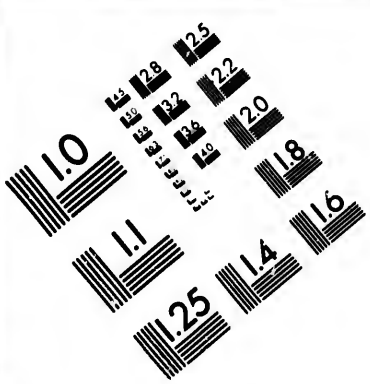

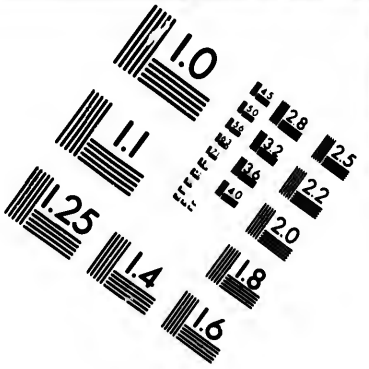

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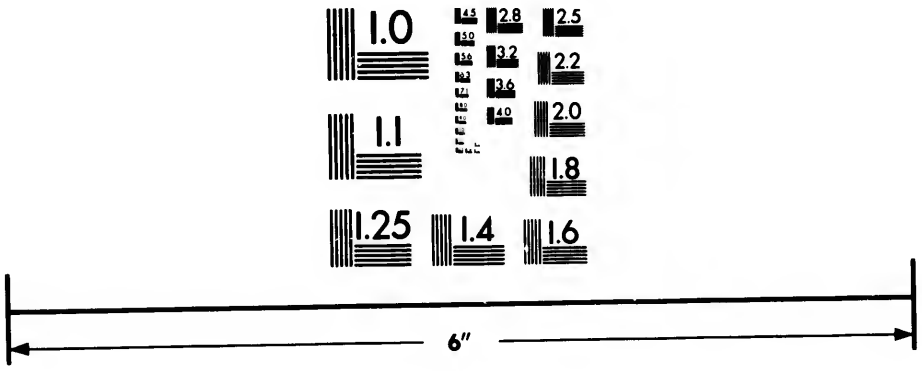

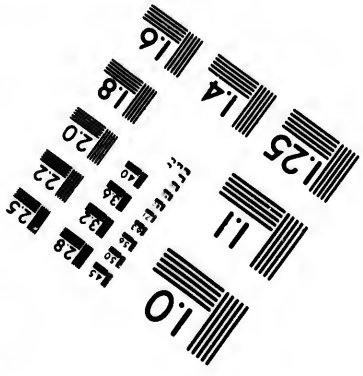

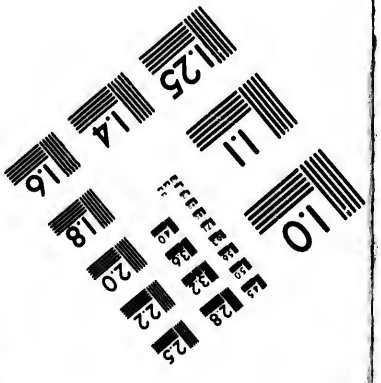

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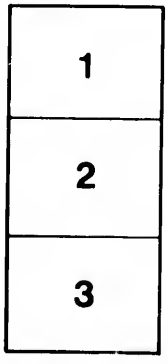

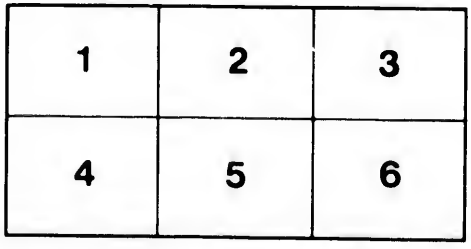

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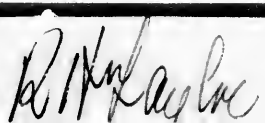

A

MANUAL

OF

VOCAL MUSIC,

(TREATED ANALYTICALLY),

IN TWO PARTS.

PART I.—ELEMENTARY.
PART II.—PRACTICAL.

BY

H. F. SEFTON,

MUSIC MASTER OF THE NORMAL AND MODEL SCHOOLS OF ONTARIO.

Toronto:
PUBLISHED BY THE AUTHOR.
1871.

HUNTER, ROSE & Co.,
PRINTERS, BOOKBINDERS, ELECTROTYPERS, &c.

PREFACE.

The preparation of this elementary work has arisen from the impression that the time has arrived when a greater amount of consideration may be fairly claimed from the musical student to the absolute elementary principles of music, than has hitherto prevailed.

To the promotion of this object, Part I. of the present work is exclusively devoted, consisting, as it does, of a development of those natural laws on which the musical system is constructed, and which "limits the number of sounds to a certain series, and fixes the ratio which they bear to one another, or to one leading term."

Part II. consists of the transference of the elements as presented in Part I., to those symbols and their nomenclature by which they are usually represented, called "notation," which together with the study of intervals, &c., constitute the practical department.

From the peculiar treatment of the Theory, Part I. will be found to differ materially from every other Treatise on the same subject.

Where it has been practicable, the various subjects have been reduced to tabulated forms. This, in the Author's opinion, will be found to be very convenient for the student, as it places the subjects, treated as a whole, at once before the eye for comparison.

It is impossible to adapt an elementary work on music to all the various circumstances of pupils or classes. The Teacher will therefore exercise his discretion in selecting those portions of the work that are suited to his course of instruction.

At page 7 will be found directions for applying Part II. in the ordinary method, independently of any reference to the numerical calculations of parts and vibrations, constituting the theory contained in Part I. By the *music master*, no portion of Part I. ought to be dispensed with, as experience proves that it is necessary for the teacher of a science to know considerably more than he may ever be called upon to teach.

But few examples in harmony are given in the Manual, as the teacher will select such specimens as may be necessary to illustrate the subject under consideration, from the "Three-part Song Book;" a work already published "under the sanction of the Council of Public Instruction of Ontario," and which forms a Supplement to the Manual.

The method herein laid down, is not presented as an experiment now first to be tested. It has been used by the Author for a number of years in the Normal School of Ontario, with decided success; and he feels justified in recommending it to the Teachers of music for individual, or simultaneous instruction in classes; as well as to all others who may desire to acquire a thorough knowledge of the elementary principles of vocal or instrumental music.

H. F. S.

SEPTEMBER, 1871.

INTRODUCTION.

The introduction of features entirely original into a treatise on the theory and practice of Vocal Music, naturally suggests the desirability of a few remarks, explanatory of the objects sought in their publication.

It has been long felt by the Author of the present work, that all the "elementary" (?) Music Instruction Books extant are deficient in one great and important feature,—namely, the absence of any well defined and practical arrangement of the elements which constitute music a science, so disposed as to present to the musical student, in a logical and consecutive manner, the connection which the theoretical holds with the practical.

It is strange that—while as a rule, every other branch of natural science has, in latter years, received at the hands of the philosopher the most profound investigation, and its results made subservient to the uses of man—the elements of the science of music should alone have remained without any development or form.

Yet music is a *science* as well as an art. There is, however, no comparison between the progress made of late years, by music as a *science* and that made by music as an *art;* for, while "the executive" has attained a degree of excellence which can never be surpassed, the former has received little or no attention.

This oversight in a musical education can scarcely be attributed to any distaste for such inquiries, when we consider the great interest which has been felt by all classes of society during the last few years, in philosophical researches, but rather to the want of a work to place in the hands of the pupil, wherein the elements of the musical system are laid down in a systematic and comprehensible manner.

Anyone doubting the verity of these remarks will soon arrive at a settled opinion by experience. Let any musical student, with more than an ordinary amount of inquisitiveness, seek for a more satisfactory and methodical elucidation of the elementary principles of the musical system than he finds in the ordinary books of instruction, and he will soon discover that he stands alone, unassisted by any of those helps which are so liberally supplied every other branch of the sciences.

"In order fully to understand the advantages and the pleasures which are derived from an acquaintance with any science, it is necessary to become acquainted with that science; and it would therefore be impossible to convey a complete knowledge of the benefits conferred by a study of the various sciences which have hitherto been cultivated by philosophers, without teaching all the branches of them. But a very distinct idea may be given of those benefits by explaining the nature and objects of the different sciences; it may be shown, by examples, how much use and gratification there is in learning a part of any one branch of knowledge; and it may thence be inferred how great reason there is to learn the whole."—*Library of Useful Knowledge,—Natural Philosophy.*

"Music" (says Sir W. Jones) "belongs, as a science, to an interesting part of natural philosophy, which, by mathematical deductions from constant phenomena, explains the causes and properties of sound, *limits the number of sounds to a certain series*, which perpetually recurs, and fixes the ratio which they bear to each other, or to one leading term. * * * * * Thus, it is the province of the philosopher to discover the true direction and divergence of sound propagated by the successive compressions and expansions of air, as the vibrating body advances and recedes; to show how sounds themselves may excite a tremulous motion in particular [illegible] to demonstrate the law by which all the particles of air, when it undulates with [illegible]ickness, are continually accelerated and retarded; and to compare the number of pulses in agitated air with that of the vibrations which cause them."

W. Crotch, Mus. Doc., says, in his "Lectures on Music":—

"Music is both an art and a *science*. As a *science*, it includes the theories of sound and of musical composition.

"The study of the *science* of music is strongly recommended to every lover of the *art*. The theory of musical sound may be turned to much practical account. This determines the exact mode of tuning, and teaches the nature of temperament, or the distribution of unavoidable imperfections."

Dr. Higgins, in his "Philosophy of Sound," observes—

"Although the art of playing on musical instruments has become so general in this country (England) that the education of a female is esteemed imperfect, if she be not a tolerable performer, the *science* of music seldom becomes an object of study. There are many persons who, from constant practice, are able to 'discourse most eloquent music,' and yet cannot account for the production of a single *sound*, much less for the spirit-stirring harmony. * * * * * * A knowledge of music should be based upon its philosophical principles; and in those instances where the teacher has failed to adopt this system, the want of a sufficient guide would probably be urged as the only reason for a course which everyone would deprecate. So far as our knowledge extends, there is not a single work in the language which pretends to teach the doctrine of sound in connection with the principles of music calculated to assist the student."

All the music instruction books *profess* to be elementary; but we seek in vain in them for any development of its principles.

Such books contain only the symbols and the nomenclature by which the elements are represented; but as the *name* of a thing is not *the thing* itself, so these books do not exhibit the absolute elements, and cannot therefore be elementary in principle.

To supply this deficiency,—to present an incorporation of the theoretical with the practical in an intelligible form,—has been more especially the object sought in this work.

In carrying out this object, the principles of sound in general, and musical sound in particular, required investigation, in order to arrive at a fundamental basis whereon to construct, in a methodical manner, the collective sounds which constitute the musical system, according to the science of Acoustics, which treats of the vibrations of sonorous bodies.

The results of this investigation and the system founded upon it in this work, leave nothing to conjecture or doubt; the *whys* and the *wherefores* are all accounted for; and by means of diagrams and sonorous illustration the whole subject is made apparent to the *touch*, the *eye*, and the *ear*, three indispensable features to an intelligible study of music.

By these means it will be perceived how each succeeding step in the theory is a consequent of an antecedent, until we attain

(1.) A fundamental basis;

(2.) A measured series of sounds, whose velocities of vibrations are in the perfect ratio of 2 to 1;

(3.) A uniform series of sounds, (irregular in their ratios) which constitute the musical system;

(4.) Series of sounds, irregular in construction, but uniform within themselves.

All explanatory matter and observations on the technics of music, the Author has left to be dealt with under the heading of "Remarks," immediately preceding the subjects treated of.

Temperament.—The subject of temperament, or what is called the adjustment of the imperfections of the scale, is a vexed and troublesome subject, and is likely to remain so until one settled temperature shall have been settled by universal consent.

The "musical pitch" adopted in this work is what may be called the "theoretical pitch,"—that is, the lowest appreciable musical sound, produced by sixteen double vibrations in one second.

H. F. S.

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PART I.

CHAPTER I.

On the philosophical elements of sound in their relation to Music as its fundamental principle.

1. Music is a science, and like all other sciences, 'its study should be based upon its philosophical principles.'—*Dr. Griffin.*

2. Music is a science of sound.

3. The term "sound" embraces everything perceptible to the human ear.

4. Sound is the result of the vibratory action of sonorous bodies acting upon the elastic properties of the atmosphere, which latter is also the conducting medium.

The elementary principles of sound are treated in natural philosophy under the head of acoustics, which teaches that the atmosphere which pervades all space, is a gaseous fluid, susceptible of compression; as also of expansion, to the extension of which there is no known limit. Thus a quantity of air contained within a given space, can, by mechanical force, be compressed into a diminished space; and when in this state, the air is said to be *condensed.*

When the air is released by the removal of the pressure to which it had been subjected, it will, by its elasticity or repulsive force, immediately return to its former natural state.

On the contrary, when the particles of air are separated, and the force on each other is less than in its normal state, the air is said to be more or less *rarefied.*

Condensation and rarefaction of the air, then, are caused by the action of some elastic disturbing force upon it, and each separate and distinct vibration of the latter creates a corresponding condensation and rarefaction of the former, the result being sound.

From its intensely elastic properties and susceptibility to the slightest action upon it, the air is said to be a propagator or conductor of sound, and is sometimes called a sonorific medium. "The air being a conductor, the oscillations of the atmosphere, created by the vibratory action of the sonorous body impinging upon the nerves of the ear, create the sensation which we call *hearing;* hence in a physiological point of view, hearing is nothing else than a vibratory motion perceived by means of the auditory nerves."—*Chladni.*

5. All sounds alike are produced by the same media, and may be described as of two characters, namely,—(1) Short abrupt sounds produced by a single vibration, or a few slow vibrations, difficult of imitation by reason of their having no definable pitch; hence such sounds are considered unmusical, and are described as "noise";—and

6. (2) sounds produced by the comparatively rapid vibratory action of sonorous bodies, which are called *musical.* Of the latter kind are those produced

by Organ pipes, the strings of the Piano Forte, the tongues of the Harmonium, and the strings of the Violin, the piercing sounds of the Trumpet, the soft sounds of the Flute, and the sounds of the human voice, &c.

Common, unmusical sounds are such as surround us in every-day life, arising from the varied occupations in which man is engaged. The following are the natural laws pertaining to vibrating bodies:—namely, that the oscillations of the elastic body are always uniform with the vibrations of the sonorous body,—that is to say, if there be one, two, or three vibrations of the sonorous body, there will be a corresponding number of oscillations of the elastic body; consequently, by reason of the fewness and slowness of such vibrations, the sounds produced by them are so short and abrupt, that they can only be regarded as short unmusical sounds, and hence are called *noise*.

Again, there are other sounds, which, though not so short and abrupt as the foregoing, yet by reason of their comparatively slow and continuous vibratory action, produce long, continuous, indescribable sounds, or *noise*. Of such a character are the rumbling sound of thunder,—the roar of the cataract,—the lowing of cattle, &c., which having no definable pitch, are classed among *unmusical* sounds.

Musical sounds, on the contrary, are those whose vibrations are sufficiently rapid, and of the necessary duration, to produce sounds which have a recognizable pitch, and can be easily imitated.

7. Sounds are musical or unmusical, according to the relative velocities of their vibrations. Unmusical sounds cease at thirty-one vibrations, and musical sounds commence at thirty-two vibrations in one second of time.

Since *all* sounds, unmusical and musical, are alike produced by the same media, and since the only difference is in the relative velocities of their vibrations, it becomes important to ascertain at what amount of velocity noise or unmusical sounds cease, and musical sounds commence.

Experimental philosophy teaches that the lowest musical sound, appreciable by the human ear as such, is the action of a sonorous body giving thirty-two single vibrations in one second of time; that is to say,—all sounds produced by between *one* and *thirty-one* vibrations in one second of time, are unappreciable to the ear as musical, and are consequently *noise*; but, at *thirty-two* vibrations in one second they are sufficiently rapid to produce a recognizable sound decidedly *musical*. This fact is important, because it enables us to establish upon unerring principles the dividing line between noise and music, or sounds musical and unmusical.

It is also important, because, by means of it, we have an unequivocal elementary basis, upon which we may rear the superstructure of musical science,—the root to which all the intricate ramifications of music may be traced theoretically.

8. The simple sound produced by thirty-two single vibrations in one second of time, is the fundamental element or basis of the theory of music.

9. Upon this basis are constructed the scale of Octaves, and the Chromatic, and the Diatonic scales.

CHAPTER II.

An unlimited number of sounds conceivable.

REMARKS:—As it is possible to conceive a sound indefinitely low, so we may conceive a sound indefinitely high; for as it has been shown that the *lowest* appreciable musical sound is produced by thirty-two single vibrations in one second, so it can be

shown that the *highest* appreciable sound is produced by 16384 vibrations in the same time; and as two sounds differing in acuteness or gravity from any given sound, even by one vibration, cannot be the same sound, so an unlimited number of sounds may be conceived to exist between these two extremes, each of which may be higher or lower than another by an infinitely small difference.

No practical use can be made of these small differences, or of the extremely low or the extremely high sounds of the musical range, for vocal purposes, the registers of the human voice being comparatively limited.

Out of all these possible sounds, the musical system has been reduced to thirteen, each of which is arranged and fixed at certain distances, one above the other, by a given number of vibrations in a given time, collectively called a CHROMATIC SCALE.

SCALES.

REMARKS:—The term "scale" in music is used in the same sense as in its ordinary signification, and indicates gradations of measured fixed musical sounds; and as we have a scale of inches,—a scale of miles, &c., by admeasurement, so in music we have a scale of measured octave sounds,—a chromatic scale of measured half-tones,—and diatonic scales of measured tones and half-tones, each sound thereof being fixed according to the computed velocities of their respective vibrations.

These scales depend one on the other; for we cannot construct a diatonic scale without a previous acquaintance with the chromatic scale; we cannot construct a chromatic scale without a previous knowledge of the scale of octaves, and we cannot construct a scale of octaves without a fundamental basis whereon to form it; *because*,—the scale of octaves is formed upon the lowest appreciable musical sound; the chromatic scale is formed between two of such octaves, and all diatonic scales comprise a given number of the half-tones of the chromatic scale.

It will thus be seen that the indispensable necessities to a theoretical musical system are:—

A simple fundamental basis;
A Scale of Octaves;
A Chromatic Scale; and
Diatonic Scales.

ON THE FUNCTIONS OF THE VOCAL ORGANS.

REMARKS:—Little is positively known of the mechanism of the vocal organs, as far as their powers of producing inflected vocal sounds are concerned. A great amount of ingenuity has been displayed by writers on this subject, in order to account for the extraordinary range of inflected sounds which that wonderful organ, the human voice, is capable of producing. But as most of those arguments are merely speculative, and as Physiologists have vouchsafed nothing of a positive nature whereon to found a vocal theory, the musician has to deduce from other sonorous bodies, whose vibratory actions *can be seen* and calculated, data whereon to found a basis for a vocal theory. Vocal music may thus be said to be a system of imitation.

The Improved Sonometer, or Sound Measurer.

The forms of apparatus which have been invented at different times for the admeasurement of the ratios of musical sounds for experimental illustration of its theory, have consisted principally of strings submitted to tension over a sounding board.

The ordinary one presented in most philosophical works on this subject, consists chiefly of a string of catgut or wire attached to a fixed point, carried over a pulley, and stretched by known weights over two bridges, one of which can be moved to any part of the string; and thus the lengths of such string can be measured and their corresponding vibrations obtained.

But such an instrument, though correct in principle, does not meet the requirements of the present work.

The improved Sonometer consists of a sounding board or box, with a steel wire string extending over its length, which is fixed at both ends over bridges, in the same manner as a string of a piano forte, and can be tuned by means of the screw to which one end is fastened, and thus tightened or slackened to any degree of tension. Under the string is a raised dove-tail, upon which a movable bridge slides. Upon the top of the dove-tail, a graduated scale is marked, dividing half of the length of string into 500 parts, agreeably to par. 18.

The bridge may be moved to any part marked on the graduated scale, and the string can be cut off by an arrangement on the top of the bridge, to any length desired.

Near the tuning screw is a piano-forte striking arrangement, consisting of a key adjustment, by which the sound produced by any length of string may be observed, and its number of parts and vibrations accurately obtained, and, with the assistance of *Savart's wheel*, its correctness may be practically tested.

CHAPTER III.

Construction of the Scale of Octaves.

10. Musicians illustrate the theory of music by means of a steel wire string, the length of which is derived from a philosophical deduction.

11. Sound travels at the rate of 1,120 feet per second.

Certain conditions of the atmosphere cause the velocity of sound to vary a little. The mean velocity is here adopted. The difference of a few feet, however, is practically of little consequence to the subject of music. It is convenient to adopt this rate, as being most in keeping with that of the majority of the treatises on the subject, leaving thereby their deductions undisturbed.

12. If the speed at which sound travels be divided by the number of vibrations, thirty-two, the quotient will be the length, in feet, of a given steel wire string, giving thirty-two vibrations in a second of time:—thus,—$1120 \div 32 = 35$ feet.

If a steel wire string, in a perfectly lax state, thirty-five feet long, be gradually tightened by means of a screw adjustment at each end, its vibratory action and gradually increasing velocity may be *seen*, and the result of the tightening, from an indistinct rumble to a distinct musical sound, may be *heard*. When its tension becomes such as to give to its vibrations a velocity of thirty-two in one second, the lowest appreciable musical sound is obtained.

13. If any length of a stretched wire string be taken and halved, and either half put into a state of vibration, the velocity of the vibrations of such half will be just double those of the whole, or in the ratio of 2 to 1. Such a sound in musical language is called an Octave, or by contraction, an 8ve.

This is a mathematical truth. The rule applies to any length of string, subjected to any amount of tension.

14. As musical sound has its limit in its degree of acuteness as well as of gravity, we are enabled to present in a tabulated form, the series of octave sounds within those limits, by the continuous divisibility of the string into halves.

15. Table I presents the series of octaves from thirty-two single vibrations, the *lowest* appreciable musical sound and basis, to 16,384, the ninth and *highest* appreciable musical sound of the system.

In the following table, two columns of vibrations are given,—single and double. Writers on this branch of music differ as to what constitutes a vibration; some reckon by single vibrations,—that is, the extent of its greatest diameter from its state of equilibrium, right *or* left; while others state that a vibration is,—its divergence right *and* left; so that instead of saying there are thirty-two vibrations in a second, they say there are sixteen in a second. Both are given in the Table; but in all references to them in this work, double vibrations are understood.

TABLE I.

Length in Feet.	Single Vibrations.	Double Vibrations.	Octaves. Vibrations in the ratio of 2 to 1.
35	32	16	*Lowest* appreciable musical sound.
$\frac{1}{2}$	64	32	First Octave.
$\frac{1}{4}$	128	64	Second Octave.
$\frac{1}{8}$	256	128	Third Octave.
$\frac{1}{16}$	512	256	Fourth Octave.
$\frac{1}{32}$	1024	512	Fifth Octave.
$\frac{1}{64}$	2048	1024	Sixth Octave.
$\frac{1}{128}$	4096	2048	Seventh Octave.
$\frac{1}{256}$	8192	4096	Eighth Octave.
$\frac{1}{512}$	16384	8192	Ninth Octave, and *highest* appreciable musical sound.

CHAPTER IV.

Chromatic Scale. Intervals. Half-tone. Tone.

Remarks:—The word chromatic is derived from the Greek word *chroma*, in English, color. This figurative term, as applied to the musical system of half-tones is supposed to have arisen anciently from the custom of writing sounds belonging to it in different colored inks; and in later times by distinguishing the five intermediate half-tones of the so-called natural scale on the piano forte by *black*, instead of *white* keys.

Exception is taken by some writers, to the indiscriminate use of the term, as being inapplicable to two things radically different in themselves, and contrary to the sense of a scale or key,—namely, chromatic and diatonic half-tones; but as these arguments are not worth the paper they are printed upon, the musical student is advised to take no further notice of these objections than to note that such silly arguments exist.

But whatever may be the merits of such arguments, it is certain that custom has made so indiscriminate a use of the term, that it must very properly be retained in the musical nomenclature as embracing both chromatic and diatonic half-tones.

16. An interval is the measured space between any two sounds of different denominations.

17. A Chromatic scale, is the space or length of string contained between any two octave sounds inclusive, divided into twelve parts, agreeably to a given arrangement. The interval between every two of such divisions, is called a halftone. There are twelve halftones and thirteen sounds in a chromatic scale, each sound thereof being regulated and fixed according to the number of parts and the corresponding velocity of its vibrations in a second. Collectively they comprise all the sounds admitted into the musical system, to the exclusion of all others.

18. Chromatic scales are constructed by dividing the length of string contained between any two octaves into 500 equal parts, and appropriating a given number of such parts to each halftone of the scale. The particular length used for illustration is that between the fourth (256 vibs.), and fifth (512 vibs.) octaves.

Of the various theories advanced for the arrangement of the eleven intermediate halftones in respect to their degrees of gravity or acuteness, the simplest and the most easily comprehended is the division of the string into '500 equal parts'—(*Dr. Crotch,*)—by which means what is called the "imperfections of the scale," are nearly equally distributed over the fifteen diatonic scales.

The thirteen vertical lines which represent strings (Table II), shew the method of fixing the thirteen sounds of the chromatic scale between the fourth and fifth octaves, with their respective parts and corresponding velocities of vibrations, calculated to one second of time.

On the left of the string at *a* are the figures 500, denoting the number of parts into which one half of its length is divided, and on the right the figures 256, its corresponding vibrations.

At *b* the short intersecting line cuts off and shortens the length by 53 parts, leaving 447 parts as its vibrating length, and thus increasing the velocity of its vibrations by 27 as compared with *a*, namely, from 256 to 283 in a second. The interval between *a* and *b* is called a halftone, and is the second sound of the scale.

At c the string has again been shortened by 57 additional parts, leaving 390 parts as its vibrating length, which has increased the corresponding velocity of its vibrations by 29 as compared with *b*, and 56 as compared with *a*. This is the *third* sound of the scale, and the *second* half tone.

The remaining figures, *d*, *e*, *f*, *g*, *h*, *i*, *j*, *k*, *l* and *m* complete the scale. At *m* the octave is represented by 0, and the vibrations by 512, the double of *a*.

The true fractional remainders of the vibrations are omitted, and round numbers given, the slight differences being of no importance to the subject.

19. The word *Tone* in music is understood to express a measured interval equal to any two halftones of the chromatic scale.

This word as applied in music, implying space or interval, is one of those misnomers which from custom become engrafted upon a language. The words *tone* and *sound* are synonymous; and thus music may be said to be a system of tones or sounds. But the word *sound*, as applied to the sounds of the musical system, and *tone*, as meaning an interval between two sounds of different denominations, are terms so generally received, that no isolated attempt to correct the latter would be of any avail. The word tone therefore is retained with its usual signification, namely, an interval equal to two halftones.

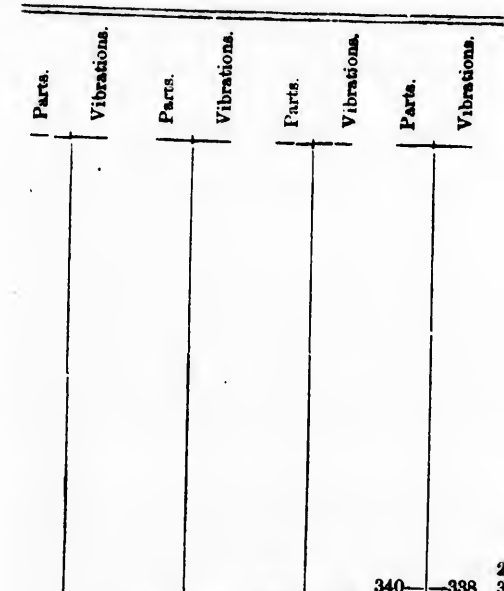
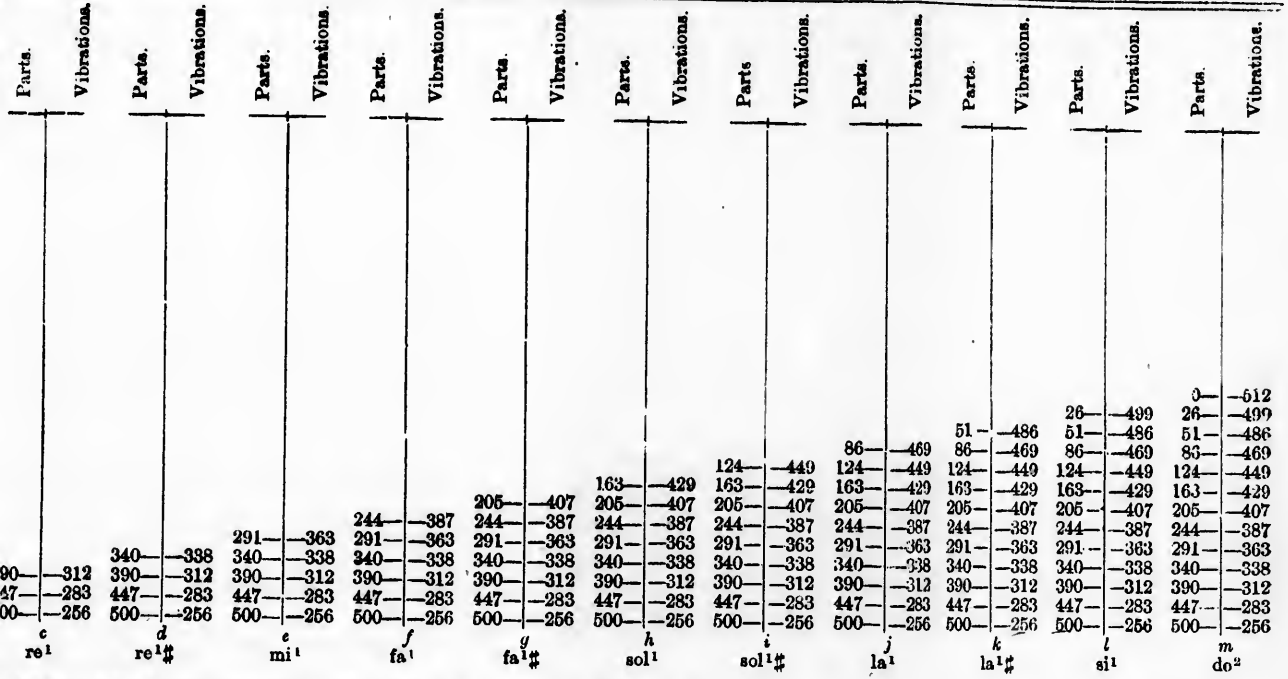


TABLE II.—Diagram, showing the method of c
vibrating length of string to each halftone.

TABLE II.—DIAGRAM OF CHROMATIC SCALE.



showing the method of constructing the thirteen sounds of the Chromatic Scale of do¹; their *parts*, corresponding vibrations, and the relative to each halftone.

CHAPTER V.

Construction of Diatonic Scales.

REMARKS:—The term DIATONIC is given to a scale which, proceeding by degrees, includes tones and half-tones, in contradistinction to the chromatic scale, which proceeds by half-tones only.

20. Diatonic scales are major and minor.

21. Major Diatonic scales consist of eight sounds, standing in the following relation to one another:—from the first to the second *must* be a tone; from the second to the third *must* be a tone; from the third to the fourth *must* be but a halftone; from the fourth to the fifth *must* be a tone; from the fifth to the sixth *must* be a tone; from the sixth to the seventh *must* be a tone; from the seventh to the eighth *must* be but a halftone. Any other arrangement of the sounds of the musical system than this cannot be a major Diatonic scale.

22. A tone is the greatest term, and a halftone is the least term by which the contents of all intervals greater than a tone, are described.

23. A Diatonic scale can be constructed upon any one sound of the Chromatic scale, and the sound so taken is called the tonic, or key-note of that particular scale.

24. The successive sounds of a scale are invariably calculated upwards, from the first or lowest sound, or key-note.

It has thus been demonstrated, that from the preceding analysis of the elements of musical sound, we have derived in natural sequence:—

(1.) A fundamental elementary basis;
(2.) A scale of octaves;
(3.) A chromatic scale;
(4.) Diatonic scales.

which by inverse reasoning shows that we cannot methodically and clearly comprehend the latter, without a previous acquaintance with the three former truths.

Directions to the Teacher.

Lessons on the theory of music become interesting to the pupil in proportion to the ability of the teacher in developing and illustrating his subject.

No teacher should be without a *Sonometer* and a large sliding *scale-apparatus*; the former dispenses with the tuning fork or other musical instrument, and the latter is indispensable to the teaching of classes.

In cases where the teaching of Part I. of this work, may not be expedient or practicable, its use may be dispensed with, so far as the philosophical consideration of parts and vibrations of the scales is concerned. Instead thereof, the teacher may adapt to the diagrams and scales any simile his ingenuity may suggest, with which his pupils may be already familiar; for instance, most children and all adults are conversant with admeasurement by half-inches and inches. Thus the vertical line at A, Table III., may be

transferred to the black board, and intersected by thirteen short and equi-distant lines, and twelve spaces. They may not be literally half-inches, but for all practical purposes they may be considered as such.

It may be shown that these half-inches may be grouped into inches and half-inches, in various different ways; they may be collected into *six groups* of *two half-inches* each—*two* groups of *six half-inches* each, &c., &c.

When the pupils have become quite conversant with the idea of grouping, their attention may be directed to the more important one of—inch—inch—half-inch,—inch—inch—inch—half-inch,—the seven successive intervals of a diatonic scale.

Attention may be drawn to the significance and importance of the thirteen lines which mark the half-inches, and the pupils may be informed that these lines represent an equal number of fixed and definite sounds which constitute the musical system, and the distances or spaces between the sounds are called *halftones;* and that the lines and spaces collectively are called a *chromatic scale.*

When the pupils have become thoroughly acquainted with the idea of a chromatic scale, the first, third, fifth, sixth, eighth, tenth, twelfth and thirteenth short lines of the chromatic scale may be extended a sufficient distance to the right, so as to form of themselves a distinct series of eight sounds, tone, tone, halftone, tone, tone, tone, halftone, collectively forming what is called a diatonic scale.

It must be left to the teacher's discretion as to how far he may choose to enter into the analysis of scales as contained in Part I.

The teacher may now *intone* the scale with numerals *slowly* and *firmly*, dwelling upon the sounds 3 and 4, and 7 and 8, explaining that since those intervals are but half inches apart, so the sounds which they represent are but half the distance apart, as compared with the other five.

The syllables may now be added to the chromatic and the diatonic scales, and the pupils well and carefully practised in the diatonic scales with intonation.

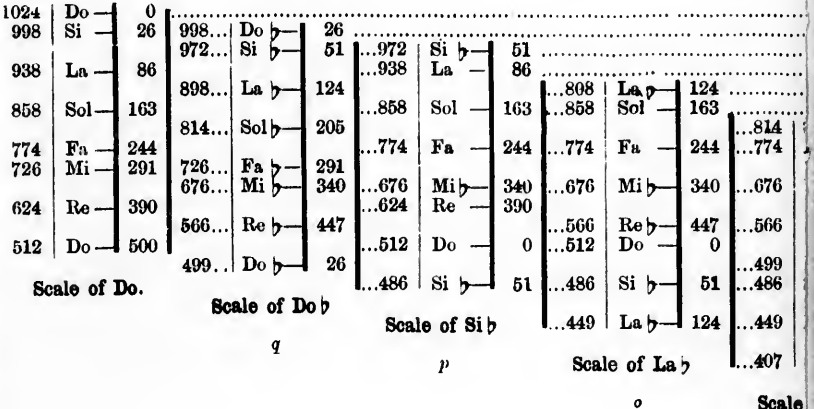
By drawing a *double chromatic scale*, as at A, Table III., the whole of the diatonic scales may be studied as on that diagram, with the substitution of inches and half-inches for parts and vibrations.

The study of Part II. may be pursued as laid down, with a substitution similar to the one just recommended.

The power of appreciating the inward feeling of the difference between two sounds, a *whole tone* apart, and two sounds, a *halftone* only, is by no means so easy a matter as is generally represented in the books of instruction. Considerable experience in the practice of the chromatic scale, modulation, and accidentals is necessary before this difference can be *easily* discerned by the ear, or produced at will by the voice.

C.

Major *Diatonic Scales*, derived from the *Descending Chromatic Scale*, requiri



PART II.

CHAPTER I.

The Properties of Musical Sounds.

25. Musical sounds involve the consideration of four properties, namely,—*pitch, duration, intensity,* and *timbre,* or *quality.*

26. The *pitch (acuteness,* or *gravity)* of a musical sound, depends upon the comparative velocity of its vibrations.

The comparative velocities of sounds may be clearly illustrated upon the sonometer, by which it will be seen,—that the *shorter the string,* the *more rapid* will be *the vibrations,* and consequently the *higher* or *more acute* the sound; and inversely, the *longer the string,* the *slower* will be the vibrations, and the *deeper, lower,* or *graver* the sound.

27. The *intensity (loudness* or *softness)* of a musical sound depends upon the force with which the sonorous body is struck, and the consequent diameter of the vibrations.

28. The *duration* of a musical sound is that length of time which the sonorous body continues to vibrate with the same velocity.

The duration or length of a sound may be measured on the sonometer,—and is that length of time which transpires from the instant the sonorous body is put into motion, until it again returns to a state of equilibrium.

29. The *Timbre* (or quality) of a sound depends on the material of which the musical instrument is constructed, and also upon the forms which the vibrations assume.

CHAPTER II.

Notation.

30. NOTATION includes all the symbols by which the *elements* of the science proper of music are *represented to the eye,* as well as the *nomenclature* by which they are described.

31. If we wish to represent a sound of any *given value of time*, it is evident that the sound must *begin at a given time, continue the given time, and cease* at the *expiration of that time.*

To accomplish this, some symbol to represent the *unit of admeasurement*, and another the *period of time* by which to measure, must be assumed.

SHAPES AND COMPARATIVE VALUES OF THE SYMBOLS CALLED NOTES. RHYTHM.

32. The comparative values of musical sounds, are represented by symbols called notes; and every such character is intended to convey two distinct and separate ideas,—*pitch* and *duration.*

The number of these symbols in common use at present, are six, whose relative values are in the simple ratio of 2 *to* 1.

The comparative *length, time,* or *values* of notes may be conveniently compared to a second of time and its fractional parts, and a semibreve assumed as the greatest unit of value.

FIG. 1.

1. A Semibreve		the unit of admeasurement, equal to a second.
2. A Minim		half of a semibreve, " " $\frac{1}{2}$ "
3. A Crotchet		one fourth of a semibreve, " " $\frac{1}{4}$ "
4. A Quaver		one eighth of a semibreve, " " $\frac{1}{8}$ "
5. A Semiquaver		one sixteenth of a semibreve, " " $\frac{1}{16}$ "
6. A Demi-semi-quaver		one thirty-second of a semibreve " $\frac{1}{32}$ "

33. The above six notes are described as follows :—

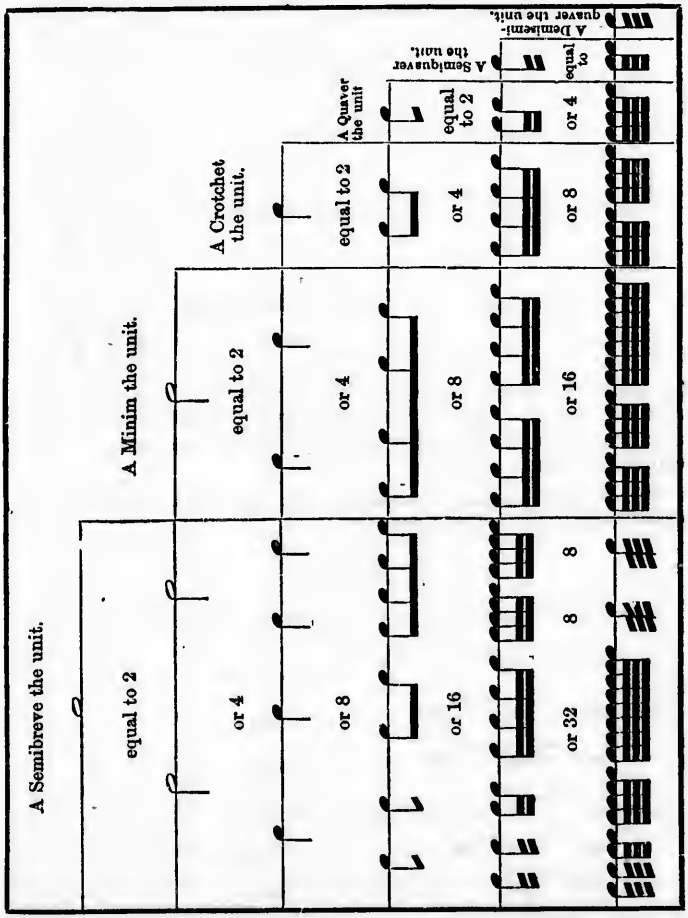
FIG. 2.

The semibreve is an *open note.*
" minim " " *with a stem.*
" crotchet " a *black note with a stem.*
" quaver " " " " " *and a dash.*
" semiquaver " " " " *and two dashes.*
" demi-semi-quaver " " " *and three dashes.*

ALSO :—A semibreve is equal to *two* minims.
" minim " *two* crotchets.
" crotchet " *two* quavers.
" quaver " *two* semi-quavers.
" semi-quaver " *two* demi-semi-quavers.

34. The following table shows the relative values of notes descending:—

TABLE IV.



The teacher should not leave this first lesson in notation, until he feels quite satisfied that the *idea of comparative values* as represented by notes in their relations to time, or period, is quite comprehended.

COMPARATIVE VALUES OF NOTES CONTINUED. THE DOT. THE TIE OR BIND.

35. A dot (.) after a note prolongs its duration by one half.

FIG. 3.

A dotted semibreve is equal to three minims.

" minim " three crotchets.

" crotchet " three quavers.

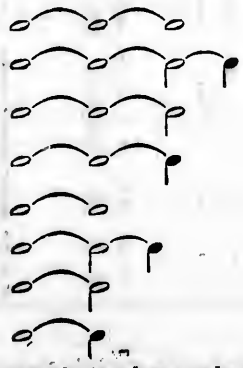
" quaver " three semi-quavers.

" semi-quaver " three demi-semi-quavers.

36. Prolonged sounds of any desired value or length may be obtained by means of the *Tie* or *Bind*, which, extending from note to note of the same denomination, gives to such sound the length of duration equal to the collective value of the notes so tied.

Fig. 5 represents sounds varying in value from twelve to five crotchets, the crotchet being the unit of admeasurement.

FIG. 4.



equal to twelve crotchets.

" eleven "

" ten "

" nine "

" eight "

" seven "

" six "

" five "

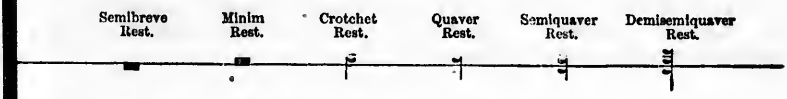
Still more minute values may be obtained by double dotted notes.

CHAPTER III.

Rests, or Periods of Silence.

37. In almost every piece of music will be found interruptions by which the flow of the melody or part is broken by occasional cessation of sound. These interruptions are called *rests*, whose periods of silence are equal to the values of the notes whose names they bear.

FIG. 5.



A Semibreve rest is described as a strong dash *under* a line.

A Minim rest is described as a strong dash *over* a line.

A Crotchet rest is described as a stem with a dash to the *right*.

A Quaver rest is described as a stem with a dash to the *left*.

A Semiquaver rest is described as a stem with *two* dashes.

A Demi-semi-quaver rest is described as a stem with *three* dashes.

The dash of the crotchet rest must always turn to the *right*.

The dash of the quaver rest must always turn to the *left*.

The dashes of the semiquaver and demi-semiquaver rests may turn either way.

38. Rests may be prolonged by means of the dot just in the same ratio as notes.

FIG. 6.

The dotted semibreve rest is equal to three minim rests.

" minim rest is equal to three crotchet rests.

" crotchet rest is equal to three quaver rests.

" quaver rest is equal to three semiquaver rests.

" semiquaver rest is equal to three demi-semi-quaver rests.

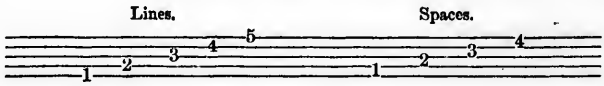
CHAPTER IV.

The Stave. Ledger Lines.

REMARKS:—A stave may consist of any number of lines which may be necessary to the illustration of any portion of the theory of music; for instance:—the scale of octaves, which requires thirty-two lines;—the chromatic and the diatonic scales require five lines only. The lines of a stave are not necessarily long lines.

39 The ordinary stave for all practical purposes is a series of five parallel lines, extending from margin to margin of music paper, upon and between which the notes are placed. The *lowest line* is named the *first line*, and the space between the first and second lines is called the *first space*. The lines and spaces are always reckoned upward. The position of a note, whether on a *line* or in a *space* is called *a degree;* hence, as there are *five lines* and *four spaces*, there must be *nine degrees* within the stave, upon which the nine notes may be placed.

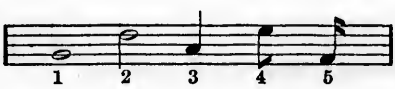
FIG. 7.



40. Notes convey to the mind, "two distinct and separate ideas, *pitch* and *duration*" (par. 32). A note irrespective of any position on the stave, is the representative of *value only*, but when placed on any line or space of the stave, a note becomes the representative of a fixed and definite *sound as well as of value.*

At fig. 8, five notes are placed upon the stave, the second of which is higher than the first; the third is lower than the second; the fourth is higher than the second, and the fifth is lower than the first; moreover the first is as long again as the second; the second is twice as long as the third; the third is twice as long as the fourth; and the fourth is twice as long as the fifth.

FIG. 8.

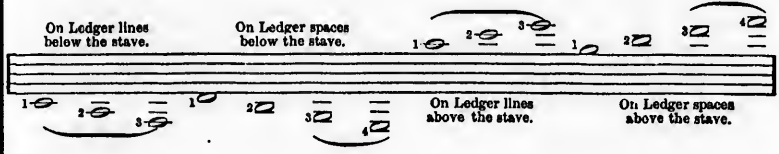


41. The stems of notes may be turned up or down, the object being to keep them as nearly as possible within the extent of the stave.

42. When notes are required to represent sounds below or above the extent afforded by the stave, additional short added lines, called *ledger lines*, are used, upon and between which the notes required are placed, just in the

same order as on the stave itself, and each note is distinguished as being upon or between the first, second or other ledger line or space, above or below the stave, as the case may be:

FIG. 9.



CHAPTER V.

Transference of the Scale of Octaves to Notation.

REMARK :—An acquaintance with the stave, notation, rests, &c., prepares us for transferring to notation in a methodical manner, the scales, which in Part I. of this work were treated exclusively on their elementary principles.

THE SCALE OF OCTAVES.

43. In transferring the nine octaves, Table I. p. 5, to their relative positions on the stave, it will be necessary to have a stave containing as many lines and spaces as there are diatonic sounds within each octave, namely $7 \times 9 = 63$.

44. Table V. fig. 10, is a large stave of thirty-two ledger or short lines, on which the nine octaves on Table I., par. 15, Part I., are transferred to the stave in notation of semibreves.

To find the places of the nine octaves on a stave of short ledger lines, place the fundamental sound *DO*, 16 double vibrations, *on a line*, and call it *one*, draw three other corresponding lines *above*, and on each successive space and line thereof place a semibreve; it will be seen that the eighth note will fall on a space. This is the position of the octave to the lowest sound, and is equal to 32 double vibrations. By pursuing this course, and counting the eighth of the preceding as the first of a succeeding series of eight, the positions of the nine octaves may be described, as shewn at fig. 10, Table V. It will also be seen that each succeeding octave occupies lines and spaces alternately.

Opposite to each octave are placed its numerical position and its relative vibrations, corresponding with Table I., par. 15, in connection with which it should be studied.

REMARKS :—Hitherto the successive octaves have been considered in their numerical succession only—as the first, second, &c., to the ninth. But something beyond this,—some more concise method is desirable, by which any particular octave, irrespective and independent of its numerical position on the great scale, may be at once more readily expressed and understood.

Instead of describing the octaves numerically upwards from the bottom, the third and fourth octaves are taken as central points, from which the other octaves radiate *upward* and *downward*.

For many reasons, these octaves and the intermediate scale are important.

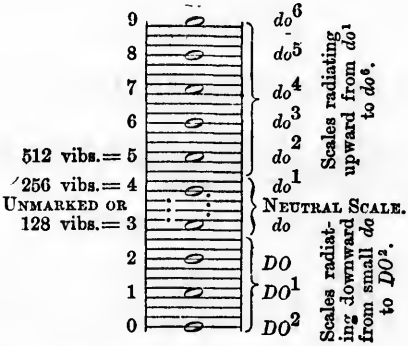
The fourth octave (256 vibs.) is an important point, as from it radiate *upward* the registers of the light and airy sounds of the higher species of instruments; as also the Treble voices.

The third octave (128 vibs.) is also an important point, as from it radiate *downward* the more ponderous and deep registers of instruments and voices, viz.: the Bass; and thus the scale lying between them becomes a sort of *neutral scale*, as occupying a central position between the high treble, and the low bass.

For the purpose of distinguishing readily one octave from another, as also any particular note in its respective scale, the third octave is described simply as 'small *do*,' and its scale 'small *re*,' 'small *mi*,' and so on, to its octave, which is called 'small *do*, once marked,' and its scale 'small *re*, once marked,' and so on,—or for sake of brevity, 'small do^1,' 'small re^1,' &c., &c.

The octaves below small *do* are named 'large *DO*,' 'large *DO* once marked,' 'large *DO* twice marked;' or, for shortness, 'large DO^1,' 'large DO^2,' and so on.

FIG. 11.



Scale of the five-times marked small *do*.
*do*⁵, *re*⁵, *mi*⁵, *fa*⁵, *sol*⁵, *la*⁵, *si*⁵, small *do*⁶.
Scale of the four-times marked small *do*.
*do*⁴, *re*⁴, *mi*⁴, *fa*⁴, *sol*⁴, *la*⁴, *si*⁴, small *do*⁵.
Scale of the three-times marked small *do*.
*do*³, *re*³, *mi*³, *fa*³, *sol*³, *la*³, *si*³ small *do*⁴.
Scale of the twice-marked small *do*.
*do*², *re*², *mi*², *fa*², *sol*², *la*², *si*², small *do*³.
Scale of the once-marked small *do*.
*do*¹, *re*¹, *mi*¹, *fa*¹, *sol*¹, *la*¹, *si*¹, small *do*².

} Scales radiating upward from do^1 to do^6.

Unmarked or Neutral Scale of 'small do,' to once-marked small *do*.
do, *re*, *mi*, *fa*, *sol*, *la*, *si*, do^1.

Scale of large *DO*.
DO, *RE*, *MI*, *FA*, *SOL*, *LA*, *SI*, *DO*.
Scale of once-marked large *DO*.
DO^1, RE^1, MI^1, FA^1, SOL^1, LA^1, SI^1, DO^2.
Scale of twice-marked large DO_2.
DO^2, RE^2, MI^2, FA^2, SOL^2, LA^2, SI^2, DO^1.

} Scales radiating downward from *do* to DO^2.

According to this arrangement, all octaves and their respective scales will be described for the future.

CHAPTER VI.

Transference of the Chromatic Scale to Notation. Chromatic and Diatonic Halftones.

NAMES OF THE SOUNDS OF THE CHROMATIC SCALE.

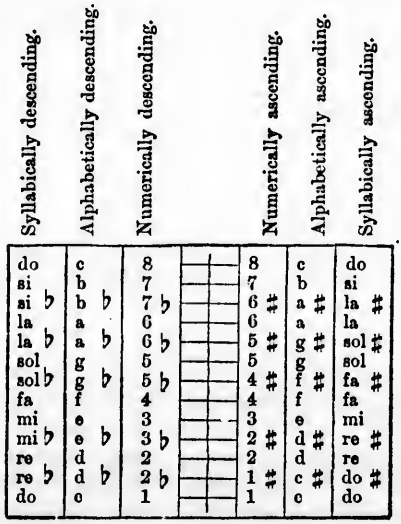
REMARKS :—It is usual in all our Music Instruction Books to adapt names in the first instance, to the eight sounds of the so-called 'natural scale,'—namely, do, re, mi, fa, sol, la, si, do,—or—c, d, e, f, g, a, b, c. *After* the pupil has been thus far drilled, he is instructed that by 'sharpening' *this* or 'flattening' *that* sound, other sounds, accidental or intermediate between any of the whole tones may be produced which are higher than the lower, and lower than the higher of the two sounds which form the interval; that the eight sounds of the 'natural scale,' together with these five intermediate accidentals form what is called a 'Chromatic Scale,'—that is, an indefinite something made out of tones and semitones!

From this most infelicitous mode of construction false impressions arise, which it is difficult afterwards to correct.

It is self-evident, that anything to be derived *from* another thing, must be preceded by the thing itself, from which it is formed; and it is evident that the *whole* of the sounds admitted into the musical system must be methodically developed and understood *before* an exceptional Diatonic scale can be methodically constructed upon any sound thereof: and that, consequently, a knowledge of the Chromatic scale must *precede* the Diatonic scale.

The following tabulated form of the Chromatic Scale, ascending and descending, is given numerically, alphabetically, and syllabically :—

FIG. 12.



The numerical arrangement is used principally for numerical reference; the alphabetical for instrumental purposes; and the syllabic for vocal solmization, or *sol-faing.*

It will be seen from this arrangement, that each succeeding sound is named sharp (♯) to the *name* of the sound below, on the ascending side, as do—do ♯, re—re ♯, and so on, except 3 and 7, which have no sharps; and so on the descending side, 8 and 4 have no flats (♭). It will also be seen, that on the descending side, each succeeding sound is *named* flat (♭) to the sound above, as si—si ♭, la—la ♭, and so on. It will further be observed, that the self-same sounds called sharp in the ascending scale are called flat in the descending; consequently:—

7♭ is the same sound as 6♯, (*a*♯ and *la*♯.)
6♭ " " as 5♯, (*g*♯ and *sol*♯.)
5♭ " " as 4♯, (*f*♯ and *fa*♯.)
3♭ " " as 2♯, (*d*♯ and *re*♯.)
2♭ " " as 1♯, (c♯ and *do*♯.)

The simplicity and convenience of this arrangement will become evident when we arrive at the construction of the Diatonic scales.

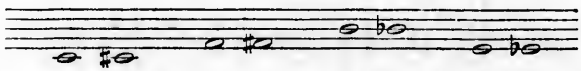
The student is timely cautioned against heeding any of those groundless arguments raised by some against this nomenclature of the Chromatic Scale. They contend that '*do* sharpened can no longer be *do*'! that '*si* flattened can no longer be *si*,' a fatal objection indeed, if such a paradox were ever contemplated. "But those musicians who are merely practical,—and these are the most numerous,—having attached an idea of reality to the signs which represent sounds, and seeing that the signs of *do* and *re* are not changed, but that the signs of raising and lowering are simply added to them;—that is to say, the sharp (♯), or the flat (♭),—these musicians, I say, have imagined that *do* is always *do*, whether there be a sharp added to it or not. Similar errors are frequent in music, and have thrown much obscurity over its theory." *M. Fetis.* 'Music Explained.'

By a reference to A, Table III, and to the sonometer, it will be seen that the sound produced by do^1, 500 parts and 256 vibrations, cannot by any mode of reasoning, be the *same* sound as that given by do^1 ♯, having 447 parts and 283 vibrations,—a difference of 53 parts, and an increase in velocity of 27 vibrations as compared with do^1; and so on with the relations of the other sounds, the principle of its nomenclature being a mere convenience for avoiding an otherwise objectionable accumulation of names.

To give distinguishing names to each separate halftone of the Chromatic scale, would involve no less than eighteen distinct syllables, letters, or numerals. Such an arrangement would render the reading of music exceedingly complex and difficult.

45. In transferring the Chromatic Scale to Notation, two proximate halftones, having the same syllabic names, as *do*—*do* ♯; *fa*—*fa* ♯; *si*—*si* ♭; *mi*—*mi* ♭; &c., have the *same places* on the stave, the one being distinguished from the other by the sharp or flat, which always *precedes* the note, and are called '*Chromatic halftones,*' in contradistinction to those which occupy successive degrees.

FIG. 13.



46. All proximate halftones having different syllabic names, as *do* ♯—*re*; *fa* ♯—*sol*; *la*—*si* ♭; *mi* ♭—*re*, etc., occupying *successive degrees* of the stave, are called, by way of distinction, '*diatonic halftones.*'

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Table V.—Table of the Scale of Octaves, and the Chr
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SCALE OF OCTAVES.

Fig. 10.

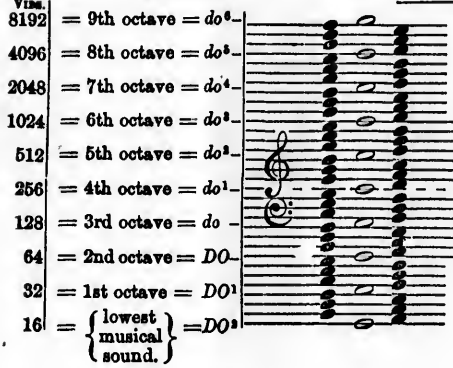
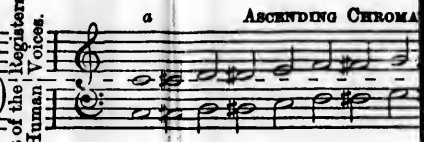
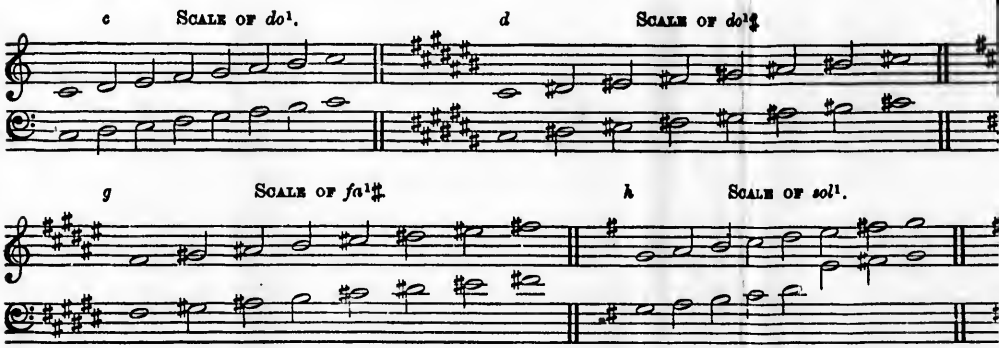


Fig. 17.

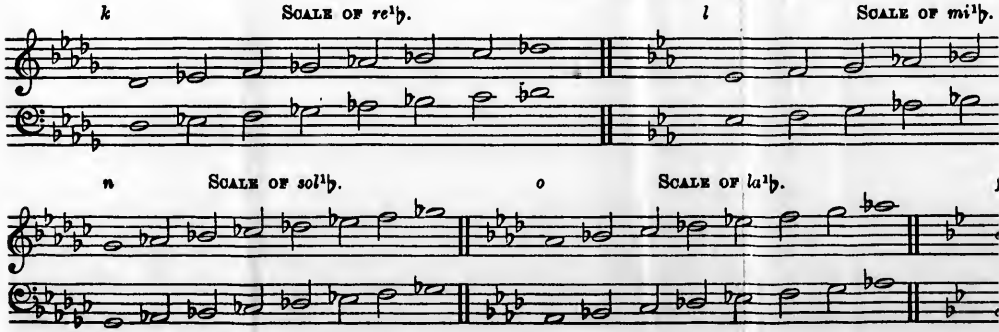


DIATONIC SCALES, *ascending*,

Fig.



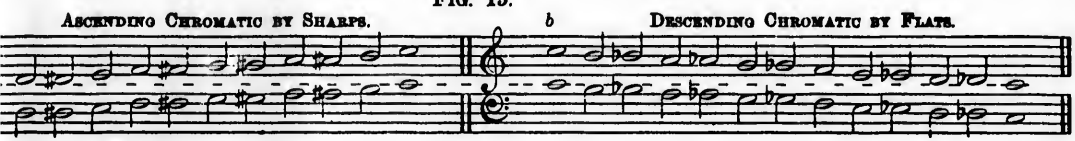
DIATONIC SCALES, *ascending*, requiring



ES, and the CHROMATIC and the DIATONIC SCALES transferred to the Diagrams of Scales, Table III.

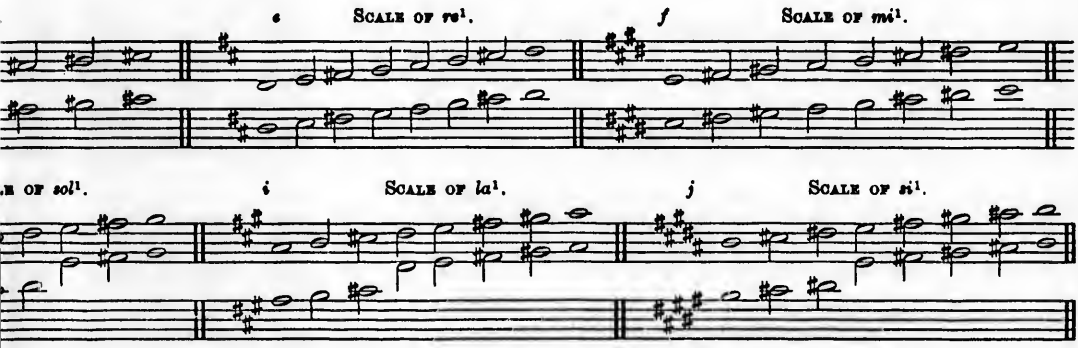
CHROMATIC SCALE.

FIG. 15.

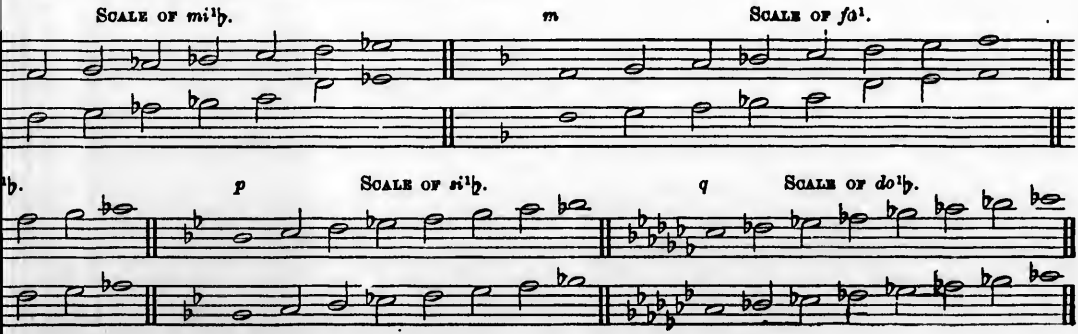


C SCALES, *ascending*, requiring Sharps in their construction.

FIG. 16.



S, *ascending*, requiring Flats in their construction.



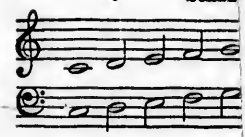
Table

SCALE OF O

FIG. 1(

VIBR.	
8192	= 9th octave = c
4096	= 8th octave = a
2048	= 7th octave = d
1024	= 6th octave = d
512	= 5th octave = d
256	= 4th octave = d
128	= 3rd octave = d
64	= 2nd octave = D
32	= 1st octave = D
16	= {lowest musical sound.} = D

c SCALE



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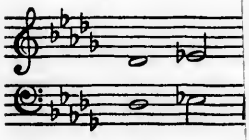


n SCAL

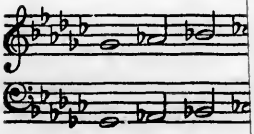


FIG. 14.

47. Table V, Fig. 15, shows the Chromatic scale of diagram A, Table III, transferred to notation, from do^1 to do^2, to its proper stave of five lines. *A* is the ascending, and *b* the descending scale. The corresponding scale from *do* to do^1 is also given below it.

CHAPTER VII.

Transference of the Diatonic Scales to Notation. Signatures.

REMARKS :—The Diatonic scale of *do* is usually called the 'Natural scale.' *Why* it should be so called, it is difficult to say, if we adopt the ordinary acceptation of that term.

It will have been seen that, in the foregoing analysis of the elements of sound, in its connection with the construction of scales, in Part I, nothing has arisen to give any undue prominence to this scale over others. The only prominence that can be accorded to it, is its tonic only, which is the recurring double of the simple elementary basis, to which is given the name *do*. But this circumstance gives no undue prominence to the scale constructed upon it, to entitle it to any literal meaning of the term '*natural*,' as compared with other scales. It is merely one scale among the many others, *as* 'natural' as any of them, but not more so.

The term 'natural' as given to this scale exclusively, is an unfortunate misnomer, since it implies, as a consequence, that there is something *un*-natural in all the remaining scales.

There is nothing 'natural,'—that is, produced by any law in nature,—in the order of the successive intervals of the Chromatic scale (and consequently in any of the proportions of the intervals of the Diatonic scales), according to the equal temperament (the only practical) arrangement in instruments with fixed sounds, as the Piano-Forte, Organ, &c. The Diatonic scales being nearly all alike *imperfect*, are therefore *equally natural*, if such a paradox may be allowed.

The application of the term to instruments whose sounds may be modified at pleasure,—as the Violin, Violincello, Double Bass, etc., is equally incorrect; for, as *all scales* can be made *equally perfect* upon them, so the term '*natural*,' applied to any one of them exclusively, is not correct.

An investigation of the irregular ratios of the vibrations and parts of the Chromatic scale shews at once the imperfections of the musical system, in which there are but few equal ratios.

The use of the term natural, if applied at all, to the scale of *do*, should be used with a due amount of reservation.

48. The eight successive sounds of any Diatonic Scale occupy eight successive degrees of the stave.

49. On Table V, Fig. 16, the fifteen Diatonic Scales on the Diagram, Table III, are transferred to notation in semibreves. The corresponding scales on the octave below, are also given on the under stave.

It is important that Table V should be carefully studied along with Table III, in order that the connection between the diagrams of the scales, and their transference to notation may be constantly kept in mind:—for instance—Fig. 15, A, Table V, is the transference of the chromatic diagram A, Table III,—namely, *a* ascending, and *b* descending; c to *q*, Table V, are the corresponding scales of c to *q*, Table III, transferred to notation.

Fig. 17, Table V, represents the extreme extent of the registers of the human voice; and the scale *do* to do^1, shown by the six intermediate black notes, is the neutral scale, as already explained at par. 44, Fig. 11.

CHAPTER VIII.

Essential Sharps and Flats.

50. The sounds sharp or flat necessary to the construction of any scale, are called the *essential sharps* or *flats.*

51. The essential sharps or flats of a scale are *collected,* and placed as *signatures* at the commencement of the stave.

52. Every Major Diatonic Scale, except the scale of *do,* has one or more sounds, sharp or flat, in its construction.

The Diatonic scales, Table V, have their sharps placed against each note in the course of their construction. They are then *collected,* and each sharp or flat thereof is placed on a corresponding line or space of the same name, at the commencement of the stave; thus, in the scale of re^1, the essential sharps are fa^1 ♯ and do^2 ♯ in the scale of fa^1, the essential flat is si^1 ♭.

53. The number of collected sharps or flats indicates at once the scale in which a piece of music is written, as no two major scales have the same signature.

54. If Diatonic Scales were to be constructed on each of the halftones of the Chromatic Scale, according to the syllabic names they bear ascending and descending, the number would be seventeen. Three of these, however, (re ♯, sol ♯, and la ♯), cannot be constructed without the use of double sharps, (♯♯ or ×), and are therefore never used.

55. There are also four which are seldom used,—namely, the scales of fa ♯, do ♯, re ♭, and sol ♭, which are called 'extreme scales.' The number of scales for all practical purposes is thus reduced to eleven.

CHAPTER IX.

The usual arrangement of the Major Diatonic Scales, according to their Signatures.

ON THE TERM "TRANSPOSITION," AS APPLIED TO THE FORMATION OF SCALES.

REMARKS :—Of the many inapplicable terms made use of in the nomenclature of music, that of "transposition," as applied to the construction of scales, is, perhaps, one of the most incorrect.

"Changing the order of, by putting each in the place of the other," "putting out of place—*removing*," are the ordinary meanings conveyed by the word "transposition."

In the arrangement of the chromatic scale, as laid down in Part I, pars. 17 and 18 of this work, it will be seen that each one sound thereof entered into the construction of that scale separately and independently of the other, according to a given arrangement. In like manner, each sound of the fifteen Diatonic scales entered into those scales, separately and independently of each other, in the order in which they were derived from the chromatic scale, according to B and C, Table III. There was nothing "changed by putting each in the place of the other," nothing "put out of place" or "removed," no reference or comparison with other scales, and consequently there was no "transposition."

Transposition, therefore, as a method for the formation of scales, is incorrect in principle, and is expunged from this work.

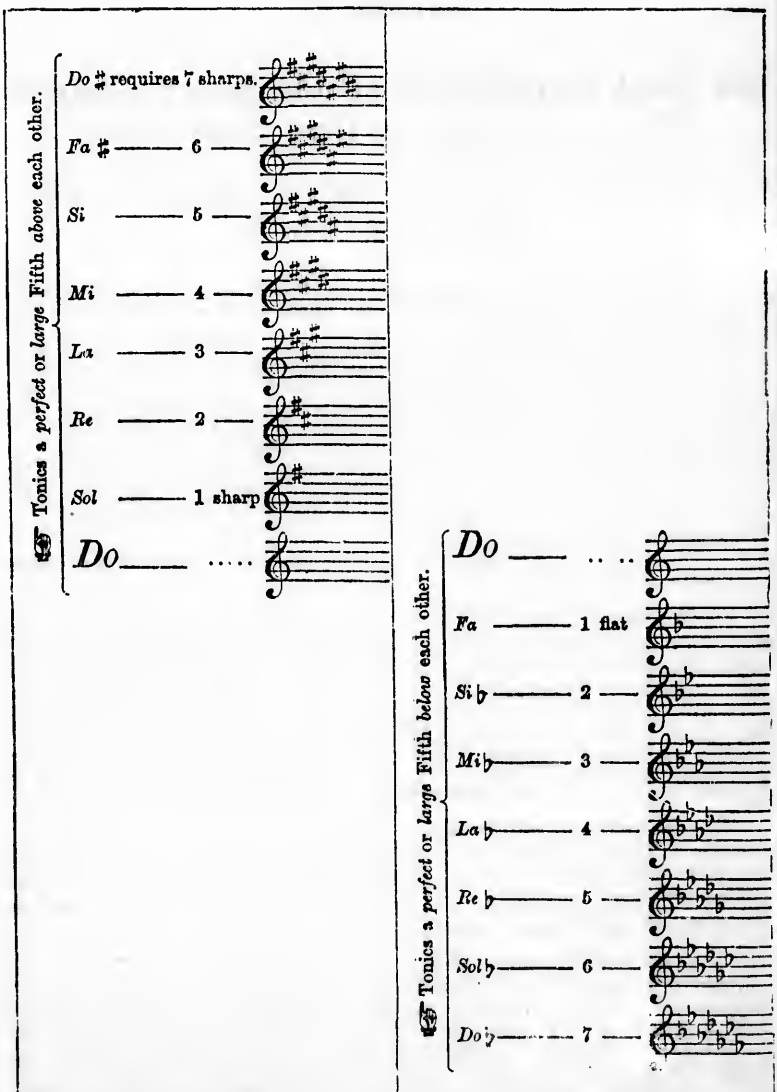
56. It is usual to arrange the Table of Diatonic Scales in the same order of succession as their essential sharps or flats increase in number. This circumstance occasions the key notes of scales having essential sharps, to fall in perfect or large fifths *above* each other :—thus, the perfect or large fifth above do^1 is sol^1, which has one essential sharp,—fa^2 ♯; re^2 is the perfect or large fifth above sol^1, and has *two* essential sharps,—fa^2 ♯ and do^2 ♯; la^1, the perfect or large fifth above re^1 is la,[1] and has three essential sharps,—fa^2 ♯, do^2 ♯, and sol^2 ♯; and so on, through the remaining sharp scales.

57. The key notes of Diatonic scales having essential flats in their construction, fall in perfect or large fifths *below* one another; thus the perfect or large fifth below do^2 is fa^1, which has one essential flat,—si^1 ♭; the perfect or large fifth *below* fa^1 is si ♭, and has *two* essential flats,—si ♭ and mi^1 ♭, and so on, through the remaining flat scales.

RULE :—There cannot be two *Major* Diatonic scales with the *same* signature. If a scale has one sharp it is always fa ♯; if two sharps, the second is always do ♯ preceded by fa ♯; if three sharps, the third is always sol ♯, preceded by fa ♯ and do ♯, the greater number of sharps always including the next preceding lesser. So with the flats; if one flat, it is always si ♭; if two flats, the second flat is always mi ♭, preceded by si ♭; if three flats, the third flat is always la ♭, preceded by si ♭ and mi ♭, the greater number of flats always including the next preceding lesser number through the remaining flat scales.

TABLE OF SIGNATURES OF MAJOR SCALES.

FIG. 22.



CHAPTER X.

Registers of the human Voice. Cleffs.

58. From physical causes over which we have no control, the human voice is described as of two sorts—namely—the voices of *women* and *children*, and the voices of *men*, the former of which move in octaves above the latter.

59. By the *register* of a voice is meant the number of Diatonic sounds, upward and downward, which each voice respectively can produce.

60. The voices of women and children are divided into *Treble* and *Contralto*, and the voices of men into *Tenor* and *Bass*. The Treble is called the *top part*, the Bass the *bottom part;* and the tenor and contralto the *inner parts*, in harmonies of four voices.

61. Though each species of voice occupies a different register in its degree of acuteness and gravity, yet each register has nearly the same average extent within itself.

62. Notes *alone* cannot indicate the register of any voice, nor the absolute pitch of any sound. Some sign is required to express this,—something to shew at once which register the music is written for.

63. The notation for the four registers are distinguished by three characters, supposed to be corruptions of the old forms of the letters C, G, and F, and are called *Cleffs;* and these are the only symbols in music which absolutely represent sounds, and which act as indexes to all the other sounds of the scale. They are called the Do, (or C), Sol, (or G), and Fa, (or F) Cleffs.

FIG. 23.

Do. C. *Sol.* G. *Fa.* F.

64. Cleffs are signs placed at the beginning of the stave, and are so arranged that a particular part of each shall cross a given line thereof, and thus give to all notes standing on their respective lines the names which the cleffs themselves bear.

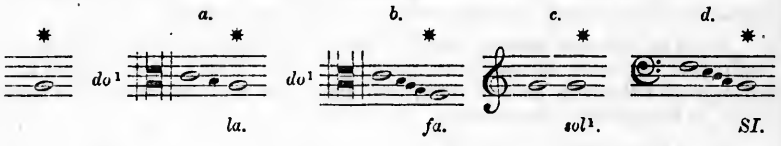
65. At * fig. 24, a note is placed upon the second line of the stave, without any sign to indicate its name. At *a* the *Do* Cleff is placed upon the third line, that is, the two strong lines parallel with the *third* line, which they enclose. The cleff in this position is called the "Contralto" cleff, and represents the Contralto register, by reason of which the note which at * was nameless becomes *la*, as indicated by the black note leading to it at *a*.

66. At *b* the same cleff is placed upon the *fourth* line of the stave, in which position it indicates the Tenor Register, and the note at * becomes *fa*, as indicated by the black notes descending to it.

67. At *c* the *Sol* cleff is placed across the second line, that is, the lower portion of the character, the curve crosses the second line four times in its formation; it is this portion of the cleff that represents the sound of sol^1. This Cleff indicates the Treble Register, and its position being on the same line as the note at *, its name becomes *Sol*, as at *c*.

68. At *d* the *Fa* Cleff is placed to cross the fourth line of the stave; the line is also enclosed by two dots, and indicates the Bass Register. This Cleff gives to the note at * the name of *SI*, as indicated by the black notes descending to it, as at *d*.

FIG. 24.



CHAPTER XI.

Positions of the Four Registers on the great Stave.

69. *Fig.* 18, Table VI, is the great stave. Upon it is shewn the series of sounds extending from the lowest possible sound *DO*, which can be rarely sung by men, to the highest sound do^3, rarely sung by women; the whole embracing four octaves.

70. At Fig. 19, the sounds on the great stave are divided into Bass, Tenor, Contralto, and Treble, with their respective Cleffs, positions, and extent of each register, namely:—

a, the Bass, extending from *FA* to re^1,			13	Diatonic sounds.
b, the Tenor,	"	" *do* to sol^1,	12	" "
c, the Contralto,	"	" *fa* to si^1,	11	" "
d, the Treble,	"	" do^1 to do^3,	15	" "

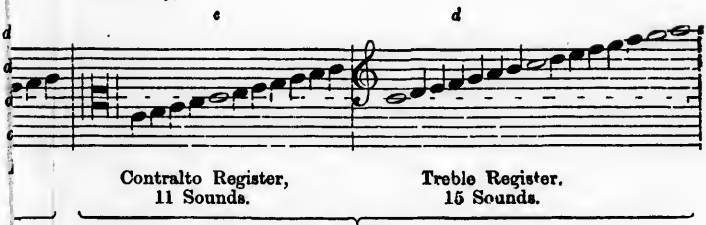
Although the Treble Register is extended to do^3, the two extreme sounds si^2 and do^3 are exceptions, and of rare occurrence, the average extent being la^2.

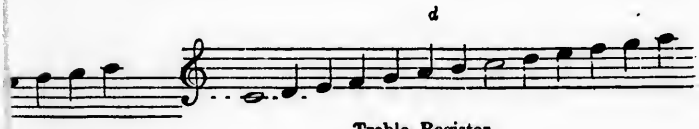
71. At Fig. 20, *a*, *b*, *c*, *d*, the Registers are brought out more clearly divested of the extraneous lines.

72. At Fig. 21, each Register is disconnected, and placed in its respective position for harmonized four-part-music, namely, the Bass at the bottom, the Treble at the top, the Contralto next below the Treble, and the Tenor next above the Bass.

, on the Great Stave.

FIG. 17.





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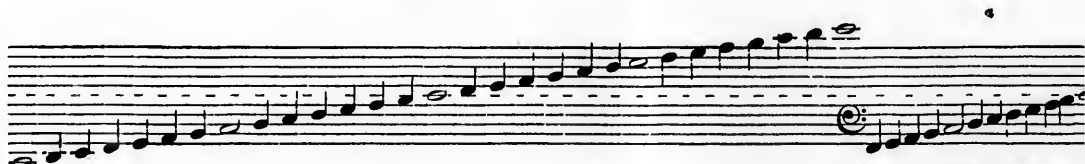
Bass, Tenor, Contralto, and Treble Registers of th

FIG. 24.

FIG. 16.

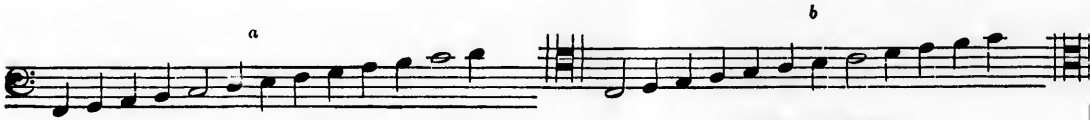


Collective extent of the four Registers of the human voice.

Bass Register,
13 Sounds.

V

FIG. 18.



Bass Register.

Tenor Register.

FIG. 19.

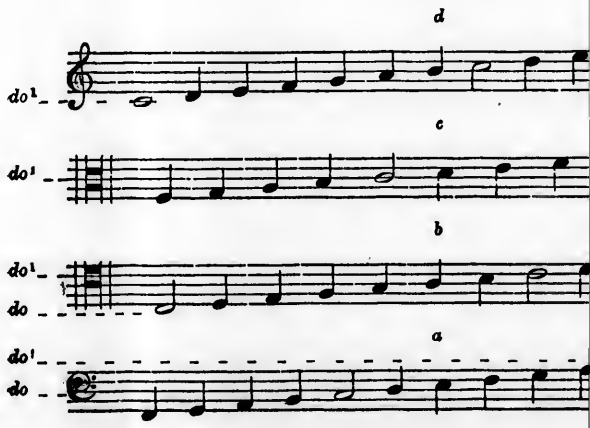


TABLE VI.

Registers of the Human Voice, on the Great Stave.

FIG. 17.

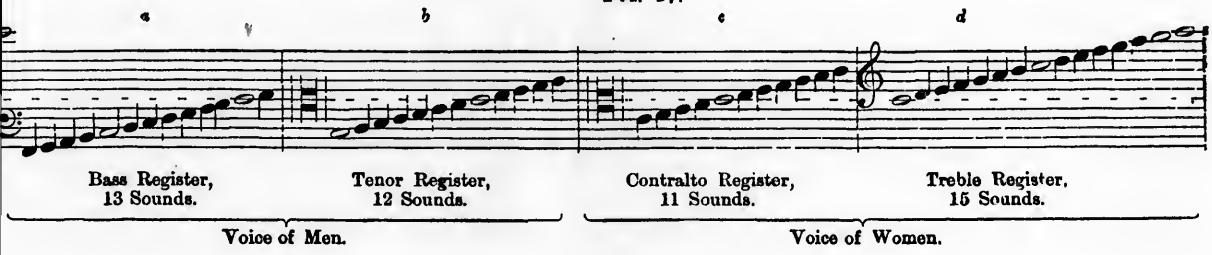


FIG. 18.

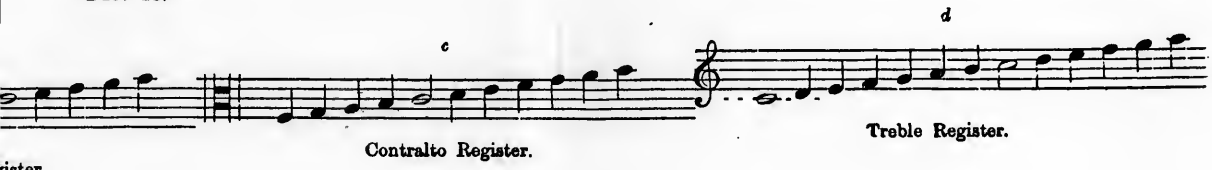


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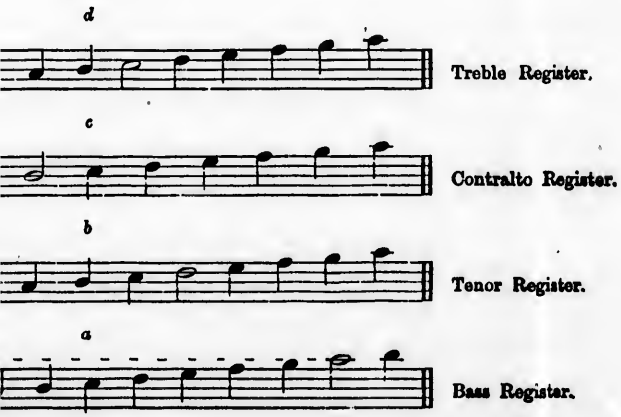
FIG. 19.



CHAPTER XII.

Rhythm, or Prosody of Music. Accent. Measures. Bars.

73. Rhythm is the first principle which reduces notation to symmetry and order, and embraces time, accent, measures, bars, &c.

74. In order to gain a clear insight into the signification of Rhythm, and its important bearing upon music, it will be well to investigate its relation to versification, to which it immediately belongs.

75. "Prosody in grammar deals chiefly with accent, metre, (or measure), and versification."

Prosody in music deals chiefly with accent, metre (or measure) phrases, &c.

76. "Metre, (or measure), in versification, is the regular succession of accented syllables."

Metre, (or measure) in music is the regular succession of accented sounds.

77. "English verse is therefore determined by the falling of the accent."

Musical measures are therefore determined by the falling of the accent.

78. "Accent in versification means a certain force given to some syllables, and not to others."

Accent in music means a certain force given to some sounds, and not to others.

79. "The regular falling of the accent in versification divides a line of verse into certain portions called feet."

The regular falling of the accent in Music divides a piece of music into certain portions called parts of measures, (which may appropriately be called feet.)

80. "Feet in versification are so called from the measured falling of the voice, resembling the falling of the feet in marching."

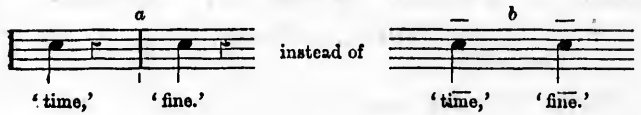
Parts of measures in music are so called from the measured falling, or forcing of the voice in vocal music, and its resemblance to the falling of the feet in marching.

81. By these parallel coincidences, it will be seen that a close analogy exists between the "sister arts," poetry and music, and that the laws of Prosody are equally as applicable to the one as to the other.

82. To investigate the analogy still farther:—The place of the accent in versification is expressed by a character above the word, called a long (—), as "time," "fine," &c.

83. The place of the accent in music is expressed by changing the *horizontal* position of the *long* (—) into a vertical one (|), which is placed BEFORE instead of above a note, in which position it is called a Bar, as at *a*, where the *long* is removed from its horizontal position as at *b*, and placed in its vertical position, to *precede* the note.

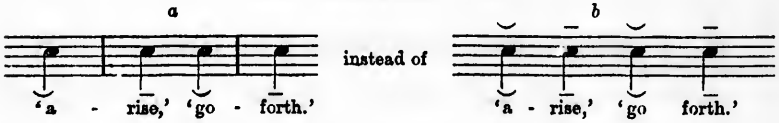
FIG. 25.



84. The unaccented syllables in versification are marked with a symbol called a 'short,' (⏑), as '⏑*a*-rise,' '⏑*go* forth.'

The places of the unaccented notes are expressed by the vertical lines following, instead of preceding the note: as

FIG. 26.



where at *a* the vertical lines follow the *unaccented*, and precede the *accented* syllables, and the contents *between* the two lines is called *a measure.*

85. "A row of feet in versification is called a line; two lines rhyming make a couplet; three lines make a triplet; four or more lines make a verse."

86. *Two or more measures in music are called a phrase; two, three, four, or more phrases make a period.*

87. The chief kinds of metre used in English Poetry are the Dissyllabic, (two part order), and the Trisyllabic, (three part order).

Measures of two and three part orders or measures, are the only metres, (or measures) used in English music.

CHAPTER XIII.

Measures. Bars. Time. Time Signs.

88. It has been shown in the foregoing chapter that all music is divided by the bar line into small portions called measures.

89. It is usual in most treatises on music to give the name 'bar' indiscriminately to the *vertical line* that divides music into measures, as well as

to their *contents*. In this work the *lines* are called *Bars*, and that which is contained between two bars is called *a measure*.

90. Measures of two part order, as two, or four, or its multiple, are called Common or equal times.

Measures of three part order are called triple or unequal times.

These are called the 'simple' or 'radical' times.

91. From these 'simple' times, other times called 'compound' are derived, namely,—'compound common' and 'compound triple' times.

92. Hence has arisen the use of time or measure signs, by which to convey readily to the sight the particular *order*, *measure*, or *time* of the notation in which a piece of music is set, or written.

93. With one exception, the contents of all measures are represented by fractions, placed immediately after the Cleff signature: as $\frac{2}{1}, \frac{2}{2}, \frac{2}{4}, \frac{3}{1}, \frac{3}{2}, \frac{3}{4}, \frac{3}{8}$, &c., the denominator implying either the *whole* or some fractional part of a *semibreve*, and the numerator the *number* of such parts.

94. Figs. 27 and 28 are tables of the various simple times and their signatures in most common use:—

FIG. 27.

Common, or equal Measures.

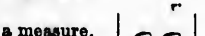
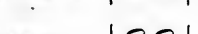
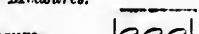
$\frac{2}{1}$	or 𝄵, two semibreves in a measure,	
$\frac{2}{2}$	or 𝄴, two minims in a measure,	
$\frac{4}{4}$	or 𝄴, two minims in a measure,	
$\frac{2}{4}$	two crotchets in a measure,	

FIG. 28.

Triple, or Unequal Measures.

$\frac{3}{1}$	three semibreves in a measure,	
$\frac{3}{2}$	three minims in a measure,	
$\frac{3}{4}$	three crotchets in a measure,	
$\frac{3}{8}$	three quavers in a measure,	

REMARKS:—If we compare the $\frac{3}{1}$ measure with the $\frac{4}{1}$, it will appear that fundamentally and in principle they are one and the same measure, differing only in the mode of representation, namely, in $\frac{2}{2}$ time the minim is taken as the principal parts of the measure; while in the $\frac{4}{4}$ measure the crotchet is taken as the principal parts, and thus in appearance becomes a four-part or quadruple measure, corresponding to such words as con-se-cra-tion,—mod-er-a-tion, &c.

95. Of the four measures of two-part order, or common times, $\frac{2}{1}$ is become obsolete. $\frac{2}{2}$ and $\frac{4}{4}$ times may be considered the same; and thus equal or common times are reduced to two in number.

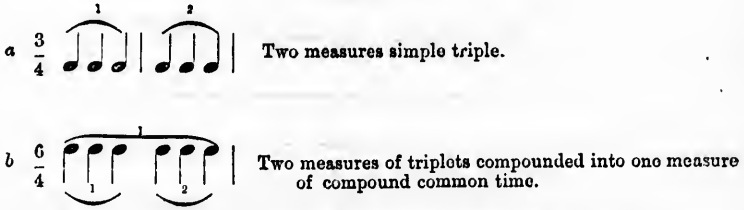
Of the four triple measures, $\frac{3}{1}$ is become obsolete; $\frac{3}{2}$ used principally in Psalmody; $\frac{3}{4}$ for general purposes, and $\frac{3}{8}$ for music of a light and secular character.

CHAPTER XIV.

Compound Times. Their Signatures.

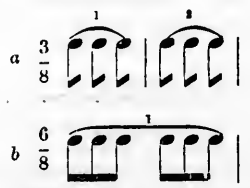
96. *Compound Times* are so called from the *compounding into one measure*, two, three, four, or more *simple triple measures*:—thus *a*, Fig. 29, consists of two measures of simple triple $\frac{3}{4}$ time; by dispensing with the bar dividing measures 1 and 2, another order of measure, totally different in its character is derived, as at *b*,—namely, two groups of three each, and requiring a different time signature to represent it,—namely, $\frac{6}{4}$, the double of $\frac{3}{4}$.

FIG. 29.



97. So with simple triple time of the next lower denomination; from a compounding of two measures of $\frac{3}{8}$, the compounded $\frac{6}{8}$ time is derived.

FIG. 30.



98. But in this compounding of two measures, a very important change takes place. Whereas, in each measure in its simple triple form, a corres-

T their derived Compounds;

S.

Times.	
Ti Signi	
 Two b	Compounded of two measures of $\frac{2}{2}$ time. (Never used.)
 Two b	Compounded of two measures of $\frac{2}{4}$ time.
 Two b	Compounded of four measures of $\frac{2}{8}$, or two measures of compound $\frac{2}{8}$ time.
 Two	Compounded of two measures of $\frac{2}{8}$ time.
 Thr	Compounded of three measures of simple $\frac{3}{2}$ time. (Never used.)
 Thr b	Compounded of three measures of simple $\frac{3}{4}$ time.
 Thr	Compounded of three measures of simple $\frac{3}{8}$ time.
 Thr	Compounded of three measures of simple $\frac{3}{16}$ time.

Time Table of Simple Common and Simple Triple Time Signs, and their re

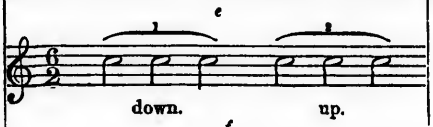
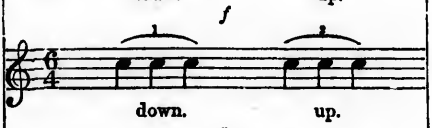
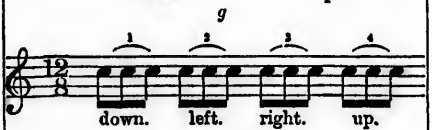
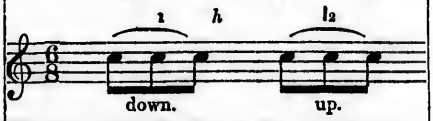
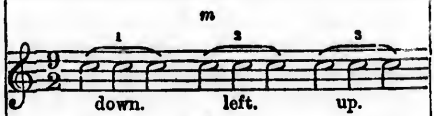
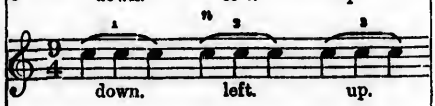
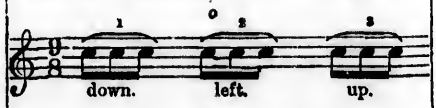
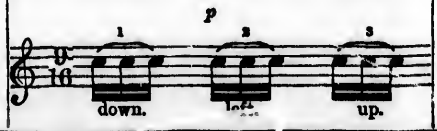
A.—Simple Times.

Time. Signatures.	Simple two part Order. Simple or Common Times.	Time Signatures.	Compounde
¢ or $\frac{2}{1}$ Two or four beats.	*a*	$\frac{6}{2}$ Two beats.	down.
$\frac{2}{2}$ or $\frac{2}{2}$ Two or four beats.	*b*	$\frac{6}{4}$ Two beats.	down.
$\frac{4}{4}$ or $\frac{4}{4}$ Two or four beats.	*c*	$\frac{12}{8}$ Four beats.	down. left
Two beats $\frac{2}{4}$	*d*	$\frac{6}{8}$ Two beats.	down.
	Simple three part Order. Simple or Triple Times.—C.		Compounded T
Three beats $\frac{3}{1}$	*i*	$\frac{9}{2}$ Three beats.	down.
Three or six beats $\frac{3}{2}$	*j*	$\frac{9}{4}$ Three beats.	down.
Three beats $\frac{3}{4}$	*k*	$\frac{9}{8}$ Three beats.	down.
Three beats $\frac{3}{8}$	*l*	$\frac{9}{16}$ Three beats.	down.

TABLE VII.

Simple Triple Times, and their derived Compounds; s, and their relative Beats.

B.—Compound Times.

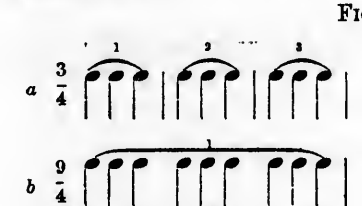
Compounded Common.	
	Compounded of two measures of $\frac{2}{2}$ time. (Never used.)
	Compounded of two measures of $\frac{3}{4}$ time.
	Compounded of four measures of $\frac{3}{8}$, or two measures of compound $\frac{6}{8}$ time.
	Compounded of two measures of $\frac{3}{8}$ time.
Compounded Triplo Times.—D.	
	Compounded of three measures of simple $\frac{3}{2}$ time. (Never used.)
	Compounded of three measures of simple $\frac{3}{4}$ time.
	Compounded of three measures of simple $\frac{3}{8}$ time.
	Compounded of three measures of simple $\frac{3}{16}$ time.

ponding number of beats is necessary,—two only can be made in its compounded form,—namely, *down—up*. No two groups of three equal notes can be represented by three beats.

From the conformity of these Compound measures in their *beats* to the beats of simple common times, arises the name "Compound Common times."

99. So with the compounding of *three* measures of simple triple time into one measure. *A*, Fig. 31, is three measures of $\frac{3}{4}$ time; by dispensing with the bars which divide them, one measure of three groups of triplets is obtained, as at *b*, forming a compound triple measure of nine crotchets, described by the fraction $\frac{9}{4}$.

FIG. 31.

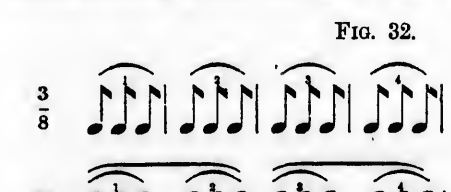


So also with the compounding of the simple triple of the next lower denomination; from $\frac{3}{8}$ is derived the Compound triple, $\frac{9}{8}$.

Compounded Triple times require three beats to represent them. Compounded Triple times cannot be represented by two beats.

100. A third description of compounded time arises from the compounding of four measures of simple $\frac{3}{8}$ time upon each unit of a $\frac{4}{4}$, or quadruple common time; or it is the compounding of four measures of simple $\frac{3}{4}$ time, or of two measures of compounded $\frac{6}{8}$ time into one measure, and described by the fraction $\frac{12}{8}$. Such a measure contains four groups of triplets, and requires four beats to represent them; Fig. 32:—

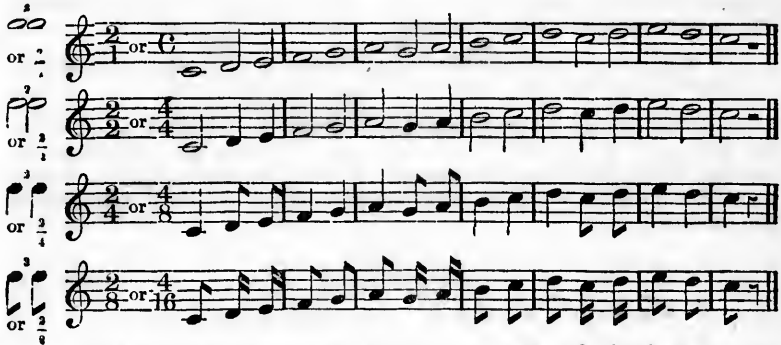
FIG. 32.



101. Table VII, A and B, contains the four simple 'common, and the four simple triple times,' with their 'compounded times,' 'time signs' and 'beats.'

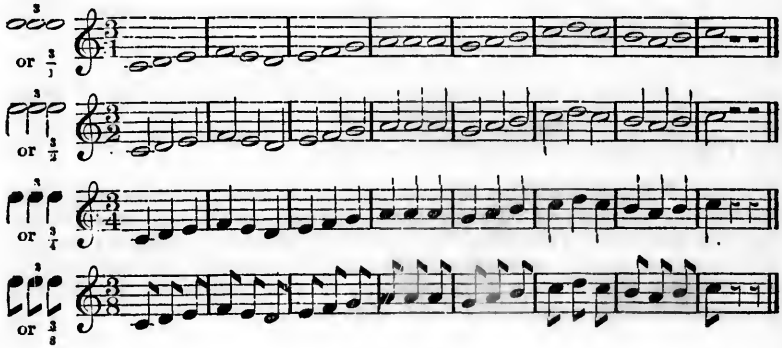
REMARK:—On an analysis of the various common time signs, it is evident that a piece of music can be written as well in one time as in another, so long as their ratios are as $\frac{2}{1} : \frac{2}{2} :: \frac{2}{4} : \frac{2}{8}$, and as long as a beat has no 'absolute time,' the same velocity may be applied to the beats of any or all of the examples at figs. 33 and 34.

FIG. 33.



The same rule applies to music with Triple time signs, as $\frac{3}{1} : \frac{3}{2} :: \frac{3}{4} : \frac{3}{8}$; example, fig. 29.

FIG. 34.



CHAPTER XV.

Comparative values of Notes as represented by Beats.

102. At par. 32, Chapter II, in order to make clear the meaning of the value, length, or time of a sound, a second was assumed as the unit of time, and a semibreve the unit of admeasurement.

So mathematically correct a time, however, is not practicable or necessary in music.

103. The values or lengths of sounds are measured by equal timed motions of the *right hand* for *vocal* purposes, and by similar movements of the *foot* for *instrumental*, and are called *beats*.

104. A measure of equal, common, or two part order, may be represented by two or four beats. Table VII, A.

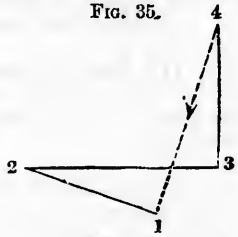
105. A measure of unequal, triple, or three part order, may be represented by three beats. Table VII, C.

106. A beat may be very slow, or of any degree of velocity, however rapid; but whatever be the given velocity to any given unit of the measure, the same velocity must be observed to each remaining unit of the same measure, and a uniform equal movement observed through all the measures of the same piece, unless marked to the contrary.

107. The hand should be in the raised position preparatory to beating time.

108. The positions of the beats of a measure, whose value is of a two-fold order, and equal to a semibreve, or its equivalent,—two minims or four crotchets, is generally and most conveniently represented by four equal beats, namely,—down—left—right—up.

FIG. 35.



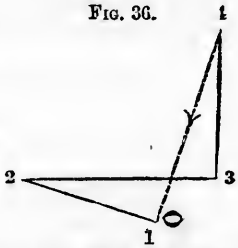
First beat. Place the elbow of the right arm close to the side of the body, and raise the hand in the direction of 4. Fig. 35. Pass the hand swiftly in the direction of the arrow to 1, and say *down*, and keep the hand in that position the length of time proposed.

Second beat. Pass the hand swiftly to the left, from 1 to 2, saying *left*, and keep the hand in that position the same length of time as at 1.

Third beat. Pass the hand swiftly to the *right*, horizontally in the direction 2—3, saying, *right*, keeping the hand in that position as at 1 and 2.

Fourth beat. Pass the hand swiftly upwards, in the direction of line 3—4, and say *up*; also keeping it at 4, as at the previous points.

FIG. 36.



109. A semibreve is equal to four beats; namely—*down—left—right—up*—as at Fig. 36, where a semibreve is placed on the first beat, and its value equal to it and the three succeeding beats.

Practise with different degrees of velocity.

REMARK:—The Teacher will explain, that while facing the pupils and beating time, his hand moves in contrary directions to theirs; that while their hands move to the left, his passes to the right, and while theirs pass to the right, his passes to the left. This is necessary, otherwise he cannot face his pupils, which is indispensable.

110. All beats require to be made with the greatest possible exactness at equal intervals of time.

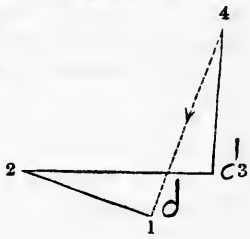
Preparatory to practising an exercise, make several successions of four equal beats, according to Fig. 35.

In practising 36, on the passage of the hand downward in the direction of the arrow to 1, say sharply "semibreve," and continue the beats to its completion,—left, —right,—up.

Practise with different degrees of velocity.

111. A minim being half the value of a semibreve, the number of beats will be also half those of the semibreve; and, consequently, two minims can be beaten in the time of one semibreve, Fig. 37, where a minim is placed at each of the points 1 and 3.

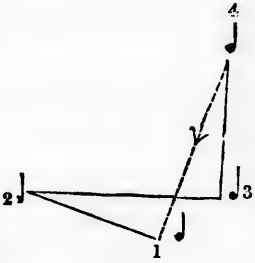
Fig. 37.



In practising 37, say "minim" on the first beat, and repeat it on the third, thus giving to each minim two beats; namely—*down—left*—to the first,—*right—up*—to the second.

112. A crotchet being one half the value of a minim, its value is equal to one beat; and, consequently, two crotchets can be beaten in the time of one minim, and four in the time of one semibreve, Fig. 38, where a crotchet is placed at each of the points, 1, 2, 3, 4.

Fig. 38.

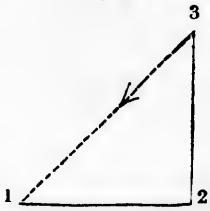


In practising Fig. 38, at each point say 'crotch,' thus giving to each crotchet one beat.

113. These exercises shew that, in respect to *value* or *time*, a semibreve is equal to two minims, or four crotchets, and a minim equal to two crotchets.

114. Measures of simple triple, or three part order, are represented by three equal-timed beats, which are equally the representatives of semibreves, minims, crotchets and quavers.

Fig. 39.



Pass the hand rapidly from 3 in the direction of the arrow 1, and say "down;" to the left to the point 2, and say "left;" and from 2 upwards to the point 3, saying "up." By omitting the right beat we get three beats instead of four: Fig. 39.

Remarks:—It is of the greatest importance that the exercises on beating time should be thoroughly practised, and that the inward feeling of correct equal-timed pulses, or beats, should be fully appreciated before leaving the subject; nor should the Teacher pass from the lessons until his pupils are able to beat time steadily together.

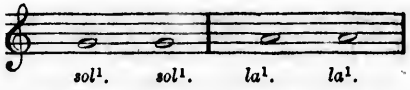
The simple ratios of the values of semibreves, minims and crotchets, may be made more evident, by dividing the class into three divisions; the first division beating semibreves, the second minims, and the third crotchets, simultaneously.

CHAPTER XVI.

Unisons and Intervals

115. A UNISON is the iteration, or repetition of any sound represented upon the *same degree* of the stave, as sol^1—sol^1, la^1—la^1.

FIG. 40.



116. "An INTERVAL is the measured distance between any two sounds of different denominations," occupying *different degrees* of the stave, as do^1—re^1, do^1—mi^1, etc.

117. The NUMERICAL NAME of an interval is derived from the *number of degrees* of the stave which any two sounds occupy, inclusive of the sounds themselves.

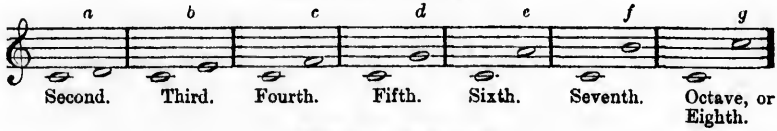
118. The CONTENTS of an interval are the *number of tones* and *halftones* contained within the two sounds inclusively.

119. "A tone is the greatest term, and a halftone the least term by which the contents of all intervals greater than a tone are described."

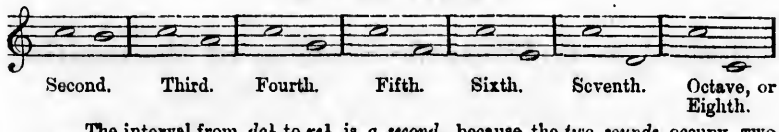
Fig. 41 describes all the intervals contained within a Major Diatonic scale from the least, a second, to the greatest, an octave, from do^1 respectively ascending and descending.

FIG. 41.

ASCENDING INTERVALS.



DESCENDING INTERVALS.



The interval from do^1 to re^1 is *a second*, because the *two sounds* occupy TWO *successive* and *dis*-similar positions on the stave, namely, do^1 one, re^1 two, hence called a *two* or *second*; do^1 to mi^1 is a *third*, because mi^1 stands on the degree of the stave next but one above do^1, namely, do^1 one, re^1 two, mi^1 three, hence called the interval of the *three* or *third*, and occupy *similar* positions on the stave; and so on through the remaining five intervals, ascending and descending to the *octave*.

CHAPTER XVII.

Melody and Harmony.

120. MELODY in its general acceptation, is a rythmical arrangement of simple sounds, following one another in a pleasing order acceptable to the ear, and comprises one voice songs, airs, or melodies.

121. HARMONY is a pleasing succession of two or more sounds heard in combination, produced simultaneously.

In vocal harmonized music, as many separate voices are required as there are separate sounds in the harmonies. Each voice is called *a part*, hence we have Duets for two voices, Trios for three voices, Quartetts for four voices, etc.

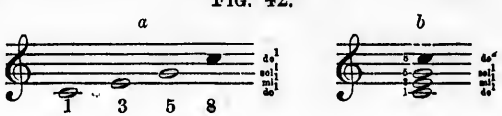
122. A combination of two or more sounds of a scale forms a *chord*.

123. Chords are either *harmonious* and *pleasing* to the *ear*, and are hence called *concords;* or *inharmonious* and *offensive to the ear*, and hence called *discords*.

124. Of the various concordant chords, the *major common chord* is the most perfect and important. It consists of the *first, third,* and *fifth* sounds of a Diatonic Scale, to which may be added the Octave.

125. As *melody*, the four sounds of a common chord may follow each other, as at *a*, Fig. 42, in the scale of do^1; as *harmony* they are placed one above the other, as at *b*.

FIG. 42.



CHAPTER XVIII.

Method to facilitate the learning of the positions of the Notes on the Stave.

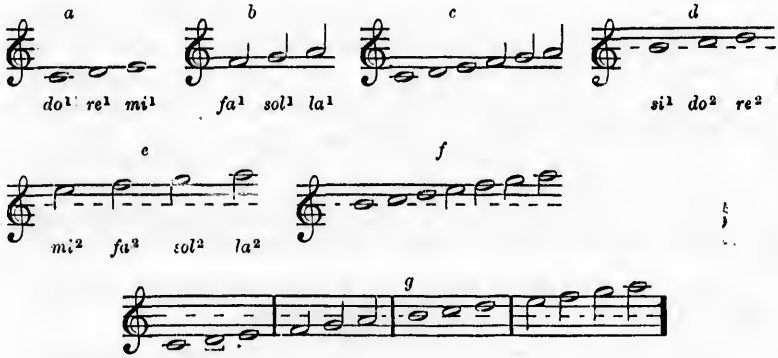
REMARKS :—The first attainment to be sought in Notation is that of recognizing at a glance the numerical positions of the lines and spaces of the Stave, and the names of the Notes placed upon them, with the same facility as we recognize the shapes and names of the letters of the alphabet.

Although the Stave is reduced to five lines and four spaces, considerable difficulty

is found by beginners in teaching the eye to distinguish one line or space from another, as also the names of the notes placed upon them.

The division of the lines, spaces and notes into small groups as at *a*, *b*, *c*, *d*, *e*, *f*, *g*, Fig. 43, studied separately, is recommended as a means of accomplishing the object more expeditiously.

FIG. 43.



Each of these examples is to be carefully studied, and committed to memory separately, in the following order :—

(*a*)—*do*¹—on the first ledger line *below* the stave,—or (more concisely) 'first ledger line *below*.'

*re*¹—on the first ledger space *below* the stave,—or (more concisely) 'first ledger space *below*.'

*mi*¹—on the first line of the stave,—or (more concisely) 'on the first line,' as distinguished from the *first line below*.

(*b*)—*fa*¹—on the first space.
*sol*¹—on the second line.
*la*¹—on the second space.

At *c*, *a* and *b* are joined together, *a* being written in semibreves, and *b* in minims, to assist in distinguishing them.

(*d*)—*si*¹—on the third (dotted) line.
*do*²—on the third space.
*re*²—on the fourth line.

For present purposes, the third line is described as dotted, as being a centre line,—namely, *two* lines *below*, and *two* above ; of course, the line ultimately becomes continuous.

(*e*)—*mi*²—on the fourth space.
*fa*²—on the fifth line.
*sol*²—on the first ledger space *above* the stave,—or (more concisely) 'first ledger space *above*.'
*la*²—on the first ledger line *above* the stave,—or (more concisely) 'first ledger line *above*.'

At *f*, *d* and *e* are joined together.
At *g*, the whole series of examples are joined in one.

Thus there are three prominent points for comparison,—namely—(1) the clef sign, *sol*, which gives its name to every note on that line,—(2) the first ledger line below the stave,—*do*¹ ; and the third dotted line, *si*¹.

CHAPTER XIX.

Vocal Exercises on the Major Diatonic Scales.

REMARKS :—In the practice of the Exercises and of the Scales, and throughout this work, no change in the names of the notes takes place. The syllabic names which the Chromatic scale obtained at its construction, in Part I, Table III, are retained unchanged throughout.

The fallacious method of adapting the syllables *Do—Re—Mi—Fa—Sol—La—Si—Do*—indiscriminately to every scale in the system, is not used, as the arguments for its adoption are deceptive and unsound.

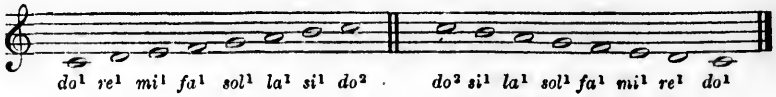
The power of singing a Diatonic Scale independent of any name, and ability to detect and correct any false step therein, are matters purely connected with the *education of the ear* alone. That power once attained, and in which there is no difficulty, it matters little by what terms they are called ; "*Do—Re—Mi—Fa*,—A—B—C—D,—Fee, Fa, Fo, Fum,—or any other syllables equally short and easy of utterance would do just as well." *Hullah.* 'Musical Grammar.'

126. *Double bars* are placed in the *middle* or at the *end* of a piece of music, to show that a part, or the whole is finished.

The following unmeasured scales, and exercises with numerals, are intended to give a first impression of inflected sounds, and their numerical positions.

SCALE OF do^1.

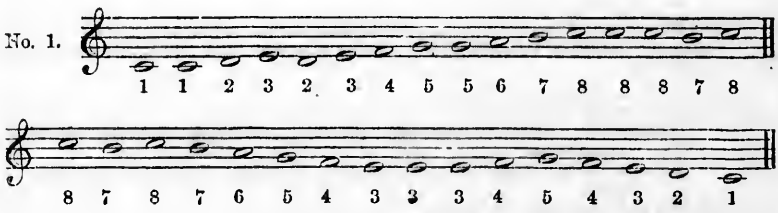
FIG. 44.



EXERCISE ON THE SCALE OF do^1.

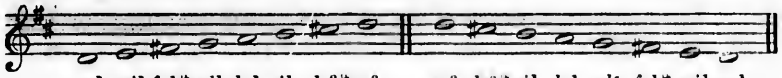
May be sung to any Long Metre.

No. 1.



SCALE OF re^1.

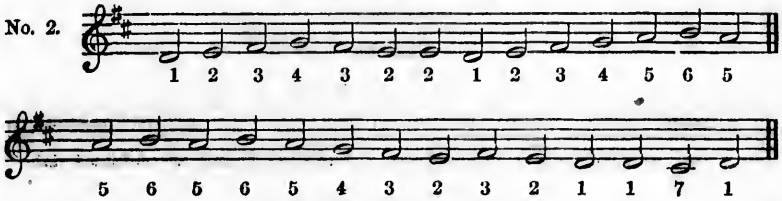
FIG. 45.



EXERCISE ON THE SCALE OF re^1.

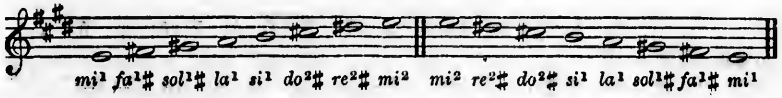
May be sung to any Common Metre.

No. 2.



SCALE OF mi^1.

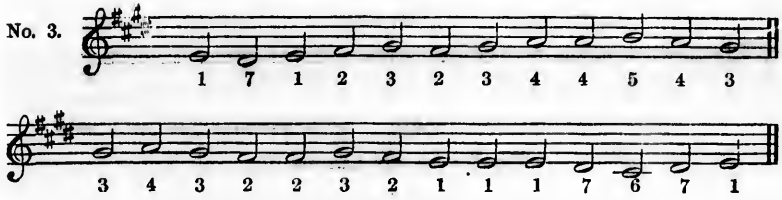
FIG. 46.



EXERCISE ON THE SALE OF mi^1.

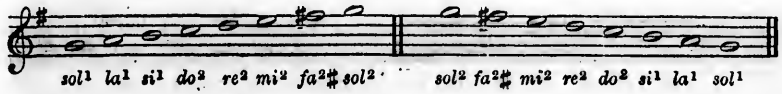
May be sung to any Short Metre.

No. 3.



SCALE OF sol^1.

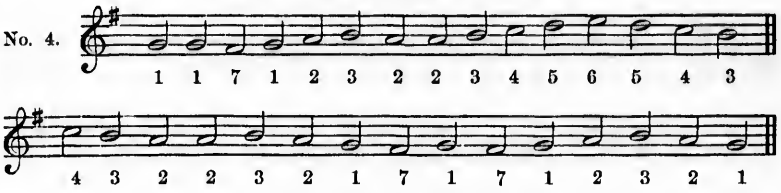
FIG. 47.



EXERCISE ON THE SCALE OF *sol*[1].

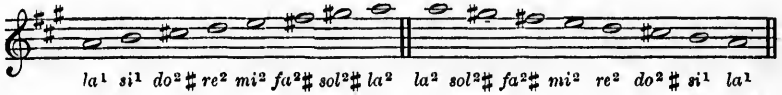
May be sung to any four lines, 8, 7, 8, 7.

No. 4.



SCALE OF *la*[1].

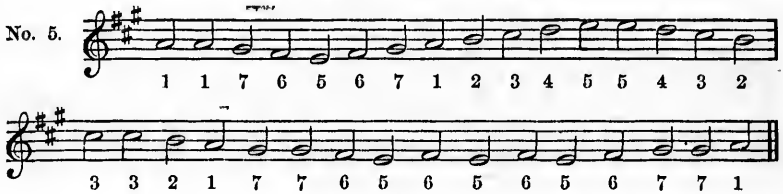
FIG. 48.



EXERCISE ON THE SCALE OF *la*[1].

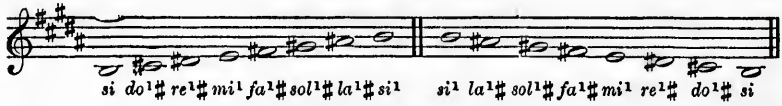
May be sung to any Long Metre.

No. 5.



SCALE OF *si*[1].

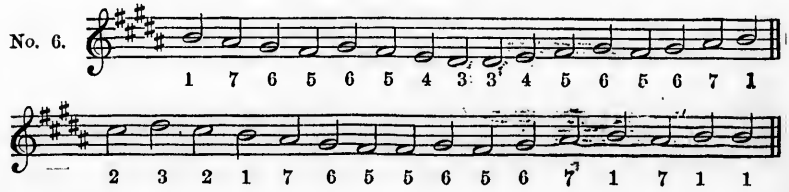
FIG. 49.



EXERCISE ON THE SALE OF *si*[1].

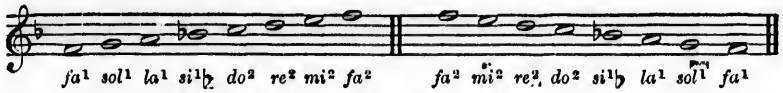
May be sung, to any four lines, 8, 8, 8, 8, *Trochaic.*

No. 6.



SCALE OF *fa*^{1}.

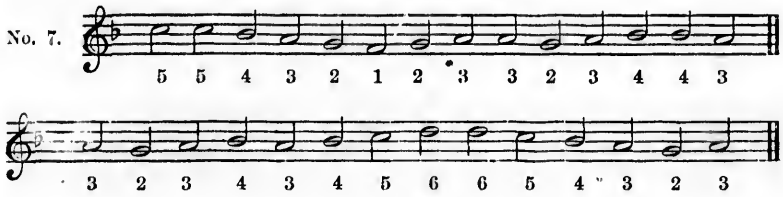
FIG. 50.



EXERCISE ON THE SCALE OF *fa*^{1}.

May be sung to any Common Metre.

No. 7.



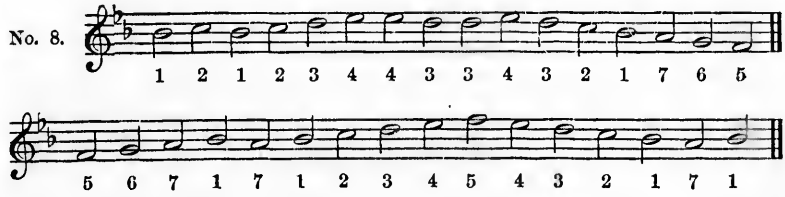
SCALE OF *si*^{1}♭.

FIG. 51.

EXERCISE ON THE SCALE OF *si*♭.

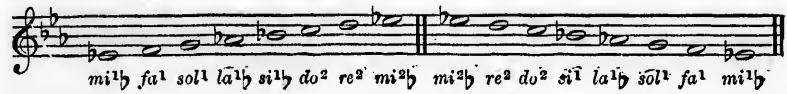
May be sung to any Long Metre.

No. 8.



SCALE OF *mi*^{1}♭.

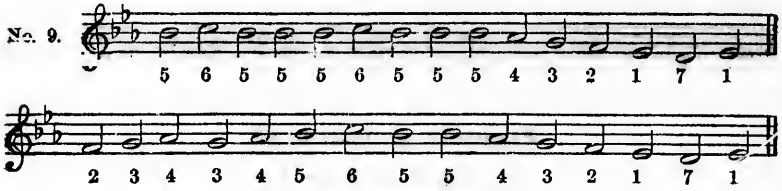
FIG. 52.



EXERCISE ON THE SCALE OF *mi*¹♭.

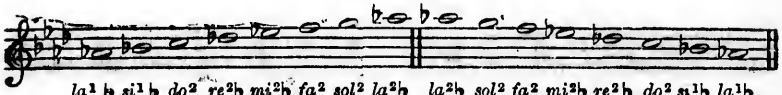
May be sung to any four lines, 8, 7, 8, 7.

No. 9.



SCALE OF *la*¹♭.

FIG. 53.

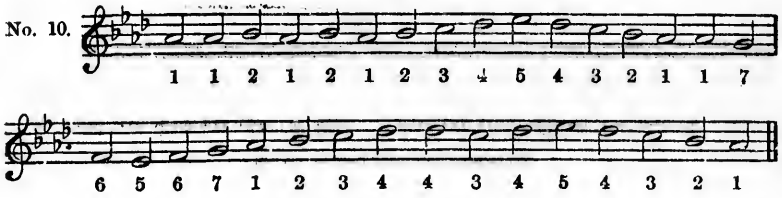


*la*¹♭ *si*¹♭ *do*² *re*²♭ *mi*²♭ *fa*² *sol*² *la*²♭ *la*²♭ *sol*² *fa*² *mi*²♭ *re*²♭ *do*² *si*¹♭ *la*¹♭

EXERCISE ON THE SCALE OF *la*¹♭.

May be sung to any Long Metre.

No. 10.



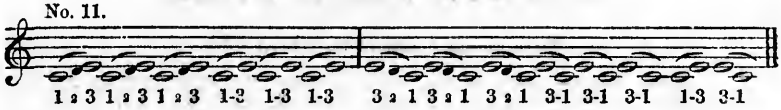
CHAPTER XX.

Practice on the Harmony of the Common or $\frac{5}{3}$ Chord.

127. Trace by the numerals from *do*¹ the tonic, to *mi*¹, the *third* of the scale, with intonation,—that is, sing the numerals 1, 2, 3, impressing firmly on the ear the sounds 1, 3; then repeat 1, 3 without the tracing note 2. Afterwards repeat the same exercise with the syllables.

EXERCISE ON THE THIRD OF THE COMMON CHORD.

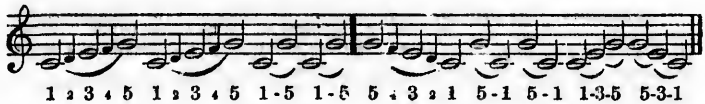
No. 11.



EXERCISE ON THE FIFTH OF THE COMMON CHORD.

To be practised in like manner to the third, pausing and impressing on the ear the first, third, and fifth.

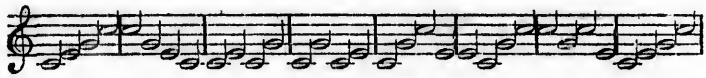
No. 12.



EXERCISE ON THE THIRD, FIFTH, AND OCTAVE, OF THE COMMON CHORD.

To be practised without tracing notes.

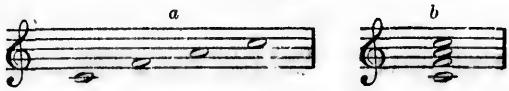
No. 13.



PRACTICE ON THE HARMONY OF THE $\frac{6}{4}$ CHORD.

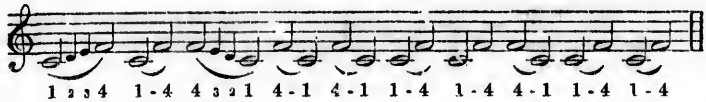
128. The $\frac{6}{4}$ chord is the *first* (understood), the *fourth*, and the *sixth* of a scale upon a given note. Thus the $\frac{6}{4}$ chord upon do^1, is do^1 (the first), fa^1 (the fourth), and la^1 (the sixth), to which the octave to the first may be added, which is called "*doubling* the first." At *a*, Fig. 54, the chord appears as a melody, and at *b* as a harmony.

FIG. 54.



EXERCISE ON THE FOURTH OF THE $\frac{6}{4}$ CHORD.

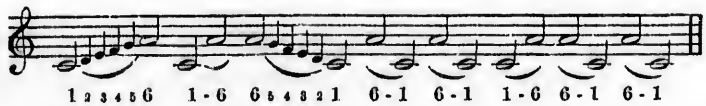
No. 14.



EXERCISE ON THE SIXTH OF THE $\frac{6}{4}$ CHORD.

To be practised in like manner.

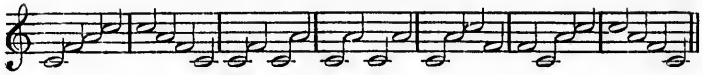
No. 15.



EXERCISE ON THE FOURTH AND SIXTH, WITH THE OCTAVE.

To be practised without the tracing notes.

No. 16.



THE PRELUDE.

REMARKS :—The principal object of the *Prelude* is, to give to the part-singers, in many part harmonies, the key note of the scale in which the music is written, to enable them mentally to attune the ear to the scale at large, and to assist each individual voice to prepare the particular sound of the harmony given to it.

Preludes generally consist of the scale and some short variation upon it, together with the common chords of the tonic, dominant, subdominant, &c.

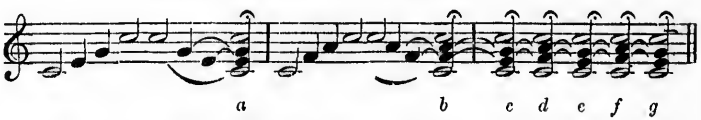
The preludes in this work will consist of the Scale, followed by the chord of the $\frac{5}{3}$ or common chord, and the chord of the $\frac{6}{4}$, alternated with one another, according to the following directions and example :

The class should be divided into four groups. In *ascending* 1—3—5—8, the groups move in *unison;* in *descending* each group *sustains* its *respective note* as denoted by the tie (⁀), until the whole chord is completed and heard collectively, sustaining the chord as expressed by the pause (𝄐) at *a*; practise in the same manner the chord 1—4—6—8, pausing as at *b*, No. 17.

At *c* the movement of the inner voices, namely, the movement of 6 to 5, and 4 to 3,—while 1 and 8 stand still,—causes the chord of the $\frac{6}{4}$ to change to the chord of the $\frac{5}{3}$; and so inversely at *d*, the inner voices move back again to 6 and 4, thus alternating the two chords, as at *e*, *f*, *g*.

EXERCISE ON THE $\frac{5}{3}$ AND $\frac{6}{4}$ CHORDS.

No. 17.



The exercise given above is the first lesson in harmony.

The teacher should begin every exercise, solfeggio, melody, &c., with these two chords, before solfaing them *with intonation.*

Too much importance cannot be attached to a perseverance in this course.

The common chord is the fundamental chord in the laws of harmony, all others being modifications of it.

The chords are also important as embracing all the intervals contained within the scale, excepting the *second* and the *seventh*, namely, the *third—fourth—fifth—sixth* and the octave upon the tonic or key-note.

CHAPTER XXI.

On the Practical Study of Intervals. Rests.

REMARKS :—On entering upon the practical study of Intervals, it is necessary that the musical student should be fully impressed with the importance of, and the necessity for, a continuous perseverance in their practise, remembering that the amount of success he may ultimately attain will be in proportion to the attention he may have given to the education of the *ear*, so as to enable it to recognize, and the voice to *give vocally* every interval at will. There is no "*short cut*" or "*royal road*" to its attainment.

The highest point sought by the practical study of vocal music, is the power of what is technically called "singing at sight;" that is, *reading* and *singing* a piece of music correctly in time and tune at a *first attempt* or at *sight*.

There are two features involved in attaining this faculty,—first, the power of discovering at a glance the distance of any two notes from each other; second, the power of giving without hesitation their corresponding sounds.

The *interval* between any two sounds upon the stave and its name, may be instantly recognized by training the eye to become familiar with the respective *distances* at which the notes stand from one another.

There are but seven intervals within the extent of the eight sounds of a diatonic scale, and they occupy positions on the stave either *similar* or *dissimilar* to one another.

As the eye can, by comparing them, readily and certainly perceive the difference in length between the four upright lines at *a*, Fig. 55, so by a little application the eye can as easily distinguish one interval from another by their comparative widths.

Three of the seven intervals occupy *similar* positions on the stave,—namely, the 3rd, the 5th, and the 7th, which we will call the *smallest*, the *greater*, and the *greatest* interval; thus at *b*, Fig. 55, the given note being *do*^{1} *on a line*, its 3rd, 5th and 7th are *on lines* also; at *c*, the given note being *re*^{1} *on a space*, its 3rd, 5th, and 7th are *on spaces* also, thus in both cases occupying *similar positions*.

The four remaining intervals occupy *dissimilar* positions,—namely, the 2nd, the 4th, the 6th, and the 8th, which we will distinguish as the *smallest*, the *great*, the *greater*, and the *greatest* intervals; at *d*, Fig. 56, the given note *do*^{1}, is *on a line*, its 2nd, 4th, 6th, and 8th are *on spaces*; at *e* the given note *re*^{1} is *on a space*, and its 2nd, 4th, 6th, and 8th are on *lines*; thus in both cases occupying *dissimilar positions*.

FIG. 55.

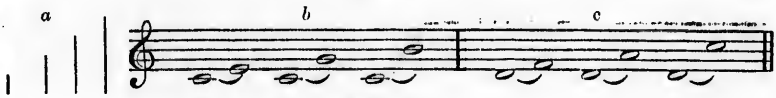
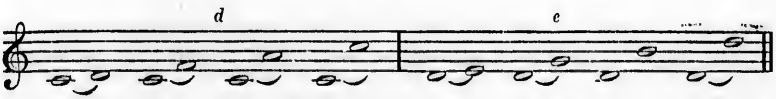


FIG. 56.



The power of giving at will the corresponding *sounds* to intervals cannot be assisted by any representation to the *eye*. It is a matter purely connected with the education of the *ear*, and must be learned by *imitation* from the human voice, or from some musical instrument having the fixed sounds of the musical system contained within it, as the organ, the piano forte, the harmonium, &c.

RESTS.

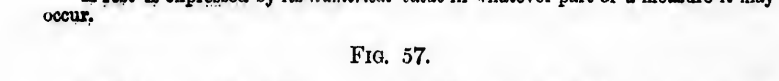
In counting the time assigned to each particular rest, a number is to be *counted* equal to the number of *beats* which the note, represented by the rest, would require.

The figures *above* the stave at Fig. 57, denote the number of *beats;* the words *below* indicate the number that is to be *counted* during the corresponding beats.

A crotchet rest is expressed by *one.*

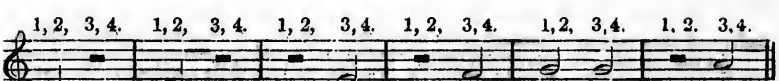
A rest is expressed by its *numerical value* in whatever part of a measure it may occur.

FIG. 57.



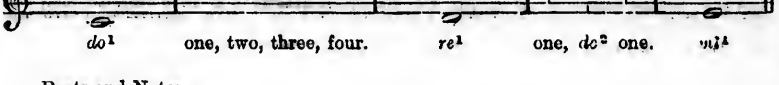
A minim rest is expressed by *one—two.*

FIG. 58.

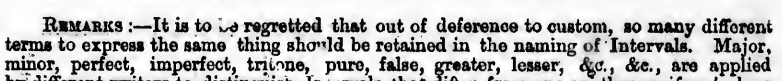


A semibreve rest is expressed by *one—two—three—four.*

FIG. 59.



Rests and Notes.



THE NUMERICAL NAMES OF INTERVALS.

REMARKS:—It is to be regretted that out of deference to custom, so many different terms to express the same thing should be retained in the naming of Intervals. Major, minor, perfect, imperfect, tritone, pure, false, greater, lesser, &c., &c., are applied by different writers to distinguish Intervals that differ from one another *uniformly* by a halftone.

Not only are several terms applied to the same thing, but also *one term* is applied to *two things* diametrically opposite in character to each other, namely, a *greater* and a *less*: the interval of the *fourth*, containing three whole tones (a greater), a thing of *three parts*,

is called an *imperfect*: while the interval of the *fifth*, containing two tones and two halftones (a less), a thing of *four parts*, is called an *imperfect*; and this without the slightest advantage to the practical study of Intervals, or any of the laws relating to harmony.

It would manifestly be of advantage to have *uniform terms* to express *uniform differences*. Now since all the intervals within a scale are greater or less than one another by a halftone, the terms "large" and "small" are admirably adapted for distinguishing them.

The different names which the Intervals bear, are given once for all in the following Table; but throughout the rest of this work they will be distinguished by "large" and "small."

TABLE VIII. INTERVALS.

All *small intervals* are distinguished by *black notes*, excepting the *fourth*.

SECONDS.

SECONDS are *large* and *small*.
LARGE SECONDS are equal to *a tone*; called also *Major* and *Greater*.
SMALL SECONDS are equal to *a halftone*; called also *Minor* and *Lesser*.

FIG. 60.

THIRDS.

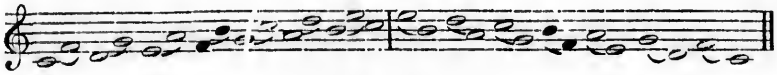
THIRDS are large and small.
LARGE THIRDS are equal to *two tones*; called also *Major* and *Greater*.
SMALL THIRDS are equal to *one tone* and *one halftone*; called also *Minor* and *Lesser*.

FIG. 61.

FOURTHS.

FOURTHS are large and small.
LARGE FOURTHS are equal to *three tones*; called also *Imperfect*, *Superfluous*, *Tritone*, *False*, and *Major*.
SMALL FOURTHS are equal to *two tones* and *one halftone*; called also *Perfect*, *Pure*, and *Minor*.

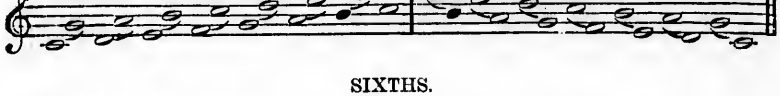
FIG. 62.



FIFTHS.

FIFTHS are large and small.
LARGE FIFTHS are equal to *three tones* and *one halftone*; called also *Perfect*, *Pure*, and *Major*.
SMALL FIFTHS are equal to *two tones* and *two halftones*; called also *Imperfect*, *False*, and *Minor*.

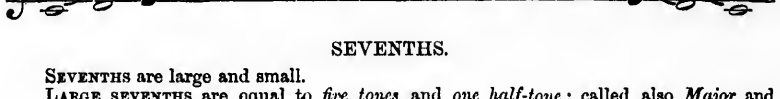
FIG. 63.



SIXTHS.

SIXTHS are large and small.
LARGE SIXTHS are equal to *four tones* and *one halftone*; called also ***Major.***
SMALL SIXTHS are equal to *three tones* and *two halftones*; called also ***Minor.***

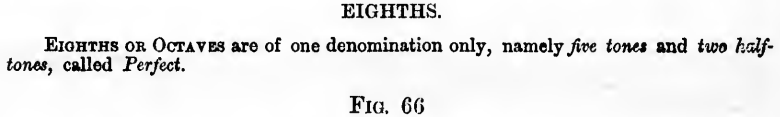
FIG. 64.



SEVENTHS.

SEVENTHS are large and small.
LARGE SEVENTHS are equal to *five tones* and *one half-tone*; called also ***Major*** and ***Sharp.***
SMALL SEVENTHS are equal to *four tones* and *two half-tones*; called also ***Minor,*** and ***Flat.***

FIG. 65.



EIGHTHS.

EIGHTHS OR OCTAVES are of one denomination only, namely *five tones* and *two half-tones,* called *Perfect.*

FIG. 66

CHAPTER XXII.

Practice of Intervals. Unisons. Seconds.

129. A unison is the iteration, or repetition of any given sound, standing on the *same degree* of the stave.

Each exercise, solfeggio, melody, and harmonized piece in this work is to be *solfaed* first *without intonation*,—that is, each note is to be called by its syllabic name *only*; afterwards it is to be rendered vocally,—that is, each syllable must have added to it its respective sound. In both cases the pupil must beat time.

Two or more voices singing any *one simple sound* at the *same time*, are said to sing in *unison*.

The teacher will sing *do—do*, *re—re*, or any other two sounds of the same name.

130. A note that stands next above or below another on the stave, is called the "second" above or below that note; thus the "second" *above* do^1 is re^1; the second *above* re^1 is mi^1, and so on; so the "second" *below* si^1 is la^1; the "second" *below* la^1 is sol^1, and so on.

131. In a diatonic scale there are five "seconds" containing a *whole tone*,—hence they are called *large seconds*,—and two "seconds," each containing a *half-tone*, and hence called *small seconds*.

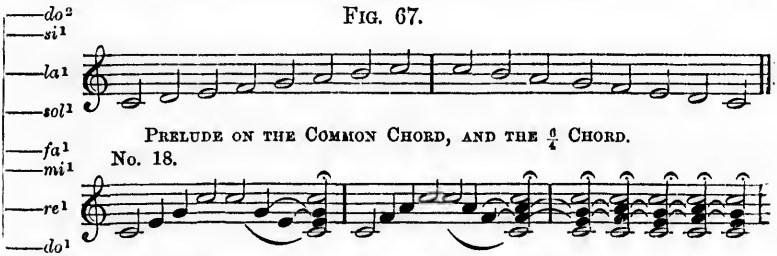
Seconds occupy *dissimilar* positions on the stave.

REMARKS:—It should be understood once for all, that success in teaching Vocal Music must depend upon a thorough knowledge of the subject, both theoretical and practical, on the part of the *teacher himself*, and his aptitude to teach others that which he knows himself.

To know *just enough* of music to teach verbatim from a book, is a very poor alternative. Books, be they ever so minute in treating subjects, can, at the best, give but general outlines of principles; experience must do the rest.

EXERCISES ON THE SECOND. SCALE OF do^1.

FIG. 67.

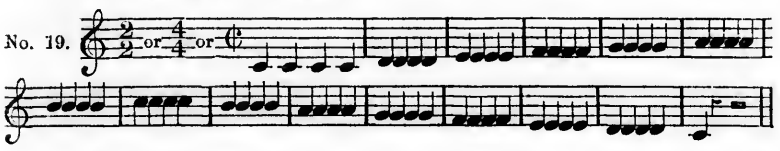


PRELUDE ON THE COMMON CHORD, AND THE $\frac{6}{4}$ CHORD.

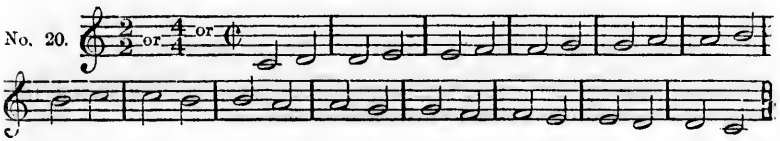
No. 18.

Every exercise must be preceded by beating one preparatory measure in the time which is intended to be taken.

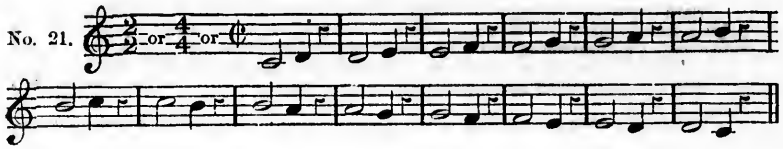
No. 19.



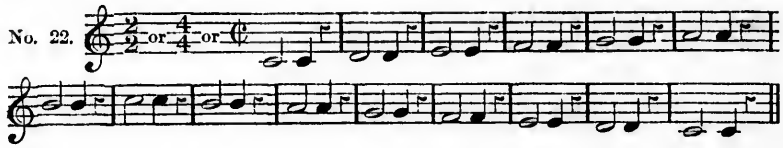
No. 20.



No. 21.

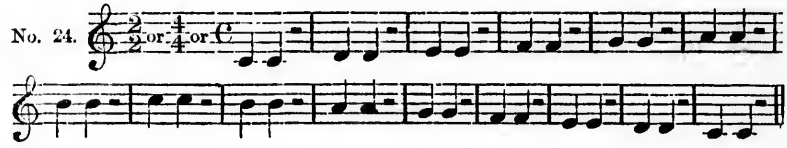


No. 22.

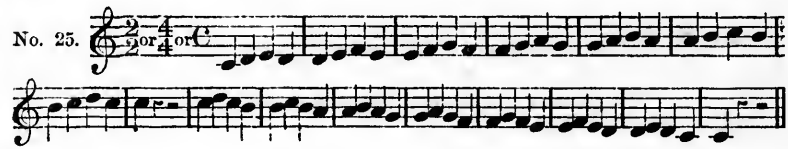


No. 23.

No. 24.



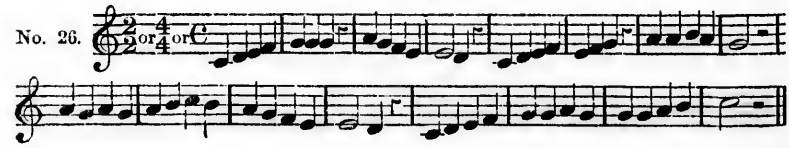
No. 25.



132. A Solfeggio is a piece of music to be *sol-fa-ed*—that is, *syllabically*.

SOLFEGGIO ON THE SECOND.

No. 26.



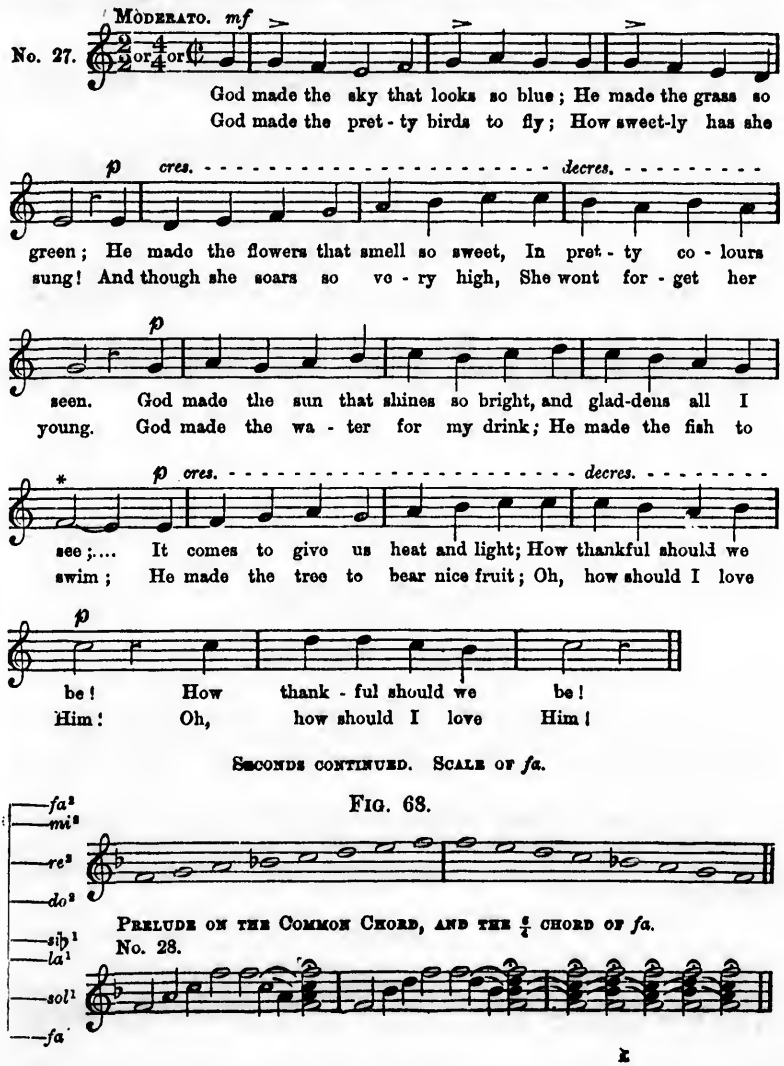
133. A *slur* extending over or under two or more notes of different denominations, shows that such notes are to be sung smoothly to *one syllable*. When two notes only are slurred, as at the word "see"* in the following melody, the accent falls on the first note, and the second note should be made a little shorter than its strict value.

The first measure of No. 27 is an incomplete one, having but one crotchet, on the fourth part. It is usual to place such a number of parts in a final measure, that, with the first incomplete part, they may together make a complete measure.

Independent of the usual preparatory measure, three additional beats will be required before commencing the melody.

MELODY ON THE INTERVAL OF THE SECOND, AND UNISON.

No. 27.



SECONDS CONTINUED. SCALE OF *fa*.

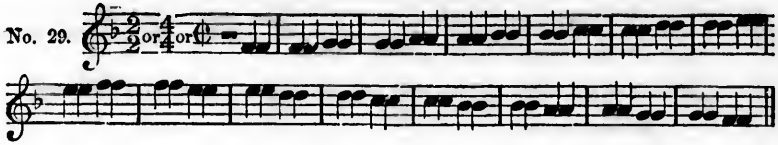
FIG. 68.

PRELUDE ON THE COMMON CHORD, AND THE $\frac{6}{4}$ CHORD OF *fa*.

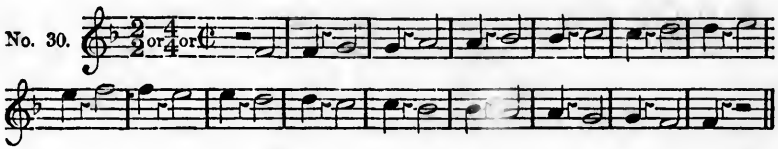
No. 28.

EXERCISES ON THE SECOND CONTINUED.

No. 29.



No. 30.



SOLFEGGIO IN THE SCALE OF *fa*.

No. 31.

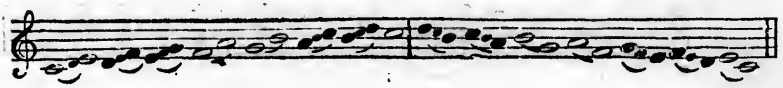
CHAPTER XXIII.

Thirds. Repeats.

134. A note standing *next but one* above or below another note on the stave, is called the "third" above or below that note, and occupies three degrees of the stave. Thus the third *above* do^1 is mi^1, the third *below* do^1 is *la*, and so on.

135. There are three thirds in a diatonic scale, each containing two tones, and hence they are called *large thirds;* and four, each containing a *tone* and a *halftone*, which are called *small thirds.* Thirds occupy *similar positions* on the stave

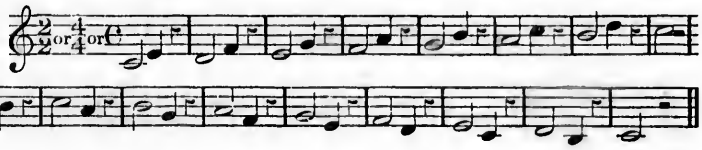
FIG. 69.



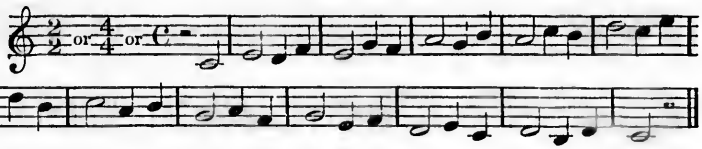
(PRELUDE AS AT No. 19.)

No. 32.

No. 33.

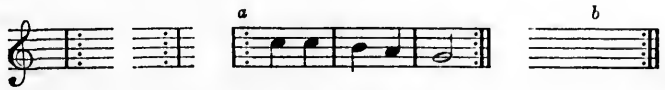


No. 34.



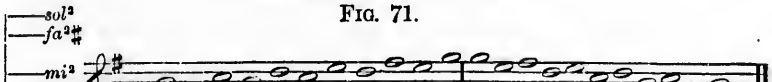
136. Dots placed before a bar signify that the whole or part of the preceding music is to be repeated. When a *portion only* is to be repeated, corresponding dots are placed after a bar at the point at which the repeat takes place, as *a*, Fig. 70. If *the whole* is to be repeated, no corresponding dots are necessary, as at *b*.

FIG. 70.



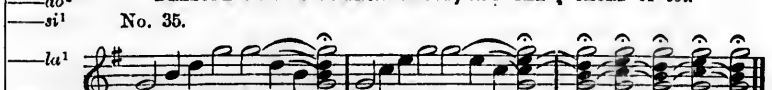
THIRDS CONTINUED. SCALE OF *sol*.

FIG. 71.



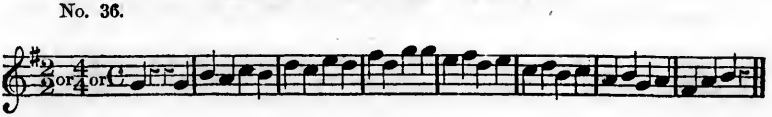
PRELUDE ON THE COMMON CHORD, AND THE $\frac{6}{4}$ CHORD OF *sol*.

No. 35.

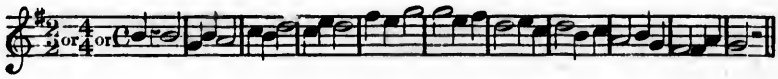


EXERCISES ON THE THIRD. SCALE OF *sol*.

No. 36.

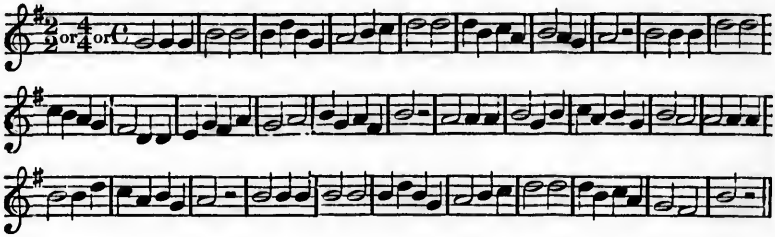


No. 37.



SOLFEGGIO ON THE THIRD, SECOND, AND UNISON.

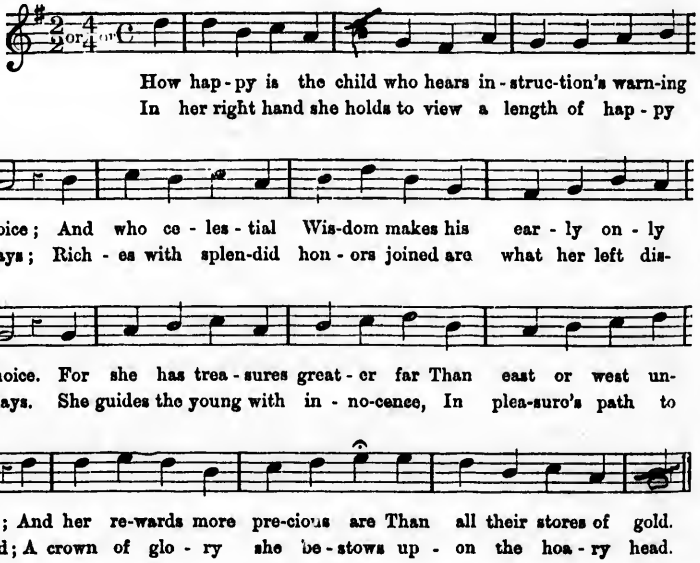
No. 38.



MELODY ON THE INTERVAL OF THE THIRD, WITH THE SECOND AND UNISON.

ALLEGRETTO MODERATO.

No. 39.



☞ For farther practice of the *third* with the *second* and *unison*, refer to "Little by Little," page 30; "Evening Hymn," page 77; "The Wish," page 73; "White Sand and Grey Sand," page 70, in the "Three-part Song Book."

CHAPTER XXIV.

Practice of Quavers.

137. The practice of quavers requires both beating and counting; the beats representing crotchets, and the counts, quavers.

Make four beats, as usual. Keep the hand steadily on the *first beat* while distinctly counting *one—two*, at *equal intervals*; on the second beat count *three—four*; on the third beat *five—six*; on the fourth beat *seven—eight*. Repeat several times as at Fig. 72. When the counting can be done steadily, substitute the syllables as at Fig. 73. Lastly, apply the practice as at Fig. 74, with *numerals* and *syllables*.

FIG. 72.

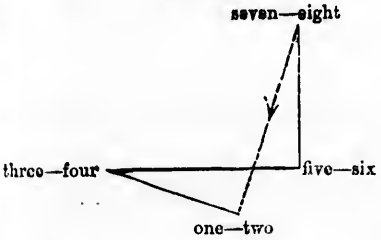


FIG. 73.

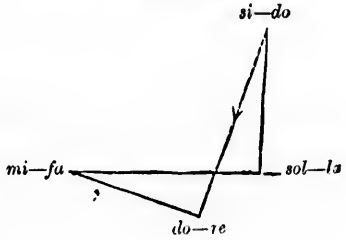
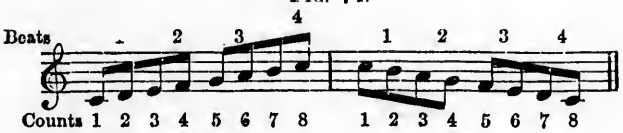
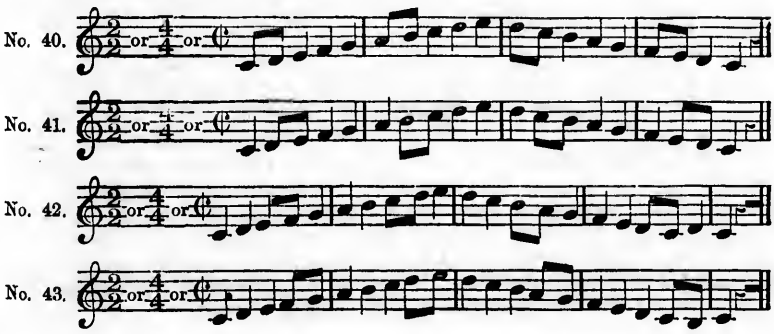


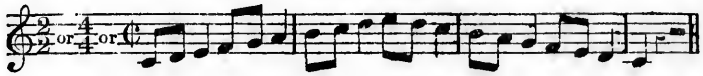
FIG. 74.



EXERCISES FOR THE PRACTICE OF QUAVERS AND CROTCHETS.

Four beats equal to four crotchets.



No. 44. 

No. 45. 

138. All common or equal times of four or two part order, may be beaten with *four* or *two beats*. (See Table VII., A.)

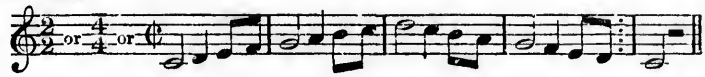
The choice of these depends upon the character and velocity of the music. If the movement consists principally of minims with crotchets, two beats will be preferable, *each beat* being *equal to a minim*.

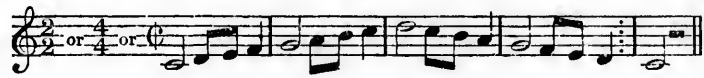
If it consist principally of crotchets with quavers, or of notes of a varied character, four beats are generally found most convenient, *each beat* being *equal to a crotchet*.

The *character of the music* should be consulted *before choosing the beat*.

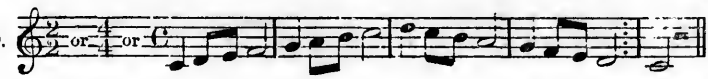
EXERCISES FOR THE PRACTICE OF MINIMS, WITH CROTCHETS AND QUAVERS.

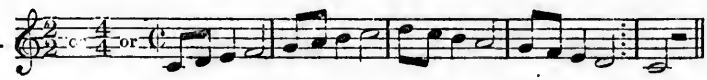
Four beats.

No. 46. 

No. 47. 

No. 48. 

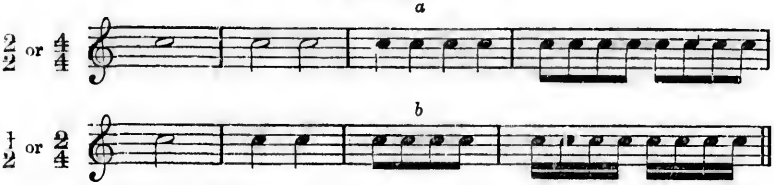
No. 49. 

No. 50. 

No. 51. 

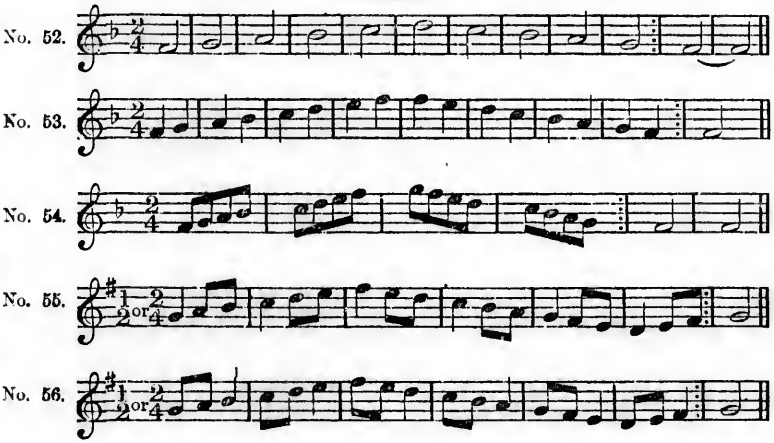
139. Divide the units of $\frac{2}{2}$ or $\frac{4}{4}$ time into two equal parts, and two measures of $\frac{1}{2}$ or $\frac{2}{4}$ time are produced. Divide the *four beats* also into *down* and *up* instead of *down—left—right—up*, and two *sets of beats* corresponding and equal to the *two measures* are produced; and thus $\frac{1}{2}$ or $\frac{2}{4}$ time signifies *half everything* of a $\frac{2}{2}$ or $\frac{4}{4}$ measure, expressed in notes of the next lower denomination: the relative comparative values of the measures at *b* have the same ratios as the measures at *a*.

FIG. 75.

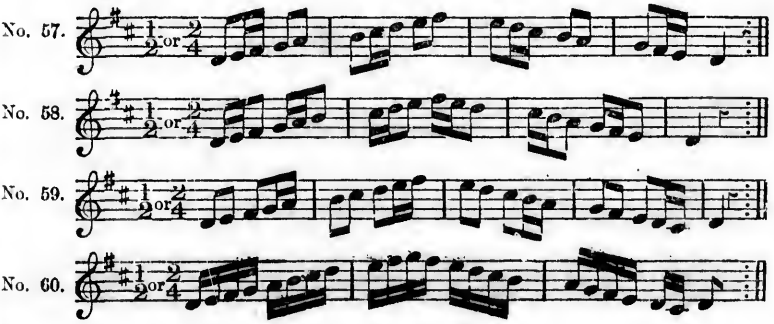


It is evident, therefore, that music written in notes of one denomination may be equally well expressed in notes of the next, or any succeeding lower denomination; and as beats are not absolute, it is also evident that the same musical results would flow from one as from the other.

EXERCISE FOR THE PRACTICE OF CROTCHETS AND QUAVERS IN $\frac{2}{4}$ TIME, WITH TWO BEATS



EXERCISES FOR THE PRACTICE OF QUAVERS AND SEMIQUAVERS IN $\frac{2}{4}$ TIME WITH TWO BEATS.



CHAPTER XXV.

Fourths.

140. A note that stands *next but two* above or below another on the stave is called the "fourth" above or below that note, and occupies four degrees on the stave.

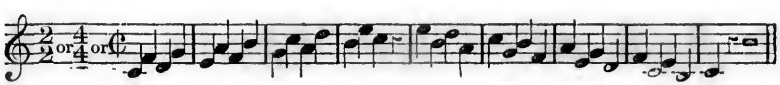
141. There are six "fourths" in a diatonic scale, each containing *two tones* and *one halftone*, and hence called small fourths; and one containing three tones, which is called a large fourth.

Fourths occupy *dissimilar positions* on the stave.

FIG. 76.

(PRELUDE AS AT No. 19.)

No. 61.



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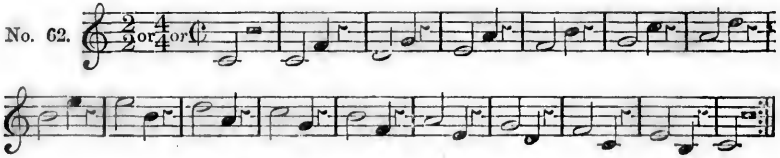
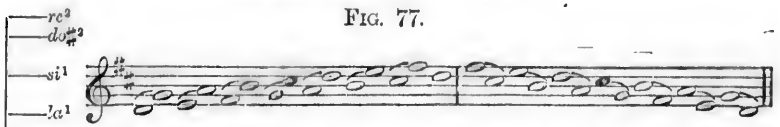


FOURTHS CONTINUED. SCALE OF *re*.

FIG. 77.

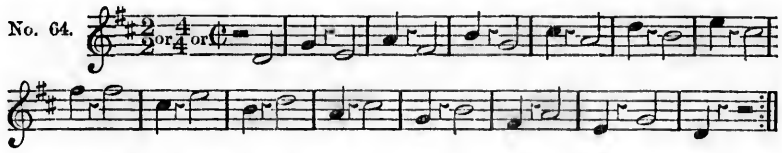


PRELUDE ON THE COMMON CHORD, AND THE $\frac{6}{4}$ IN THE SCALE OF *re*.

No. 63.

EXERCISES ON THE FOURTH IN THE SCALE OF re.

No. 64.



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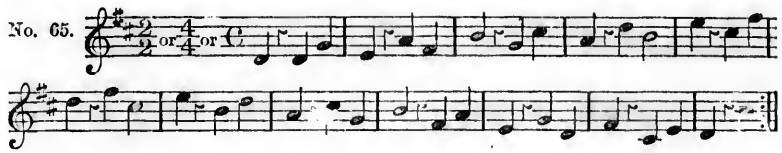
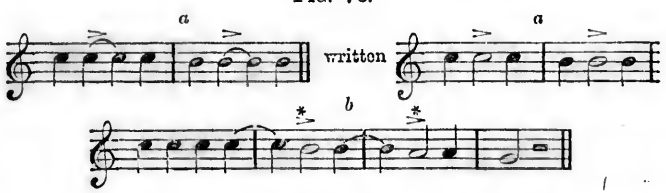


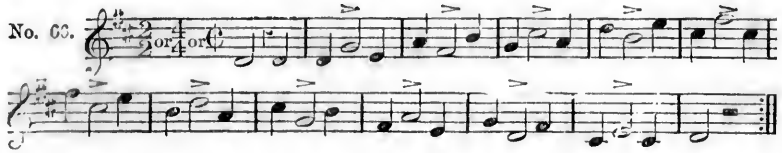
142. A *Syncopation* is the *accented part* of a measure thrown on to a following *unaccented part* in *the same measure*; or, it is a final *unaccented part of a preceding* measure *added to* the succeeding *accented part of a following measure*, and its collective value made one continuous sound. At *a*, Fig. 78, the accent, which naturally falls on the first crotchet, is transferred to the second crotchet, which is joined to the third by a tie, and thus they are made one sound: or as at *b*, where the unaccented note on the fourth part of the measure is carried on to the note on the first part of the following measure, and by the tie they are made one *unaccented* sound, and consequently the following minim at * becomes the *accented* or *syncopated* note.

FIG. 78.



EXERCISES ON SYNCOPATION.

No. 66.



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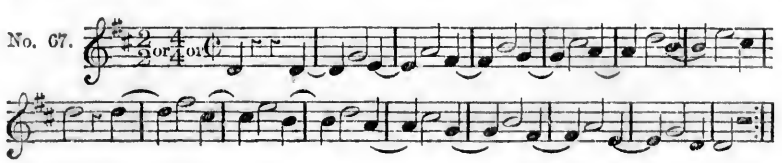
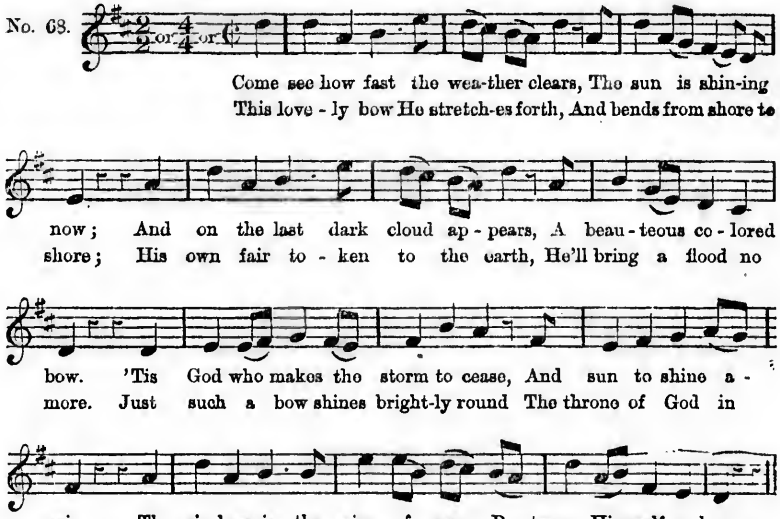


MELODY ON THE FOURTH, WITH THE THIRD, SECOND, AND UNISON.

ALLEGRO MODERATO.

No. 68.



☞ For further practice of the *fourth* with the *third*, *second* and *unison*, refer to "The School Bell," page 61; "Along the Line," page 40; "O how Pleasant to be Roaming," page 11; "Rest," page 3, in the "Three-part Song Book."

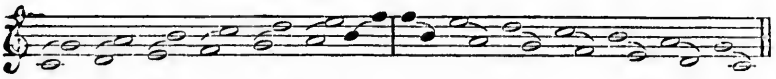
CHAPTER XXVI.

Fifths.

143. A note that stands *next but three* above or below another on the stave, is called a "fifth" above or below that note, and occupies five degrees of the stave; thus the fifth *above* do^1 is sol^1; the fifth *below* do^1 is *fa*, and so on.

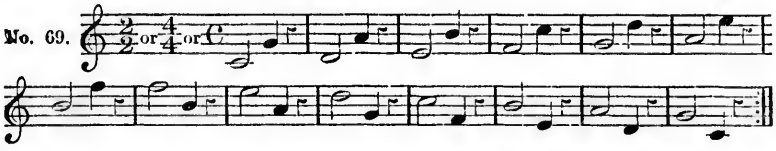
144. There are six "fifths" in a diatonic scale, containing *three tones* and *one half tone*, and hence called *large fifths*; and one containing *two tones* and *two half tones*, which is called a *small fifth*. Fifths occupy *similar positions* on the stave.

FIG. 79.



(PRELUDE AS AT No. 19.)

No. 69.



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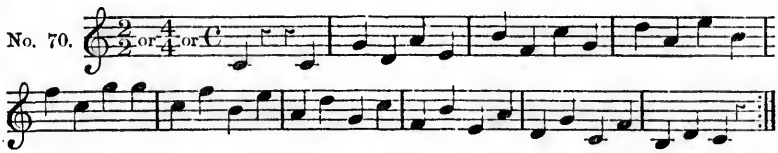
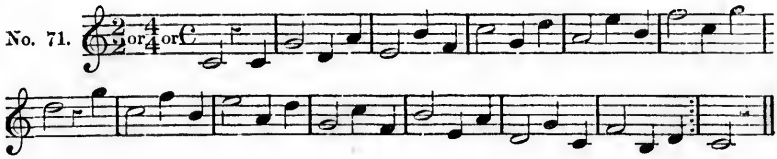
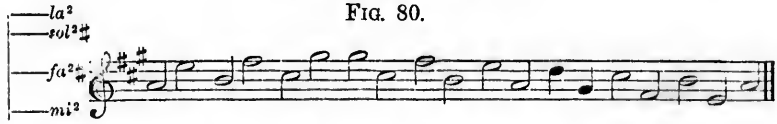


No. 71.



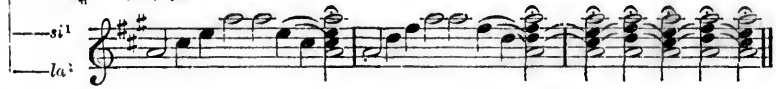
FIFTHS CONTINUED. SCALE OF *la*.

FIG. 80.



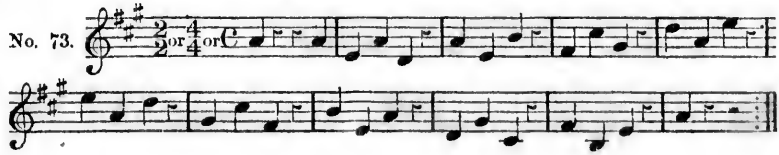
PRELUDE ON THE COMMON CHORD, AND THE $\frac{6}{4}$ CHORD OF *la*.

No. 72.



EXERCISES ON THE FIFTH. SCALE OF *la*.

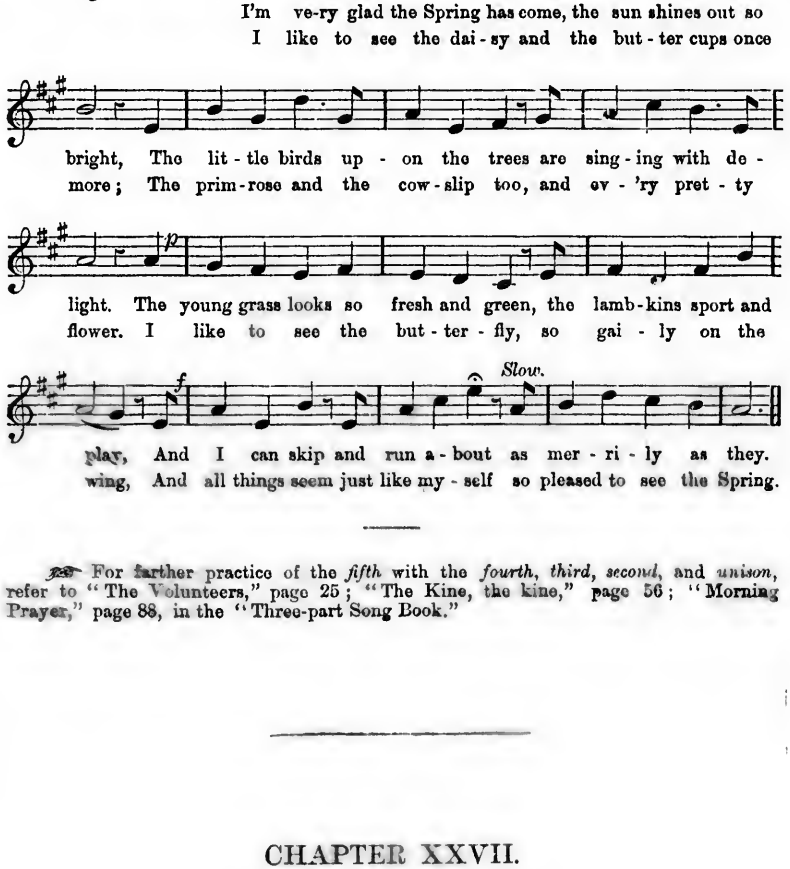
No. 73.



MELODY ON THE FIFTH, WITH FOURTH, THIRD, SECOND, AND UNISON

ALLEGRETTO.

No. 74.



☞ For farther practice of the *fifth* with the *fourth*, *third*, *second*, and *unison*, refer to "The Volunteers," page 25; "The Kine, the kine," page 56; "Morning Prayer," page 88, in the "Three-part Song Book."

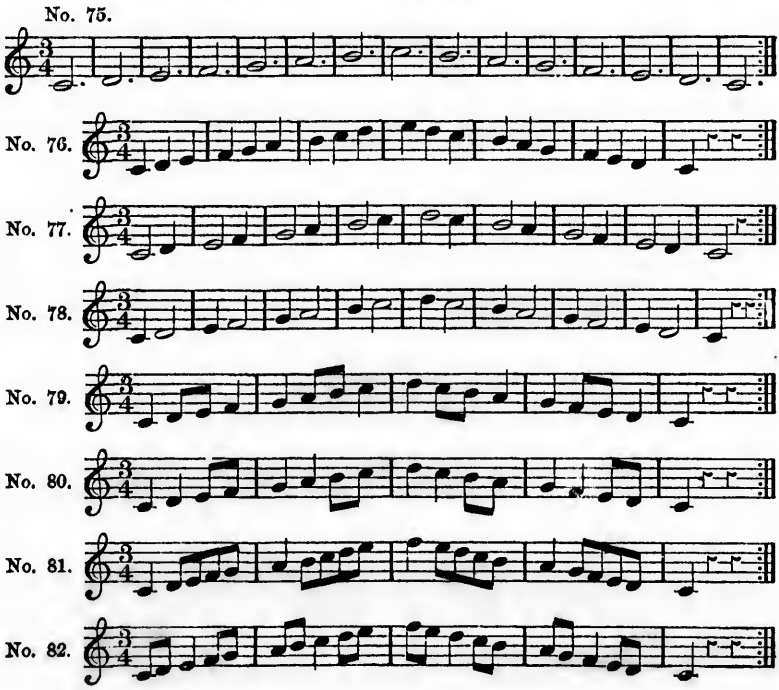
CHAPTER XXVII.

Triple $\frac{3}{4}$ Time.

145. Triple, or three part measures of three crotchets, is expressed by the signature $\frac{3}{4}$. (See Fig. 23, par. 106, as also Fig. 26, and Table VII.)

For directions for beating $\frac{3}{4}$ time, see Fig. 39.

EXERCISES FOR PRACTICE OF CROTCHETS, WITH MINIMS AND QUAVERS.



Sixths.

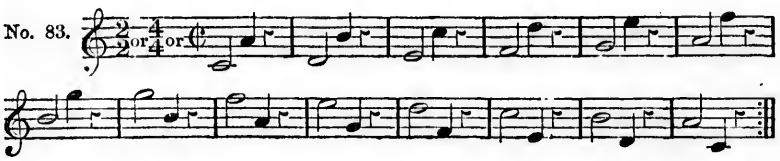
CHAPTER XXVIII.

146. A note standing *next but four* above or below another on a stave is called the "sixth" above or below that note, and occupies six degrees of the stave.

147. There are four "sixths" in a diatonic scale, each containing *four tones* and *one halftone*, and hence called *large sixths*; and three containing *three tones* and *two halftones*, which are called *small sixths*. Sixths occupy *dissimilar positions* on the stave.

EXERCISES FOR THE PRACTICE OF SIXTHS.

No. 83.



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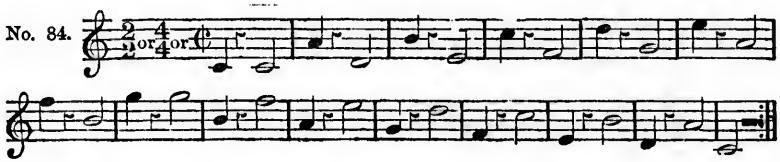

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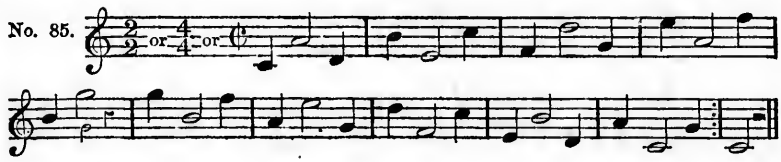
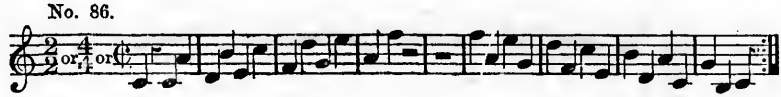


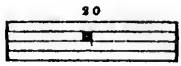
No. 86.



148. When any considerable number of measure rests occur in a piece of music, it is usual to place a *breve rest* (equal to two semibreve rests) upon the third space, with numerals over it to indicate the number of measures intended to be observed as rests.

In such cases the initial count indicates the progressive number of each measure: thus, | *one*—two—three—four | *two*—two—three—four | *three*—two—three—four | and so on to the completion of the total.

FIG. 81.



SIXTH CONTINUED. SCALE OF $si\flat$.

FIG. 82.

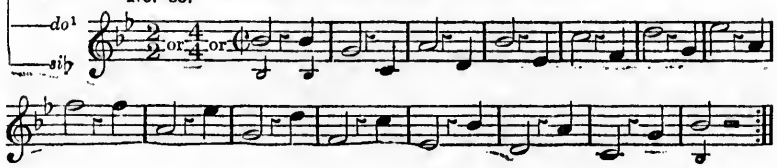
*sib*¹ *la*¹ *sol*¹ *fa*¹ *mib* *re*¹ *do*¹ *sib*

PRELUDE ON THE COMMON CHORD, AND THE $\frac{6}{4}$ IN THE SCALE OF *sib*.

No. 87.

EXERCISES ON THE SIXTH. SCALE OF *sib*.

No. 88.



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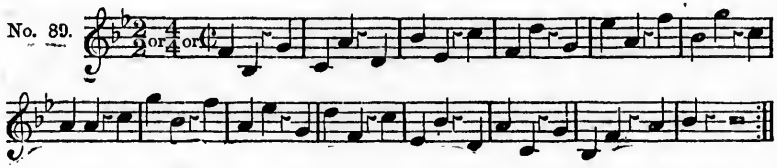
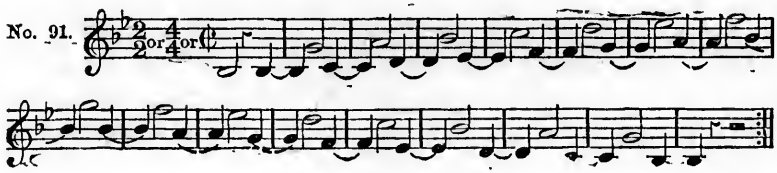


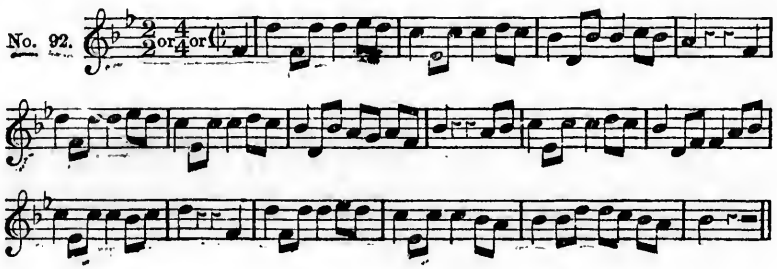
No. 90.

No. 91.



SOLFEGGIO ON THE SCALE OF *sib*.

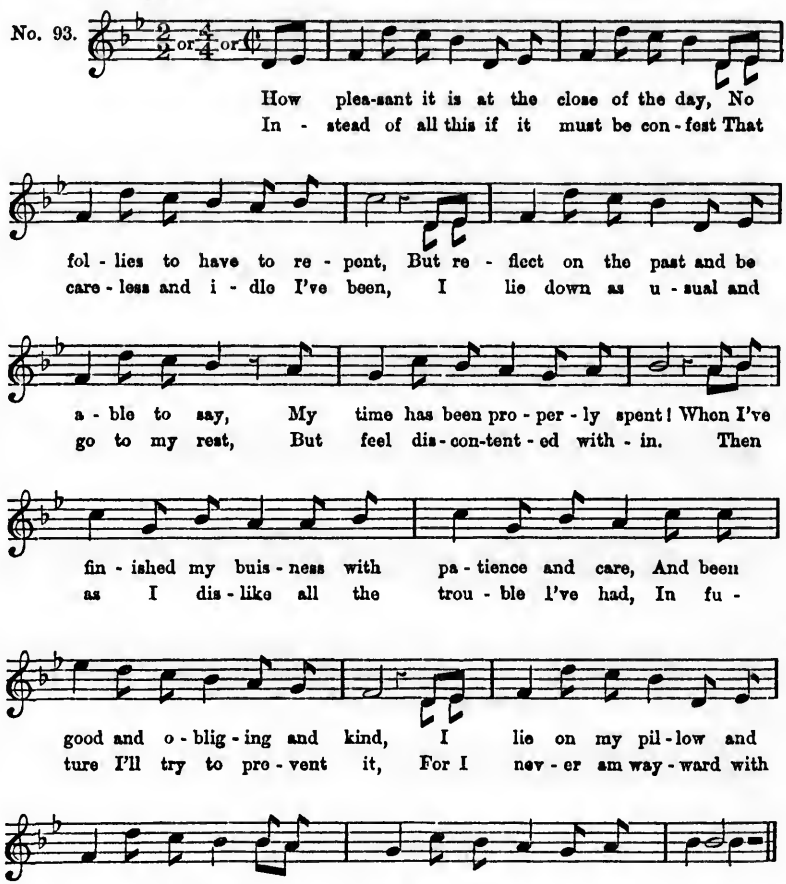
No. 92.



MELODY ON THE SIXTH, WITH FIFTH, FOURTH, THIRD, SECOND, AND UNISON.

ALLEGRETTO.

No. 93.



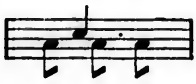
☞ For farther practice of the interval of the *sixth*, with the *fifth*, *fourth*, *third*, *second* and *unison*, refer to "The Violet," page 13; "Employment," page 9; "The Pilot," page 17; "The Skater's Song," page 22; "Be Kind to the Loved Ones at Home," page 36; "Our Country and our Queen," page 48, in the "Three-part Song Book.

DOTTED CROTCHETS.

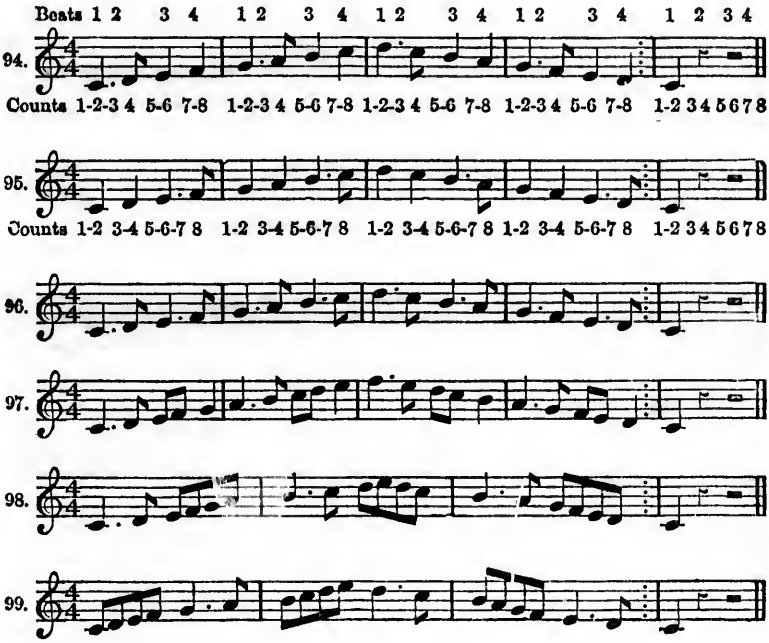
149. A dotted note may be practised by counting a few exercises *vocally* by numerals, until the mental feeling of its value be perceived. Afterwards *sol-fa* with the beat alone.

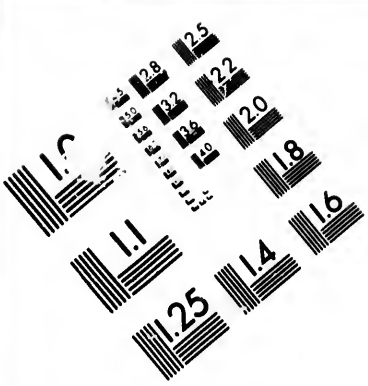
150. A *dot* (·) after a note prolongs its duration by one half; a dotted crotchet is equal to three quavers.

FIG. 83.



EXERCISES FOR THE PRACTICE OF DOTTED CROTCHETS.





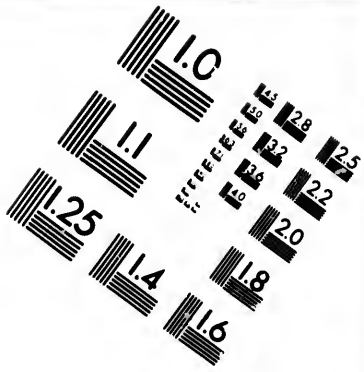
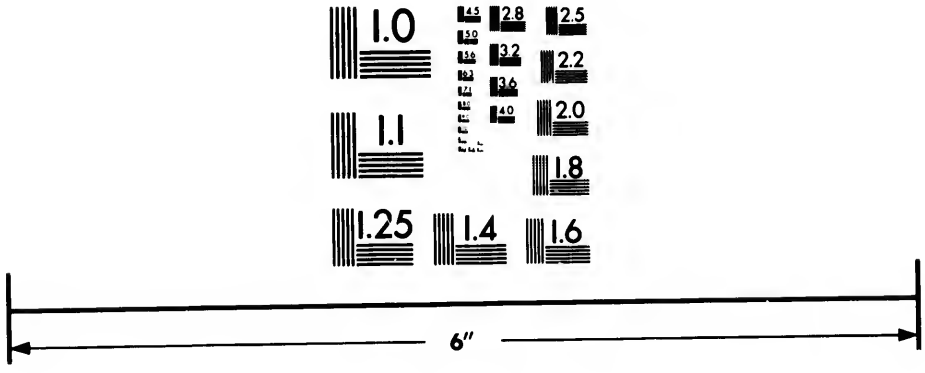
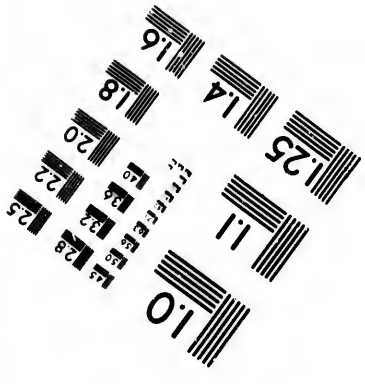
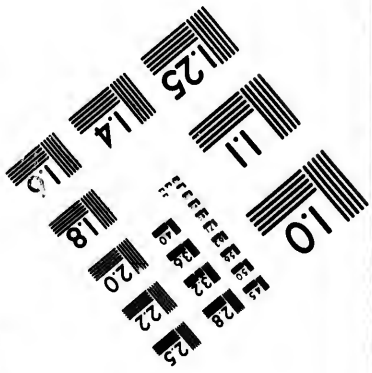


IMAGE EVALUATION
TEST TARGET (MT-3)







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CHAPTER XXIX.

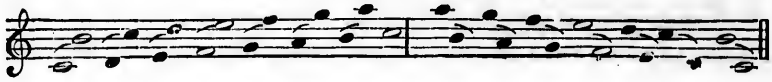
Sevenths.

151. A note that stands *next but five* above or below another on the stave, is called the "seventh" above or below that note, and occupies seven degrees of the stave.

152. There are five "sevenths" in a diatonic scale, each containing *four tones* and *two halftones*, hence they are called *small sevenths*; and two containing *five tones* and *one halftone*, which are called *large sevenths*.

Sevenths occupy *similar positions* on the stave.

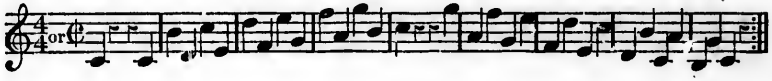
FIG. 84.



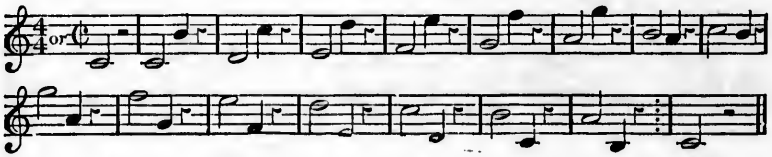
(PRELUDE AS AT No. 19.)

EXERCISES FOR THE PRACTICE OF SEVENTHS.

No. 100.



No. 101.



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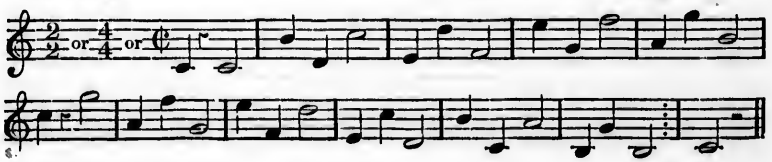
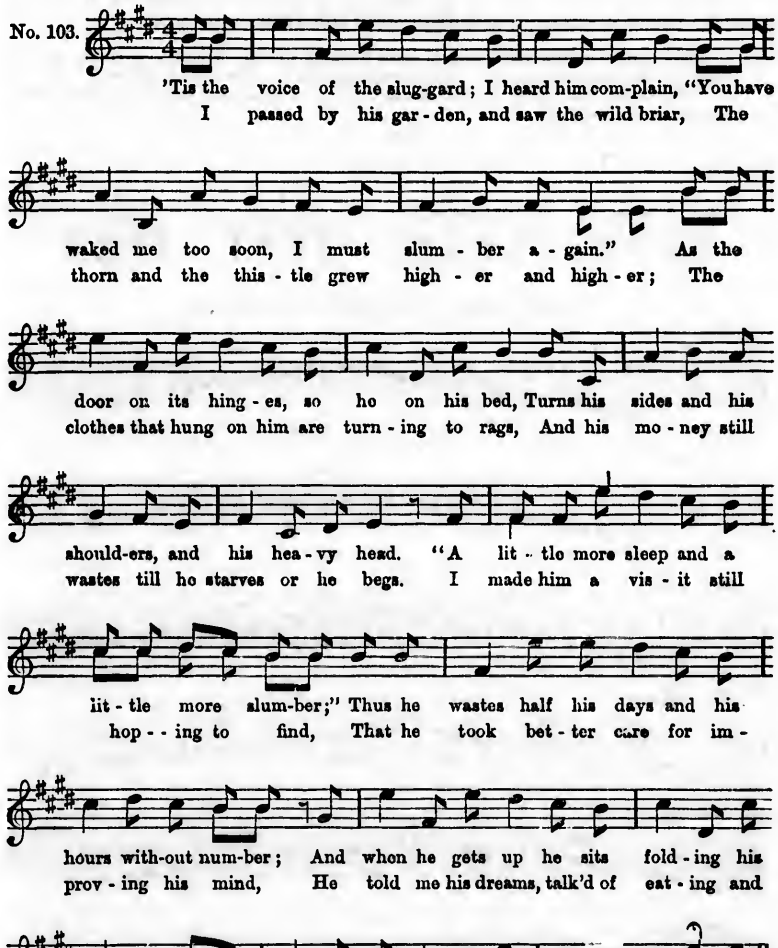


MELODY ON THE SEVENTH, WITH FIFTH, FOURTH, THIRD, SECOND, AND UNISON.

ALLEGRETTO.

No. 103.



THE TIE, OR BIND.

153. The *tie*, or *bind*, is principally used to add length or value to sounds in such positions that could not be otherwise expressed.

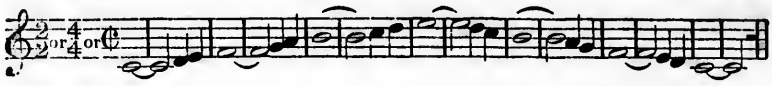
Fig. 85, *a*, represents a sound with a value of five beats; *b*, a sound with a value of two beats and a half. These notes cannot be otherwise expressed.

Two notes occupying some internal part of a measure, are frequently represented as at *c* and *d*.

FIG. 85.

EXERCISES FOR THE PRACTICE OF TIED NOTES.

No. 104.



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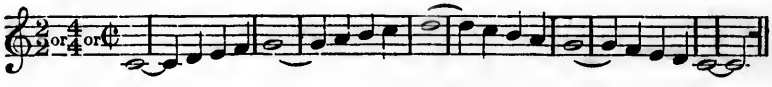

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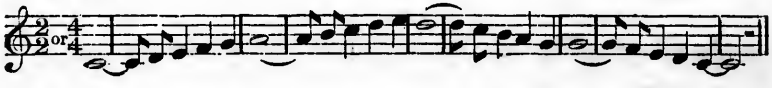

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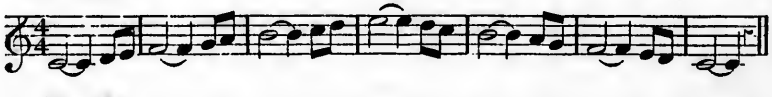

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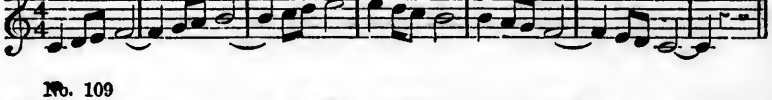
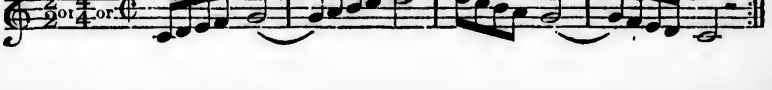


No. 109

No. 110.



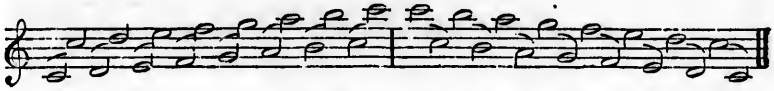
CHAPTER XXX.

Octaves.

154. A note that stands *next but six* above or below another on the stave, is called the "octave" above or below that note, and occupies eight degrees of the stave.

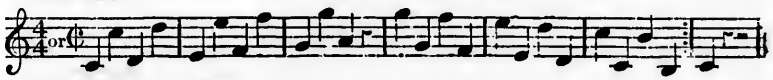
155. Octaves are of one kind only, each containing *five tones* and *two halftones* Octaves occupy *dissimilar positions* on the stave.

FIG. 86.

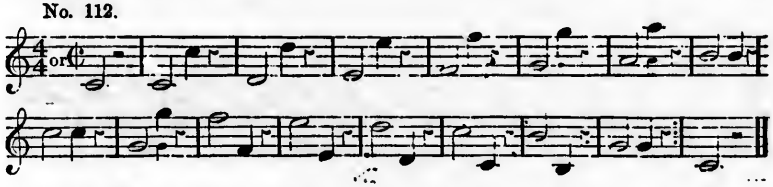


EXERCISES ON THE OCTAVE.

No. 111.

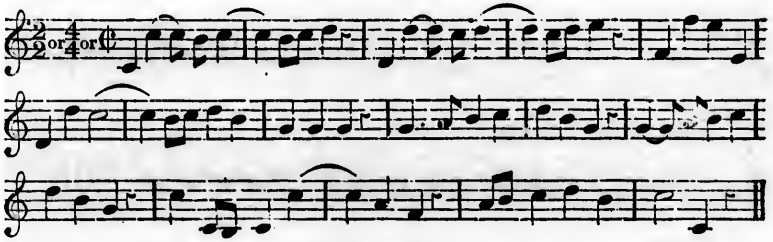


No. 112.



SOLFEGGIO ON THE OCTAVE, WITH THE THIRD, SECOND, AND UNISON.

No. 113.



☞ For farther practice of the *octave*, refer to "The Sea is England's Glory," page 21, in the "Three-part Song Book."

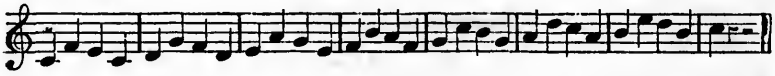
CHAPTER XXXI.

Recapitulatory Exercises on the Intervals.

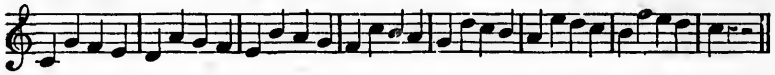
No. 114.

No. 115.

No. 116.



No. 117.



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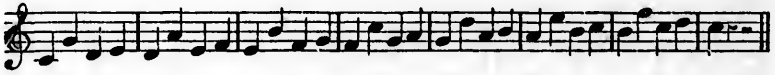
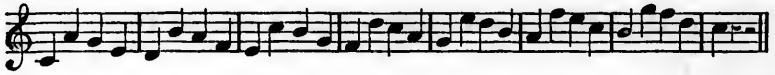
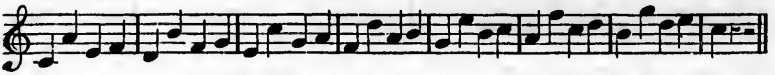


No. 119.

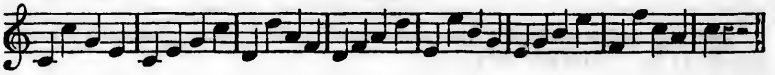


No. 120.



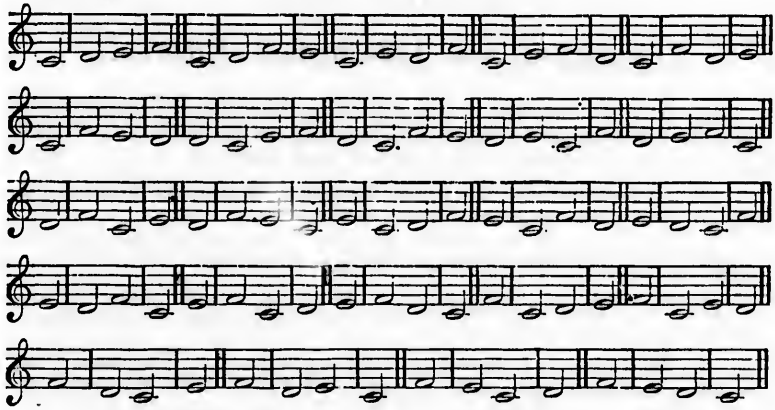
No. 121.

No. 122.



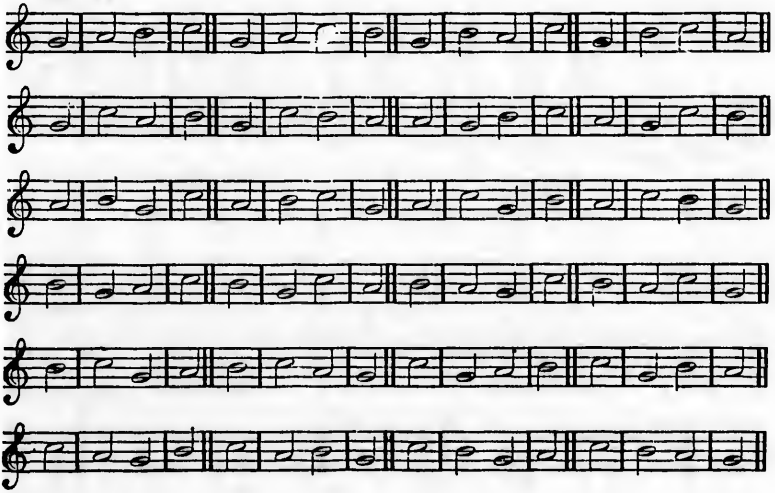
156. The following exercises contain twenty-four forms of the second, third, and fourth, in the lower half of the scale of do^1 : namely do^1, re^1, mi^1, fa^1.

No. 123.



157. Twenty-four forms of the second, third, and fourth, in the upper part of the scale of do^1 : namely, sol^1, la^1, si^1, do^2.

No. 124.



CHAPTER XXXII.

Augmented and Diminished Intervals.

158. The consideration of the Intervals, technically called augmented and diminished, has been postponed to this stage of the practice of intervals, in order to avoid confusion with large and small intervals.

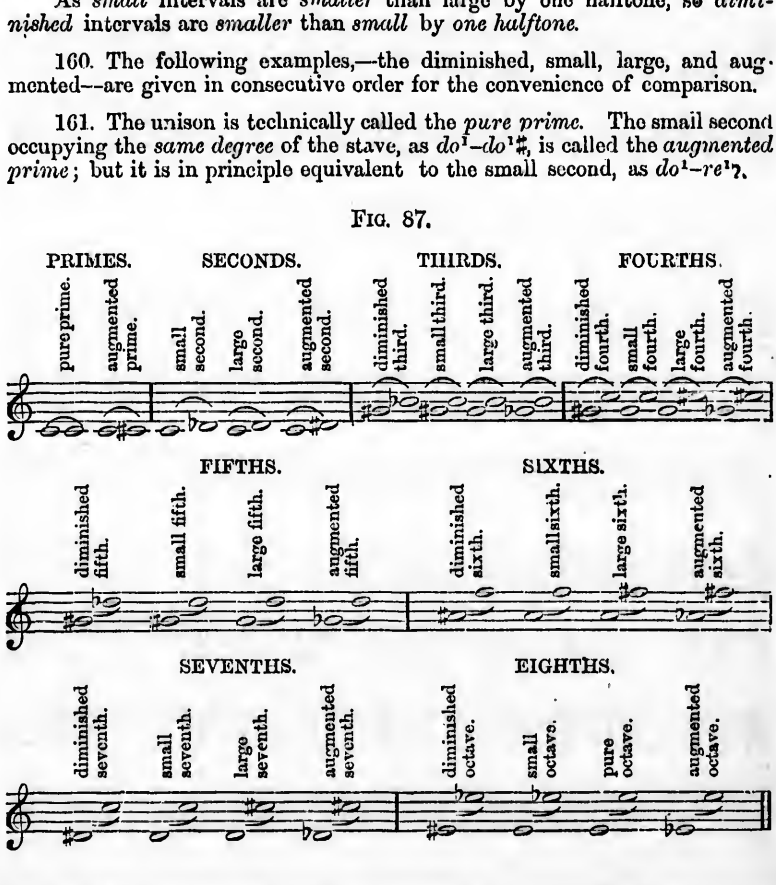
159. As *large* intervals are one halftone larger than small, so *augmented* intervals are *greater* than *large*, by *one halftone*.

As *small* intervals are *smaller* than large by one halftone, so *diminished* intervals are *smaller* than *small* by *one halftone*.

160. The following examples,—the diminished, small, large, and augmented—are given in consecutive order for the convenience of comparison.

161. The unison is technically called the *pure prime*. The small second occupying the *same degree* of the stave, as do^1–$do^1\sharp$, is called the *augmented prime*; but it is in principle equivalent to the small second, as do^1–$re^1\flat$.

FIG. 87.



CHAPTER XXXIII.

The Flat and Sharp as Accidentals. The Natural, or Cancelling Sign.

It will be seen on reference to the diatonic scales, Table III., that in each scale thereof there are five unappropriated or omitted sounds as compared with the chromatic scale.

The five unappropriated sounds of the scale of do^1 are: $do^1\sharp$ or $re^1\flat$,—$re^1\sharp$ or $mi^1\flat$,—$fa^1\sharp$ or $sol^1\flat$,—$sol^1\sharp$ or $la^1\flat$,—and $la^1\sharp$ or $si^1\flat$.

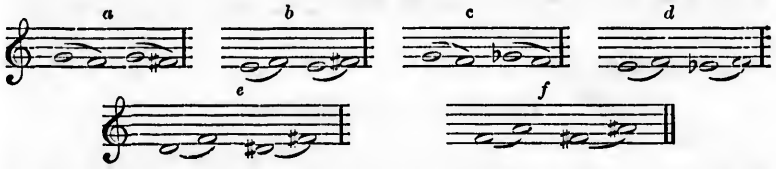
The five unappropriated sounds of the scale of re^1 are: $re^1\sharp$ or $mi^1\flat$,—fa^1,—$sol^1\sharp$ or $la^1\flat$,—$la^1\sharp$ or $si^1\flat$,—and do^2.

The five unappropriated sounds of the scale of fa^1, are: $fa^1\sharp$ or $sol^1\flat$,—$sol^1\sharp$ or $la^1\flat$,—si^1,—$do^2\sharp$ or $re^2\flat$, $re^2\sharp$ or $mi^2\flat$, and so on through the remaining sharp or flat keys of the diatonic scales.

Any one of these unappropriated sounds, when introduced into a musical composition, is used principally for effect.

Their effects upon the *contents* of an interval is to make *small* intervals *large*, and *large* intervals *small*: and when the *same sign* is applied to the two sounds inclusive alike, they cause *small* intervals to remain *small*, and *large* intervals to remain *large*; thus at *a*, Fig. 88, the large second is made small; at *b*, the small second is made large, by the use of the sharp; at c and *d* the same results follow by the use of the *flat*; at e the small third remains small, and at *f* the large third remains large.

FIG. 88.



EXERCISES FOR THE PRACTICE OF THE FIVE ACCIDENTALS.

162. Two halftones occupying two *successive degrees* (par. 46) of the stave, as $do^1\sharp$—re^1, $re^1\sharp$—mi, $fa^1\sharp$—sol^1, and so on, by way of distinction, are called *diatonic halftones*; while *the same series of sounds* represented as $re^1\flat$—re^1, $mi^1\flat$—mi^1, $sol^1\flat$—sol^1, and so on, which occupy the *same degrees* of the stave, are called *chromatic halftones*.

To intone a chromatic scale correctly, without instrumental aid, is a very difficult matter, and its attainment is the result of a very considerable amount of application.

But its attainment in its entirety is not a necessity, for rarely is any practical use made of it for vocal purposes.

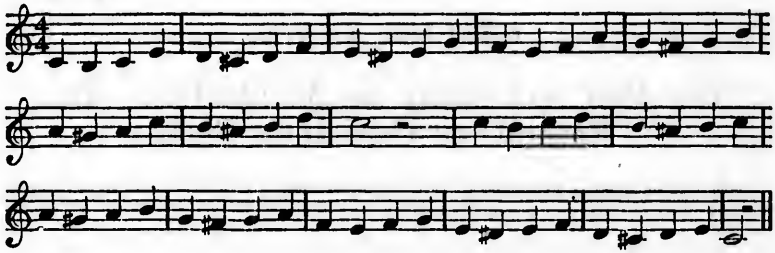
Short chromatic passages, however, consisting of two or three halftones, are of frequent occurrence in modern composition, and ability to sing them is consequently indispensable.

The following exercises, intended for the practise of halftones as *accidentals*, are first given in the diatonic form, and repeated in the chromatic; the same in fact, though differently represented.

Chromatic passages in the diatonic form are more *simple* in appearance, and much easier to sing; but it is desirable to study them both ways.

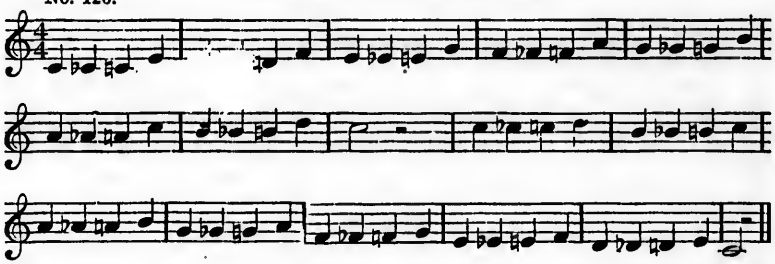
EXERCISE IN THE DIATONIC FORM.

No. 125.



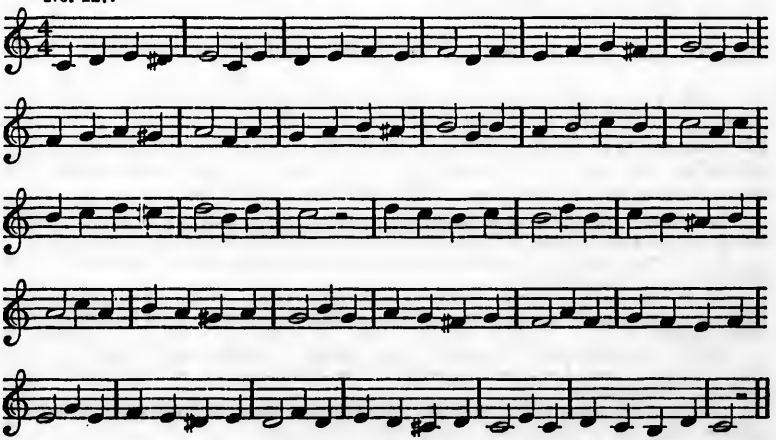
THE SAME IN THE CHROMATIC FORM.

No. 126.



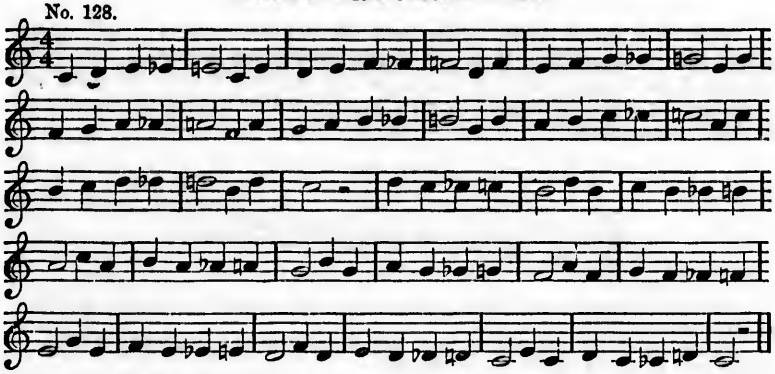
EXERCISE IN THE DIATONIC FORM.

No. 127.



THE SAME IN THE CHROMATIC FORM.

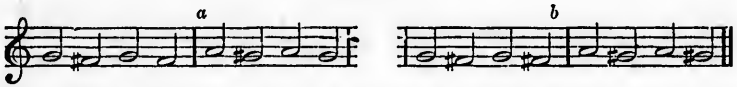
No. 128.



Great assistance in the study of the foregoing examples will be derived by carefully tracing them on the chromatic diagram, Table III.

163. An accidental affects not only the note before which it is placed but also all the notes of *the same name* in the *same measure*, unless contradicted by another sign. The passage in Fig. 89, *a*, is to be sung as at *b*.

FIG. 89.

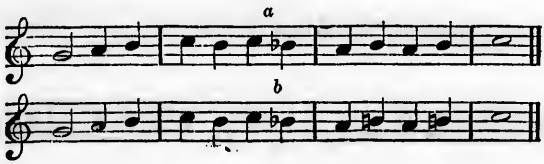


164. When the first note in a following measure is identical with the last note in a preceding measure, previously affected by an accidental, such accidental applies to the following note without any repetition of the sign: thus the passage in Fig. 90, *a* * *, is to be sung as at *b* * *.

FIG. 90.

165. A note in a following measure, of the same name as a note affected by a sharp or a flat on the last part of a preceding measure, but intercepted by a note of another denomination, does not require the cancelling sign before it: thus the passage at Fig. 91, *a*, is sung as at *b*.

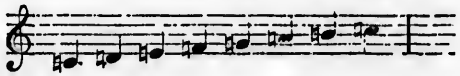
FIG. 91.



THE NATURAL, OR CANCELLING SIGN.

166. In addition to the sharp and the flat, we have a third symbol called the *natural* (♮). It is the characteristic sign by which the eight sounds of the diatonic scale of *do* (commonly called the *natural* scale) are described, in contradistinction to all the other scales having sharps or flats in their construction.

FIG. 92.



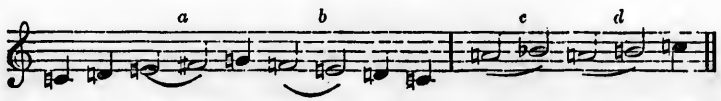
Unlike the sharp or flat, the natural has the double power of *cancelling* any sharp or flat, either *accidental* or *essential*.

By its use an interval may be made less by a halftone, by cancelling a sharp, or made larger by a halftone, by cancelling a flat.

Thus at *b*, Fig. 93, the fa^1, which at *a* was accidentally made $fa^1\sharp$, is restored to its original position in its scale at *b*, and the interval, which at *a* was a *large second*, becomes a *small second* at *b*, by cancelling the ♯.

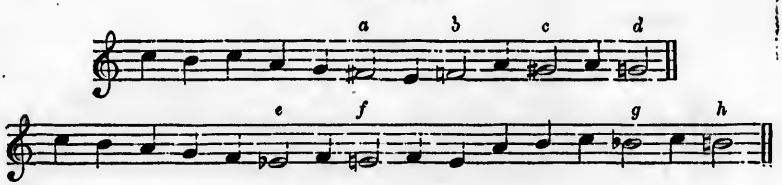
At *d*, the *si*, which was accidentally made flat at c, a *small second*, becomes a *large second* at *d*, by cancelling the ♭.

FIG. 93.



Thus the accidentals $fa^1\sharp$ and $sol^1\sharp$ at *a* and c in the following figure, are cancelled at *b* and *d*; the accidentals $mi\flat$ and $si\flat$ at *e* and *g*, are cancelled at *f* and *h*.

FIG. 94.



SOLFEGGIO ON THE NATURAL, AS A CANCELLING SIGN

No. 129.

CHAPTER XXXIV.

Modulation.

167. There are four sounds of a diatonic scale distinguished by given names, which bear certain relations to the key-note.

The first sound of a scale is called the	Tonic.
The fourth " " "	Subdominant.
The fifth " " "	Dominant.
The sixth " " "	Related Minor.
The seventh " " "	Leading Note.
The eighth " " "	Octave.

Thus in the scale of *do*^{1} :

do^1, the first note, is called the	Tonic.
fa^1, the fourth, " "	Subdominant.
sol^1, the fifth, " "	Dominant.
la^1, the sixth, " "	Related Minor.
si^1, the seventh, " "	Leading Note.
do^2, the eighth " "	Octave.

REMARKS:—All the preceding Exercises on Intervals, Solfeggi, and Melodies have been confined exclusively to the sounds belonging to the respective scales in which they are written.

But compositions, be they ever so short, are rarely confined exclusively to the scale indicated by its signature. Departures into other scales take place: that is, supposing a composition to be written in the scale of *do*, the composer at his option may depart from that scale, and by given rules *modulate* at will into the scale of the dominant (*sol*), the subdominant (*fa*), or its related minor (*la*), and return again by given rules into the original scale.

This liberty of changing scales in the course of a composition is called *modulation*, and is employed to give a greater variety and scope to the genius of the composer than could be obtained by a continuation in the same scale throughout all its phrases.

168. By modulation is meant a change of key or scale *in the course* of a musical *phrase*, by which "a step is taken into the realm of another key."

In order to attune the ear to a change of key in the course of a phrase, other sounds, bearing a certain relation to the new key, must precede or announce it.

169. A change of key may also take place at the *commencement* of any of the internal phrases of a composition, but the *final* phrase is always in the principal key.

170. The key in which a composition begins, and mostly continues, is called the PRINCIPAL KEY.

171. Modulations from a principal key generally proceed into those scales most nearly related to it: *i. e.*, into those scales having the least number of sharps or flats in their construction. Thus, of the sharp keys, the

key of *sol* is most nearly related to *do*, because it has only *one sharp*; and the scale of *fa* is as nearly related, because it has only *one flat* in its construction.

172. The order of modulation from a principal key is:—

1. Into its DOMINANT, - - through its modulating - - *sharp fourth.*
2. Into its SUBDOMINANT, - ,, ,, - - *flat seventh.*
3. Into its RELATED MINOR, ,, ,, - - *sharp fifth.*

REMARKS:—The ability to appreciate the effect of modulation, especially into the more remote keys, is purely the result of considerable application and experience in the practice of harmonized music. All that theory can do on the subject is, to present to the *eye* in as simple a manner as the subject will admit, the course of the *movements* of the parts by which means it is effected; the education of the ear, by application and observation in its practise, must accomplish the rest.

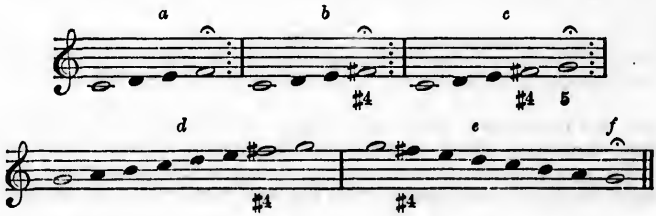
EXAMPLES IN MODULATION FROM A PRINCIPAL KEY WITH *SHARPS* INTO ITS DOMINANT.

REMARKS:—Great care and clearness are necessary on the part of the teacher, in his method of illustrating this part of the subject, in order to convey to the mind of his pupils a correct impression, or *feeling*, of modulation.

As prefatory exercises on modulation, simply in the progressions of scales, the following, or some similar course is recommended. Ascend the principal scale as far as the fourth, as at *a*, Fig. 95, and pause upon the sound *very firmly*; repeat it several times; then introduce the sharp fourth, which in the scale of do^1 is $fa^1\sharp$; intone do^1, re^1, mi^1, $fa^1\sharp$, as at *b*, pausing firmly on $fa^1\sharp$ sufficiently long to attune the ear to the sound; repeat the passage several times, ultimately gliding smoothly, but firmly, to *sol*, as at *c*; repeat this several times. The ear will now be attuned to the new tenic, *sol*, the dominant being previously announced by the preceding sharp fourth.

Lastly, sing the new scale of *sol* firmly, as at *d*, being careful to intone the $fa^1\sharp$ (the leading seventh) firmly; descend the new scale, as at *e*, and pause upon its tonic at *f*. The ear will now become attuned to the new key, and all impressions of the former principal key will have become obliterated.

FIG. 95.



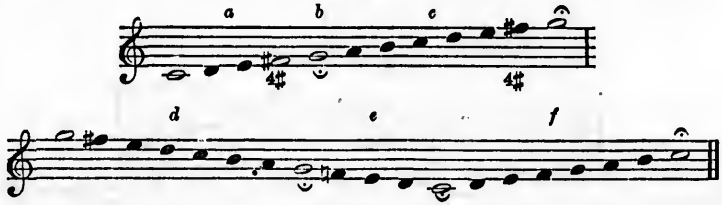
a—do^1 is the tonic of *principal* key.
b—$fa^1\sharp$ is the *leading* or *announcing* note of the new scale, $4\sharp$ ($fa^1\sharp$).
c—sol^1 is the *dominant* of principal key, and *tonic* of new scale.
d e—new scale of dominant, *sol*, ascending and descending.

173. A *return* from a dominant scale into the scale of its principal, is made in all scales with sharps, by means of the *natural* which contradicts or cancels the modulating sharp, or large fourth.

The following examples show the modulations from five *principal* keys, into their respective *dominants*, and the change back again into their principals.

MODULATION FROM THE SCALE OF *do*^{1} INTO *sol*^{1}, ITS DOMINANT, AND RETURN TO ITS PRINCIPAL.

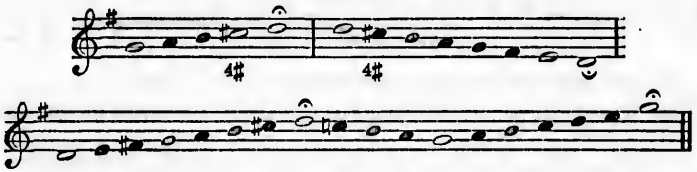
FIG. 96.



a—is the ascending modulating cadence from the tonic to the principal.
b—is the tonic of the dominant.
c—is the ascending scale of the dominant, in which the modulation is completed, and *fa*^{1}♯, the sharp fourth of *do*^{2}, becomes the seventh of *sol*^{2}.
d—is the descending scale of the dominant.
e—is the restoring descending cadence, in which *fa*^{1}♯ is cancelled by the natural.
f—is the principal key restored.

MODULATION FROM THE SCALE OF *sol*^{1} INTO *re*^{2}, ITS DOMINANT, AND RETURN TO ITS PRINCIPAL.

FIG. 97.



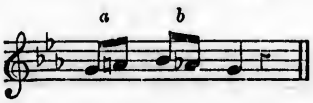
It will be seen that the same uniform principles rule modulations into the dominants of all sharp scales.

☞ Modulations into the remaining sharp scales are left as exercises for the pupils.

EXAMPLES OF MODULATIONS FROM PRINCIPAL KEYS WITH *FLATS*, INTO THEIR DOMINANTS, AND RETURNS.

174. In the modulations from principal sharp keys into their dominants, the *sharp* was the *accidental*, and the *natural* the *cancelling* sign. In scales with flats, this order is inverted; the *natural* becomes the *accidental*, and the *flat* the *cancelling* sign, as at Fig. 98, where at *a*, *la*^{1}♮ becomes the 4^1♯ to the key note or tonic of *mi*^{1}♭, which is cancelled by the flat at *b*.

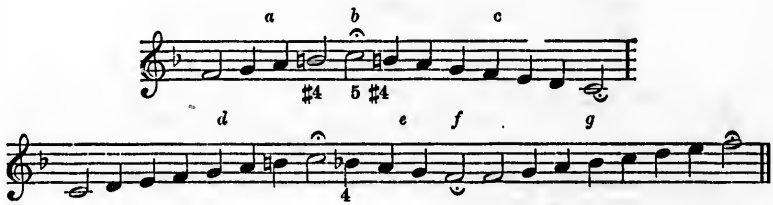
FIG. 98.



The following examples show the modulations from two principal keys with flats into their respective *dominants*, and the change again into their principals.

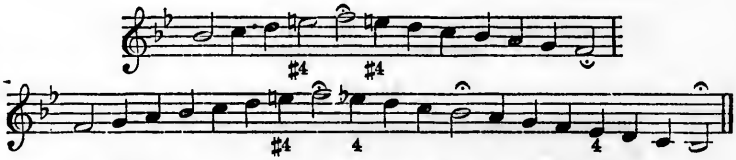
MODULATION FROM THE SCALE OF *fa*[1] INTO *do*[1], ITS DOMINANT, AND RETURN.

FIG. 99.



MODULATION FROM THE SCALE OF *si*♭ INTO *fa*, ITS DOMINANT, AND RETURN.

FIG. 100.



The same uniform rule extends to all the modulations in flat scales.

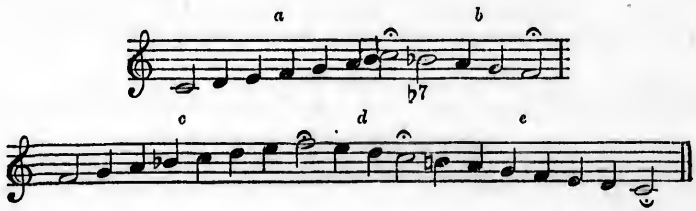
☞ Modulations into the remaining flat scales are left as exercises for the pupils.

EXAMPLES IN MODULATION FROM A PRINCIPAL KEY INTO ITS SUBDOMINANT.

175. Modulation from a principal key into its subdominant is effected by what is technically called its *flat seventh*, that is, the seventh, which in all scales is a *large* seventh, is reduced to a *small* (or flat) seventh descending to the *subdominant*, when the modulation is completed.

MODULATION FROM THE SCALE OF *do*[1] INTO *fa*[1], ITS SUBDOMINANT, AND RETURN TO ITS PRINCIPAL.

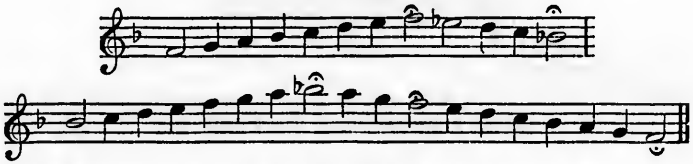
FIG. 101.



a—is the ascending scale of the principal.
b—is the cadence by $si^1\flat$ (flat seventh of principal) to fa^1, its dominant.
c—is the scale of the subdominant, in which the modulation is complete.
d—is the descending cadence to the tonic of the principal.
e—is the scale of the principal restored by the cancelling sign on si^1.

MODULATION FROM THE SCALE OF fa^1 INTO $si^1\flat$, ITS SUBDOMINANT, AND RETURN TO ITS PRINCIPAL.

FIG. 102.



The same uniform rule extends to all modulations into subdominants.

☞ Modulations into the remaining subdominants are left as exercises for the pupils.

CHAPTER XXXV.

Forms and Construction of Minor Diatonic Scales.

REMARKS :—No branch of the science of music is presented to the musical student in so unsatisfactory a state as the treatment of the minor diatonic scale, arising from the disagreement among theorists as to what shall be the progression of the successive degrees of a minor scale.

There are no less than nine forms of the minor scale, six of which belong exclusively to Church music.

It would be out of place in this work to enter upon any discussion of the comparative merits of all these forms. Three of them, however, require to be noticed.

In the arrangement of the lower portion of the minor scale, 1 to 4, all theorists are agreed; namely, 1 to 2 a tone—2 to 3 *a halftone*—3 to 4 a tone, alike in the *descending* as the ascending. This fixed invariable minor, or small third, is the distinguishing characteristic of the minor scale, and was called by the old writers "the mode (scale) with the *lesser* third," as the major scale was called "the mode (scale) with the greater third." Fig. 103.

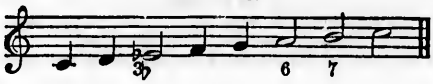
The order of the intervals of a major scale are uniform, ascending and descending. Not so with the minor, the intervals of which vary in several relations in the three more generally received forms.

It is in the order of succession of the four sounds of the upper portion, 5—6—7—8, of the minor scale that theorists so widely disagree.

Mr. Hullah, in his "Manual of Singing," contends for the four following conditions to the succession, 5—6—7—8 of an descending minor scale, Fig. 104 :

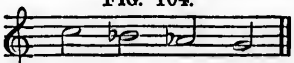
(1) a leading or *sharp seventh* to the tonic.
(2) a *halftone* from 7 to 8.
(3) a *major* sixth.
(4) no second greater than a major, otherwise it cannot be a *diatonic* scale.

FIG. 103.



He also contends for the following form of the minor *descending* scale :

FIG. 104.

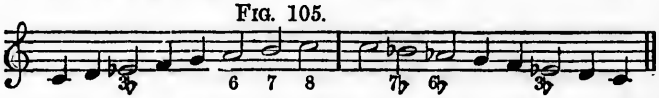


(1) a *tone* from 8 to 7.
(2) a *tone* from 7 to 6.
(3) a *halftone* from 6 to 5.

COMPLETE FORM ASCENDING AND DESCENDING.

FIG. 105.

Form A.



Dr. Marx (General Musical Instructor) observes of this form,—"No doubt these successions of tones (sounds) are softer than those with the extreme (augmented) second, but the *idea* of *one form* is entirely destroyed. The sixth is as well $la^1\flat$ (ascending) as la^1; the seventh, $si^1\flat$ as si^1; therefore the pretended scale should be declared to be a double formation."

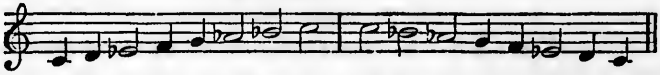
In addition to its greater smoothness, Form A. has the merit of preserving a uniformity of scale relationship.

A second form of the minor scale is as follows :

(1) a *halftone* from 5 to 6.
(2) a *tone* from 6 to 7.
(3) a *tone* from 7 to 8.

FIG. 106.

Form B.



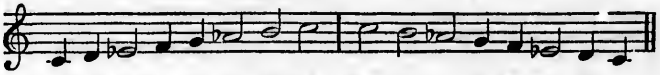
The difference between Forms A. and B. is, that the ascending form is the same as the descending. This is the form contended for by Dr. Marx.

A third form is as follows :

(1) a *halftone* from 5 to 6.
(2) a *tone* and a *half* from 6 to 7.
(3) a *halftone* from 7 to 8.

FIG. 107.

Form C.



Form A. has a key relationship, namely, *mi*♭ major.
Form B. has the same key relation as Form A.
Form C. has no key relationship.
Form A. is more generally adopted in England, and partially in the United States, and is the one adopted in this work.
Forms B. and C. are more generally used by German theorists. Classical writers occasionally use them all.

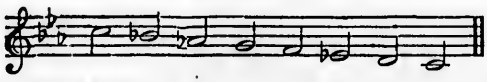
CHAPTER XXXVI.

Signatures of Minor Diatonic Scales. Related Minors and Majors.

176. The signatures and successions of the minor scales of Form A. are derived exclusively from the *descending* form of their related majors.

DESCENDING FORM OF do^1 MINOR.

FIG. 108.



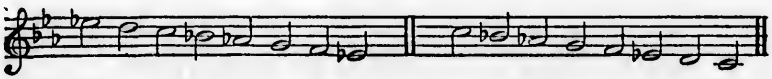
The essential flats of the descending scale of do^1 minor, have the self same notes flat as the essential flats of $mi^1\flat$ major; and hence, because these flats are common to both scales (though falling in a different order in their relative positions to one another) they are said to have a *relation* to each other, and are accordingly called "related scales." But beyond this, all relationship or similarity ceases.

177. Every major scale has its related minor scale, and, by inversion, every minor scale has its related major.

178. The tonic, or key note, of a minor scale is invariably a small third *below*, or (which is the same thing) a large sixth *above* the tonic of its related major.

FIG. 109.

MAJOR SCALE OF $mi^1\flat$. MINOR SCALE OF do^1.

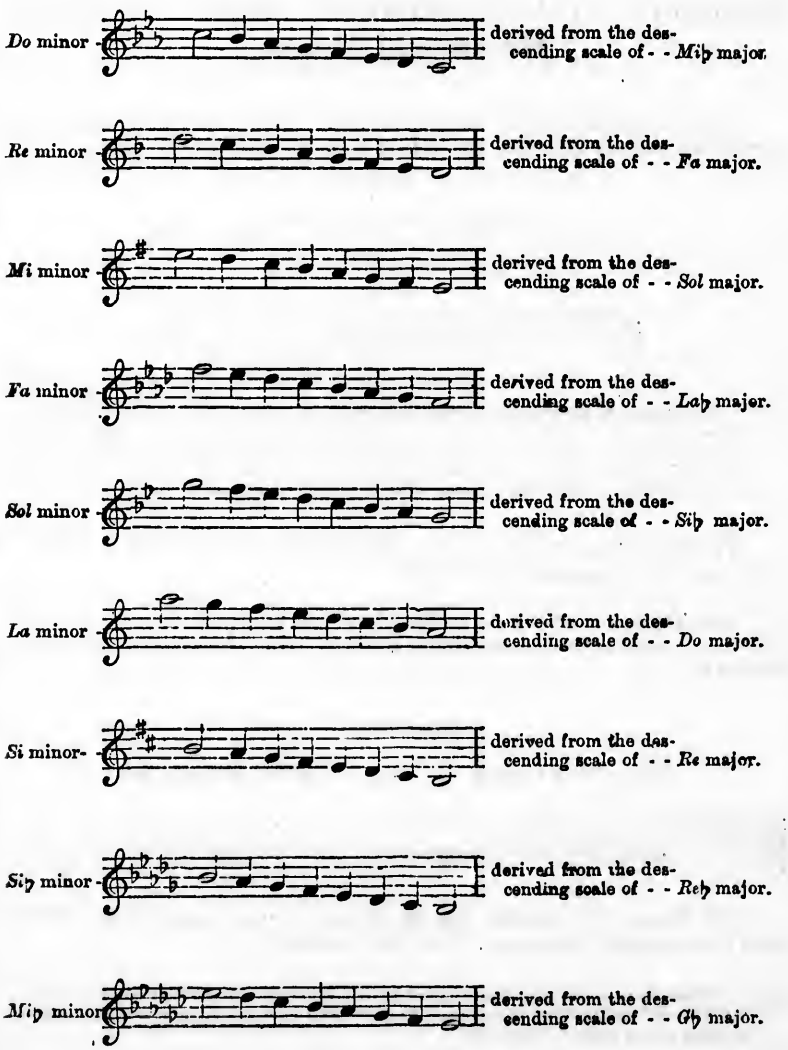


179. Table IX. contains the signatures of nine minor scales, with their corresponding majors, to which they are related.

The notation of these scales is not given, as a sufficient acquaintance with the method of forming them is supposed to have been attained by previous practice in forming major scales. Table III.

SIGNATURES OF MINOR SCALES.

TABLE IX.

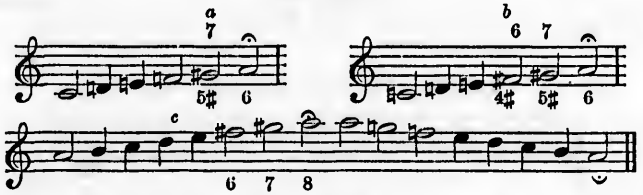


MODULATION FROM A PRINCIPAL MAJOR SCALE INTO ITS RELATED MINOR.

180. According to the conditions upon which Form A. of the minor scale is constructed, rule 2 provides a halftone between its seventh and eighth.

The related minor of do^1 major is la^1 minor, the tonic or key note of which is the *sixth* of the scale of do^1. The 5♯ of the scale of do^1 is sol^1♯, which becomes the seventh of its related minor, la^1, as at *a*, Fig. 110. This occasions a *tone* and a *halftone* (an augmented second) between fa^1♮ and sol^1♯, which is contrary to condition 4. In order to conform to this condition, fa^1♮ must be altered to fa^1♯, as at *b*. The scale of la^1 minor, ascending and descending, is represented at *c*.

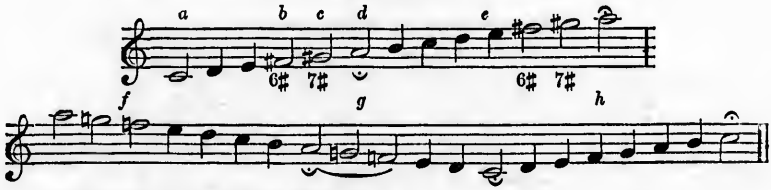
FIG. 110.



181. The following figures show the modulations from five principal keys with sharps into their respective related minors, and returns into their principals.

FROM do^1 INTO la^1 MINOR, AND RETURN.

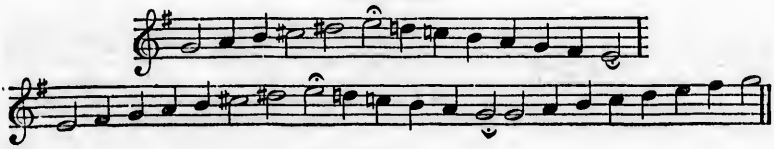
FIG. 111.



a—tonic of principal major scale of do^1.
b c—modulating sharp fourth (fa♯) and sharp fifth (sol♯).
d—tonic of related minor.
e—scale of la^1 minor ascending.
f—scale of la^1 minor descending.
g—returning cadence to principal.
h—principal scale restored.

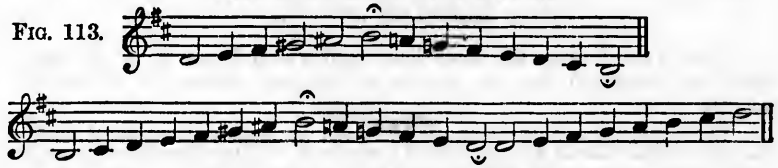
FROM sol^1 INTO re^1 MINOR, AND RETURN.

FIG. 112.



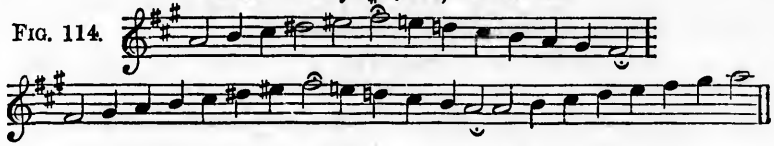
FROM *re*^{1} INTO *si*^{1} MINOR, AND RETURN.

FIG. 113.



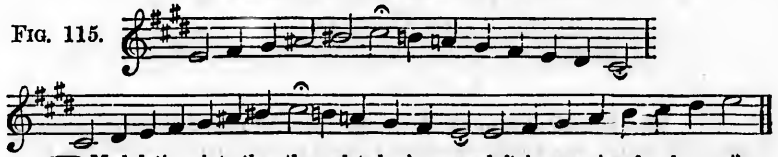
FROM *la*^{1} INTO *fa*^{1}♯ MINOR, AND RETURN.

FIG. 114.



FROM *mi*^{1} INTO *do*^{1}♯ MINOR, AND RETURN.

FIG. 115.

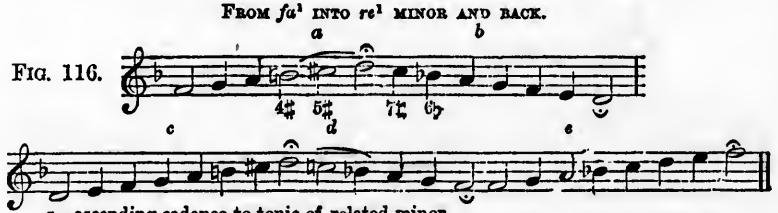


☞ Modulations into the other related minors are left for exercises for the pupils.

182. The following figure shows the modulation from the principal key of *fa*^{1} into its related minor, and its return again to its principal.

FROM *fa*^{1} INTO *re*^{1} MINOR AND BACK.

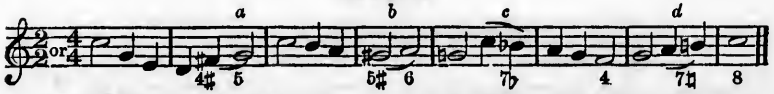
FIG. 116.



a—ascending cadence to tonic of related minor.
b—descending scale of related minor.
c—ascending scale of related minor.
d—descending cadence to tonic of principal.
e—major scale of *fa*^{1} restored.

183. The following example illustrates the three principal modulations from the scale of *do*^{1}.

EXAMPLE.



a—modulation into dominant (*sol*^{1}).
b—modulation into related minor (*la*^{1}).
c—modulation into subdominant (*fa*^{1}).
d—return to principal scale (*do*^{1}).

CHAPTER XXXVII.

Inversions.

184. An interval is said to be inverted when its lowest note is placed an octave higher, or its highest note an octave lower.

TABLE X.—INVERSIONS.

A Unison	by inversion becomes	an Octave
A Second	by inversion becomes	a Seventh
A Third	by inversion becomes	a Sixth
A Fourth	by inversion becomes	a Fifth
A Fifth	by inversion becomes	a Fourth
A Sixth	by inversion becomes	a Third
A Seventh	by inversion becomes	a Second
An Eighth	by inversion becomes	a Unison

Moreover:

A major or large second	by inversion becomes	a minor or small seventh.
A minor or small second	,, ,,	a major or large seventh.
A major or large third	,, ,,	a minor or small sixth.
A minor or small third	,, ,,	a perfect or large sixth.
A perfect or small fourth	,, ,,	a perfect or large fifth.
An imperfect or large fourth	,, ,,	an imperfect or small fifth.
A perfect or large fifth	,, ,,	a perfect or small fourth.
An imperfect or small fifth	,, ,,	an imperfect or large fourth.
A major or large sixth	,, ,,	a minor or small third.
A minor or small sixth	,, ,,	a major or large third.
A major or large seventh	,, ,,	a minor small or second.
A minor or small seventh	,, ,,	a major or large second.
An octave	,, ,,	a perfect unison.

CHAPTER XXXVIII.

Accidentals Indicating Modulation.

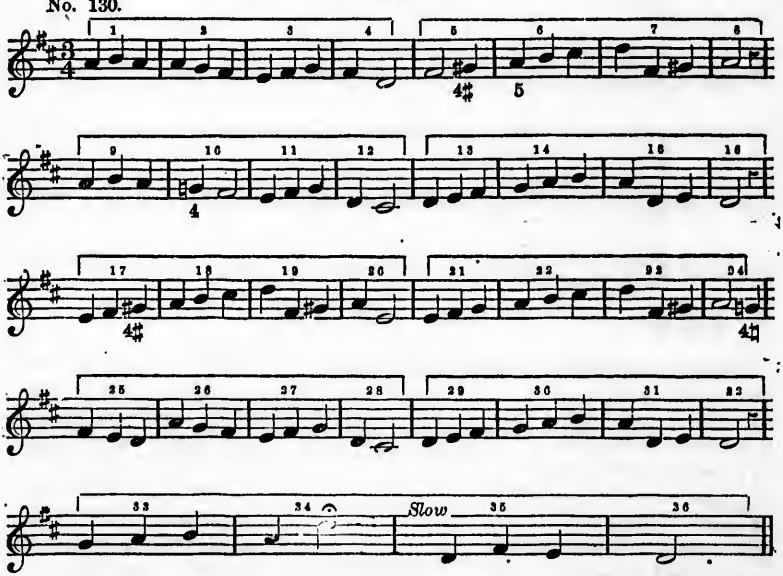
185. The occasional introduction of an accidental sharp or flat into a composition is used for one of two purposes, namely, modulation, or for expressing a musical idea.

186. In Chapter XXXIV. it has been shown that a sound called the modulating note must precede the resolutions into the related keys; that the modulating notes are the 4♯, the 5♯, and the 7♭, and that these *lead into* the tonics of the new keys. These latter are called *accidentals indicating modulation.*

No. 130 is a solfeggio or melody, without words, exemplifying modulation from the principal key of re^1 into its dominant la^1. The points of modulation into the dominant are marked with a 4♯, and their return to the principal with 4♮.

SOLFEGGIO.

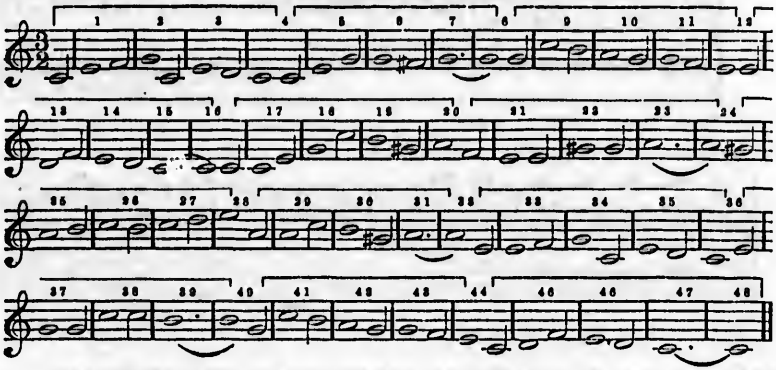
No. 130.



Of the thirty-six measures of the above solfeggio, numbers 1 to 4 are in the principal key; numbers 5 to 8 are in the scale of la^1, its dominant, modulation into which took place at la^1 by the 4♯; numbers 9 to 16 are in the principal key, a return to which took place at 10 by the natural at sol^1; measures 17 to 24 are in the dominant, which commenced at 17 without any introductory modulation, and returns again into the principal at 24, in which it continues to the end.

EXAMPLE OF MODULATION INTO THE DOMINANT AND THE RELATED MINOR.

No. 131. SOLFEGGIO.—PSALM STYLE.



In harmonized music of two or more parts, the modulating note may appear in any one of the parts, according to the position of the leading or treble part of the melody; that is, it may occur in the treble, contralto, tenor, or bass.

In the songs ("Three-part Song Book") "Employment," page 9; "My hands, how nicely are they made," page 15; "The Volunteers," page 25; "The Reapers' Song," page 27; "Christmas Carol," page 40; "The Red, White, and Blue," page 72, in each, the modulating note into its dominant is in the melody.

In "The Pilot," page 17; "On the Water," page 19; "The Sea is England's Glory," page 21; "Defence, and not Defiance," page 76, in each, the modulating note into its dominant is in the second or contralto part.

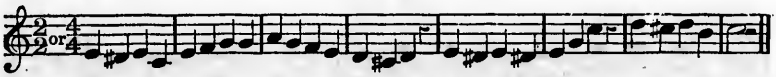
Compositions sometimes remain throughout in the principal key. "God Save the Queen," page 124; "Oft in the Stilly Night," page 4; "When the Rosy Morn Appearing," page 23; "The Poor Blind Boy," page 24; and the "Evening Hymn," page 77, are of this class.

CHAPTER XXXIX.

Accidentals not Indicating Modulation.

187. All accidentals, excepting those indicating modulation, are used as transition or passing notes, and fall principally on unaccented parts of a measure.

FIG. 117.

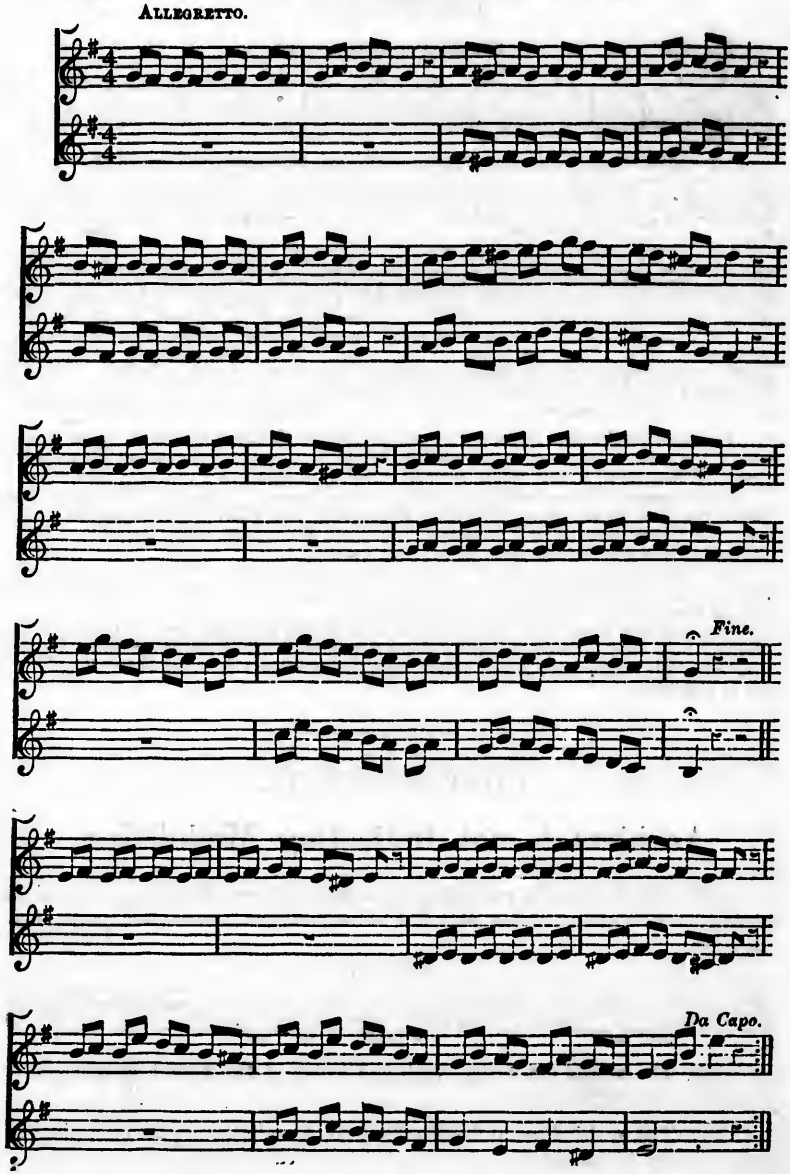


188. The words *Da Capo*, with the mark of the repeat  reads "*repeat from the beginning.*"

189. The word *Fine* indicates *the end*, in whatever part of a piece of music it may be placed.

No. 132. DUET.

ALLEGRETTO.



CHAPTER XL.

Transposition.

190. All scales being alike in their internal arrangement,—that is, alike in the order of their progressions,—it is evidently immaterial which scale is chosen wherein to write a melody. So it is also evident, that a melody written in any one key, may be changed to another. This change is called TRANSPOSITION.

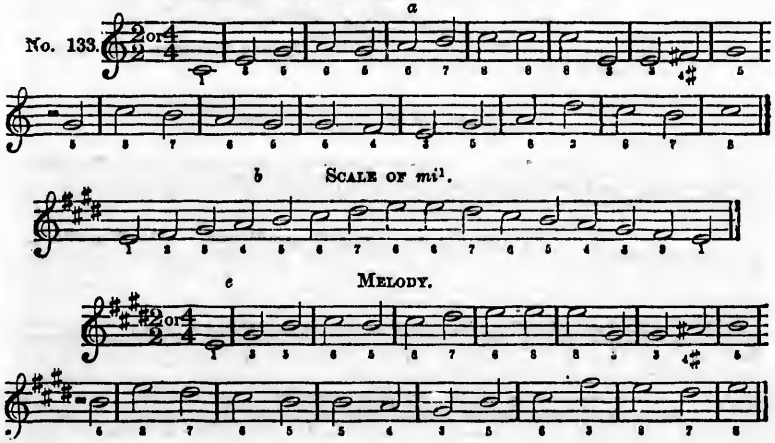
To transpose a melody is a very simple matter. All that is required, is to observe the same numerical interval between each succeeding note, in the new scale, that exists in the original one.

The best way for a beginner to learn to transpose, is to mark the numerical position of each succeeding note of a melody in the scale in which it is written. Then write the scale into which it is intended to be transposed, and mark its numerical succession; and whatever may be the numerical relation of each sound of the melody, transfer the note to its corresponding position in the new scale.

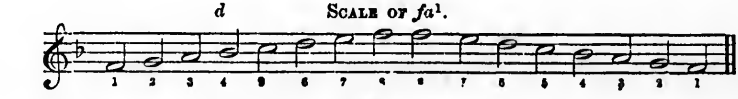
a—(No. 133) is a melody in the key of do^1, each note marked according to its numerical position in the scale.
b—is the scale of mi^1, into which it is intended to be transposed, also marked numerically.
c—the melody at *a* transposed into mi^1, with which the numerals exactly correspond.
d—the scale of fa^1, into which the melody is to be transposed.
e—the same melody transposed into fa^1.

It is no more difficult to *sing* in any of the extreme sharp or flat scales than in the scale of do^0. Let the practise of either of the following transpositions be preceded by its respective preludes and chords, so as to attune the ear to the scale, and no difficulty will be found in *transposing vocally*.

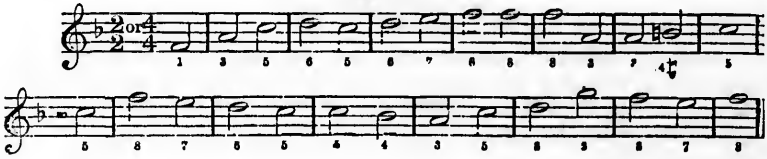
MELODY. (May be sung to any Common Metre.)



d SCALE OF *fa*[1].



MELODY.



CHAPTER XLI.

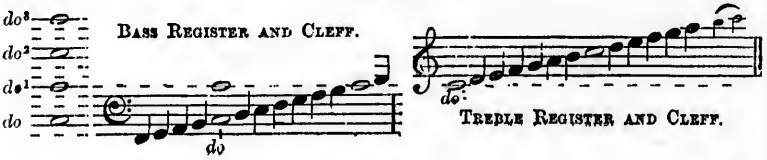
The Bass Register and Cleff.

191. At *a*, Fig. 19, Table VI., the bass register extends from *FA* to *re*[1], a range of thirteen diatonic sounds.

Fig. 118, the position of the bass register is clearly shown, both in its relation to its position in the scale of octaves, as well as its position as compared with the treble register.

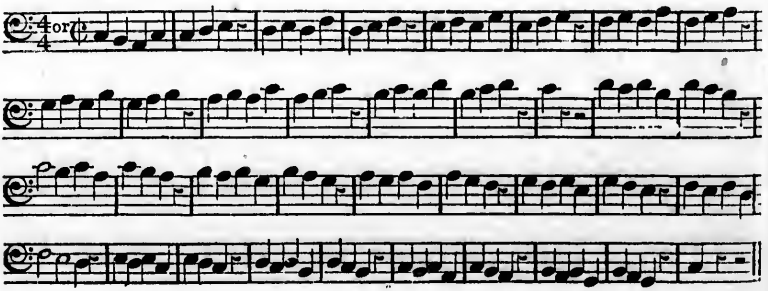
A comprehensive acquaintance with these relations is indispensable to an intelligent study of registers and cleffs.

FIG. 118.



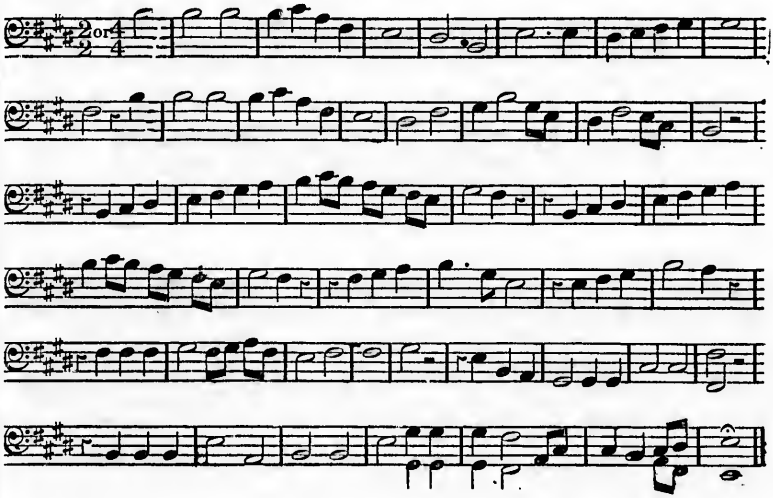
EXERCISES ON THE BASS REGISTER.

No. 134.



SOLFEGGIO.

No. 135.



THE TENOR AND THE CONTRALTO REGISTERS.

REMARKS:—The use of the tenor and contralto cleffs and staves has become obsolete, and probably will not be again restored until a conviction of their importance shall have arisen,—the result of a more general knowledge of their elementary relations.

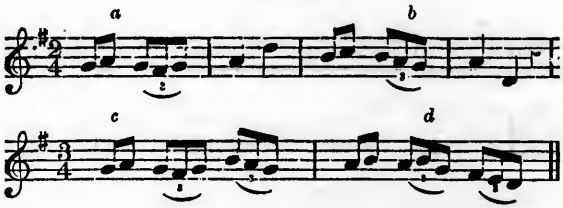
CHAPTER XLII.

Interrupted or Mixed Measures.

192. The regular recurrence of even parts in simple equal, and unequal times, is occasionally interrupted in their rhythm by the introduction of a triplet, in notes of the next lower denomination, on one of the even parts of a measure, which does not destroy the regular flow of the time, but is intended to be enunciated in the same time as the value of the note which it displaces.

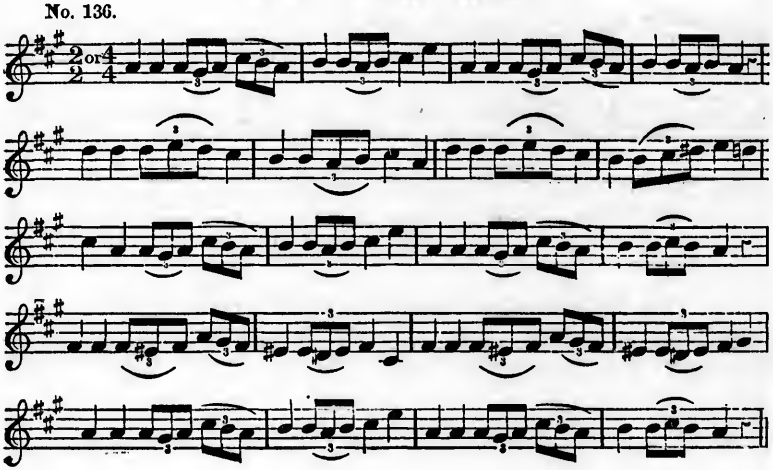
Fig. 119, is an example in $\frac{2}{4}$ time, two beats. To the up beats at *a* and *b* a three-quaver triplet is introduced; the time of the second beat must not be interrupted, but the three quavers must be enunciated in the time of the up beat. A figure $\overset{3}{\frown}$ is always placed under or over them. At c and *d* a triplet is given to each of the second and third beats, each of which has to be enunciated in the time of one beat, the example being in $\frac{2}{4}$ time.

FIG. 119.



SOLFEGGIO ON MIXED MEASURES.

No. 136.



CHAPTER XLIII.

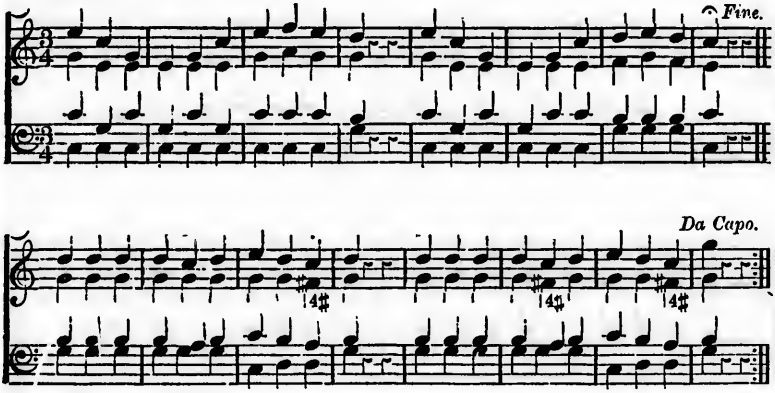
Harmonies in Short Score.

193. The following harmonized solfeggi for four voices are given as introductions to the more elaborately harmonized pieces in the Appendix to the "Three-part Song Book."

They are arranged in what is technically called "short score," that is, the four parts are written on two staves,—namely, the contralto *below* the treble on the *treble* stave, and the tenor *above* the bass on the *bass* stave. This method keeps each voice in its fundamental position, and is an accurate arrangement for the piano forte.

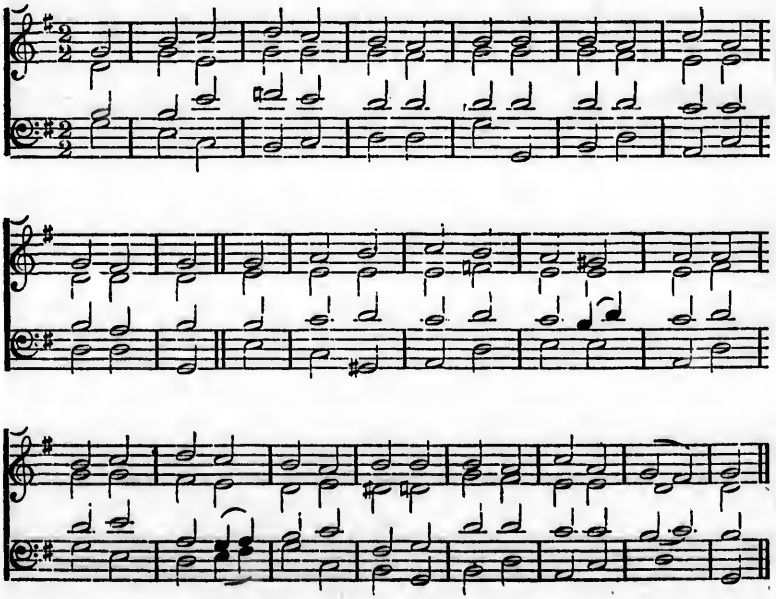
FOUR-PART EXERCISE, PRINCIPALLY ON THE COMMON OR $\frac{5}{3}$ CHORD, AND MODULATION TO ITS DOMINANT.

No. 137.



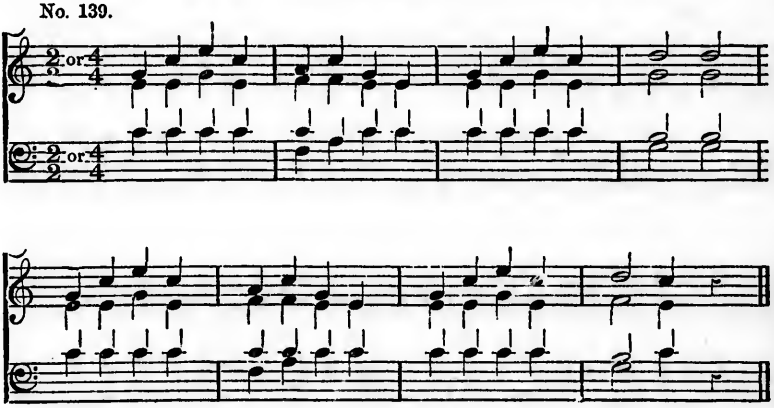
CORALE.

No. 138.



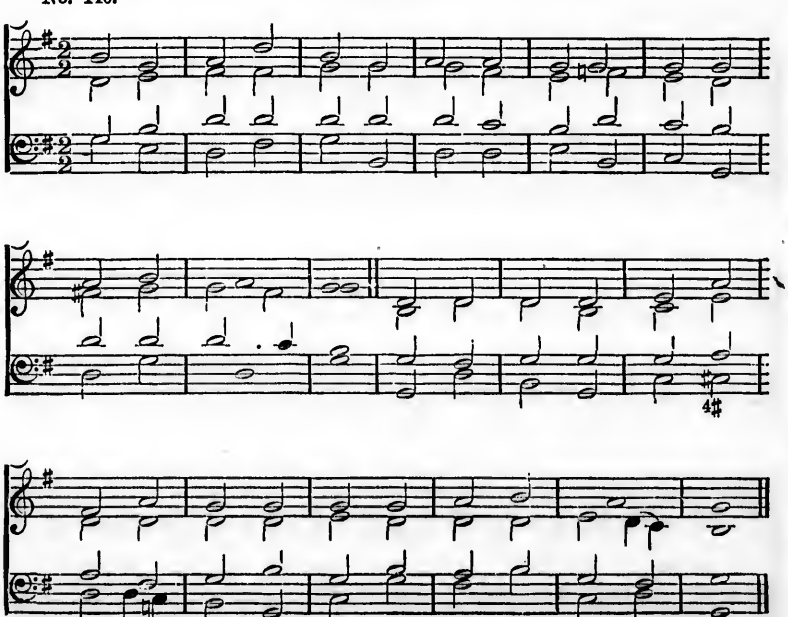
FOUR-PART EXERCISE ON THE $\frac{5}{3}$ OF THE PRINCIPAL AND ITS SUBDOMINANT.

No. 139.



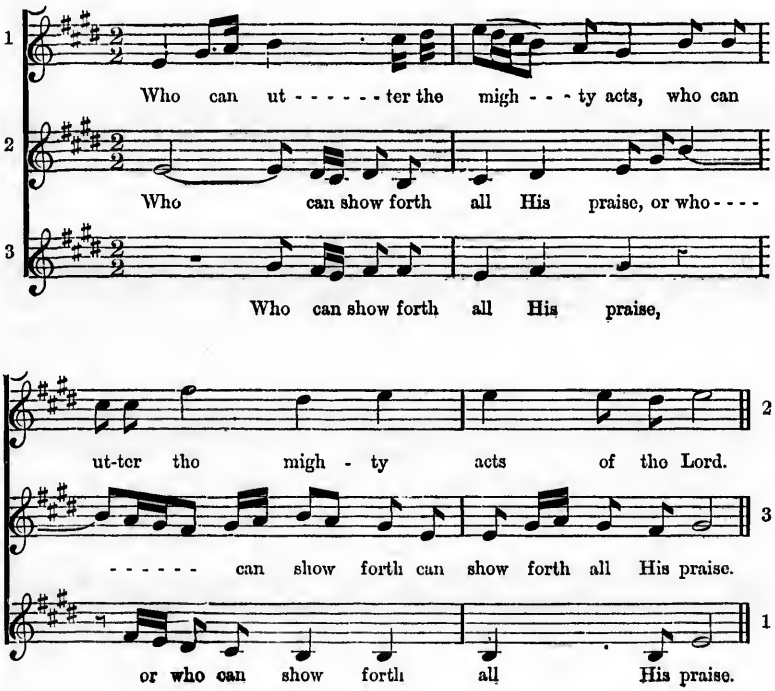
CORALE.

No. 140.



SACRED ROUND, FOR THREE VOICES.

No. 141.



CHAPTER XLIV.

Legato, Staccato, and Half-Staccato.

194. Legato (bound together) passages consist of two or more notes tied together with a bind.

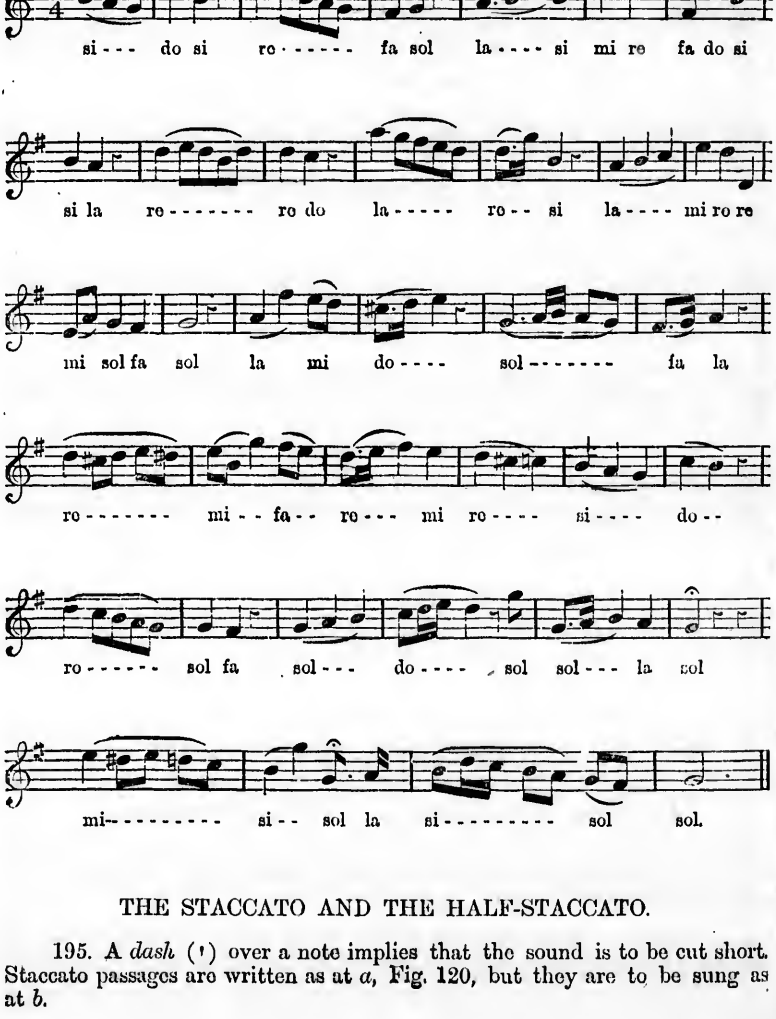
In vocalizing legato passages, each sound must be held on to the utmost limit of its value, until the immediate commencement of the following sound, which should be distinctly and firmly articulated by an effort of the throat alone, the chin, the lips, and the tongue remaining motionless upon the foundation given to

the mouth by the syllable of the *first note*, until the completion of the passage; so that while *sliding* should be carefully guarded against, the sounds must glide into each other smoothly.

All legato passages are sung connectedly to the syllabic name of the first note.

SOLFEGGIO ON THE LEGATO.

No. 142.



THE STACCATO AND THE HALF-STACCATO.

195. A *dash* (') over a note implies that the sound is to be cut short. Staccato passages are written as at *a*, Fig. 120, but they are to be sung as at *b*.

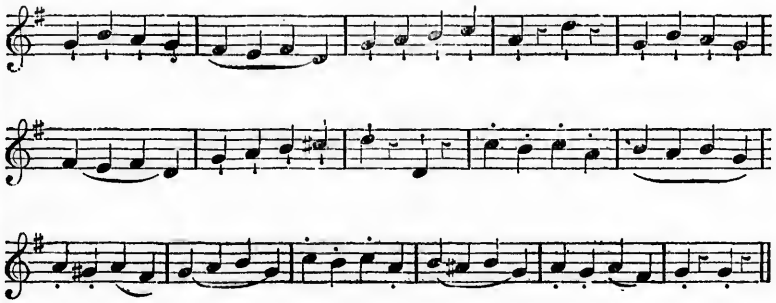
FIG. 120.

196. A *dot* (·) over a note also implies that the sound is to be cut short, but not so short as "staccato." It is called *half-staccato.* Passages of this sort are written as at *a*, Fig. 121, but they are sung as at *b*.

FIG. 121.

SOLFEGGIO ON THE STACCATO, HALF-STACCATO, AND THE LEGATO.

No. 143.



Terms expressive of Absolute Time.

REMARKS:—Words in themselves cannot convey a correct idea of absolute velocity. A pendulum, the ticking of a clock or watch, a metronome or time measurer, can alone describe absolute time.

Certain Italian words, however, have been received, by which an approximation to the correct time intended by the composer of a piece of music may be understood.

There are five *principal words* which are intended to express the different degrees of movement, from the very slow to the greatest velocity, to which other words are occasionally added to qualify them.

WORDS RELATING TO VELOCITY, STYLE, AND INTENSITY.

LARGO, LENTO, GRAVE: extremely slow.
Largetto, rather slow.

ADAGIO: slow.

ANDANTE: at a moderate pace.
Andantino, slower than Andante.
Andantino sostenuto, sustained.
Andantino maestoto, majestic.
Andantino grazioso, graceful.

ALLEGRO: merry and cheerful.
Allegro animato, animated, lively.
Allegro con moto, lively, with increased motion.
Allegro agitato, strongly excited.
Allegro vivace, most lively.
Allegro guisto, exact, marked.
Allegro brillant, or *con brio*, with brilliancy
Allegretto, rather lively.
Allegretto moderato, moderate.

PRESTO: quick.
Prestissimo, as quickly as possible.

Piano or *p*, softly.
Pianissimo or *pp*, very softly.
Crescendo or *Cres.*, or  , increasing in loudness.
Mezzo forte or *mf*, middling loud.
 *Crescendo* and *Diminuendo* combined.
Sforgato or *sf*, forced.
Forte or *f*, loud.
Fortissimo or *ff*, very loud.
Decrescendo or *Decres.*, *Diminuendo* or *Dim.*, or , decreasing in loudness.

INDEX.