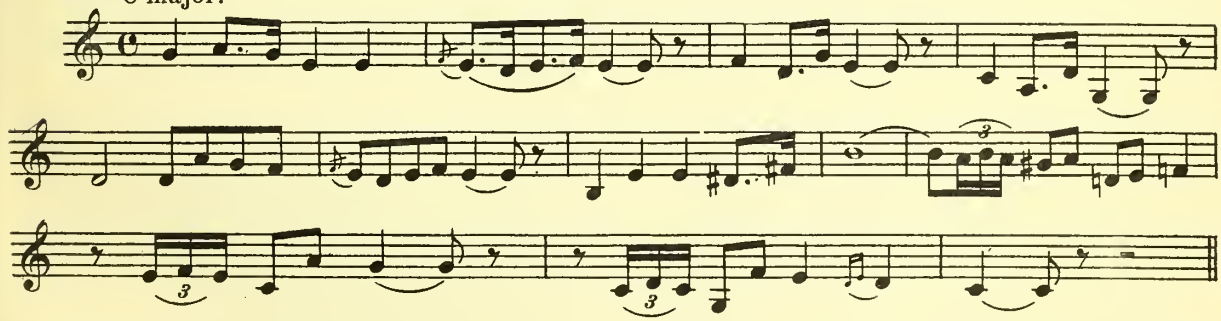


33. D♭ major (a major third lower than F major.)



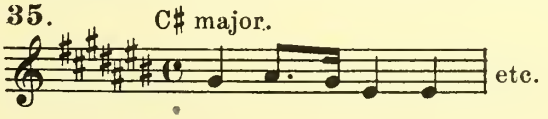
Transposition from F major to C major; that is, a perfect fourth (four notes) lower:-

34. C major.



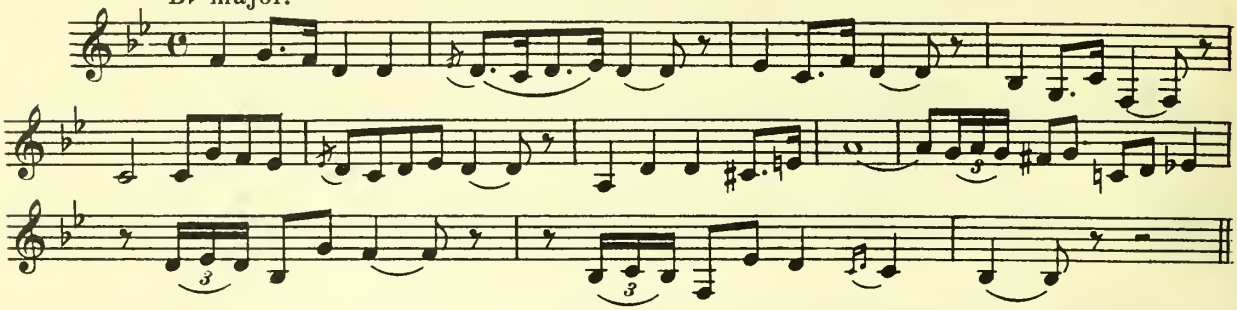
The above transposition could also have been made use of for C sharp major, in the following way:-

35. C♯ major.



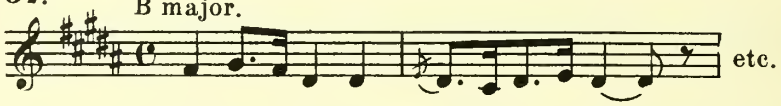
Transposition from F major to B-flat major; that is, a perfect fifth (five notes) lower:-

36. B♭ major.



In the same manner this melody could have been transposed to B major, as follows:-

37. B major.

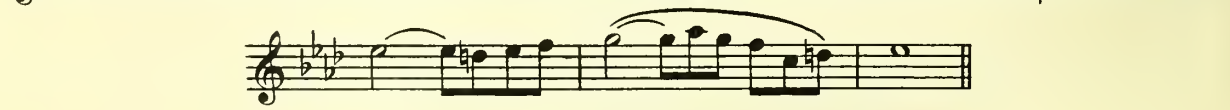


The best method for simplifying transposition, and one which should be employed in preference to all others, is the use of the different clefs:-

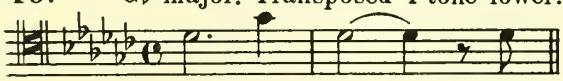
38. One Tone lower: One Tone higher: A Third lower: A Third higher:

Practical employment of the clefs already shown, in connection with transpositions:-

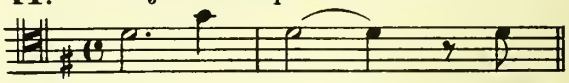
39. Rossini.



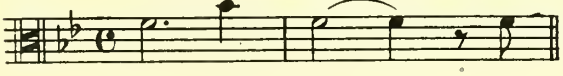
40. G♭ major. Transposed 1 tone lower:



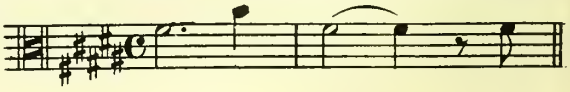
41. G major. Transposed ½ tone lower:



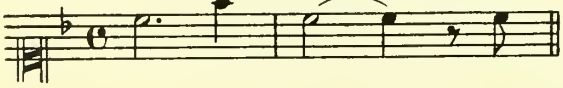
42. B♭ major. Transposed 1 tone higher:



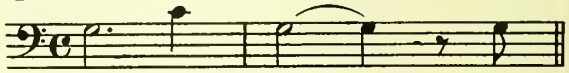
43. B major. Transposed 1½ tone higher:



44. F major. Transposed 1½ tone lower:



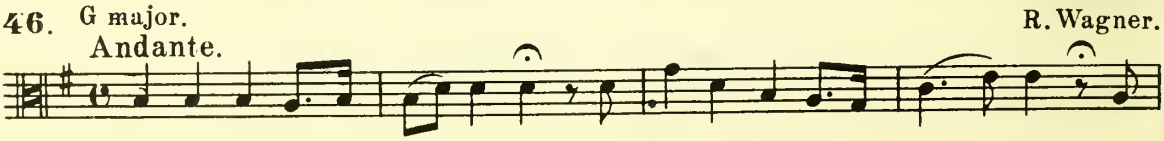
45. C major. Transposed 2 tones higher:

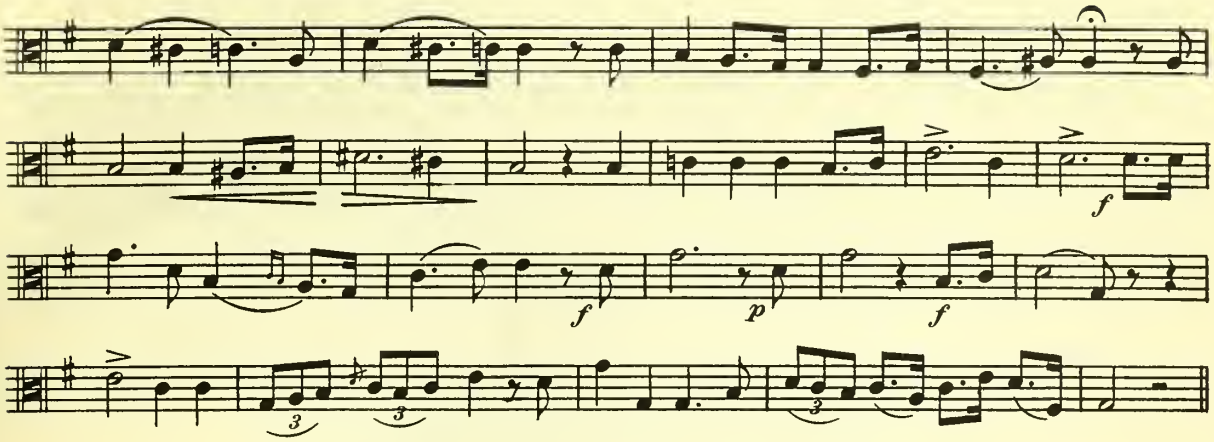


(To be imagined two octaves higher.)

Transposition upon those instruments which naturally play in the Alto, Tenor or Bass clef is brought about in a way identical with the Violin clef. The following examples will serve as practical illustrations:-

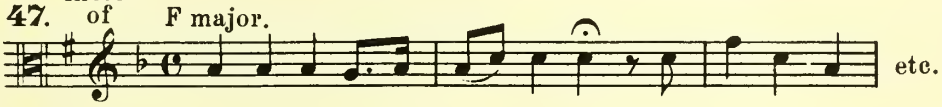
46. G major. Andante. R. Wagner.





Transposition of the above melody from G to F major may be brought about in the following simple way:-

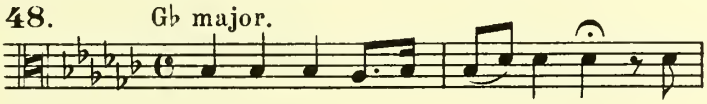
47. instead of F major.



etc.

It is easy to see that only a change of clef is required in order to play the melody one tone lower. If the transposition is to be made for only one half-tone lower, the following change in signature will suffice:-

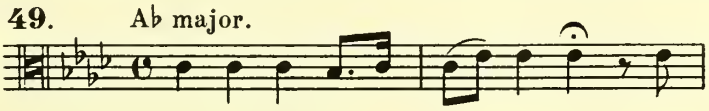
48. G♭ major.



etc.

If the melody is to be executed one half-tone higher the transposition will be brought about as follows:-

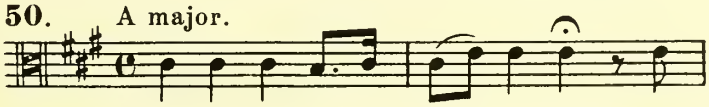
49. A♭ major.



etc.

One whole tone higher than G major (A major) can be brought about by the following transposition:-

50. A major.

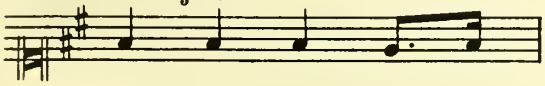


etc.

Furthermore, the following transpositions can be brought about through change of clefs:-

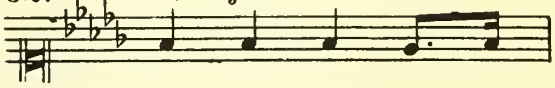
One Fifth higher or One Fourth lower.

51. D major.

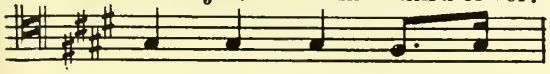


or

52. D♭ major.

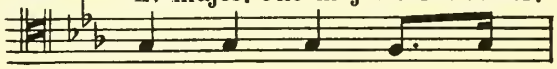


53. E major. One minor third lower.

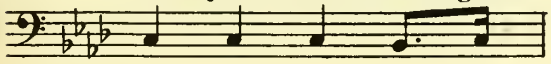


or

54. E♭ major. One major third lower.

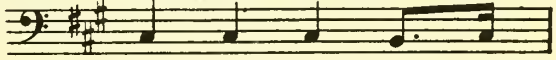


55. A♭ major. One half-tone higher.



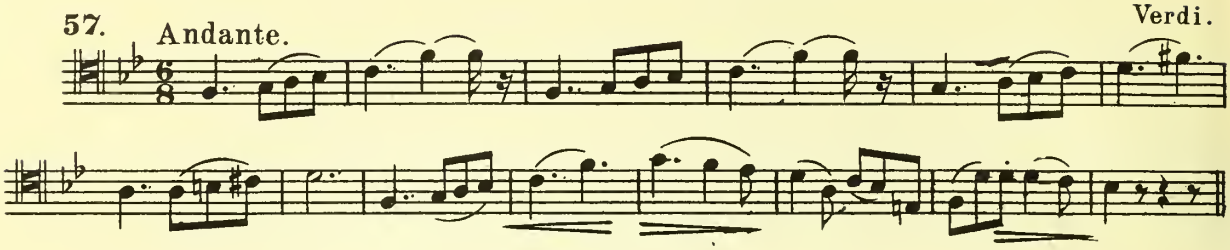
or

56. A major. One whole tone higher.



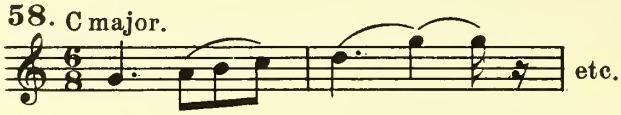
The same proceeding can also be employed with compositions in the Tenor clef:-

57. Andante. Verdi.



Transposed one tone higher:-

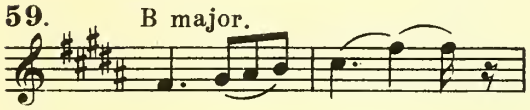
58. C major.



etc.

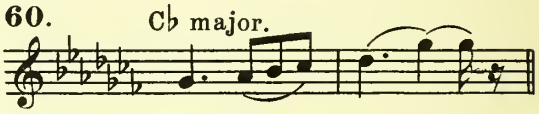
One half-tone higher gives us B or C flat major:-

59. B major.



or

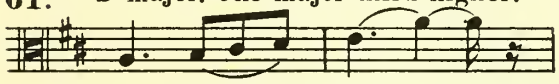
60. C♭ major.



etc.

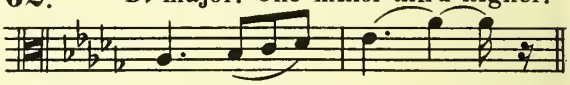
Through change of keys the following additional keys may be obtained:-

61. D major. One major third higher.

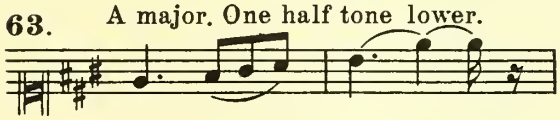


or

62. D♭ major. One minor third higher.

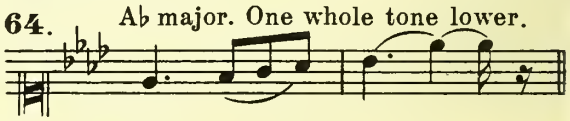


63. A major. One half tone lower.

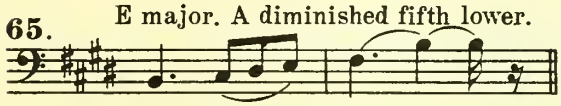


or

64. A♭ major. One whole tone lower.

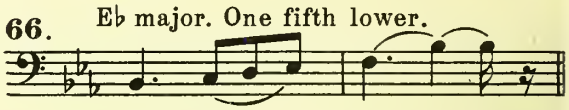


65. E major. A diminished fifth lower.



or

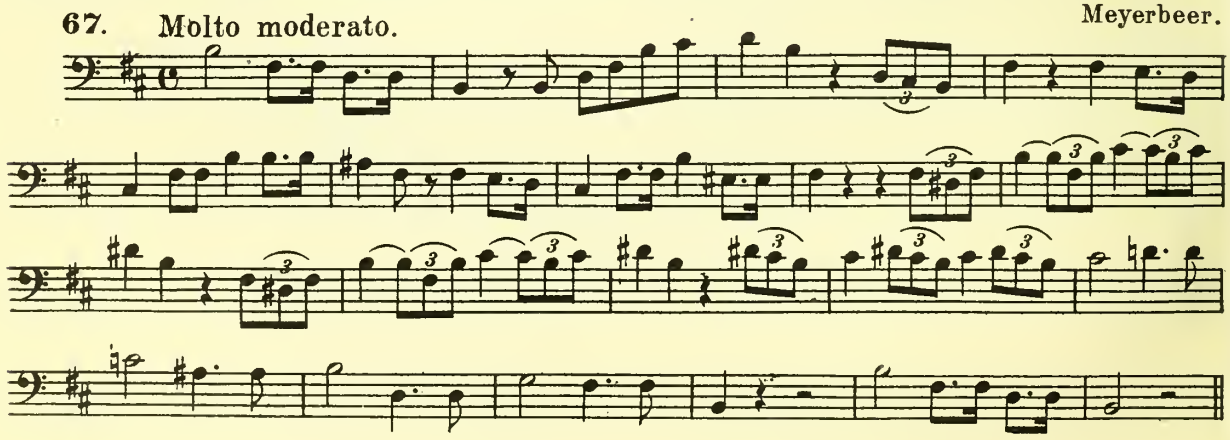
66. E♭ major. One fifth lower.



The last two examples could also be imagined an octave higher, in which case the transposition would come a fourth higher.

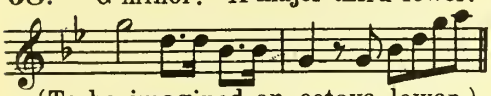
In the following examples we will illustrate a few transpositions for those who are o bliged to read in the bass clef:-

67. Molto moderato. Meyerbeer.



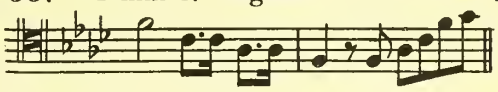
Through change of clef the following keys are obtained:

68. G minor. A major third lower.

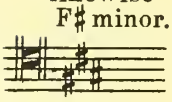


(To be imagined an octave lower.)

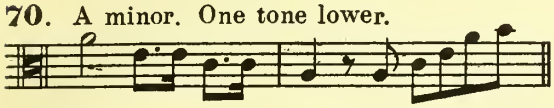
69. F minor. Augmented fourth lower.



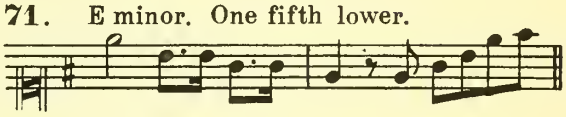
likewise F♯ minor.



70. A minor. One tone lower.

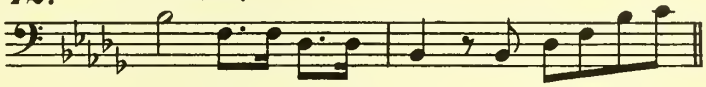


71. E minor. One fifth lower.



If it were necessary to transpose this melody of Meyerbeer one half-tone lower, the signature would simply have to be changed as follows:-

72. B♭ minor.



etc.

The principal and most important consideration in any kind of transposition is the key into which we wish to transpose, together with the necessary accidentals therefor, and it is the latter which the transposer must be absolutely sure and certain of; incessant daily practice is positively necessary to arrive at mastery in this exceptionally difficult accomplishment.

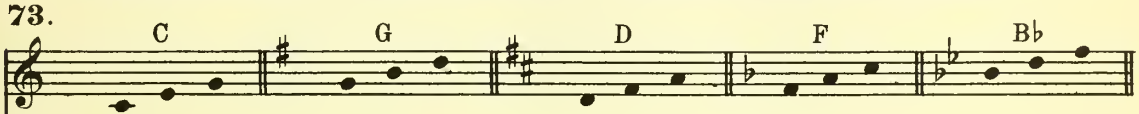
CHAPTER IX.

Special Remarks on Transposition for Clarinet Players.

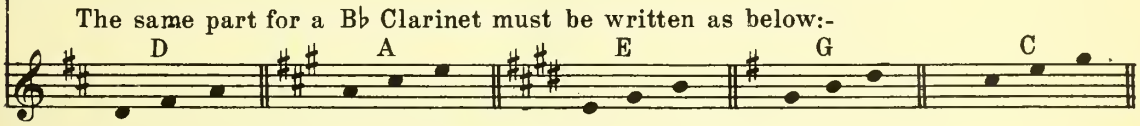
In case a Clarinet player should possess but one instrument, a B♭, and should be asked to play a part written for a C Clarinet, he would have to transpose the part one tone higher, in doing which he must observe the following important point: The B♭ Clarinet is pitched one whole tone lower than the C Clarinet, owing to which fact we are confronted with an entirely different tonal relationship, which is clearly demonstrated by the following table:-

If a part for the C Clarinet is written in either of the following keys:-

73.



The same part for a B♭ Clarinet must be written as below:-

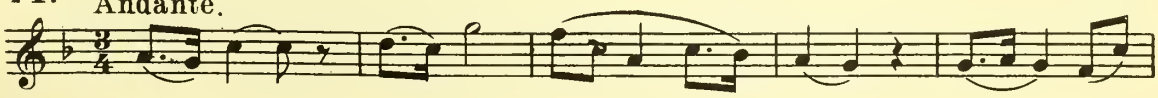


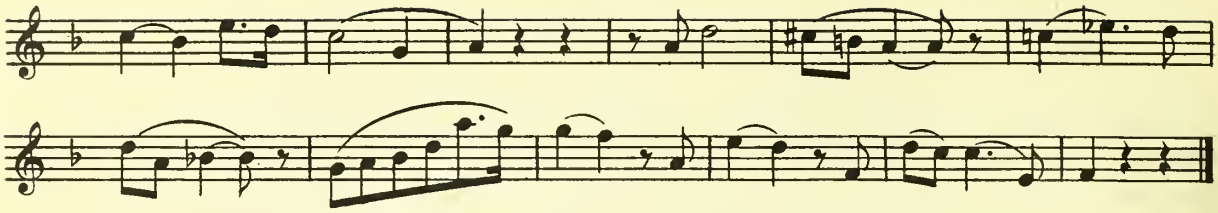
Consequently, as many flats as belong to the key of B flat (two) are to be deducted in the transposition for the B♭ Clarinet, or for every flat a sharp (consequently two sharps) must be added. If a part written for the B♭ Clarinet were to be played upon a C Clarinet, it would have to be transposed one tone lower. In such a case the signature would receive two flats more; i.e., two sharps less. In order to execute an E♭ Clarinet part upon a B♭ Clarinet, it would have to be transposed a fourth higher; the signature receiving one flat more, or one sharp less, as illustrated in the following example:-

74. Clarinet in E♭.

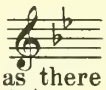
Andante.

Gounod.



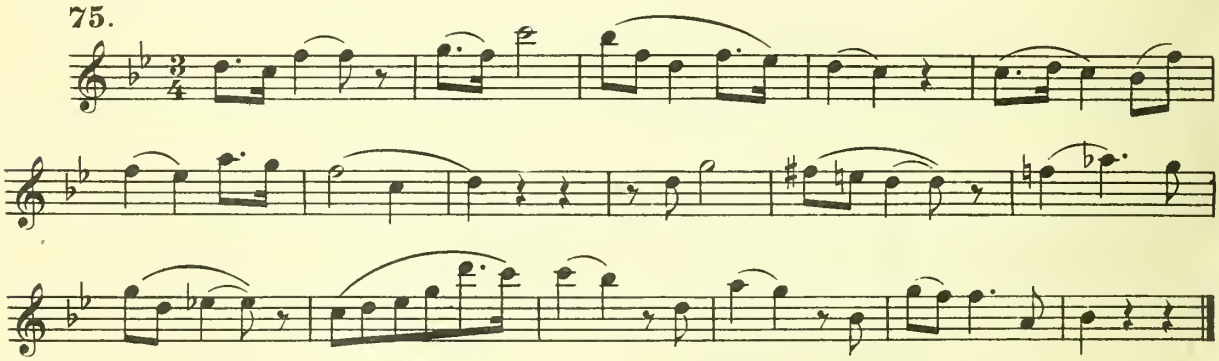


Considering the pitch of the instrument, we must picture or try to imagine the desired key to ourselves, and deduct the signature of the latter from that of the piece to be transposed, in order to arrive at the correct key for the transposition. For instance, a Clarinet or any other instrument pitched in B♭ deducts the signature of B-flat major, two flats; the Clarinet in A deducts three sharps. If the signature of the piece to be transposed does not contain as many flats or sharps as are to be deducted, we add a sharp for every missing flat and a flat for every missing sharp.

For instance; if  were to be re-written for the E♭ Clarinet we would have to deduct three flats; and as there are only two we substitute a sharp for the third one, therefore the signature is this:- 

Example 74, transposed for the B♭ Clarinet (B-flat against E-flat); E-flat deducts three flats, B-flat only two; consequently but one flat is to be added to our former example:-

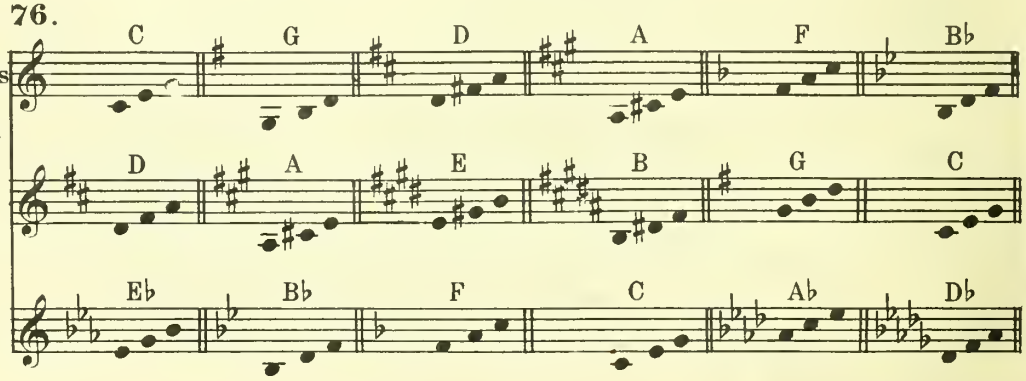
75.



The A Clarinet is pitched one half-tone lower than the B-flat, and a minor third lower than the C Clarinet. Consequently the notes of the two latter varieties must be played that much higher. In transposing a part naturally pitched in C, the performer on an A Clarinet deducts three sharps from the signature, or adds three flats, as the case may demand.

76.

C Clarinet parts are written thus for B♭ Clarinet and thus for A Clarinet.



If a part written for a D Clarinet were to be played upon an A Clarinet, the transposition would have to be made in the same manner as illustrated in Ex. 74; that is, a fourth higher.

Explicit directions regarding how to practice transposing and how to apply these directions in a practical way will be given later on, in a chapter especially devoted to this subject.

CHAPTER X.

Special Remarks on Transposition for Cornet Players.

In this chapter we will deal chiefly with the transposition of Trumpet parts, which must frequently be played upon Cornets in our smaller organizations, and transposed at sight. It may not be out of place to mention here that the designation "Clarino" which is frequently found in old symphony parts does not refer to the Clarinet, but to the Trumpet.

As the Cornets in general use are pitched in either C, B♭ or A, while Trumpet parts, on the other hand, are met with every possible key, it will be necessary for the transposing Cornetist to choose such keys as will simplify the desired transposition to the greatest possible extent. In this way the part for an E Trumpet would easily be transposed upon either a C or an A Cornet, as here shown:- ★)

77.

E trumpet

A major third higher.

C Cornet

A fifth higher.

A Cornet

Likewise the D Trumpet.

78.

D Trumpet

C Cornet

A fourth higher.

A Cornet

It will be still easier to transpose F Trumpet parts upon the C or B♭ Cornet, thus:-

79.

F Trumpet

A fourth higher.

C Cornet

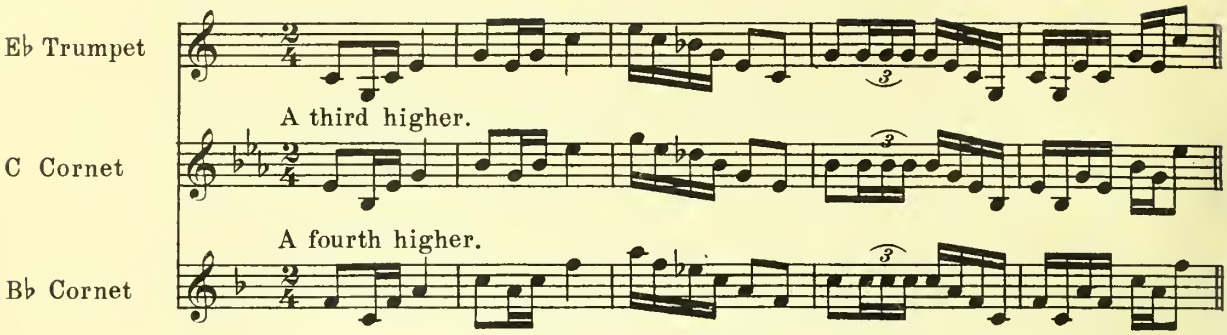
A fifth higher.

B♭ Cornet

★) The remarks as to the signatures and deducting of sharps and flats, as explained in a previous chapter, must also be observed here.

Likewise the E♭ Trumpet.

80.

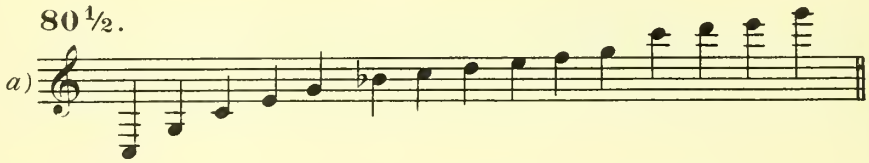


We will now compare the Trumpet and the Cornet in a more detailed way, showing the exact nature of the Trumpets in various pitches, their range or compass, and how their parts may be interpreted by Cornets in the most effective and satisfactory manner.

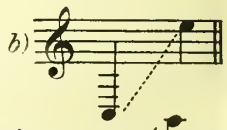
The Trumpet is furnished with seven crooks, by the use of which it may be pitched in either of the following keys at will:- A-flat, A, B-flat, B, C, D-flat, D, E-flat, E, F and G. The G crook is the smallest, and consequenty the highest in pitch. The notation for these differently-pitched Trumpets varies according to the particular crook employed.

The compass of the Trumpet, as here shown, extends a few notes over three octaves:-

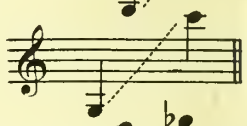
80½.



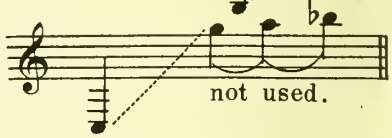
The low notes are used in writing for the high crooks, such as E, F and G:- *b)*



The high notes are written for the low crooks, such as A, B, C, etc. *c)*

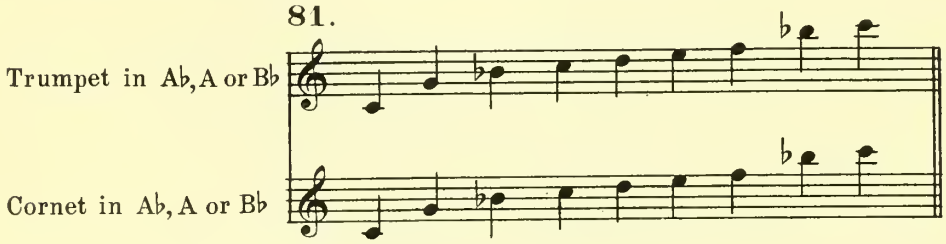


The D crook may also be written for in this manner:- *d)*



As a sure point of reference for comparison, it is to be remembered that the Trumpet in B♭, A and A♭ is in unison with the Cornet in B♭, A and A♭:-

81.

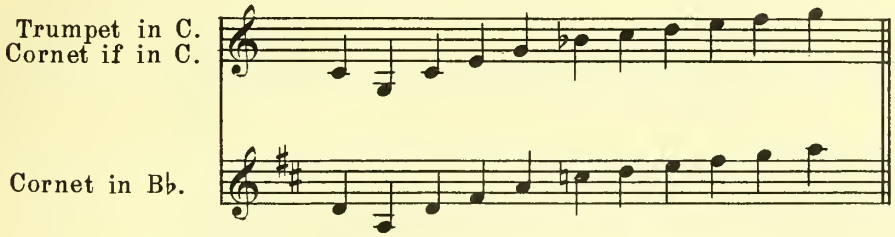


On a G Cornet, for instance, the five crooks of G, B, B♭, A and A♭ are in unison with the same crooks of the Trumpet. Apparently, this would obviate the necessity of transposition; but as these crooks are very rarely used on the Trumpet, and when they are used the sound produced is rather dull and unsatisfactory, it is nearly always necessary to transpose.

The greatest similarity between the Cornet in B-flat or A and the Horn as regards tone is brought about by the D and E-flat crooks on the latter.

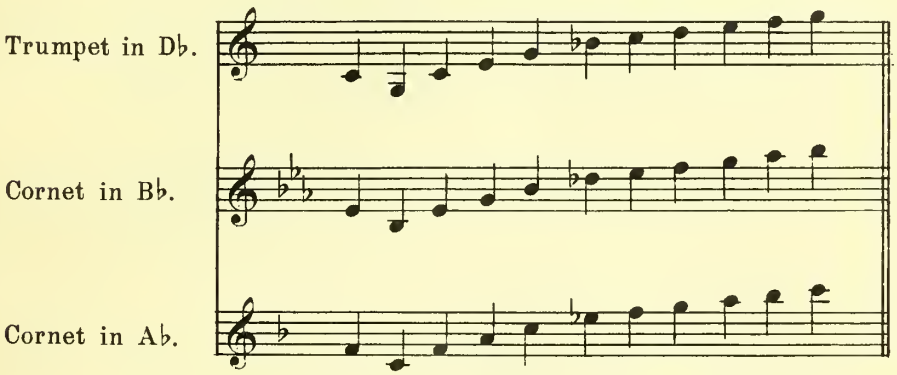
The following example will give an idea of the keys and transpositions which may be used in playing Trumpet parts on the Cornet, when such occur in the Band or Orchestra:-

82. Orchestra or Band in C.



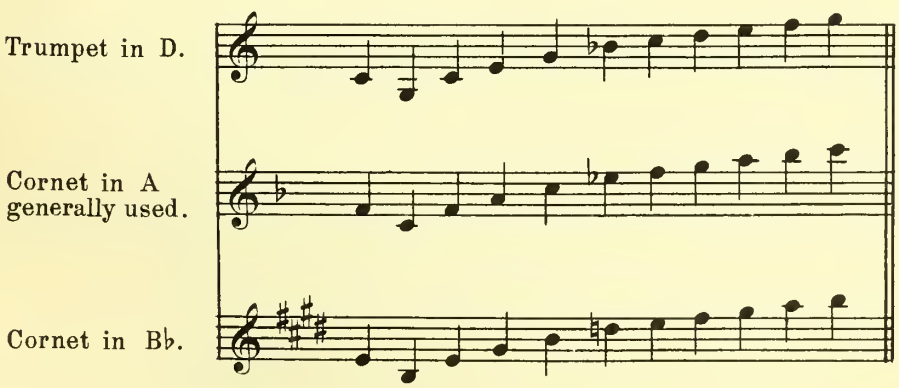
Some players prefer using the B♭ crook, although the A crook is more desirable, the tone thus produced having more similarity to that of the Trumpet with G crook.

83. Orchestra or Band in D♭.

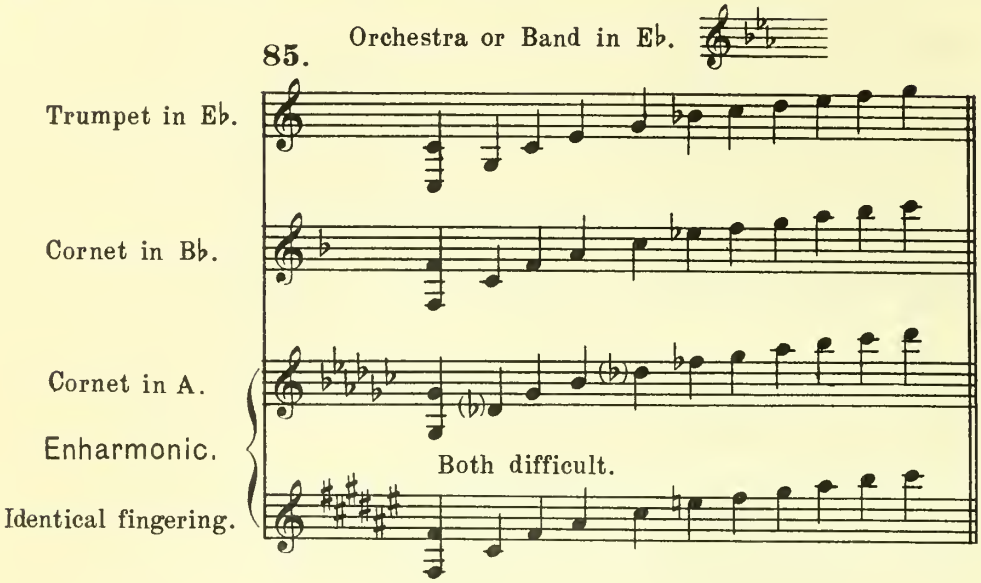


From the foregoing example may be understood how to transpose a part for A♭ Cornet for use on a B♭ Cornet.

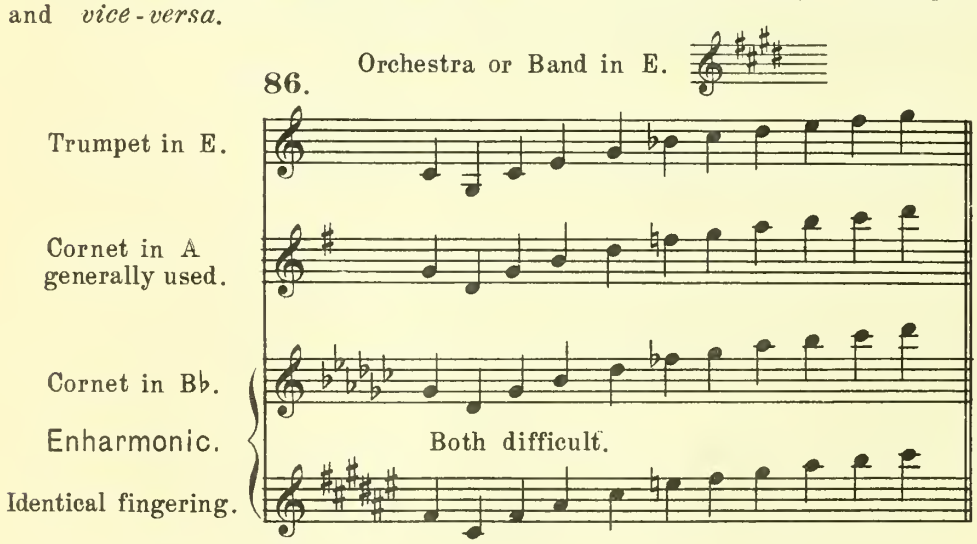
84. Orchestra or Band in D.

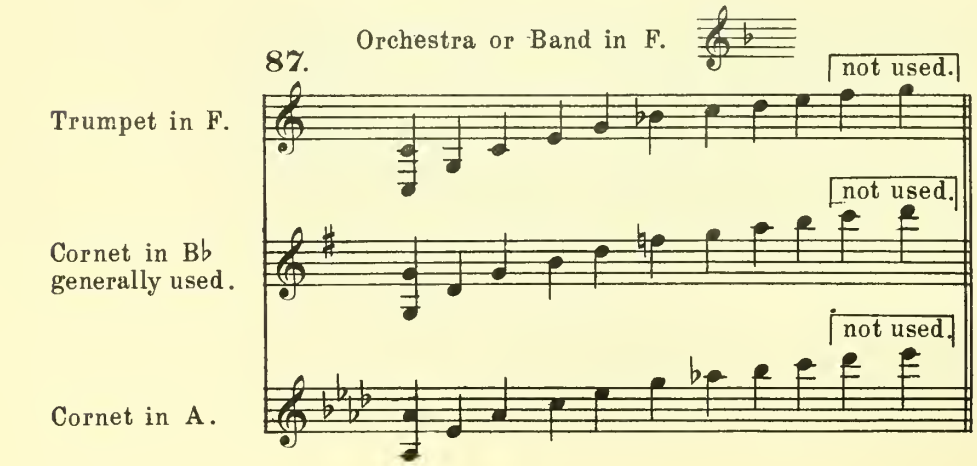


The foregoing example illustrates the transposition of a Cornet part written in A to B♭ and *vice-versa*



The foregoing example shows how a B♭ Cornet part may be transposed for an A Cornet, and *vice-versa.*





88. Orchestra or Band in G

Trumpet in G.

Cornet in A.

Cornet in B♭.

not used.

not used.

not used.

With Cornet in G, same as the Trumpet, play an octave higher.

89. Orchestra or Band in A♭

Trumpet in A♭.

Cornet in A.

Cornet in B♭.

1
2
3

The low F can be obtained with all three valves down, by opening the lips to the greatest possible extent; but it is an "artificial" tone.

90. Orchestra or Band in B

Trumpet in B.

Cornet in A.
Trumpet in A.

Cornet in B♭.
Trumpet in B♭.

Extract from "Oberon" Overture.

91. Adagio.

Trumpet in D.

Cornet in A

or

Cornet in B♭.

pp

Extract from "William Tell" Overture.

92. Allegro.

Trumpet in E.

Cornet in A.

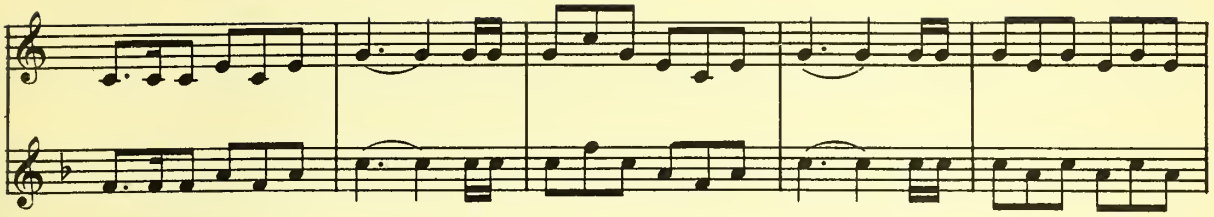
Cornet in B♭.
difficult;not good.

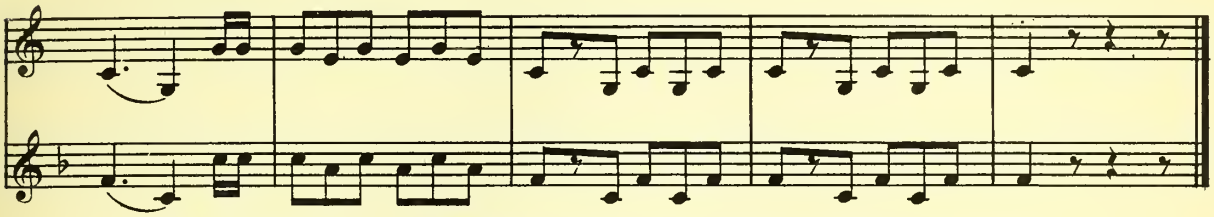
Extract from "Fra Diavolo" Overture.

93.

Trumpet in D.

Cornet in A





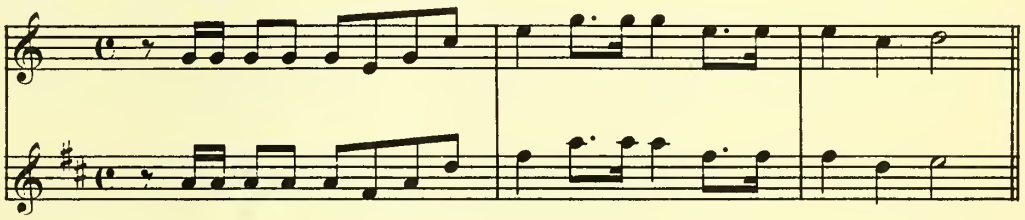
In Military Band, use B♭ crook, and play as if written for Trumpet in E♭.

Commencement of "Tannhaeuser March" as first published for Orchestra.

94.

Trumpet in B.

Cornet in A.

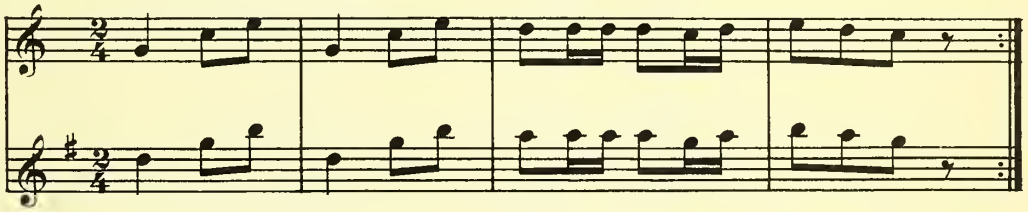


Extract from "Le Serment" Overture. (first time.)

95.

Trumpet in F.

Cornet in B♭.



From the same Overture. (second time.)

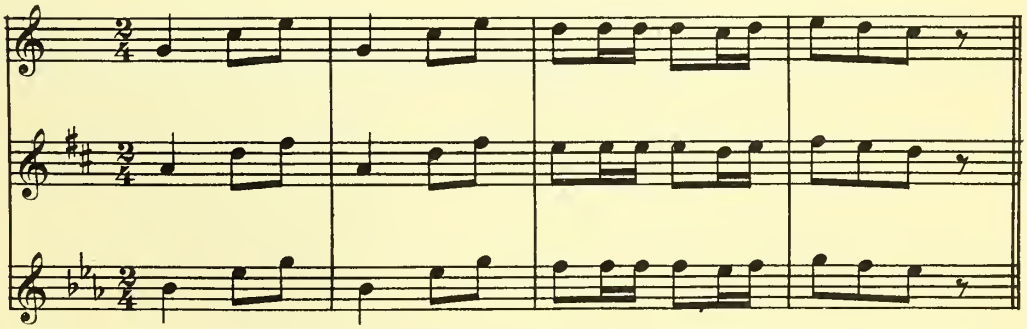
96.

Trumpet in C.

Cornet in B♭.

better for

Cornet in A.



CHAPTER XI.

Special Remarks on Transposition for Trumpet Players.

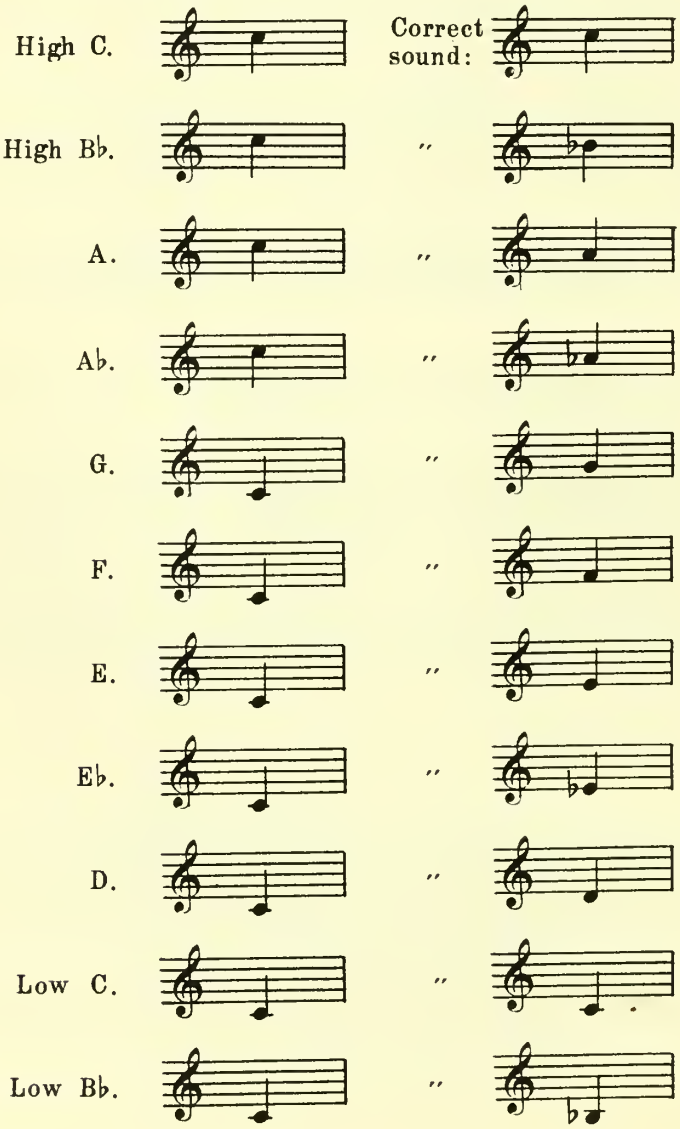
a) The pitches and actual sound of the Trumpets.

When considering the many varieties of Trumpets in use at the present day, with a view to explanation of the proper transpositions for them, we find at the very outset that they must be divided into two classes, called for convenience High and Low Trumpets. The notation for these two classes of Trumpets will be found to differ by an octave. If, for example, the natural tone of a low Trumpet would be written  it would appear as  for a high Trumpet.

In order to become thoroughly acquainted with the exact pitches of all the different varieties of Trumpets, the student is earnestly advised to study the following example carefully and repeatedly.

Natural tones of various Trumpets.

97.



b) The so-called "high" Trumpets.

As will be seen from the foregoing table, the high C, B♭, A and A♭ Trumpets are classed as the "high" Trumpets. The highest in pitch of these is the C Trumpet; then comes the B♭ Trumpet, a whole tone lower, the A Trumpet, a half tone lower than the B♭, and the A♭ Trumpet, a half tone lower still, and two tones lower than the C Trumpet. In order to produce the sound the following notes would have to be played upon these four varieties of Trumpets:-

98. Trumpet

in C. in B♭. in A. in A♭. Correct sound

From this we learn that any composition written for the C Trumpet must be performed as many intervals higher upon any of the other three as their respective pitch is lower than that of the C Trumpet. For the B♭ Trumpet this is a whole tone (B♭-C); for the A Trumpet a minor third (A-C), and for the A♭ Trumpet a major third (A♭-C).

In the opposite case a composition written for the A♭ Trumpet must be performed lower in the same degree, according to the intervals, when a C, B♭ or A Trumpet is used.

As an illustration the following example is given:- *)

99.

Trumpet in high C.

in B♭.

in A.

in A♭.

The foregoing illustration will also serve to show the entire relationship of the "high" Trumpets to each other. This relationship is the most distant (a major third) between the C and A♭ Trumpets, while the C and A Trumpets are only separated by a minor third. The distance of a whole tone separates the C and B♭, also the B♭ and A♭ instruments; a half-tone only is found between the B♭ and A and the A and A♭ instruments. Consequently, the method of transposing between a C and a B♭ is the same as between a B♭ and A♭ Trumpet. For instance:-

100.

C Trumpet.
B♭ Trumpet.

B♭ Trumpet.
A♭ Trumpet.

B♭ Trumpet.
A Trumpet.

A Trumpet.
A♭ Trumpet.

*) The remarks in chapter IX relative to signatures and accidentals must be carefully observed.

The student should now work out a table in which the tonal ranges of the several "high" Trumpets are compared. The following example will illustrate the beginning and the end of such a table:-

101.

C Trumpet. etc., descending to

B♭ Trumpet. descending to

A Trumpet. descending to

A♭ Trumpet. descending to

c) The so-called "low" Trumpets.

After the preceding remarks concerning the "high" Trumpets we can limit ourselves to a brief discussion of the "low" Trumpets and their distinctive characteristics of pitch. Counted from the highest of the family, their order of progression is as follows:- First the G Trumpet, next, and one whole tone lower, the F Trumpet; a half-tone lower than this the E, another half-tone lower, the E♭, then another half-tone lower the D; a whole tone lower than this the low C, and another whole tone lower the low B♭ Trumpet.

In order to produce the following sound:- the several "low" Trumpets must intone as follows:-

102. G Trum. F Trum. E Trum. E♭ Trum. D Trum. C Trum. B Trum.

Written for the low Trumpets the choral used in Ex. 99 would appear as follows:-

103.

G Trumpet.

F Trumpet.

E Trumpet.

E♭ Trumpet.

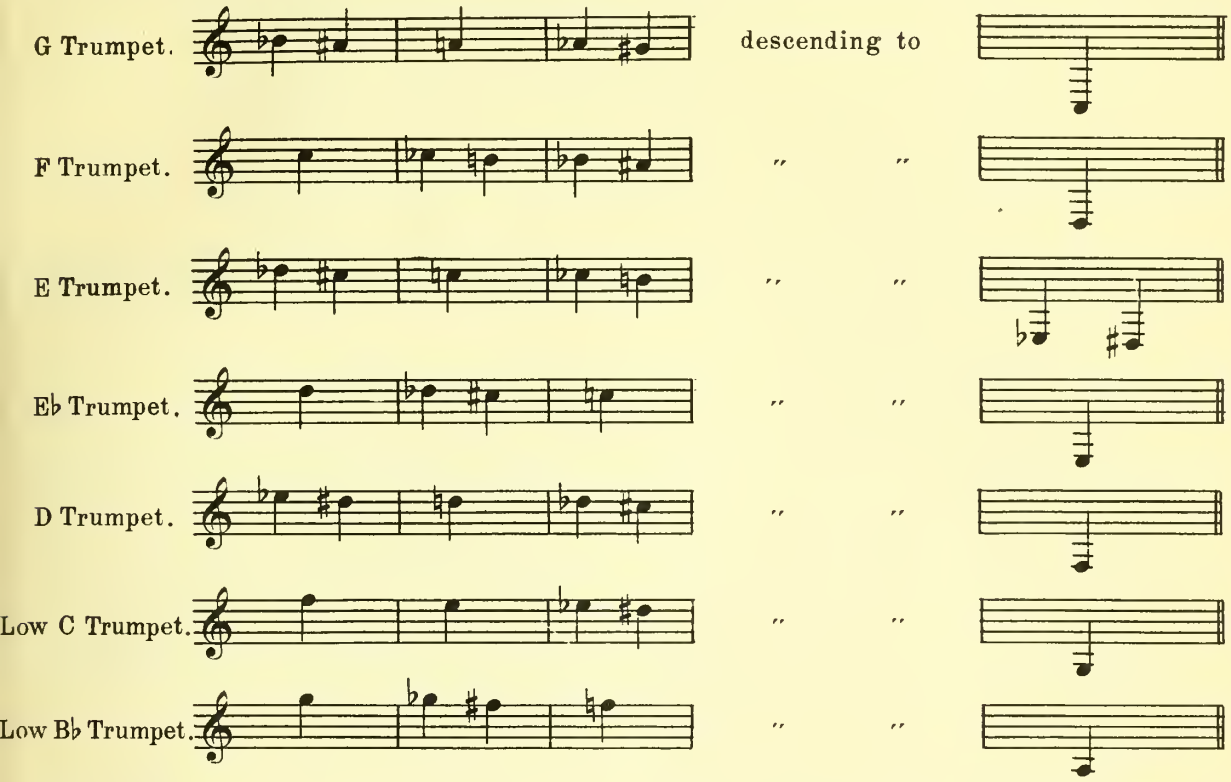
D Trumpet.

Low C Trumpet.

Low B♭ Trumpet.

As with the high Trumpets, the student should now work out a table of the low Trumpets, according to Ex. 104, which shows the beginning and ending of the compass of each:-

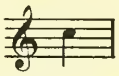
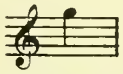
104.

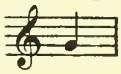


From this table it will be an easy matter to ascertain how the various Trumpets compare as to their tonal differences, i.e., intervals. In order to simplify the student's work as much as possible, we will review the different varieties of Trumpets once more, grouping them according to a proportionate system of intervals. In this way we find the Trumpets in G-B♭ in the proportions of a major sixth; those in G-C and F-B♭ of a perfect fifth; those in E-B♭ of an augmented fourth; those in G-D, F-C and E♭-B♭ of a perfect fourth; those in G-E, E-C and D-B♭ of a major third; those in G-E, F-D and E♭-C of a minor third; those in G-F, F-E♭, E-D, D-C and C-B♭ of a major second, and those in F-E, E-E♭ and E♭-D of a minor second.

d) The high and low Trumpets, and their comparative relationship.

We have already dwelt upon the peculiar system of notation which separates the Trumpets into two distinct varieties. We will now endeavor to explain the comparative relationship of those varieties in as clear a manner as possible, in order that the student may not form a wrong idea of their real nature or character. As explained in previous sections (b and c) transposition among both the high and low Trumpets is brought about in such a way that, in order to perform a composition written for a low Trumpet upon a still lower one, every note must be played as much higher than it is written as the pitch of the Trumpet in use is lower than that of the one for which the composition was originally written. If the notation is for a low pitched instrument and is to be executed upon a higher-pitched one, the opposite course must be adopted.

But if the notation is for a "high" Trumpet the case is altered. As the notation for the latter instruments is an octave lower than for the former, we must alter our methods, and blow lower tones; whereas in the opposite case, when using a "high" Trumpet and the notation is for a "low" one, we must always play higher tones. For instance, let us suppose that the note  written for a high C Trumpet must be transposed for an F Trumpet; supposing the notation for all Trumpets to be the same, this note must be played a perfect fifth higher in order to produce the same sound; that is:- 

But in reality this is not the case, because this same note is written an octave lower for the "low" Trumpets; consequently, in order to produce the correct sound upon the F Trumpet we must play 

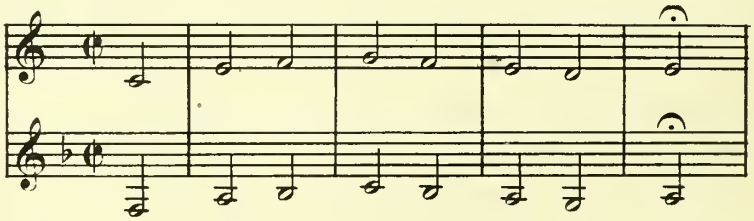
In order to simplify this it will be advisable to imagine a melody written for a high Trumpet an octave lower, before transposing it upon a low instrument, and then to go as many intervals higher as the Trumpet is pitched lower. Reversing this, when playing on a high Trumpet, we can imagine the notes written for the lower instrument to be an octave higher, and then transpose them down at the proper interval.

As a practical illustration we append the Choral already used for other examples, as well as the beginning and end of a table to be prepared by the student, in which the notation of this melody is shown and prepared for the high C and G Trumpets. Owing to lack of space the illustration has been limited to these two varieties, and it will be left to the student to work out the remainder in the same fashion.

105.

high C Trumpet.

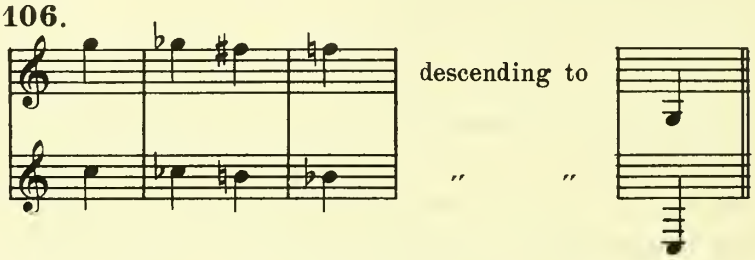
G Trumpet.



106.

high C Trumpet.

G Trumpet.



It can now be left to the student to ascertain for himself which of the Trumpets bear the same tonal relationship to each other.

e) Practical directions regarding transposition.

We will now pass on to the practical employment of the directions already given. Taking for granted that the student has acquainted himself thoroughly with all the keys and their signatures, we offer the following practical directions as to how transposition may best be practiced and ultimately mastered. First, the student should study all the instructions given in b, The so-called "high" Trumpets, writing out the exercises in full; let him note down some popular melody for high C Trumpet, imagine that he wishes to execute it upon a B♭ Trumpet, and then proceed to transpose it for that instrument, on paper. Following that, he is to continue transposing it for A or A♭ Trumpet. After this, let him take some different melody, write it out for B♭ Trumpet, and transpose it for C, A and A♭ Trumpet, also for those in other pitches.

Practical transposition with the instrument in hand should be done in this way: Let the student select some melody, imagine it to be written for C Trumpet, and proceed to transpose it at sight, the same as he did on paper before, imagining, in addition, that he is playing a B♭, A or A♭ Trumpet. Or *vice-versa,* he may imagine himself playing a C Trumpet, the melody being written for some one of the higher Trumpets. While practicing in this way, let the student advance a step in his written work, and select those melodies for transposition which contain many accidentals, or which modulate frequently into different keys; taking up the same exercises later with instrument in hand.

If the paragraphs relating to high Trumpets have been studied carefully and thoroughly in this manner, those following, which relate to low Trumpets (c) will not offer so many difficulties, as their manner of treatment and study is exactly similar, with the exception that the more distant intervals must receive consideration, rendering the most careful and constant study exceedingly necessary. In like manner the student will profit greatly through a review of (d), The high and low Trumpets and their comparative relationship; and, after careful study of the directions there given, he cannot fail to become thoroughly routined in the reading of the various styles of notation for both the high and low Trumpets, which, however, can only be mastered to perfection through practical orchestra and band routine.

It must not be forgotten that, in our endeavors to learn any certain thing, we must always advance gradually from easy to more difficult steps, from smaller to more extended forms; and we should, therefore, be careful to select melodies for this sort of practice that move within a range of five notes if possible, and which, above all, are short. Afterward, but very gradually, more extended scale studies, then entire collections of songs, exercises, etc., which are transcribed for Trumpet, and finally solo compositions, concertos, variations, etc., should be taken up for transposition.

In the general run of professional playing it will not be necessary to transpose all the intervals which we have so carefully explained, as in most cases the performer is provided with crooks, by means of which he can change the pitch of a B♭ Trumpet into an A, A♭ or C, or of an F into E, E♭ or D. Although it cannot be denied that by changing the pitch of an instrument in this manner the purity of intonation is sometimes marred to a considerable extent, still, a player can materially simplify his playing by changing the pitch of his instrument as indicated, particularly if he has thoroughly mastered transposition in all the intervals.

As the modern valve-Trumpets have been perfected to such an extent as to render them available in every possible key, many composers have fallen into the habit of writing for Trumpets in only one pitch (in F, for example), irrespective of the key in which the composition itself may be written. In such cases a player can simplify many a passage which would be complicated on an F Trumpet, by using some other crook and making the necessary transposition. Or, if it should be necessary to transpose the parts for a B♭ Trumpet, he might find it advisable to change the pitch of his instrument to A, when this passage occurs, in order to lessen the difficulties contained therein.

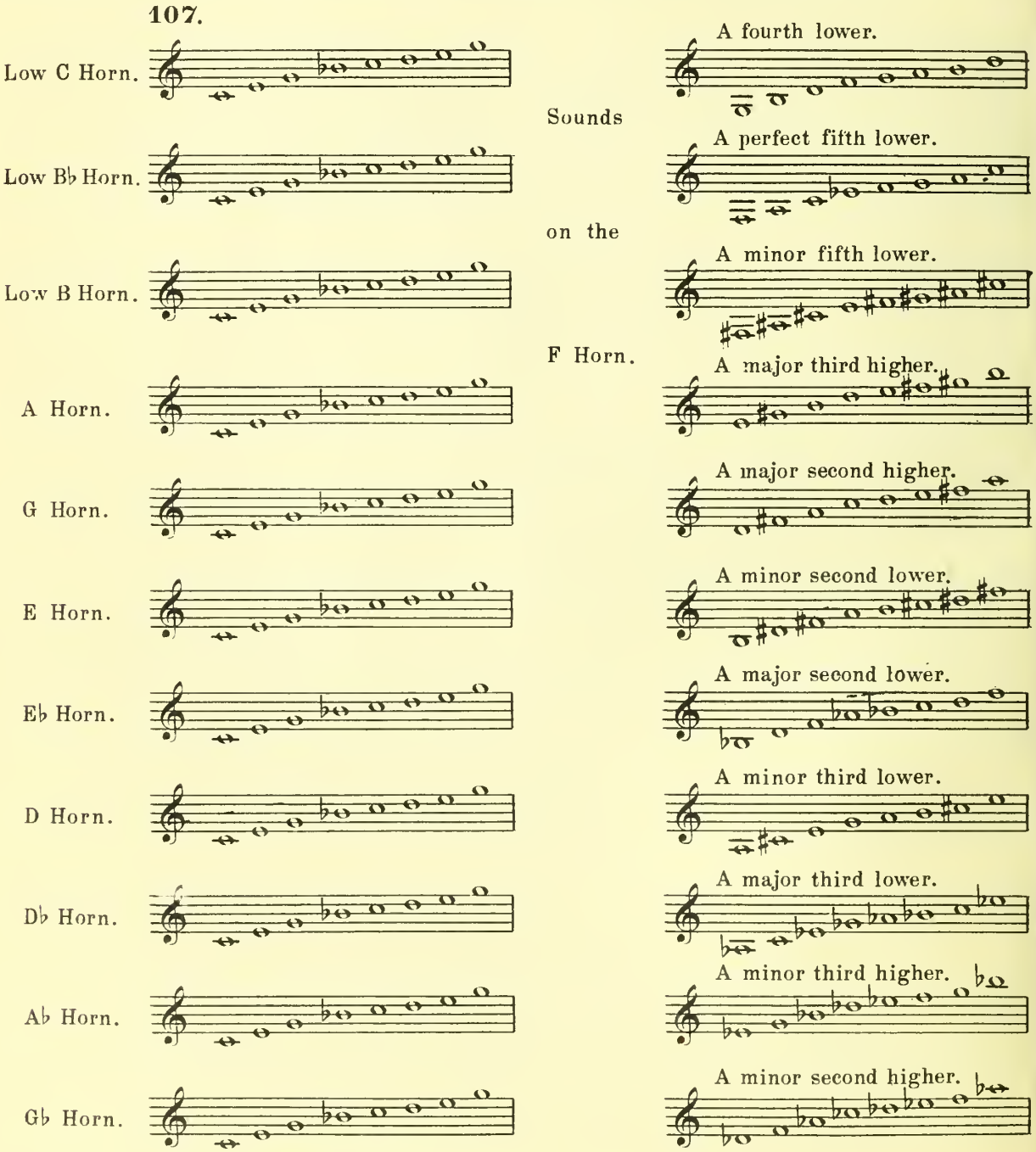
CHAPTER XII.

Special Directions Regarding Transposition for French Horn Players.

Notwithstanding the written instructions of composers relative to the precise pitch of Horns which they wish employed in different compositions, Horn-players now-a-days seldom pay any attention to these instructions, as a rule transposing everything for the F Horn, which is the only variety in common use. This is not an easy thing to do by any means, and great practice is required in order to transpose with facility and correctness.

The following example presents the different varieties of Horns, and also illustrates the sounds corresponding to their several pitches, when produced on the F Horn.

107.

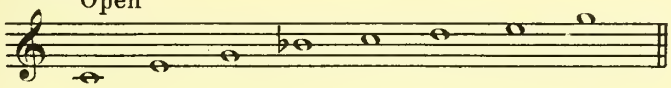


The "high" B♭, B and C Horns sound an octave higher than "low" Horns bearing the same names.

Some of these transpositions may be made on the valve Horn with extreme ease. By pressing down the second valve, the Horn is lowered one half-tone in pitch, which affects the instrument in the same manner as if an E crook were used.

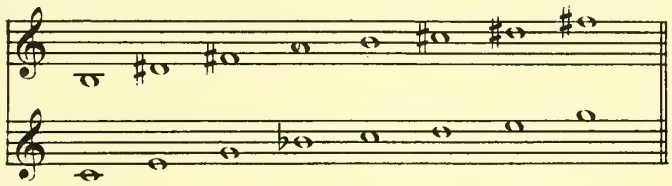
108. Open

F Horn.



Performed with the second valve held down it sounds like an E Horn:-

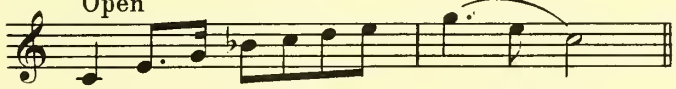
109.



By pressing down the first valve the pitch of the Horn is lowered one whole tone, and sounds as if an E♭ crook were used:-

110. Open

F Horn.

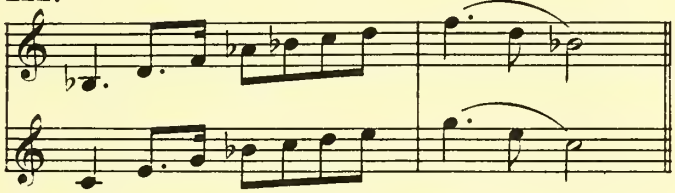


Played with the first valve down it sounds like an E♭ Horn:-

111.

Sound.

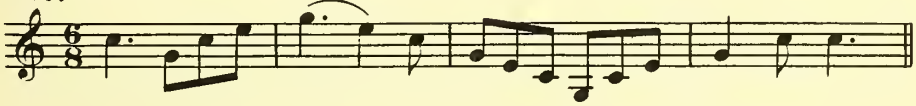
E♭ Horn.



By pressing down the third valve the pitch of the Horn is lowered a minor third, and sounds as though the D crook were used. The same result would be obtained by using the first and second valves together.

112.

F Horn.

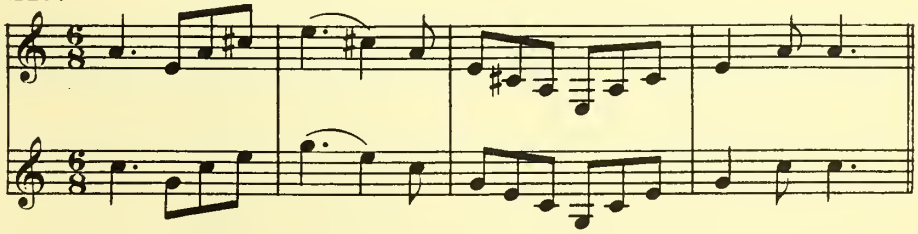


Played upon the third valve (or first and second) it will sound like a D Horn:-

113.

Sound.

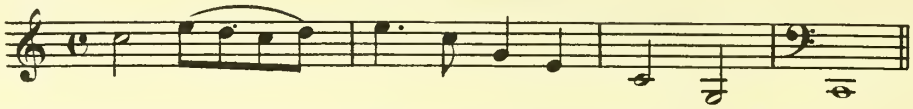
D Horn.



By pressing down the second and third valves together the Horn is flattened a major third, and sounds as though the D♭ crook were used.

114.

F Horn.

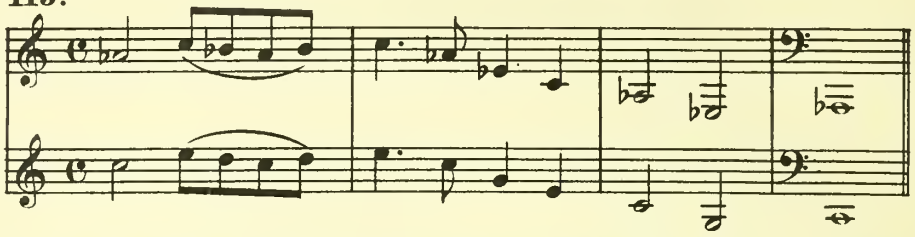


Played with the second and third valves it will sound like a D♭ Horn.

115.

Sound.

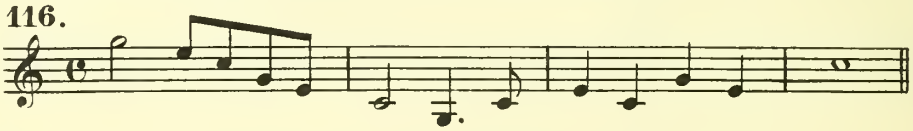
D♭ Horn.



By pressing down the first and third valves together the pitch of the Horn is lowered a perfect fourth, and it sounds as though a C crook were used.

116.

F Horn.

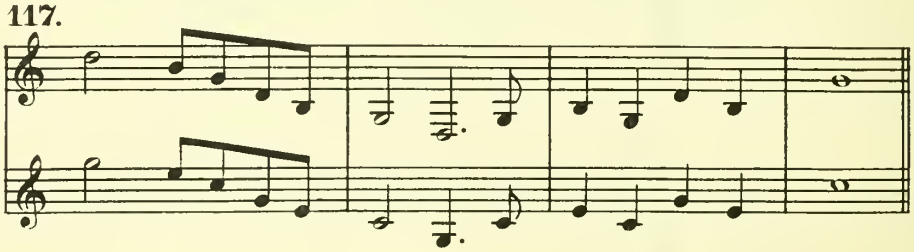


Played with the first and third valves it will sound like a C Horn:-

117.

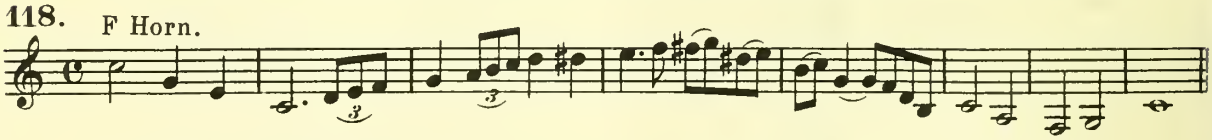
Sound.

C Horn.



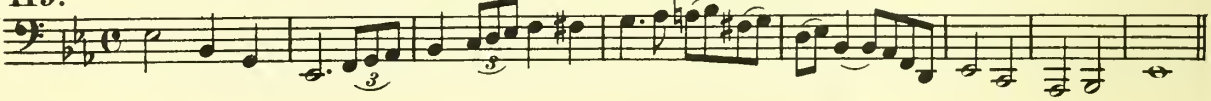
The following changes may be brought about through the use of the various clefs:-

118. F Horn.



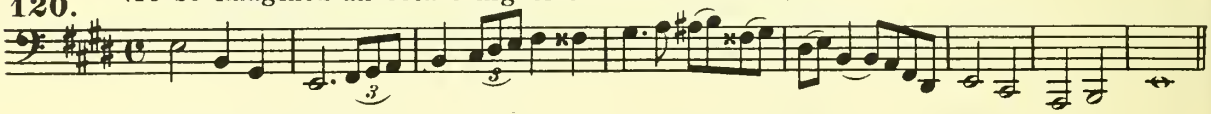
A minor third higher.
(To be imagined an octave higher than an A♭ Horn.)

119.



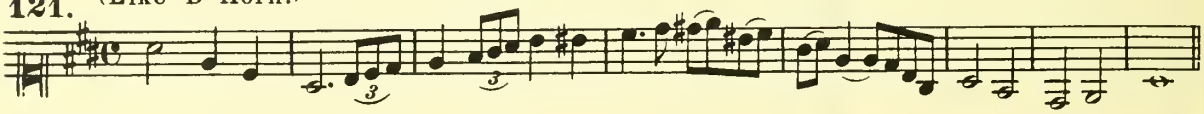
A major third higher.
(To be imagined an octave higher than an A Horn.)

120.

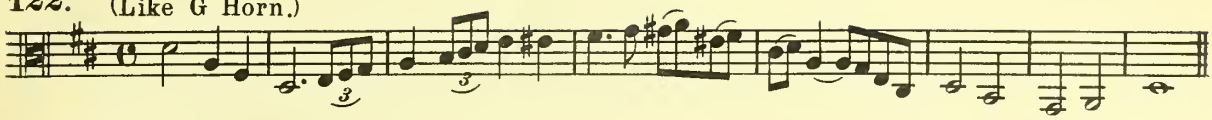


A minor third lower.
(Like D Horn.)

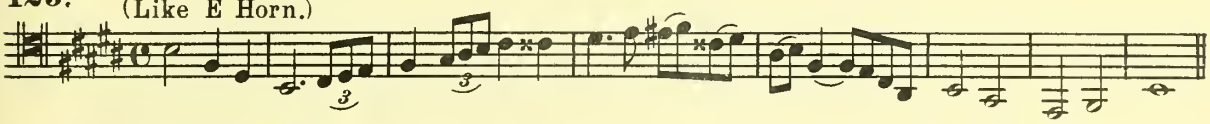
121.



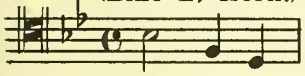
122. A tone higher.
(Like G Horn.)



123. A half-tone lower.
(Like E Horn.)



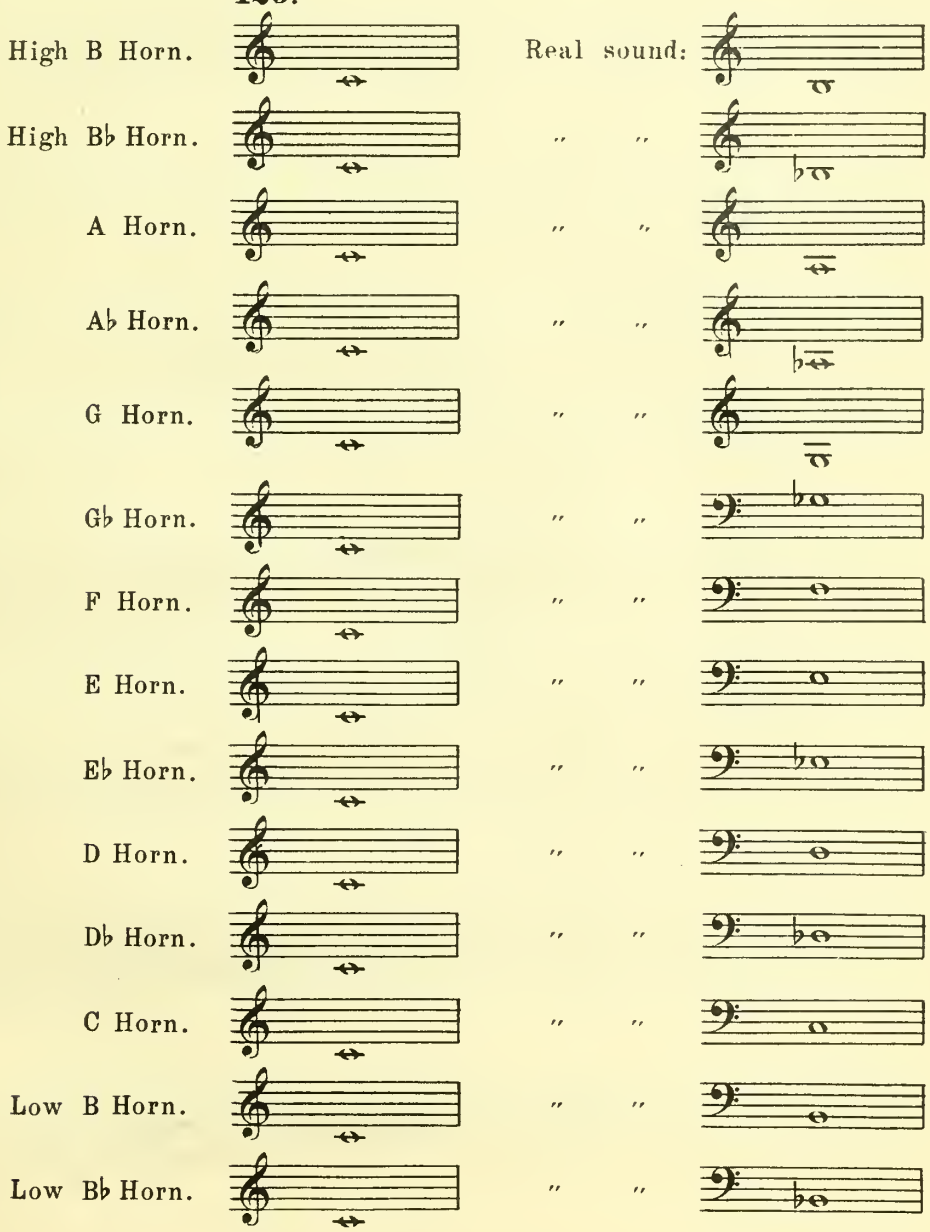
124. Or a tone lower.
(Like E♭ Horn.)



etc.

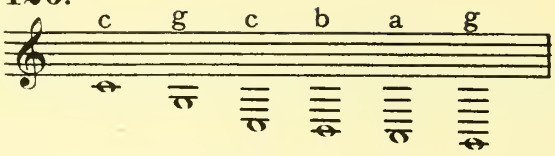
Careful study and much consideration should be given to the following table, which illustrates the real tonal pitch of all the varieties of Horns:-

125.

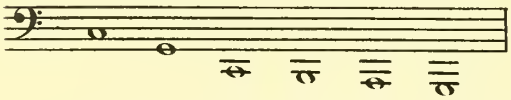


Such low notes as the following:

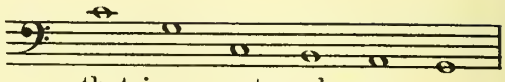
126.



are written for the Horn in this manner:



instead of:



that is, one octave lower.

It has never been definitely ascertained where this freedom and variety in the notation for the Horns comes from; but Horn players have become accustomed to it, and feel more at ease with this style of notation than would be the case with some other, especially as the low bass notes of the instrument can be indicated in a most decisive manner.

Although everything can be transposed upon the F Horn, yet I would advise the use of the G, A and B♭ crooks as frequently as possible; many a difficult passage may be simplified, may be executed to better advantage, and will sound clearer with the original crook than if it is transposed for the F Horn; furthermore, when using these original crooks the player need not fear that his tones will not "speak," nor will he be in constant dread of other accidents.

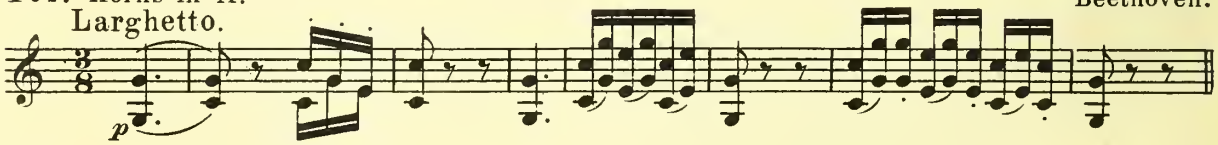
Selected Horn passages from the works of old masters, showing the advantages of the differently pitched Horns.

Instead of transposing them on the F Horn, the following examples are to be played according to their original indications.

Extract from Beethoven's D major Symphony. Easy with the A crook.

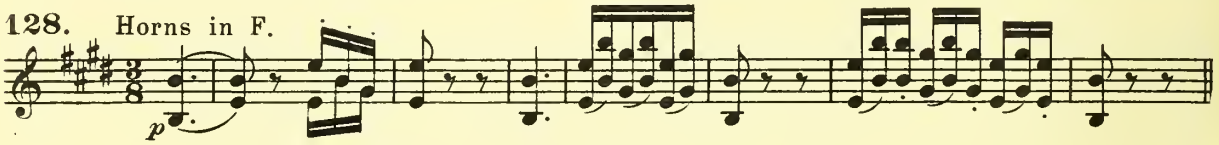
127. Horns in A.

Larghetto. Beethoven.



Transposed for F Horns this passage would present great difficulties, particularly to the first Horn, as here shown:-

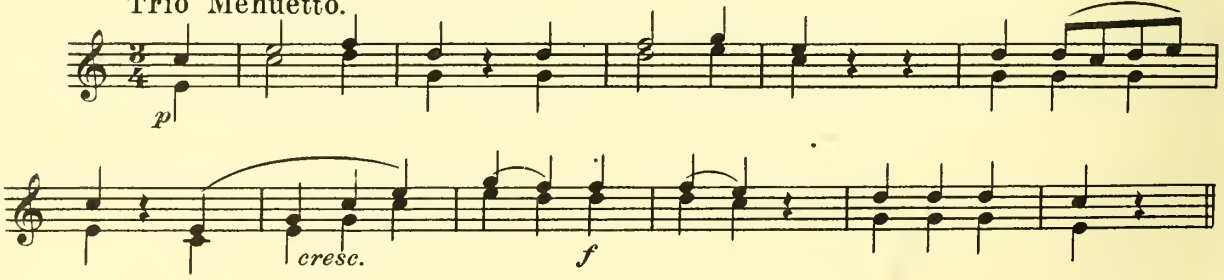
128. Horns in F.



Extract from Mozart's G minor Symphony. Easy with the G crook.

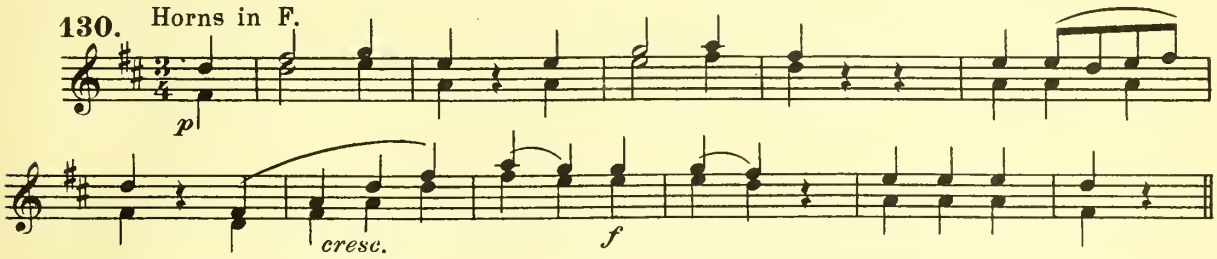
129. Horns in G.

Trio Menuetto. Mozart.



Exactly as in the abstract from Beethoven's Symphony (Nº 127) this passage would be very difficult for the F Horns, particularly the first, as here shown:-

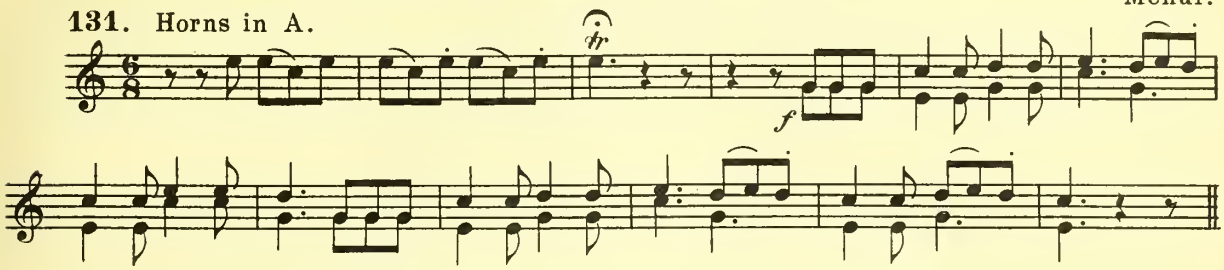
130. Horns in F.



Extract from Méhul's "Jagd Overture." Easy for the A crook.

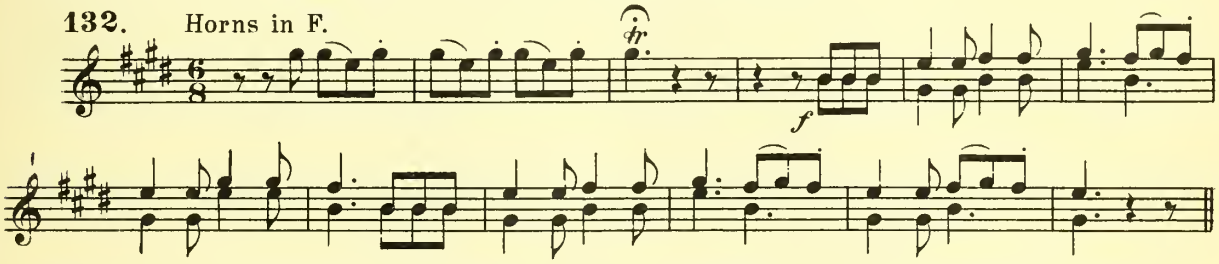
Méhul.

131. Horns in A.



As before, this passage would be very difficult for F Horns:-

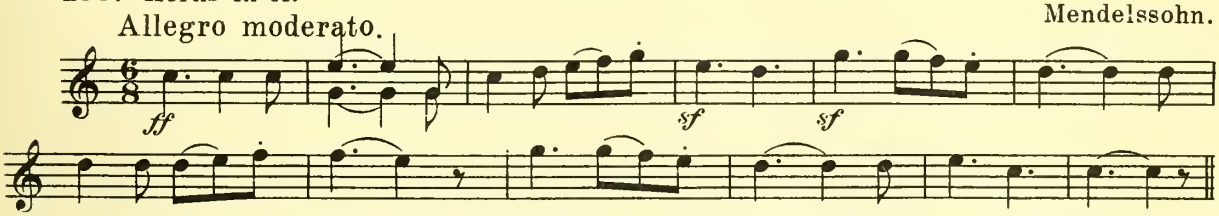
132. Horns in F.



Extract from Mendelssohn's A minor Symphony. Less difficult when played with the A crook

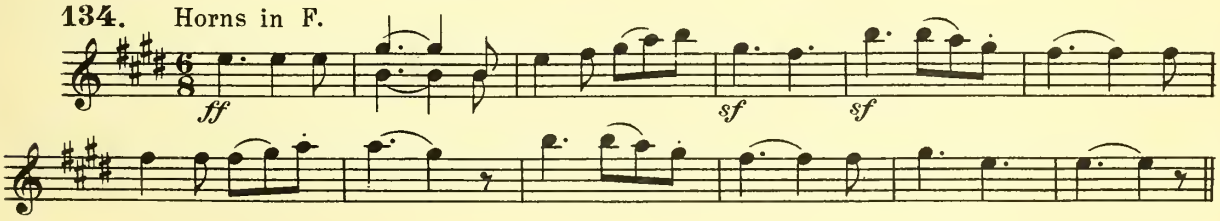
133. Horns in A.

Mendelssohn.



than when transposed for F Horn:-

134. Horns in F.

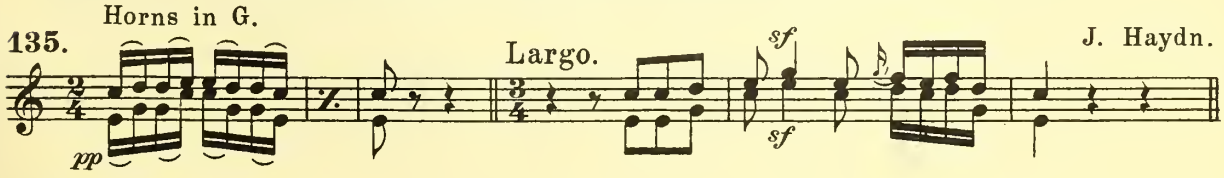


Extract from a Haydn Symphony (Andante.) Easy for the G crook.

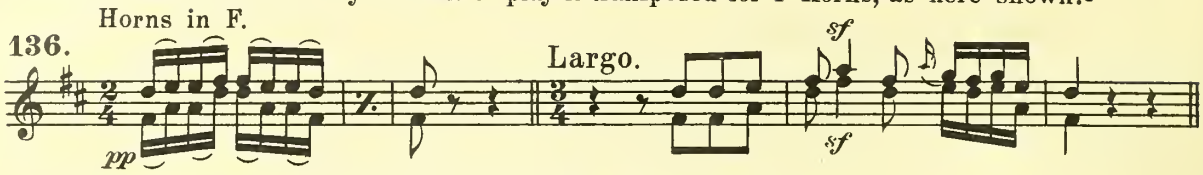
Horns in G.

J. Haydn.

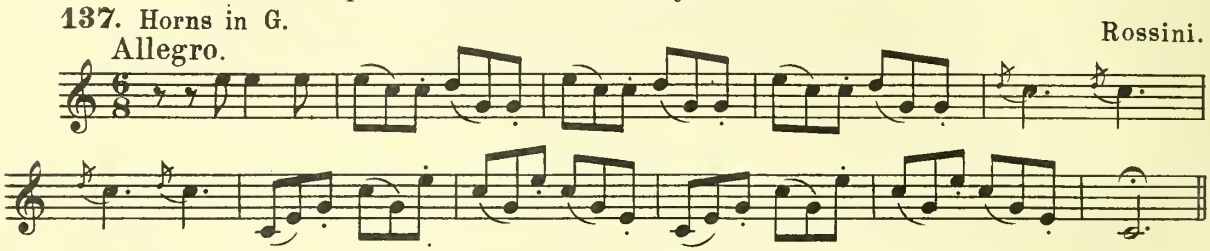
135.



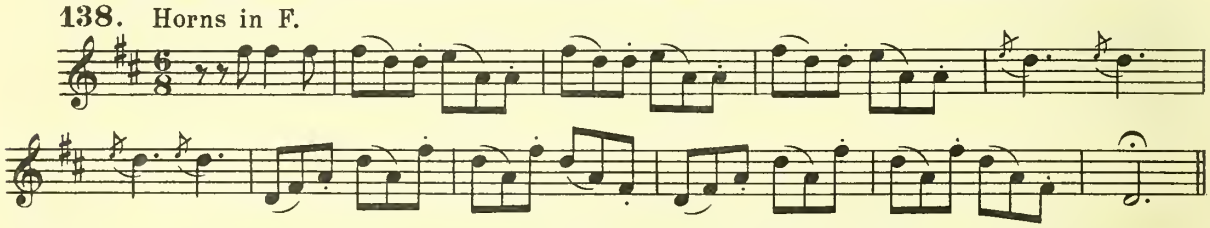
This extract would be very difficult to play if transposed for F Horns, as here shown:-



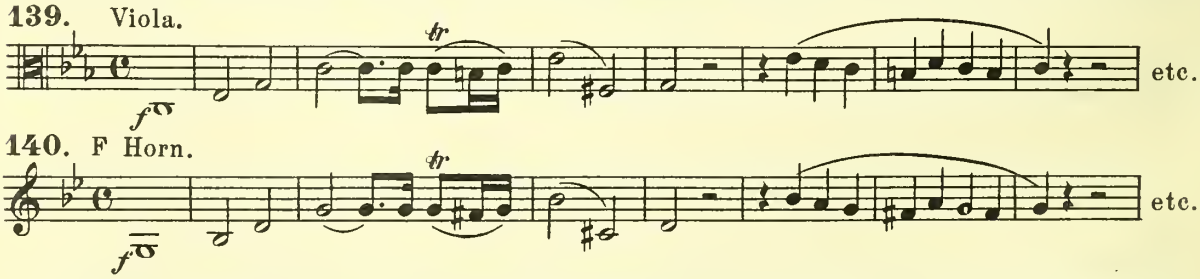
Extract from Rossini's opera "William Tell." Easy for the G crook.



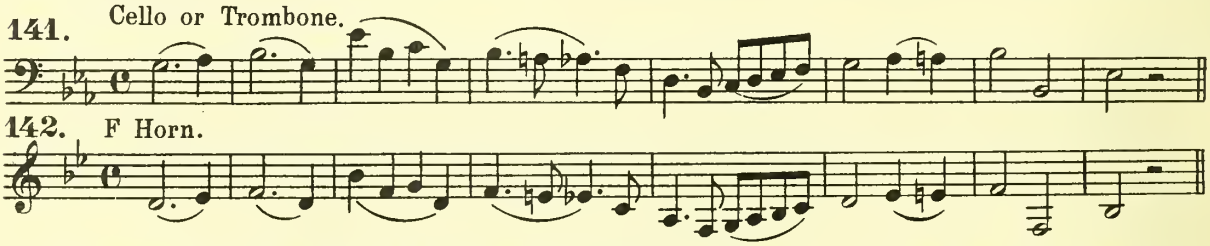
The following illustration shows how difficult this passage would be if transposed for F Horns.



It sometimes happens that a Horn player is required to play a Cello, Viola or Trombone part, in case either of these instruments is missing in an orchestra and the part is an important one. Naturally, it is important that in such an event the Horn player should know how to transpose any of these parts correctly and be capable of adapting them to his instrument. Under such conditions the Viola part would have to be transposed as if for a D crook on the F Horn:-



A Cello or Trombone part would be transposed as if for an E♭ crook on the F Horn, but an octave lower:-



The necessary accidentals (♯, ♭, ♮) should always be borne in mind, and employed according to the individual key in which each part is written.

In conclusion, it would be advisable for every Horn player to study the following works by Prof. H. Kling, as they contain a wealth of excellent and valuable instructions, derived from long and practical experience:-

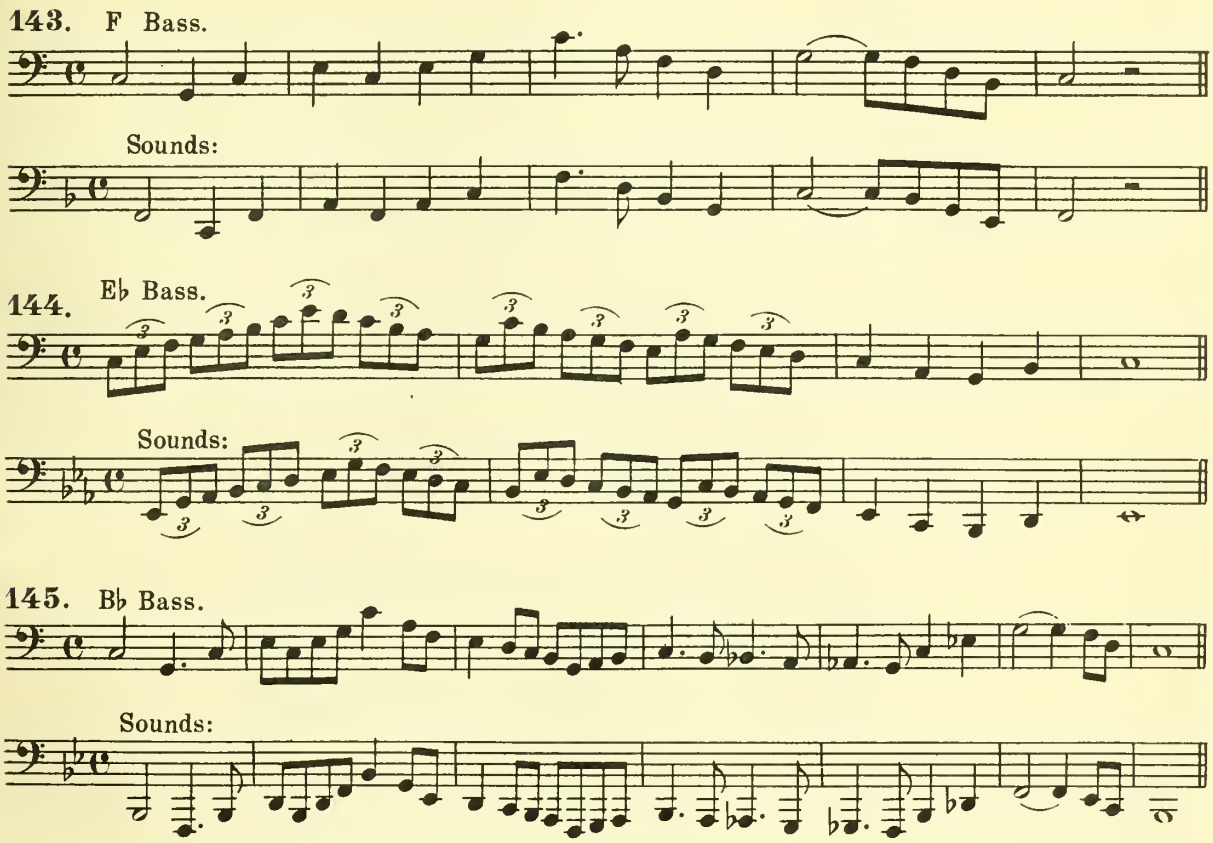
1) Horn Method for the Simple and Chromatic French Horn.
2) 25 Etudes and Preludes, together with practical instructions as to their use and study.
3) Prof. H. Kling's Modern Orchestration and Instrumentation. Special American Edition, revised and enlarged by the author, and translated from the original German edition by Gustav Saenger.

Published by Carl Fischer, Cooper Square, New York City.

CHAPTER XIII.

Special Remarks on Transposition for Tuba Players.

With the exception of Flute, Oboe, Bassoon and Trombone, the parts of all the Wind Instruments are written in a great variety of ways, owing to their difference in pitch. While the parts for Clarinets, Horns, Trumpets and Cornets are transposed by our composers while writing them, this is not the case with the parts for the Tuba; according to the pitch of these instruments, which may be either in F, E flat or B flat, the players must transpose their parts while reading them. In France, Belgium and some parts of Switzerland this is not the case, a separate part being written for every differently-pitched Tuba, in the following manner:-



From these examples it may be seen that, according to German notation, the F Tuba transposes a fifth higher, the E♭ Tuba a sixth higher, and the B♭ Tuba a ninth higher. It would of course be of greater advantage if all composers would adopt a uniform method of notation for these instruments, and would write them transposed, as they do their Clarinet, Cornet, Horn and Trumpet parts; if this were the case performers would find it much easier to play upon the differently pitched instruments, and their parts could be written in easier keys, in the majority of cases. But, as this is not the case, Tuba players must adopt the prevailing custom, and transpose their own parts when necessary; in so doing the necessary accidentals and the signature of the indicated key must be kept well in mind, as also the instructions given in the preceding chapters, which in greater part will also apply to the transpositions necessary for these instruments.

It may be well to state that in America the Basses are not considered as transposing instruments when their parts are written in the bass clef. For every instrument – E♭, BB♭, F or B♭, the player must learn a new scale, and therefore transpositions are not necessary.

CHAPTER XIV.

Special Remarks on Transposition for Violin Players.

Containing practical rules and instructions for the transposition of Clarinet, Cornet or Trumpet parts on the Violin, or vice-versa.

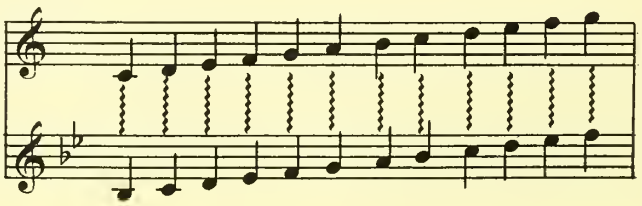
Nothing can be of greater value or importance to an orchestral violinist than a thorough knowledge of transposition. In addition to the creditable execution of his own part, he must be constantly on the alert to assist any of the other orchestral instruments, and it is one of the general rules of orchestral playing that the first violinist shall be the leader of all the instruments; wherever an instrument is lacking or fails to respond as it should, the first Violin is expected to be on hand, and to fill up the gap as best he can.

The character and compass of the Violin render it impossible to use this instrument as a representative of anything written for any of the bass instruments, and therefore its aid is principally extended to such melodious instruments as the Flute, Oboe, Clarinet, Cornet and Trumpet.

In order to be able to assist or to interpret the parts of any of these instruments at sight, it is of the greatest importance that a violinist should be able to read, understand and transpose their notation as perfectly as he does that of his own instrument. As the notation of the Flute and Oboe is identical with that of the Violin, no special directions regarding them will be necessary. But the difference between the notation of the Violin and that of the Clarinets, Cornets and Trumpets is of such a nature as to demand careful study, and the following instructions are intended as a guide for Violin players while interpreting parts written for either of these other instruments.

The instruments which a Violin player will be called upon most frequently to assist will be the B♭ and A Clarinets, Cornets and Trumpets; and the following examples will illustrate a practical system of transposition for these instruments.

146.

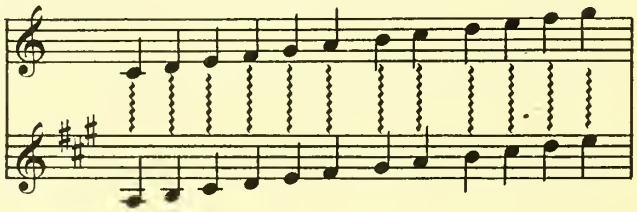


etc.

The notes placed on the upper staff of Example 146, when played by the B♭ Cornet or Clarinet, will be found to have the same sound as the corresponding ones on the lower staff when played by a Violin, Flute or Oboe; i.e., the C played on the B♭ Cornet, Trumpet or Clarinet sounds exactly the same as the B♭ of the Violin, the D the same as its C, and so on.

Notes played by the Cornet or Clarinet in A, as shown in Example 147, upper staff, will be found to sound the same as the notes on the lower staff when played by a Violin; i.e., the C of the Cornet, Trumpet or Clarinet in A sounds exactly the same as the A of the Violin, the D the same as its C, etc.

147.



etc.

It will be seen from this that any one wishing to play from a Violin part and in unison with that instrument must, if using a B♭ Cornet, Trumpet or Clarinet, read one note (or a major second) higher; or, if using an A Cornet, Trumpet or Clarinet, read two notes (or a minor third) higher.

The principal reason for the use of these several B♭ and A instruments (Cornets, Clarinets, etc.,) is to facilitate execution by diminishing the number of flats or sharps which would otherwise be required; consequently, if a melody is written in a "flat key" for the Violin, B♭ instruments are used; if it is written in a "sharp key," the other instruments must be in A. Parts written for Clarinets, Cornets or Trumpets in C require no transposition, as they are identical in pitch with the Violin.

Practical illustrations of the above method of transposition will be found in the following tables, (examples 148-149-150) which show all the different keys employed in our musical notation, together with their individual transpositions for B♭ or A instruments.

148.

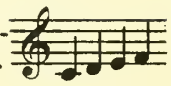
			VIOLIN.	COR. or CLAR.
If the Violin Melody is written with 1♭		take the B♭ Cornet or Clarinet and transpose one note higher.	F major or D minor.	G major or E minor.
with 2♭		"	B♭ " or G "	C " or A "
with 3♭		"	E♭ " or C "	F " or D "
with 4♭		"	A♭ " or F "	B♭ " or G "
with 5♭		"	D♭ " or B♭ "	E♭ " or C "
with 6♭		"	G♭ " or E♭ "	A♭ " or F "
with 7♭		"	C♭ " or A♭ "	D♭ " or B♭ "

149.

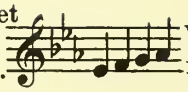
			VIOLIN.	COR. or CLAR.
If the Violin Melody is written with 1♯		take the A Cornet or Clarinet and read two notes higher.	G major or E minor.	B♭ major or G minor.
with 2♯		"	D " or B "	F " or D "
with 3♯		"	A " or F♯ "	C " or A "
with 4♯		"	E " or C♯ "	G " or E "
with 5♯		"	B " or G♯ "	D " or B "
with 6♯		"	F♯ " or D♯ "	A " or F♯ "
with 7♯		"	C♯ " or A♯ "	E " or C♯ "

150.

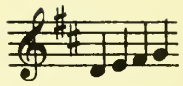
If the Violin melody is written in C.



With the A Cornet or Clarinet read two notes higher.



With the B♭ instruments read one note higher.



SERENADE.

Moderato. F. Schubert.

151.

Voice.

Warm en-treat-ies, gently pleading, Through the night to thee,

Piano.

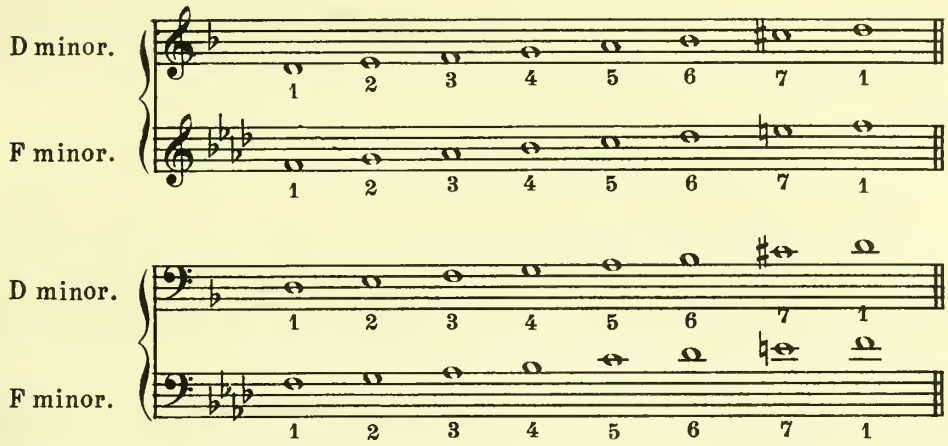
Say, while all is calm and si - lent, Dear - est, come to

me. Whisp'ring branch-es soft-ly mur-mur

In_ the moon-light clear, In_ the moon-light clear; etc.

etc.

152.



Transposition of a song with Piano Accompaniment.

(For particulars consult Chapters V-VIII.)

153.

Warm en-treat - ies, gent-ly plead-ing, Through the night to thee, Say, while all is calm and si - lent, Dear - est, come to me!

p

Whisp'ring branch - es soft - ly mur - mur In the moon-light

clear, In the moon - light clear; etc.

etc.

As in all other transpositions, the principal consideration is to be perfectly sure as to the key into which we wish to transpose, and its respective signature. For example, if the above song were to be transposed a minor third lower from the original (D minor) we would arrive at B minor, the signature of which is two sharps; a major third lower would bring us to B flat minor, with five flats, etc. In this especial case we could simplify matters to a great extent by imagining the notes of the left hand as though written in the treble clef, but played two octaves lower. In transposing chords it is important to change them as a whole, and not by transposing the individual intervals, which proceeding would prove very annoying and troublesome for sight-reading.

Therefore, aside from the thorough knowledge of the chords and harmony in general, which is necessary for fluent transposition, the latter accomplishment is a most excellent means for every pianist to become thoroughly acquainted with every possible use and position of the chords, and which, in turn, will again aid him in other branches (modulation, etc.) Continued practice in written as well as practical transposition at the instrument is more necessary for a pianist than for any other instrumentalist, as the latter in most cases is obliged to transpose only one tone at a time, while the pianist is obliged to transpose complete chords, melodies, passage-work etc., of every description.

In conclusion let us remark once more, that for the beginning only very easy pieces (such as hymns, songs, etc.), should be taken up, while the transposition of more difficult works should only be attempted gradually.


CARL FISCHER
MUSIC