

**MASTERING
THE SCALES
AND ARPEGGIOS**

JAMES FRANCIS COOKE

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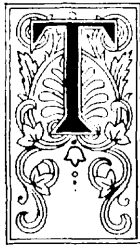
A COMPLETE AND PRACTICAL SYSTEM FOR
STUDYING THE SCALES AND ARPEGGIOS
FROM THE MOST ELEMENTARY STEPS TO
THE HIGHEST ATTAINABLE DEGREE OF
VELOCITY AND ARTISTIC PERFECTION

BY
JAMES FRANCIS COOKE

DESIGNED FOR USE WITH ANY EXISTING
METHOD OR SYSTEM OF TEACHING THE
PIANOFORTE AND INCLUDING ALL THE
STANDARD FORMS EMBODIED IN THE
BEST SCALE WORKS OF THE PAST AS
USED BY LEADING TEACHERS AND THE
FOREMOST CONSERVATORIES

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TO MY PIANO PUPILS, WHO THROUGH
TWENTY YEARS GAVE ME THE EN-
THUSIASTIC SUPPORT INDISPENSA-
BLE TO THE TEACHER'S WORK, THIS
BOOK IS CORDIALLY DEDICATED.

MASTERING THE SCALES AND ARPEGGIOS

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Introduction

The Importance of Studying Scales and Arpeggios

If it were possible to assemble a congress of the great piano teachers of today and yesterday and put the question:

"What do you consider the backbone of the technic of pianoforte playing?"

the answer would doubtless come with surprising unanimity, "The study of the scales and arpeggios."

Here and there one might hear a dissenting voice but upon reviewing the careers of these objectors one would doubtless find that they themselves had traveled much of their technical road along the lanes of scales and arpeggios.

In this book an effort has been made to compile

a A book of scales and arpeggios explaining all of the hundred and one technical points in the simplest possible manner and yet so completely that everything necessary will be fully comprehended by the pupil in the right pedagogical order.

b A book of scales and arpeggios with a preparatory section covering the work which all beginners should undertake before the actual scale playing is commenced. The scales as usually taught are really very complicated studies involving far too many different mental and physical processes to be successfully taken up without preparation. By grounding the pupil in the theory of the keys, as well as giving him practical work at the keyboard minus the additional study of the usual scale fingering, much more rapid and thorough progress may be made.

c A book of scales and arpeggios including all the standard forms employed in private teaching and conservatory work, and also additions leading to the highest possible velocity and finish in performance.

d A book of scales and arpeggios, far more comprehensive than any existing work, and yet one that may be employed at once, with any system or method, without requiring any changes.

It seems quite unnecessary for the writer to make any comment upon the great importance of the study of scales and arpeggios. It is, nevertheless, convincing to read the following quotations which have been selected from hundreds of similar ones pertaining to scale playing.

"You must sedulously practice all scales"

ROBERT SCHUMANN

"Scales should never be dry. If you are not interested in them, work with them until you become interested in them"

A. RUBINSTEIN

"Give special study to passing the thumb under the hand and passing the hand over the thumb. This makes the practice of scales and arpeggios indispensable"

J. PADEREWSKI

"Practice scales every day of your life"

WM. SHERWOOD

"Do you ask me how good a player you may become? Then tell me how much you practice the scales"

CARL CZERNY

"During the first five years the backbone of all the daily work in Russian music schools is scales and arpeggios. The pupil who attempted complicated pieces without this preliminary drill would be laughed at in Russia"

JOSEF LHEVINNE

"The scale of C should reign supreme until the practice habits are formed so that they will reign supreme while playing the other scales. Pearls lie at the bottom of the sea. Most pupils seem to expect them floating upon the top of the water. They never float, and the one who would have his scales shine with the beauty of splendid gems must first dive deep for the gems"

V. DE PACHMANN

"I have never known a piano student to finger well or read rapidly who was deficient in scale practice"

E. M. BOWMAN

"I consider the practice of scales important not only for the fingers, but also for the discipline of the ear with regard to the feeling of tonality (key), understanding of intervals, and the comprehension of the total compass of the piano"

JOSEF HOFMANN

"To the young student and to the performing artist the daily practice of scales is alike indispensable. Nor has it been found possible to supersede the practice of scales with any other form of exercise. Without their constant use, it is not possible to impart to playing certain qualities of fluency, neatness and consistency in running passages, qualities universally recognized as characteristic of well trained pianists"

WILLIAM MASON

"I believe this matter of insisting upon a thorough technical knowledge, particularly scale playing, is a very vital one. The mere ability to play a few pieces does not constitute musical proficiency"

S. RACHMANINOFF

"Few artists realize the beauty of a perfectly played scale and too few teachers insist upon it"

S. STOJOWSKI

"I play all the scales in different forms in all keys once a day"

PEPITO ARRIOLA

In most German conservatories the first word the pupil hears upon entering the teacher's room is "*Tonleiter*" (scales). The pupil then sits at the keyboard and plays through all the major and minor scales, often in an altogether perfunctory manner. Those who practice scales in a similar way cannot hope to derive the greatest benefits from them, for no form of technical work demands greater concentration than scales and arpeggios. Fortunately no form of technical study is more fascinating when properly performed.

The sincere thanks of the author are given to Dr. E. E. Ayers, Dr. H. A. Clarke, Professor of Music at the University of Pennsylvania, Dr. Ralph Dunstan, of Westminster College, England, Mr. Waldo S. Pratt, and Mr. Jaroslaw de Zielinski for reading portions of the work in manuscript and offering helpful suggestions.

THE AUTHOR

THE STORY OF THE SCALE

(This historical introduction may be omitted in the cases of young pupils, and introduced at the end of the pupils course in scales and arpeggios. When this is omitted start with page five, Lesson L)

Usually the first questions that come up in the mind of the student who has had his curiosity aroused regarding the science of the tonal system, are, "How did it all come about? Why is there a major scale and a minor scale? Why are there not other scales equally important?"

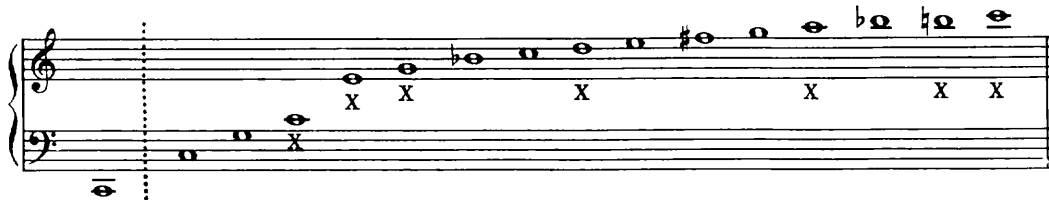
Possibly the best way in which to answer these questions is to tell the student that there have been many other scales employed by other peoples in other days and that our scales came down through the ages from sources about which we have no absolutely positive information. Like the Pyramids of ancient Egypt, we know that they exist but the gropings of historians have not revealed their real origin. For this reason we have had to content ourselves with theories little more definite than the measurement of universal space.

Contrary to opinion our modern scales are by no means altogether natural to man. That is, no savage people has developed a scale like our major or our minor scale. These scales are in fact, a legacy from the ages of culture which have preceded us and are the result of a slow development which called for the best brains of many different nations and peoples.

One thing we do know, however, and that is that the notes of our

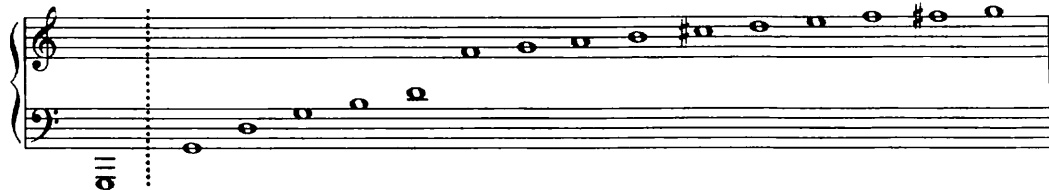
scale are contained in the so called "chord of nature." This term is the name given by some theorists to a series of tones called overtones, all of which may be contained in the composite tone heard from a vibrating string. It is difficult to conceive of the tone we hear when we strike one of the lower strings of a piano, as being composed of several different tones less perceptible to the ear. This however, is easily demonstrated in the physical laboratory, where the student may learn that the over-tones (often called harmonics) are the characteristics which give quality to a tone. It is indeed, not unlike a rose, which we see as one object of a certain color, but which is usually composed of a great number of petals.

By pressing down the keys on the piano, represented by the upper notes in the following example silently and holding them down, — then striking the lowest key a resounding blow, the student will observe that the upper tones vibrate in sympathetic vibration. This is because they are over-tones and are contained in the lower tone, although scarcely audible to the human ear. Other tones also vibrate but these "harmonics" will be detected first. The student will also observe that the notes with X under them, form most of the notes of the major scale of F Major.



In fact, a similar series of notes resulting from the fifth degree of the scale of C (known as the dominant) will produce practically

all of the notes used in the given scale.



It is reasonable to assume from this, that our scale is one natural to the physical science of music. but as we determine the higher over-tones or harmonics, it becomes obvious that so many other tones are included, that the numerous divisions of the scale made by some Oriental peoples and even advocated by some of our modern composers, are by no means foreign to the scheme of nature. In investigating the history of our own scale, however, we are surprised at the very start to learn that antiquarian evidence seems to point to the fact that the modern major and minor scales have been evolved by descendants of the white or Aryan race rather than by people of any of the colored races.

Well known writers upon the history of music have been able to trace the interval of the eighth (octave) in the music of several of the civilized peoples who lived before the time of Christ. The Chinese, the Egyptians, the Chaldeans, the Babylonians, the Persians, the Phoenicians and the Arabs, discovered this division of musical sound.

Some of these wonderful peoples had scales, but so far as we know, these scales differed for the most part from those of modern music, in that the series of intervals used were unlike those of our scales. For instance, the Chinese employed a scale of five tones in which the intervals resembled those which would occur if we made a scale from the five black keys of the pianoforte. This scale is known as the pentatonic scale. It is frequently found in Scotch music and folk songs like Auld Lang Syne and Bonnie Doone are for the most part made up of this scale.

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It is not however, until we consider the amazing Greeks of ancient times, that we encounter scales which bear resemblances to the scales now in use. The moment we attempt to find out exactly what the old Greek scales or modes were like, we meet with so many different opinions, of so many different authorities, with so many different reasons for believing their opinions correct, that we can only conclude that the Greek Scales are clouded with much obscurity and content ourselves with an approximate idea of their form and use.

Several years of study with some score of authorities have failed to reveal to the author, a means of presenting an understandable description of the musical system of Ancient Greece. The difficulty does not lie in the lack of manuscript outlines by great Greek writers. Aristotle, Aristoxenus, Euclid and the Alexandrian astronomer Claudius Ptolemy, all did their share in attempting to preserve records of what had been accomplished by their predecessors. However, the reader must take into consideration three things in reflecting upon these records. First, Greek musical endeavor extended over several centuries; second, the records of the above writers were frequently made many years after the musical systems they describe had been invented; third, there is believed to be no absolutely sure means of interpreting these writings so that their meaning in modern musical terms may be accurately understood.

The fact that there is no sure method of interpreting ancient Greek music in our modern musical notation is perhaps, the most serious obstacle in the path of the conscientious investigator. Perhaps the future may bring us some method of solving the mystery, like the

Rosetta Stone which enabled Egyptologists to interpret the hieroglyphics which up to that time had locked up a large chapter in the history of the world. Even the latest articles published in the new Encyclopedia Britannica fail to give an absolutely definite key to the venerable mystery.

How perplexing and bewildering the whole matter really is may be inferred from the following quotation from the little history of music by W. S. Rockstro (right name, Rackstraw) one of the best known popular English historians. Rockstro had an excellent training and has been the pupil of Sterndale Bennett, Mendelssohn, Hauptmann and Plaidy. He wrote the chapter upon the church modes in the Grove Dictionary and is known to have given an immense amount of serious attention to the music of Greece. His attitude upon the subject is therefore very interesting. In his little work published in 1879 he treats the entire matter by throwing up his hands in despair in the following manner:

"That this system is based, to a certain extent, upon pure mathematical truth, is indisputable; but modern critics differ so widely in their interpretations of the expressions used by the ancient writers, that it is difficult in the face of conflicting opinions, to arrive at a clear understanding even at the first principles. To attempt in the present state of our knowledge to reconcile the theories of rival commentators would be a waste of time."

But the makers of musical histories continue to describe the Greek scales or modes and the student who pursues his work sufficiently far will inevitably reach this tangle which seems to baffle all attempts at unraveling. Because of this no story of the scale would be complete without some comment upon the subject, even if only an outline of the muddle which some well meaning writers have made of it.

Among the early settlers of Greece were the Pelasgians, a race of Aryan origin. Their descendants in Greece, came to be divided into tribes known as Lydians and Phrygians. Residents of other parts of Greece were known as Dorians, Aeolians, Ionians and so forth. These peoples were believed to have been very musical, but the history of the tribes is so mixed up with mythology that it is difficult to draw the line between fact and fancy. It may be assumed, however, that the principal musical instrument of the tribes was the *lyre* or four-stringed harp, said to have been called in early times, the *tetrachordon*.

It is believed that the strings of the lyre formed the basis of a series of four notes known as a tetrachord. The account in the Grove Dictionary (New Edition) written by H. S. Macran, gives the following form of tetrachords. The sign X indicates that the note under which it is placed is to be raised one quarter tone.

DIATONIC TETRACHORD



CHROMATIC TETRACHORD



ENHARMONIC TETRACHORD



Since the chromatic and enharmonic forms lead to systems quite foreign to modern music, we shall leave them to the student of ethnology and devote our attention to the diatonic tetrachord from which our modern scale is supposed to have been evolved.

Dr. Hugh A. Clarke, of the University of Pennsylvania, has given a very clear idea of how this tetrachord was joined to other tetrachords ultimately resulting in what was then termed the *Greek Perfect System*. This system was not reached until Greek music had passed through several intermediate stages.

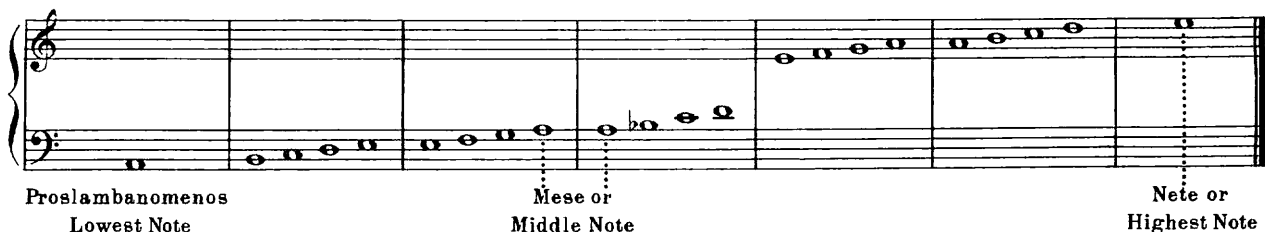
Terpander, "the Father of Greek Music," a famous philosopher who lived about seven centuries before Christ, added three strings to the lyre, making seven in all. This made it possible to include two tetrachords on the instrument and was considered a great advance in the art. Without attempting accurate notation, this may be roughly indicated in the following example.



One hundred years after Terpander came that astonishing genius Pythagoras, who did much to advance musical theory mathematically, but who laid down laws regarding the tuning of the intervals of the major and the minor third which served as a monumental obstruction to musical art. Edward Mac Dowell in his posthumous collection of critical and historical essays (Published in 1912) claims that Pythagoras "did more to stifle music for a full thousand years, than can easily be imagined." Nevertheless, the activities of Pythagoras were too important to be ignored.

With an instrument known as a canon (later called monochord) composed of a string stretched over a long sounding board, he found that by dividing the string into two equal parts, one part when vibrated would give the pitch of the octave above the natural pitch of the whole string. Dividing the string into three equal parts, he found that by sounding two thirds of the string, the interval of a fifth above the tone of the string could be created. In similar manner three quarters of the length of the string would produce the interval of a fourth. He is reputed to have secured his wisdom from the Druids of Gaul, the Brahmins of India, the Magi of the temples of Babylon and the priests of Egypt. Evidently it was the custom even in those days to go abroad for musical study. Pythagoras' discoveries were carefully described by the great mathematician Euclid, who lived about two hundred and fifty years later. A somewhat comprehensive account of his activities may be found in the "*Philosophy of Music*" by William Pole, Mus. Doc., Oxon.

Notwithstanding the fact that Pythagoras' mathematical computations led to conclusions which made the intervals of the octave, the fourth and the fifth practically the only intervals available for use in the musical compositions of several hundred years ensuing, he nevertheless made experiments which are believed to have resulted in the scale represented below. As in all our other examples of Greek music, the pitch is only relative. The bar lines in the following example are inserted by the present writer. They do not refer to time but are introduced to indicate how the original series of four notes (Tetrachords) became the centre of a series of other tetrachords included within the other bar lines. Each note of this scale had its own name, the lowest tottering under the awe inspiring title of Proslambanomenos (additional note). The middle note, *α*, which joins the two central tetrachords, was called *Mese* and was supposed to have been very important. The series was known as the *Greek Diatonic Scale* or the *Greek Greater System*.



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The characteristic names given to the several notes remained for some centuries and when the Romans took it upon themselves to make a change, they designated the notes by the letters of the alphabet from A to P. Pole and other authorities give Pope Gregory I, "the Great" credit for having designated the notes of each octave by seven different letters, Staff notation, it should be remembered, did not appear until about the year nine hundred, when a single red line was used. The special names given to notes by the Greeks have a fascinating interest and indicate the imaginative nature of that wonderful nation.

Dr. Hugo Riemann, the noted German musical savant gives the names of the degrees as follows, with their derivation from the names of tetrachords etc.

a'	the highest of the extreme	Nete
g'	the second highest of the extreme	Paranete
f'	the third of the extreme	Trite
e'	the highest of the disjunct	Nete
d'	the second highest of the disjunct	Paranete
c'	the third of the disjunct	Trite
b	the one next to middle	Paramese
a	the middle note	Mese
g	the forefinger note of the middle	Lichanos
f	the last but one of the middle	Parhypate
e	the lowest of the middle	Hypate
d	the forefinger note of the low	Lichanos
c	the last but one of the low	Parhypate
B	the lowest of the low	Hypate
A	the added note	Proslambanomenos

It should always be remembered that the Greeks looked upon their scales as passing from above downward and not from below upward as we look upon it.

Dr. Ralph Dunstan of Cambridge, gives an interesting account of how the notes of the seven stringed lyre were each given a characteristic name in the following manner.

<i>Hypate</i> (longest string giving the highest note, likened to Saturn)	<i>Parhypate</i> (next to Hypate, likened to Jupiter)	<i>Lichanos</i> (likened to Mars)	<i>Mese</i> (Middle string, was the principal or key-note. Likened to the Sun)	<i>Paramese</i> (likened to Mercury)	<i>Paranete</i> (likened to the Moon, Venus)	<i>Nete</i> (likened to the Moon)

Indeed, the ancients thought that these notes were produced by the harmonious motions of the Heavenly bodies. It is this which Shakespeare doubtless had in mind, when he wrote, -

"There's not the smallest orb which thou beholdest
But in his motion like an Angel sings,
Still quiring to the young-eyed cherubins."

It is from this same thought that we have the terms "Music of the Spheres" and "Harmony of the Spheres."

Thus far we have been trading upon comparatively secure ground fortified by numerous authorities. The moment we commence the investigations of the so-called Greek modes or scales, we meet many perplexing and paradoxical statements.

The Greek modes were supposed to have been founded upon the following tetrachords, represented in the next column.

<i>Dorian</i>	half-tone	tone	tone	
Example	E	F	G	A
<i>Phrygian</i>	tone	half-tone	tone	
Example	D	E	F	G
<i>Lydian</i>	tone	tone	half-tone	
Example	C	D	E	F

From this the following principal Greek modes are alleged to have been evolved. The word or prefix Hypo comes from a Greek preposition "under" and corresponds to the Latin "sub". One Greek writer, however, claimed that it merely denoted "likeness" or similarity in its connection with scales. In the examples given below, the sign — signifies a whole tone and the sign ∪ signifies a half tone. The scales or modes as here given, are found in many authoritative works, such as Emil Nauman's "History of Music," Dr. Hugo Riemann's "Dictionary of Music and Musicians." The pitches given are only relative and do not convey any positive information in that direction.

Mixo-Lydian Lydian Phrygian

Dorian Hypo-Lydian Hypo-Phrygian

Hypo-Dorian

The Greeks attributed special ethical values to each one of the scales or modes, apart from whatever pitch they assumed. For instance, the Dorian was thought to be especially useful in the education of youth. It was supposed to inspire a love for the law, strict obedience, courage, self-esteem and independence. Plato thought that the Lydian scale was voluptuous sensual and suitable for orgies. Aristotle attributed to the Phrygian scale, the magic of being able to inspire, to the Dorian, dignity and repose and to the Lydian which Plato declared so vicious, the power of awakening a love for purity and modesty. This does not seem so odd, when we recollect that we associate brightness

with the major mode and sadness with the minor mode.

Dr. H. A. Clarke, who has admitted that "the Greek system is still a subject of controversy about which very little is known" has cleared away much uncertainty by pointing out that the Greeks used the words Dorian Octave, Phrygian Octave, etc., in such a manner that some modern commentators assumed that the word meant scale. This is very unlikely and as W. S. Rockstro declares in the Grove Dictionary, "it seems probable that Differences of Pitch were felt to be of less importance and distinctions of species (differences in the arrangement of intervals in the octave) were more highly appreciated."

In the "Oxford History of Music," H. E. Wooldridge, M. A. has given the following means of determining the keys of the Greek modes. Starting with the series of notes in the scale supposed to have been evolved by Pythagoras, which included the octave A to A and measur-

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ing by the same series of tones and half-tones, it is obvious that the mode known as the Phrygian mode (E to E) if applied to the octave A to A would result in the following series of intervals.—



Applying the same principle to other modes adjusted to the octave A to A, the following would result.—

Possible Original form of Greek Modes	The Same Series of Intervals Applied to the octave A to A
Mixo-Lydian	
Lydian	
Phrygian	
Dorian	
Hypo-Lydian	
Hypo-Phrygian	
Hypo-Dorian	

Doubtless, for this reason, the key signature of the Greek Scales or Modes is frequently given in the following manner, as in the valuable dictionary of Dr. Dunstan, which was carefully read and reread by many of the most noted musical savants of England. It will be noticed that the notes of the scales are so arranged that while the accidentals employed affect the same notes as in the previous example, from A to A, yet the notes are arranged in such a way that the authentic scales, Dorian, Phrygian, Lydian, Mixo-Lydian, are merely transpositions of each other and similarly with Plagal Scales, Hypo-Dorian, Hypo-Phrygian, etc.

Authentic	Dorian	
	Phrygian	
	Lydian	
	Mixo-Lydian	
Plagal	Hypo-Dorian	
	Hypo-Phrygian	
	Hypo-Lydian	
	Hypo-Mixo-Lydian	

Despite all the authorities, a writer to whom great credence has been given (Monroe, author of "Modes of Ancient Greek Music") had no hesitancy in declaring that there is absolutely no definite reference in ancient Greek authorities to distinctions in modes. Why then, have we gone to such trouble to discuss the matter? Largely because it is interesting for the student to have some guide in investigating this intricate subject and some means of helping him to form opinions of his own.

Moreover, it is a well established fact, that the church modes, supposed to have been evolved from Greek Scales, have been used by some of the great composers and are continually being more and more discussed by modern composers as a means of securing variety in harmonic treatment and style. Indeed, in a rare copy of A. B. Marx' *Musical Composition* now in the writer's possession, the church modes and the Greek Modes are discussed in several chapters. This work was published as late as 1851.

The historical bridge between the Greek musical writers and the writers of the church, is a slender one. No Greek writers of consequence appeared after the fourth century and no Latin manuscripts of great consequence to the history of music have been found earlier than those of the ninth century. In the meantime, the world was evidently groping for a means of musical expression. Unquestionably, those who would make music were continually hampered by the theorists who were always ready to tell them that they could only make music in the ways permitted by their laws.

Gradually, the systems became more and more involved until thirteen or fifteen modes on different pitches were recognized. Obviously music was leading in the wrong direction and Ptolemy, the great Alexandrian mathematician and astronomer, was one of the first to reduce the number of modes to seven.

As music became a part of Christian worship the church fathers evidently foresaw what an important role it was to play in the future. Ambrose, a famous Bishop of Milan, is said to have reduced the number of modes to four, retaining those resembling the Greek modes known as Phrygian, Dorian, Hypo-Lydian and Hypo-Phrygian. This, however, is emphatically contradicted by some authorities.

The connection of Pope Gregory (who lived about the sixth century) with the history of the church scales has also been strongly contested. However, many historians give Gregory the credit of calling the four Ambrosian modes *Authentic Modes* and then adding four others which he called *Plagal Modes*. The *Plagal Modes* were composed of the same notes as the *Authentic Modes* but began four notes lower as shown

in the following example. Later writers came to call these modes the *Gregorian tones* and each tone was known by a number. The ritualistic music of the Catholic Church of to-day is based to a large extent upon these tones. It will never be possible to measure the indefatigable labors of the church fathers in their efforts to develop music at a time when so very little was known about the art.

<p>AUTHENTIC MODES</p> <p>I First Tone (Dorian)</p> <p>III Third Tone (Phrygian)</p> <p>V Fifth Tone (Lydian)</p> <p>VII Seventh Tone (Mixo-Lydian)</p>	<p>PLAGAL MODES</p> <p>II Second Tone (Hypo-Dorian)</p> <p>IV Fourth Tone (Hypo-Phrygian)</p> <p>VI Sixth Tone (Hypo-Lydian)</p> <p>VIII Eighth Tone (Hypo-Mixo-Lydian)</p>
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This division of the modes was to the best of our knowledge, employed for several centuries. According to Dr. Pole, much confusion was caused by the attempts of the Swiss educator Glareanus (right name Loris,) to bring some order out of the chaos which then existed. Glareanus lived in the sixteenth century, when man was making the way for the great artistic progress that was to follow. He fashioned modes after the Greek modes and the church modes, but is supposed to have changed the names in some instances. Some of the names which Glareanus is said to have applied to the modes are so much better known than the original Greek names, that the modes are more frequently called by them than by the Greek names. According to accounts, Glareanus attempted to institute twelve modes, but was not successful in establishing more than six, which are now known by the following names.

(See Dr. Pole's *Philosophy of Music*.)

Former Greek Names	Names supposed to have been given by Glareanus	
Phrygian	Dorian	D to D
Dorian	Phrygian	E to E
Hypo-Lydian	Lydian	F to F
Hypo-Phrygian	Mixo-Lydian	G to G
Lydian	Ionian	C to C
Hypo-Dorian	Aeolian	A to A

It will be noted that the Ionian scale (Glareanus name) corresponds to the modern scale of C Major and that the Aeolian scale corresponds to the normal minor scale. These two modes, strange to say, were not advocated for use by the church in the ecclesiastical modes. The connection between the names applied to some of the old Greek modes and the Church modes (Glareanus names) is shown in the following, given by Dr. Hugh A. Clarke of the University of Pennsylvania. The late Dr. John K. Paine of Harvard in his *History of Music to the Death of Schubert*, says upon this subject:—"The medieval musicians named their modes after the Greek modes but misapplied the names entirely."

<p>GREEK OCTAVE Pitch given by Ptolemy</p>	<p>CHURCH SCALES</p>	<p>GREEK SCALES</p>
Phrygian Octave	Dorian	Dorian
Dorian Octave	Phrygian	Phrygian
Hypo-Lydian Octave	Lydian	Lydian
Hypo-Phrygian Octave	Mixo-Lydian	Mixo-Lydian

Gioseffo Zarlino (1517-1590) or possibly his teacher Adrian Willaert, the famous Belgian master who lived near the middle of the sixteenth century, are said to have introduced the division of the octave into twelve equal semi-tones, making way for our modern system of sharps and flats. This led to our modern scale and the harmony based upon it. This scale is known as the diatonic scale in both the major and the minor forms.

The major, minor and chromatic scales have been amply discussed in the preceding chapters. Other scales of interest are the Gypsy Scale which is often found in Hungarian music.



The *Major and Minor Scales* as we know them differ from the so called acoustical scale, as the scale derived from the vibrations of the segments of a string is called. In the acoustical scale there is for instance a slight difference in pitch between E flat and D sharp. The exigencies of the keyboard demand that these notes be played by the same key and the result is a compromise altogether agreeable to the ears.

The Javanese scale of whole tones is remarkably similar to the whole tone scale employed by some modern composers seeking to produce unusual effects.



The major scale and the minor scale have been fully described in in previous chapters. It is interesting to observe that the lower tetrachord of the minor scale



always remains the same, while the upper tetrachord is changed to different forms of the minor mode.



A great number of writers have been quoted in the foregoing, all of whom have obviously given much study to the matter they discuss, but many of whom are believed by some to have substituted conjecture for authoritative information. The student who desires to make further investigations will find well sifted material in the works of Hugo Riemann, Helmholtz, Parry and Gevaert.

MASTERING THE SCALES

PREPARATORY

LESSON I

CONSTRUCTING THE SCALES

The scales most used in music are of three general kinds, called:

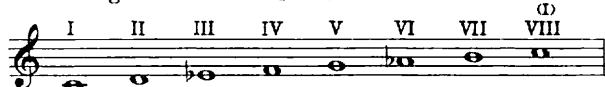
- MAJOR (the Latin word for *greater*)
- MINOR (the Latin word for *lesser*)
- CHROMATIC (from a Greek word relating to *color*)

The difference or distinction between the major and the minor scales may be easily understood by comparing them.

The following is the major scale of C:



The following are the notes of a minor scale of C:



Play these slowly upon the keyboard, and observe that the notes included between the steps, or intervals, one to three and one to six include more piano keys in the major scale than in the minor scale.

The scale with the greater intervals is named therefrom *major*.

The scale with the smaller intervals is named therefrom *minor*.

There are four species of minor scales used by composers. These we shall study later.

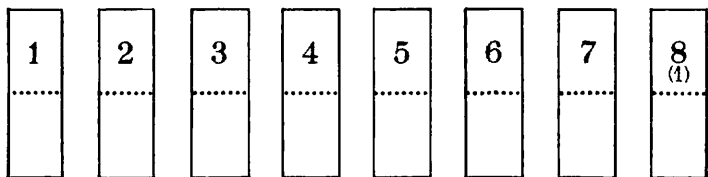
Pieces written in notes taken from the major scale, are said to be in the *major mode*. Pieces written in notes taken from the minor scale are said to be in the *minor mode*.

KEYBOARD WORK IN CONSTRUCTING THE MAJOR SCALES

The keyboard of the piano or the organ offers the student an unsurpassed opportunity for observing the construction and connection of the scales. The writer has used the following plan in teaching beginners the scales.

(The teacher may now take up the construction of the scales, step by step, in the following order, but with whatever explanatory notes the age and advancement of the pupil may demand.)

Secure a strip of cardboard of the thickness of a visiting card. Cut the cardboard into markers of about the size shown below and bend each marker to an angle of about ninety degrees at the dotted line shown. In this shape, they will not fall down between the keys of the piano keyboard.



Commencing with middle C, place in order a marker over each key until the octave above is reached. These markers will then cover the scale of C major.

Note that between the markers three and four (F and E), and between the markers seven and eight (B and C) there is no intervening black piano key. Observe that between all other markers there is an intervening piano key.

The distance from any one piano key to the very next piano key is a half step (semitone). Examples: E to F, B to C, F sharp to G, A to B flat.

When a single piano key intervenes between two other piano keys, the distance is a whole step (whole tone). Examples: C to D, E to F sharp, A flat to B flat.

All major scales follow the design shown above in the scale of C, which may be represented as follows:

1	2	3	4	5	6	7	8
whole	whole	half	whole	whole	whole	half	whole
step	step	step	step	step	step	step	step

The student may now construct all of the major scales by means of the scale markers in the following manner: Lay the markers in order C.S. - 87

over the eight notes commencing with any G on the keyboard. The result will be:

1	2	3	4	5	6	7	X	8
G	A	B	C	D	E	F	G	

This reveals upon examination that the interval (X) between the scale steps seven and eight is not a half-step, but a whole-step. We know that it should be a half-step. The only way we can make it a half-step is by using the black piano key F sharp instead of F. This is the way in which F sharp comes to be used in the scale of G major. Without it, the scale would be simply the same notes used in C major, arranged in another order.

The student should now proceed to study the other scales in similar manner by commencing the new scale on the piano key five notes above the last scale studied.

First, lay the markers on the keyboard in regular order *always on the white piano keys*.

Second, compare this arrangement with the knowledge you have of the structure of the major scale and make the changes necessary by placing the right markers on the right piano keys to form the proper order of steps and half steps.

From this you will discover the following:

SHARPS AND FLATS IN THE MAJOR SCALES

SHARPS									
G	1sharp	F#							
D	2sharps	F#	C#						
A	3sharps	F#	C#	G#					
E	4sharps	F#	C#	G#	D#				
B	5sharps	F#	C#	G#	D#	A#			
F#	6sharps	F#	C#	G#	D#	A#	E#		

(In the last scale the student will observe that in order to get a half step between the scale steps 7 and 8 it is necessary to place the marker number seven on a white piano key (F) which in this case becomes known as E sharp.)

FLATS									
F	1flat	Bb							
Bb	2flats	Bb	Eb						
Eb	3flats	Bb	Eb	Ab					
Ab	4flats	Bb	Eb	Ab	Db				
Db	5flats	Bb	Eb	Ab	Db	Gb			
Gb	6flats	Bb	Eb	Ab	Db	Gb	Cb		

(For the same reason that it is necessary to consider a white key a sharp in the scale of F sharp, we consider the piano key known as B, as C flat in the scale of G flat.)

The above represents all of the major scales most commonly used.

Two other major scales (seven sharps and seven flats) are sometimes used, but we find them so rarely in the works of the masters that they require little special study.

The student has doubtless already observed that the scale of C flat major (seven flats) and the scale of B major (five sharps) employ the same piano keys. He has also observed that the scales of C sharp major (seven sharps) and the scale of D flat major (five flats) employ the same piano keys. If he were to pursue his investigations further, he would come to the surprising discovery that all the scales could have been expressed in sharps and that all could have been expressed in flats. Convenience in reading, however, has settled the matter and scales with more than six accidentals in the signature are rarely used.

PRACTICAL EXAMPLES IN WRITING THE SCALES

Place the accidental demanded to make a correct scale in front of the right note in the following exercise, and then place the accidental in its proper place at the commencement of the staff, as it appears in the signature. Then write the name of the scale over the key signature.

SIGNATURE - whole whole half whole whole whole half
T U R E 1 step 2 step 3 step 4 step 5 step 6 step 7 step 8

6
 SIGNATURE whole whole half whole whole whole half
 TURE 1 step 2 step 3 step 4 step 5 step 6 step 7 step 8

The following are selections from real pieces. Place the accidentals employed in the right position under the word signature and then write over the staff the correct name of the key in which the piece is written. In this case, they are all major keys.

SIGNATURE

LESSON II
 LEARNING THE SCALE NOTES AND KEY NAMES

The fingering of the scales while simple when mastered, always offers many stumbling blocks to the beginner. The student will make far greater progress if an understanding of the keys is gained before studying the scales themselves with the customary fingering.

The simplest of all finger exercises is the two-finger exercise. Dr. William Mason, the greatest of American musical pedagogs of the past, made an entire book in his inestimable *Touch and Technic* series from the two-finger exercise. Liszt, Paderewski, Joseffy, Gabilowitsch and others endorse this exercise very highly. Its practice can bring nothing but successful results.

The following application of the two-finger exercise is solely for the purpose of making the pupil as familiar with the scales as with the alphabet or the multiplication table. The writer has used this exercise with hundreds of young pupils with invariably successful results.

Each exercise is played first with the thumb and second finger (1-2); then with the second and third fingers (2-3); then with the third and fourth fingers (3-4); then with the fourth and fifth fingers (4-5).

When playing, recite aloud the words over the notes just as though counting. These serve to impress the name of the scale, the mode (major or minor) of the scale, and the number of sharps or flats in the scale upon the mind of the student, until he can tell the number of sharps and flats in a scale as readily as he could tell the result of seven times nine or five times four.

Each exercise should be played at moderate rate of speed, hands separately, four times with each pair of fingers in each key. The writer has given the following exercises the name of *Tonality Exercises*, because they serve to teach the keys or tonalities.

EXERCISES

Always recite the words above the notes while playing.

C major no sharps, C major no sharps, C major no sharps, C major no sharps,

Right Hand	4 5 4 5 4 5 4 5	4 5 4 5 4 5 4 5	4 5 4 5 4 5 4 5	4 5 4 5 4 5 4 5
	3 2 3 2 3 2 3 2	3 2 3 2 3 2 3 2	3 2 3 2 3 2 3 2	3 2 3 2 3 2 3 2
	2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1	2 1 2 1 2 1 2 1
Left Hand	2 3 4 5	2 3 4 5	2 3 4 5	2 3 4 5

C major no sharps, C major no sharps, C major no sharps, C major no sharps.

	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1	5 4 3 2 1
	4 3 2 1	4 3 2 1	4 3 2 1	4 3 2 1
	3 2 1	3 2 1	3 2 1	3 2 1
	2 1	2 1	2 1	2 1
Left Hand	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

G major 1 sharp, G major 1 sharp, G major 1 sharp, G major 1 sharp.

G major 1 sharp, G major 1 sharp, G major 1 sharp, G major 1 sharp.

D major 2 sharps, D major 2 sharps, etc.

D major 2 sharps, D major 2 sharps, etc.

A major 3 sharps, A major 3 sharps, etc.

A major 3 sharps, A major 3 sharps, etc.

E major 4 sharps, E major 4 sharps, etc.

E major 4 sharps, E major 4 sharps, etc.

B major 5 sharps B major 5 sharps, etc.

B major 5 sharps, B major 5 sharps, etc.

C flat major 7 flats, C flat major 7 flats, etc.

C flat major 7 flats, C flat major 7 flats, etc.

Fsharp major 6 sharps, Fsharp major 6 sharps, etc.

Fsharp major 6 sharps, Fsharp major 6 sharps, etc.

G flat major 6 flats, G flat major 6 flats, etc.

G flat major 6 flats, G flat major 6 flats, etc.

Csharp major 7 sharps, Csharp major 7 sharps, etc.

Csharp major 7 sharps, Csharp major 7 sharps, etc.

D flat major 5 flats, D flat major 5 flats, etc.

D flat major 5 flats, D flat major 5 flats, etc.

A flat major 4 flats, A flat major 4 flats, etc.

A flat major 4 flats, A flat major 4 flats, etc.

E flat major 3 flats, E flat major 3 flats, etc.

E flat major 3 flats, E flat major 3 flats, etc.

B flat major 2 flats, B flat major 2 flats, etc.

B flat major 2 flats, B flat major 2 flats, etc.

F major 1 flat, F major 1 flat, etc.

F major 1 flat, F major 1 flat, etc.

LESSON III

LEARNING THE MINOR SCALE NOTES AND MINOR SCALE NAMES

The minor scales, which seem to give such a vast amount of trouble to some pupils, are really quite simple when properly understood.

In lesson one, we showed that the name minor (lesser) was applied to the minor scale because some of the steps, or intervals, are smaller than those in the major (greater) scale. For example, from C, the first step of the C minor scale to E flat, the third step of the C minor scale, includes one piano key less than from C, the first step of the C major C.S. - 87

scale, to E natural, the third step of the C major scale.

We also showed in LESSON I that certain scales written in sharps could also be expressed in flats; i.e. D flat major employs the same notes as C sharp major, and C flat major employs the same piano keys as B major. In fact, if we desired to do so, all of the flat scales could be written in sharps and all of the sharp scales could be written in flats. The following is an indication of what would occur:-

Sharp Scales frequently used							Rarely used	Never used				
C	G	D	A	E	B	F#	C#	G#	D#	A#	E#	B#
0#	1#	2#	3#	4#	5#	6#	7#	8#	9#	10#	11#	12#
D \flat	A \flat	E \flat	B \flat	F \flat	C \flat	G \flat	D \flat	A \flat	E \flat	B \flat	F	C
12 \flat	11 \flat	10 \flat	9 \flat	8 \flat	7 \flat	6 \flat	5 \flat	4 \flat	3 \flat	2 \flat	1 \flat	0 \flat
Flat Scales never used							Rarely used	Flat Scales frequently used				

It is obvious that no one would employ the scale of eleven sharps when the same sound could be represented in the scale of one flat, and *vice versa* no one would employ the scale of ten flats when the same sounds could be represented in two sharps.

Why, then, do we consider this connection at all? Because we have certain minor scales which take their names from some of these unused major scales and in order to see their connection, the above table is necessary. For instance, the scale of C sharp minor, G sharp minor and D sharp minor are used, whereas the major scales of C sharp major, G sharp major and D sharp major are practically never used.

DIFFERENT FORMS OF THE MINOR SCALE

There are only four generally recognized varieties of the minor scale, although it would be possible to make even more by employing other intervals.

Expressing them without their customary signature they may be represented as follows:

C MINOR (NORMAL OR NATURAL FORM)

Arises and descends in the same order.

It will be noticed that this differs from the major scale of C in that the third, sixth and seventh steps are played flat instead of natural both in going up and in coming down.

C MINOR (HARMONIC FORM)

Arises and descends in the same manner.

It will be noticed that this differs from the major scale of C in that the third and sixth steps are played flat instead of natural both in going up and in coming down.

C MINOR (MELODIC FORM, SOMETIMES CALLED THE ARBITRARY FORM)

Arises, and descends in a different manner.

It will be noticed that in ascending, only the third is played flat, but in descending the third, sixth and seventh are played flat.

The following irregular or Mixed form of the minor scale first employed by Johann Wenzel Tomaschek and strongly endorsed by Dreyshock, von Bülow and others, is important because many pianoforte writers have employed this form of the minor scale exclusively.

C MINOR (MIXED FORM)

Arises, and descends in a different manner.

It will be noticed that this scale arises with only the third played flat (same as ascending melodic scale) and descends with the sixth and third steps flat same as harmonic scale.

For practical purposes it is advisable to practice and master these scales one at a time, both in the preparatory section and in the advanced section. After the natural and the harmonic forms are mastered in

any given minor key, the pupil will have very little trouble in mastering the melodic and mixed forms.

From the foregoing we make the following general rules:

To form a minor scale from any major scale of the same name, proceed thus:—

	<i>Ascending</i>	<i>Descending</i>
To make Normal minor	Play 3, 6, 7 flat:	Play 3, 6, 7 flat
To make Harmonic minor	Play 3, 6 flat:	Play 3, 6 flat
To make Melodic minor	Play 3 flat:	Play 3, 6, 7 flat
To make Mixed minor	Play 3 flat:	Play 3, 6 flat

RELATIVE MINOR AND RELATIVE MAJOR

Every minor key is related to two major keys. These relationships often cause much unnecessary confusion. They are really very simple.

The first step of any scale is called by the Latin name *Tonic*.

When a minor scale commences on the same note as a major scale, the minor scale is said to be the *tonic* minor of that major scale and *vice versa*, the major scale is said to be the *tonic* major of that minor scale. Thus, C minor is the *tonic* minor of C major; G major is the *tonic* major of G minor, etc., etc. *The signature of the tonic minor and the tonic major is always different.*

For instance, C major has no sharps or flats in the signature, C minor has three flats; G major has one sharp in the signature; G minor has two flats.

When a major scale has the same signature as a minor scale, the connection is said to be relative. For instance, C major has no sharps or flats in the signature; A minor has no sharps or flats in the signature; A minor is said to be the *relative* minor of C major. To illustrate again, E flat major has three flats in the signature, E flat major is said to be the *relative* major of C minor.

Incidentally, it may be said that much of the difficulty in understanding the minor scales comes from the fact that teachers attempt to teach the relative minor in connection with the relative major, whereas, a much clearer comprehension can be obtained if the tonic minor is studied in connection with the tonic major. That is, the connection between C minor and C major is much more clearly seen than the connection between A minor and A major. There is another very good reason for studying the scales in this order, which we shall learn later.

We have seen that the signature of the *tonic* minor differs from that of the *tonic* major (D major is two sharps, D minor is one flat). This becomes simple when we remember that *The signature of the minor scale or key is always the same as that of the major scale on the third degree of the minor scale.* For instance, the signature of C minor is three flats, the same as that of the scale commencing on its third degree, E flat. The signature of D minor is one flat, the same as that of the major scale commencing on its third degree, F.

As we have seen, the scale changes in the different forms (Normal, Harmonic, Melodic, Mixed, etc.) This confuses the beginner very greatly. He learns, for instance, that the scale of C minor has three flats in the signature, but when he actually comes to play the scales, he plays for instance, in the harmonic form, *only two flats* (E flat and A flat), but at the same time is obliged to remember that the signature of the scale actually has *three flats*. For this reason, we will commence our study of the minor scales with the Normal minor scale, in which the signature used is precisely the same as the notes played.

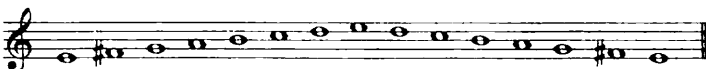
When the notes in the scale are different from those in the signature, accidentals are used to express this difference. Thus, it may be seen that the Harmonic, Melodic and Mixed scales must be expressed in part by accidentals.

KEYBOARD WORK IN CONSTRUCTING THE MINOR SCALES

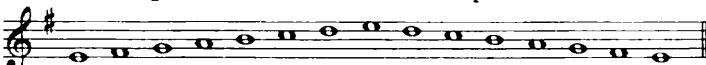
Start with the Normal minor form.

Employ the scale markers used in LESSON I in the following manner. First, place the markers in regular order over the piano keys of a major scale. Let us say E major (four sharps).

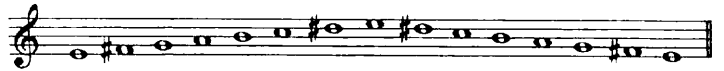
In order to make E minor (Normal form) move the markers 3, 6 and 7 to the very next piano keys to the left, white or black). This will give you the following:



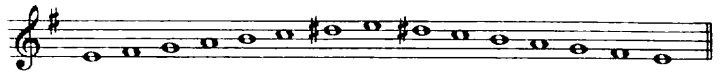
Note that the marker 3 is now upon the key G. We remember that G major has one sharp in the signature, consequently E minor has one sharp in the signature. The scale would then be printed thus:



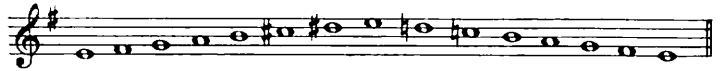
Had we desired to make the Harmonic minor of E, we would have lowered only the markers three and six, with the following results:—



Note here that two sharps remain from four sharps the original key of E major. In actual music this would be expressed thus, with the regular sharp in the signature and the extra sharp expressed as an accidental.



In similar manner, the Melodic minor would be expressed thus:



And the Mixed minor would be expressed thus:



The student should now go through the entire system of major scales and convert them into the normal minor scale of the same name at the Keyboard by means of the markers mentioned. As soon as he has worked out a scale at the keyboard, he should turn to the following pages and write it out in the place assigned for that purpose.

His work will proceed smoothly in forming the scales of C, G, D, A, E, B and F sharp, minor, but when he reaches the next scale in the order previously given, he will surely encounter a difficulty. To make this clear, we must remember something we learned in LESSON II; i.e. *We always employ the key signature with the fewest sharps and flats.*

In the minor scales, it is better to employ as few accidentals as possible. The third of the scale of D flat major, for instance, is F. If we flat the third, we have, according to the above, F flat with eight flats,—an impossible signature. Now F flat is nothing other than E. E major has four sharps. For this reason, we never use the scale of D flat minor, but always that of C sharp minor, which in this case calls for a minor signature with only four sharps. For the same reason we use the scale of G sharp minor with five sharps, instead of A flat minor with seven flats. D sharp minor calls for six sharps in the signature. These, like all scales commencing on the same piano key, but expressed by different printed notes are called *enharmonic* and may be used interchangeably.

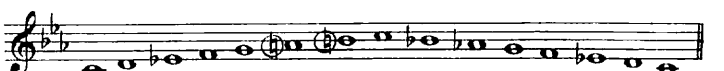
WRITING EXERCISES IN MINOR SCALES

The following exercises, if properly written out, will do much to fix a correct idea of the formation of the minor scales in the pupil's mind. Four forms are given: Normal, Harmonic, Melodic and Mixed.

The student is expected:

- 1st To insert the necessary sharps or flats immediately before the notes in order to make the scale correspond with the intervals at the top of each page.
- 2d In the Harmonic minor scale, one of these sharps or flats will be an accidental; that is, it will not be a part of the signature. In the Melodic and Mixed scales, two accidentals will be employed
- 3d When all the necessary sharps and flats have been inserted before the notes to make the proper step formation or intervals, the student should determine which sharps or flats go in the signature and then write in the signature in its proper place after the clef.
- 4th After the signature has been inserted, the student should draw a circle around the remaining accidentals to fix in his mind the fact that they do not come in the signature.

In order that the pupil may understand these suggestions, we give the scale of C Melodic minor worked out in the manner indicated above:—



NORMAL MINOR

1 whole step 2 half step 3 whole step 4 whole step 5 half step 6 whole step 7 whole step 8 whole step 9 whole step 10 half step 11 whole step 12 whole step

MELODIC MINOR

1 whole step 2 half step 3 whole step 4 whole step 5 whole step 6 whole step 7 half step 8 whole step 9 whole step 10 half step 11 whole step 12 whole step

HARMONIC MINOR

1 whole step 2 half step 3 whole step 4 whole step 5 half step 6 step and a half 7 half step 8 half step 9 step and a half 10 half step 11 whole step 12 whole step 13 half step 14 whole step

MIXED MINOR

1 whole step 2 half step 3 whole step 4 whole step 5 whole step 6 whole step 7 half step 8 half step and a 9 half step 10 whole step 11 whole step 12 half step 13 whole step

After writing out the scales in the foregoing manner, the pupil should play the tonality (two finger) exercises in all the minor forms as he has previously done in the major. Only the Harmonic Minor is given here but the Melodic Normal and Mixed afford excellent drill which should not be neglected.

Fingering same as in Major

C minor 3 flats, C minor 3 flats, etc.

C minor 3 flats, C minor 3 flats, etc.

G minor 2 flats, G minor 2 flats, etc.

G minor 2 flats, G minor 2 flats, etc.

D minor 1 flat, D minor 1 flat, etc.

D minor 1 flat, D minor 1 flat, etc.

A minor no sharps, A minor no sharps, etc.

A minor no sharps, A minor no sharps, etc.

E minor 1 sharp, E minor 1 sharp, etc.

E minor 1 sharp, E minor 1 sharp, etc.

B minor 2 sharps, B minor 2 sharps, etc.

B minor 2 sharps, B minor 2 sharps, etc.

F sharp minor 3 sharps, F sharp minor 3 sharps, etc.

F sharp minor 3 sharps, F sharp minor 3 sharps, etc.

C sharp minor 4 sharps, C sharp minor 4 sharps, etc.

C sharp minor 4 sharps, C sharp minor 4 sharps, etc.

G sharp minor 5 sharps, G sharp minor 5 sharps, etc.

G sharp minor 5 sharps, G sharp minor 5 sharps, etc.

E flat minor 6 flats, E flat minor 6 flats, etc.

E flat minor 6 flats, E flat minor 6 flats, etc.

B flat minor 5 flats, B flat minor 5 flats, etc.

B flat minor 5 flats, B flat minor 5 flats, etc.

F minor 4 flats, F minor 4 flats, etc.

F minor 4 flats, F minor 4 flats, etc.

After completing the Harmonic minor scale in all keys with the two-finger exercises, the enthusiastic student may play the Normal, Melodic and Mixed forms in all minor keys in similar manner.

Fingering the scale becomes quite a simple matter when one has a clear understanding of a few easily understood rules. These rules are based upon very clear principles.

I. The fingering of the scales follows the repetition of the fingers in this order:

1 2 3 1 2 3 4 1 2 3 1 2 3 4 1

The fifth finger is not used at all, except as the end finger of a scale run, where it may be used instead of the thumb.

The above order of the fingers is changed only in special cases where special conditions seem to demand it. The pupil should in all cases learn the regular fingering first and the exceptions later.

II. With a few necessary exceptions, the Harmonic minor scales are fingered like the major scales of the same name (C minor like C major, G minor like G major). This forms a very quick means of getting an excellent general idea of the plan for fingering the Harmonic minor scales.

The fingering of the melodic minor scales is more irregular often being different in ascending and descending. It is always better to learn the simpler or Harmonic fingering first.

The scales in which the fingering in the harmonic minor is different from the major scales of the same name are:-

Right Hand in F sharp minor differs from F sharp major.

Right Hand in C sharp minor differs from C sharp (or D flat) major.

Left Hand in E flat minor differs from E flat major.

Left Hand in B flat minor differs from B flat major.

Since there are only four exceptions it is evident that it is a great economy of time to learn the general fingering rules in both major and minor first and then master the exceptions later.

III. The fourth finger may be called the monitor of the scales. It comes only once in an octave and if we know where the fourth finger goes we immediately have the means whereby we may ascertain the position of all the other fingers. Consequently, all we need to know about the fingering of any given scale is where the fourth finger goes. The following rules are based upon the above principles and give the position of the fourth finger in all scales.

1. All sharp scales with no more than four sharps, including the scale of C (and minor scales beginning with the same piano key).

RIGHT HAND: Fourth finger on the 7th step or degree.

LEFT HAND: " " " " 2nd " " "

2. All scales employing five black piano keys (and minor scales beginning on the same piano key).

RIGHT HAND: Fourth finger on top of group of three black keys.

LEFT HAND: Fourth finger on bottom of group of three black keys.

(Exceptions in Harmonic minor: Right hand in F sharp and G sharp. The special fingering for these scales are given directly in connection with the scales themselves).

3. All major scales with no more than four flats (and minor scales beginning with the same piano key).

RIGHT HAND: Fourth finger on B flat.

LEFT HAND: Fourth finger on the fourth step or degree of scale except in the scale of F where it falls on the second, as in Class 1.

(Exceptions in Harmonic minor: Left hand in B flat minor and E flat minor. The special fingering for these scales is given directly in connection with the scales themselves). This may be made clearer by diagram.

DIVISION INTO CLASSES OR GROUPS

GROUP I	GROUP II	GROUP III
Scales with no more than four sharps (minor scales of the same name)	Scales with 5 black piano keys.	Scales with no more than four flats (minor scales of the same name)
C, G, D, A, E.	B, F#, (or Gb) Db,	Ab, Eb, Bb, F,
Place 4th finger on R.H. 7th of scale	Place 4th finger on R.H. Top of group of three black piano keys	Place 4th finger on R.H. B flat
L.H. 2d of scale	L.H. Bottom of group of three black piano keys	L.H. 4th of scale
		(Except in scale of F major and F minor where it is placed on the second step as in Group 1).

OTHER FINGERINGS

All cases of exceptional fingers are given in brackets over the regular fingering.

Liszt and Tausig were of the opinion that all the scales might be safely fingered the same as the scale of C major. This is not desirable for beginners because: 1- It leads to many extremely awkward positions on the keyboard. 2- Practically ninety-nine percent of all printed music employs the standard fingering. Any other fingering tends to confuse the beginner.

PART II

PRACTICAL TECHNICAL WORK

GENERAL DIRECTIONS

This book being a specialized work upon the technic of scale playing, does not enter into the matter of touch. The following ten general rules or suggestions are those most commonly employed by teachers and may be read and re-read with profit.

TEN SUGGESTIONS FOR SCALE PLAYING

- 1 The wrist should at all times be free, that is, absolutely unconstrained from any kind of muscular tension.
- 2 The fingers should be held curved according to the approved method.
- 3 The knuckle joints should not be permitted to "break in" when the keys are struck.
- 4 The forearm should be held quiet; that is, it should not be permitted to make exaggerated motions up and down.
- 5 The action of the fingers should be independent.
- 6 The outside (little - finger side) of the hand should be held a trifle higher than the thumb side. That is, when playing scales, the back of the hand is not held exactly parallel to the keyboard, but at a slight slant. This greatly facilitates putting under the thumb and crossing the fingers leading to smooth scale - playing.
- 7 In passing the thumb under the third, or the fourth finger, the thumb should be prepared in advance. For instance, in the ascending

scale of C, the thumb is carried gently but def ly under the second finger at the moment the second finger "strikes bottom," although the thumb is not actually played until after the third finger is struck.

- 8 In crossing the fingers or putting under the thumb the position of the hand should not be disturbed by any jerky motion or any twisting of the wrist.
 - 9 The moment a note is struck the finger intended to play the next note should immediately, accurately and easily slip into position above that note.
 - 10 All motions should be rapid and free even in slow movements.
- An excellent elementary drill in putting under the thumb and crossing over the fingers is to be found in the exercise devised by the famous teacher Kalkbrenner.
- In this, the fifth finger is gently sustained while the other fingers play.

SPECIAL PREPARATORY EXERCISES FOR TRAINING THE THUMB TO PASS RAPIDLY UNDER THE THIRD AND THE FOURTH FINGERS

These exercises are modeled after those employed in Leschetizky's so called methods as expounded by his preparatory teachers, although they may be found in similar forms in technical works published at various times during the last one hundred years.

The following present in systematic form, practically all of the essential positions in which the thumb passes under the third and the

fourth fingers. No further hand training other than the scales themselves is really necessary in this direction.

These exercises should be played with as little muscular constraint as possible.

ABOVE ALL THINGS AVOID STRAIN, ESPECIALLY IN THE CASE OF YOUNG AND UNDEVELOPED HANDS.

Exercises employing white piano keys exclusively

Exercises employing one black piano key

Exercises employing two black piano keys

Exercises employing three black piano keys

The following shows all the scales in one octave form arranged in divisions according to the fingering rules previously given.

The Harmonic form of minor scale is given as the form most frequently employed in studying the principles of fingering underlying the minor scale.

In this connection it will be interesting for the student to learn the names commonly applied in the study of harmony to the different degrees or steps of the scale, because the principal chords used in music take their names from these steps. The first step of any scale, major, minor, or chromatic, is called the *Tonic*. It makes no difference what key is being studied, the first step is known as the tonic. The word *Diatonic*, so frequently employed, simply means from one tonic through to the next tonic. This term is applied to the major and minor scales, but not to the chromatic scale.

The names given to the different steps of any major or minor scale are

- First step, TONIC
- Second step, Super-tonic
- Third step, Mediant
- Fourth step, SUB-DOMINANT
- Fifth step, DOMINANT
- Sixth step, Sub-mediante
- Seventh step, Leading-tone

(The names most frequently heard are in capitals.)

The chords employed at the end of each scale form a succession known as a cadence. This uses the three principal chords of the key. These chords are known as

The Tonic Chord: Made up of the 1st, 3d, 5th degrees of the scale

The Dominant Chord: Composed of the 5th, 7th and 2d degrees

The Sub-Dominant Chord: Composed of the 4th, 6th and 1st degrees

The Dominant Seventh Chord: Composed of the 5th, 7th, 2d and 4th degrees

These chords coming in such a succession determine the key without question or doubt. Therefore similar successions of chords are often found at the close of a piece.

SCALE EXERCISES

In the following, no attempt should be made to attain speed or great technical finish. The scales are presented first in this form in order that the student may inspect the fingering in a leisurely manner and reflect upon it. Set the metronome at 60 and count one beat to each quarter note.

FIRST CLASS

This class includes all major scales with no more than four sharps and all minor scales of the same name.

(C, G, D, A, E Major and c, g, d, a, e minor.)

RULE

Right hand: Fourth finger on seventh degree of scale.

Left hand: Fourth finger on second degree of scale.

(Note: there are no exceptions in this class.)

Scale of C Major (German name C dur)

Scale of G Major (German name G dur)

Scale of D Major (German name D dur)

Scale of A Major (German name A dur)

Scale of E Major (German name E dur)

Important Notice. It may easily be seen that on the lowest note and on the highest note of a given scale it becomes advisable to use the most convenient finger. For instance, in the left hand of the scale of C the thumb naturally falls upon the piano key C and thus follows the rule given but at the start of the scale it is more convenient to introduce the fifth finger instead of the thumb. In the right hand of the same scale it would obviously be very difficult to play the thumb upon the highest C of the scale according to the rule, since the fifth finger is right at hand. This same principle applies to all the scales and when a special fingering is found upon the lowest note or the highest note of the scale the intelligent pupil will have little difficulty in introducing it.

Scale of C Minor (German name C moll)

Scale of G Minor (German name G moll)

Scale of D Minor (German name D moll)

Scale of A Minor (German name A moll)

Scale of E Minor (German name E moll)

This class includes all scales employing five black piano keys, and the minor keys of the same name. (B Major or its enharmonic equivalent C flat; F sharp Major or its enharmonic equivalent G flat; C sharp Major or its enharmonic equivalent D flat; f sharp minor, c sharp minor, and b minor.)

RULE

Right Hand: Fourth finger on the upper of three black piano keys.

Left Hand: Fourth finger on the lowermost of three black piano keys.

(Exception: The fingering of the right hand in the scales of f sharp minor and c sharp minor does not follow this rule.)

Scale of B Major (German name H dur)

(Note: In one of the earlier scales, the note we now know as B flat, was used invariably for the seventh degree of the scale of C. Later the sound we now identify as B was found to be a necessity and when introduced it was called H in Germany. Consequently we have H dur and H moll.)

Scale of C flat Major (German name Ces dur)

(Note: This is the enharmonic scale to B major. It employs exactly the same piano keys and the same fingering, although it is printed in different notes. This scale is rarely seen printed in the flat key although it is frequently seen in sharps. The scales of C flat minor is hardly ever seen but the scale of B minor is used instead.)

Scale of B Minor (German name H moll)

Scale of F sharp major (German name Fis dur)

(Note: this is the enharmonic scale to G flat major.)

Scale of G flat major (German name Ges moll)

(Note: this is the enharmonic scale to F sharp major.)

Scale of F sharp Minor (German name Fis moll)

(Note: The G flat minor scale is never seen. F sharp minor is used instead)

Exception: Observe that the fingering in the right hand in this scale does not follow the general rule. The fourth finger comes upon G sharp. This is the fingering most widely employed.)

Scale of C sharp Major (German name Cis dur)

(Note: This scale is enharmonic to D flat major. D flat major is used much more frequently than C sharp major.)

Scale of D flat Major (German name Des dur)

(Note: This scale is enharmonic to C sharp major, and is much more frequently employed.)

Scale of C sharp Minor (German name Cis moll)

(Note: D flat minor is never used. C sharp minor is used.)

Exception: Observe that the fingering in the right hand in this scale does not follow the general rule. The fourth finger comes upon D sharp. This is the fingering most widely employed.

THIRD CLASS

This class includes all major flat scales with no more than four flats and the minor scales of the same name.

(A flat major, E flat major, B flat major and F major.)

(A flat minor, or its enharmonic g sharp minor; e flat minor, or its enharmonic d sharp minor; b flat minor, or its enharmonic a sharp minor; and f minor.)

RULE

Right Hand: Fourth finger on B flat.

Left Hand: Fourth finger on the fourth degree of scale.

(Exceptions: F Major, left hand, fourth finger on second degree.

B flat minor, left hand, fourth finger on G flat.

E flat minor, left hand, fourth finger on G flat.

Scale of A flat Major (German name As dur)

Scale of A flat Minor (German name As moll)

Play left hand one octave higher

Scale of B flat Major (German name B dur)

Scale of G sharp Minor (German name Gis moll)

Play left hand one octave higher

Scale of B flat minor (German name B moll)

(Exception: Observe that the fourth finger of the left hand falls on G flat, - not on the fourth degree.)

Scale of E flat Major (German name Es dur)

(Note: the enharmonic major of this scale D sharp Major is practically never seen.)

Scale of A sharp Minor (German name Ais moll)

(Note: This scale is very rarely seen. It's enharmonic B flat Minor is used much more frequently.)

Scale of E flat Minor (German name Es moll)

(Exception: Observe that in the left hand the fourth finger falls on G flat, - not on the fourth degree.)

Scale of F Major (German name F dur)

(Exception: Observe that in the left hand the regular fingering rule is varied and that the fourth finger comes on the second degree of the scale.)

Play left hand one octave higher

Scale of D sharp Minor (German name Dis moll)

(Note: Both D sharp minor and E flat minor are employed with equal frequency. Observe the fingering exception as in the scale of A flat minor.)

Scale of F Minor (German name F moll)

(Exception: Observe that in the left hand the fourth finger falls on the second degree, - not the fourth.)

MAJOR AND MINOR SCALES

TWO OCTAVE FORM

SPECIAL DIRECTIONS FOR PRACTICING THE SCALES

The following practical scale exercises are arranged in this order in each major key.

METRONOME OUTLINE

(for Section B)

Until real velocity work is attempted along the lines indicated later in this work, it is best to play the scales at a moderate rate of speed. The following are practical rates at which to play the scales themselves.

SEC. A. These have been given the name of "Radiating Exercises," because radiating from a given centre note they ultimately touch the limits of the two octave scale. By means of this exercise, we go from the known to the unknown, step by step, until the fingering becomes second nature.

SEC. B. The scales themselves divided into sixteenths.

In octaves.

In contrary motion.

In thirds and tenths, (also contrary motion.)

In sixths, (also contrary motion.)

These are the forms most used in conservatories and in examinations for musical institutions.

Each Scale Exercise once at $\text{♩} = 60$ or 60 notes per minute

" " " twice " $\text{♩} = 96$ " 96 " " "

" " " four times " $\text{♩} = 120$ " 120 " " "

" " " eight " " $\text{♩} = 160$ " 160 " " "

" " " " " " $\text{♩} = 208$ " 208 " " "

The speed must of course be adjusted to the advancement of the pupil and the amount of time spent in practice.

Scale of C Major

RADIATING EXERCISE SECTION A

This exercise is designed to fix the fingering in the mind by advancing the fingering step by step.

Play each exercise separately eight times, or until the fingering of each exercise becomes as second nature or until it is not necessary to have to think about the details of fingering. In other words, these little exercises become automatic. Proceed in the same manner with all the radiating exercises on following pages.

Right hand fingering above

Left hand fingering below (Play two octaves below)

Standard Scale Forms

The following forms of scale practice have been established by long usage and form the basis of the examination work in many conservato-

ries here and abroad. All the scales in this book pass through these forms and their regular use is strongly advocated by leading teachers.

SECTION B

In similar motion

In contrary motion

4th Finger on B, (7th degree of scale)

4th Finger on D, (2d degree of scale)

In Thirds or in Tenths

In contrary motion, commencing with the Third

4th Finger on B, (7th degree of scale)

4th Finger on D, (2d degree of scale)

In Sixths

In contrary motion, commencing with the Sixth

4th Finger on B, (7th degree of scale)

4th Finger on D, (2nd degree of scale)

Scale of C Minor

Right hand: 4th finger on 7th degree. Left hand: 4th finger on second degree.

Since the fingering of the scale of C minor is the same as that of C major special preparatory exercises and radiating exercises are not printed in full here. Minor radiating exercises can very readily be made from the the major radiating exercises and the student is strongly urged to employ the radiating exercises with all minor scales as well as the major scales.

Employ the same metronome plan as used in the major scales.

The student need not make a special keyboard study of the Normal or Natural minor, nor the Mixed minor. If he masters the Harmonic minor and the Melodic minor he will have little difficulty with the other forms when they appear in musical compositions.

Harmonic Minor, in similar motion

Harmonic Minor, in contrary motion

4th Finger on B \flat , (7th degree of the scale)

4th Finger on D, (2d degree of the scale)

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor, in contrary motion, commencing with the Third

4th Finger on B \flat , (7th degree of the scale)

4th Finger on D, (2d degree of the scale)

Harmonic Minor in Sixths

Harmonic Minor, in contrary motion, commencing with the Sixth

4th Finger on B \flat , (7th degree of the scale)

4th Finger on D, (2d degree of the scale)

Melodic Minor in similar motion, starting with the lowest, and also with the highest note

4th Finger on B \flat ascending and B \flat descending (7th degree of the scale)

4th Finger on D, (2d degree of the scale)

Scale of G Major

Right hand: 4th finger on 7th degree; Left hand: 4th finger on 2d degree

RADIATING EXERCISE

Right hand fingering above

Left hand fingering below

Metronome plan to regulate speed same as with C major

In similar motion

In contrary motion

4th Finger on F#, (7th degree of scale)

4th Finger on A, (2d degree of scale)

In Thirds, or in Tenths

In contrary motion, commencing with the Third

4th Finger on F#, (7th degree of scale)

4th Finger on A, (2d degree of scale)

In Sixths

In contrary motion, commencing with the Sixth

4th Finger on F#, (7th degree of scale)

4th Finger on A, (2d degree of scale)

Scale of G Minor

Right hand: 4th finger on 7th degree; Left hand: 4th finger on 2d degree

All special directions same as in scale of C

Harmonic Minor, in similar motion

Harmonic Minor, in contrary motion

4th Finger on F#, (7th degree of the scale)

4th Finger on A, (2d degree of the scale)

Harmonic Minor, in Thirds, or in Tenth

Harmonic Minor, in contrary motion, commencing with the Third

4th Finger on F#, (7th degree of the scale)

4th Finger on A, (2d degree of the scale)

Harmonic Minor, in Sixths

Harmonic Minor, in contrary motion, commencing with the Sixth

4th Finger on F#, (7th degree of the scale)

4th Finger on A, (2d degree of the scale)

Melodic Minor, in similar motion, starting with the lowest and also with the highest note

(7th degree of the scale)
4th Finger on F# ascending and F# descending

4th Finger on A, (2d degree of the scale)

Scale of D Major

Right hand: 4th finger on 7th degree; Left hand: 4th finger on 2d degree

RADIATING EXERCISES

Right hand fingering above

Left hand fingering below (play two octaves below)

Metronome plan to regulate speed same as with C major

In similar motion

In contrary motion

4th Finger on C#, (7th degree of the scale)

4th Finger on E, (2d degree of the scale)

In Thirds, or in Tenths

In contrary motion, commencing with the Third

4th Finger on C#, 7th degree of scale

4th Finger on E, 2d degree of scale

In Sixths

In contrary motion, commencing with the Sixth

4th Finger on C#, 7th degree of scale

4th Finger on E, 2d degree of scale

Scale of D Minor

Right hand: 4th finger on 7th degree; Left hand: 4th finger on 2d degree
All special directions same as in scale of C

Harmonic Minor in similar motion

Harmonic Minor in contrary motion

4th Finger on C#, (7th degree of scale)

4th Finger on E, (2d degree of scale)

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor in contrary motion, from the Third

4th Finger on C#, (7th degree of scale)

4th Finger on E, (2d degree of scale)

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, from the Sixth

4th Finger on C#, (7th degree of scale)

4th Finger on E, (2d degree of scale)

Melodic Minor in similar motion, starting with the lowest and also with the highest note

4th Finger on C# ascending and C# descending
(7th degree of scale)

4th Finger on E, (2d degree of scale)

Scale of A Major

Right hand: 4th finger on 7th degree; Left hand: 4th finger on 2d degree

RADIATING EXERCISES

Right hand fingering above

Left hand fingering below (play two octaves below)

Metronome plan to regulate speed same as with C major

Major in similar motion

Major in contrary motion

4th Finger on G#, (7th degree of scale)

4th Finger on B, (2d degree of scale)

Major in Thirds, or in Tenths

Major in contrary motion, commencing with the Third

4th Finger on G#, (7th degree of scale)

4th Finger on B, (2d degree of scale)

Major in Sixths

Major in contrary motion, commencing with the Sixth

4th Finger on G#, (7th degree of scale)

4th Finger on B, (2d degree of scale)

Scale of A Minor

Right hand: 4th finger on 7th degree; Left hand: 4th finger on 2d degree

All special directions same as scale of C

Harmonic Minor in similar motion

Harmonic Minor in contrary motion

4th Finger on G#, (7th degree of scale)

4th Finger on B, (2d degree of scale)

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on G#, (7th degree of scale)

4th Finger on B, (2d degree of scale)

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on G#, (7th degree of scale)

4th Finger on B, (2d degree of scale)

Melodic Minor in similar motion, starting with the lowest and also with the highest note

(7th degree of scale)
4th Finger on G# ascending and Gb descending

4th Finger on B, (2d degree of scale)

Scale of E Major

Right hand: 4th finger on 7th degree; Left hand: 4th finger on 2d degree

RADIATING EXERCISES

Right hand fingering above

Left hand fingering below play two octaves below

Metronome plan to regulate speed same as with C major
Major in similar motion

Major in contrary motion

4th Finger on D#, (7th degree of scale)

4th Finger on F#, (2d degree of scale)

Major in Thirds or in Tenths

Major in contrary motion, commencing with the Third

4th finger on D# (7th degree of scale)

4th finger on F# (2d degree of scale)

Major in Sixths

Major in contrary motion, commencing with the Sixth

4th finger on D# (7th degree of scale)

4th finger on F# (2d degree of scale)

Scale of E Minor

Right hand: 4th finger on 7th degree; Left hand: 4th finger on 2d degree
All special directions as in scale of C major

Harmonic Minor in similar motion

Harmonic Minor in contrary motion

4th Finger on D# (7th degree of scale)

4th Finger on F# (2d degree of scale)

Harmonic Minor in Thirds or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on D# (7th degree of scale)

4th Finger on F# (2d degree of scale)

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on D# (7th degree of scale)

4th Finger on F# (2d degree of scale)

Melodic Minor in similar motion starting with the lowest and also with the highest note

(7th degree of scale)

4th Finger on D# ascending and D# descending

4th Finger on F# (2d degree of scale)

Harmonic Minor Thirds, or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on A#

4th Finger on F#

Detailed description: This block contains two systems of musical notation. The first system is for 'Harmonic Minor Thirds, or in Tenths', showing a right hand with a treble clef and a left hand with a bass clef. The right hand starts on A# and moves up, while the left hand starts on F# and moves down. The second system is for 'Harmonic Minor in contrary motion, commencing with the Third', showing a right hand starting on G# and moving up, while the left hand starts on F# and moves down. Both systems include detailed fingering numbers (1-4) above and below the notes.

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on A#

4th Finger on F#

Detailed description: This block contains two systems of musical notation. The first system is for 'Harmonic Minor in Sixths', showing a right hand starting on A# and moving up, while the left hand starts on F# and moves down. The second system is for 'Harmonic Minor in contrary motion, commencing with the Sixth', showing a right hand starting on G# and moving up, while the left hand starts on F# and moves down. Both systems include detailed fingering numbers (1-4) above and below the notes.

Melodic Minor in similar motion

4th Finger on A# ascending and A# descending

4th Finger on F#

Detailed description: This block contains two systems of musical notation. The first system is for 'Melodic Minor in similar motion', showing a right hand starting on A# and moving up, while the left hand starts on F# and moves down. The second system is for 'Melodic Minor in similar motion', showing a right hand starting on A# and moving down, while the left hand starts on F# and moves down. Both systems include detailed fingering numbers (1-4) above and below the notes.

Scale of F Sharp Major (Enharmonic G Flat)

Right hand: 4th finger on top key of group of three black piano keys
Left hand: 4th finger on bottom key of group of three black piano keys

RADIATING EXERCISES

Right hand fingering above

Detailed description: This block contains a single system of musical notation for 'Right hand fingering above'. It shows a right hand with a treble clef and a 2/4 time signature. The exercise consists of a sequence of notes with detailed fingering numbers (1-4) above them.

Left hand fingering below (play two octaves below)

Detailed description: This block contains a single system of musical notation for 'Left hand fingering below'. It shows a left hand with a bass clef and a 2/4 time signature. The exercise consists of a sequence of notes with detailed fingering numbers (1-4) below them.

Detailed description: This block contains a single system of musical notation for a third radiating exercise. It shows a right hand with a treble clef and a 2/4 time signature. The exercise consists of a sequence of notes with detailed fingering numbers (1-4) above them.

Metronome plan to regulate speed same as with C Major

Major in similar motion

Major in contrary motion

4th Finger on A# top of three black piano keys

4th Finger on F# bottom of three black piano keys

Detailed description: This block contains two systems of musical notation. The first system is for 'Major in similar motion', showing a right hand starting on A# and moving up, while the left hand starts on F# and moves down. The second system is for 'Major in contrary motion', showing a right hand starting on A# and moving down, while the left hand starts on F# and moves down. Both systems include detailed fingering numbers (1-4) above and below the notes.

Major in contrary motion, commencing with the Third

Major in Thirds, or in Tenths

4th Finger on A#

4th Finger on F#

Major in contrary motion, commencing with the Sixth

Major in Sixths

4th Finger on A#

4th Finger on F#

Scale of F Sharp Minor

Right hand: 4th finger on G sharp; Left hand: 4th finger on F sharp.
 (Note that in the left hand the regular fingering is followed; that is, the fourth finger of the left hand goes upon the bottom key of the group of three black piano keys, or F sharp. The fingering of the

right hand in this scale is altogether irregular. In the harmonic minor, it goes upon the second degree of the scale, G sharp, while in the melodic minor form it goes upon the sixth degree, D sharp, ascending, and upon the second degree, G#, descending.

Harmonic Minor in similar motion

Harmonic Minor in contrary motion

4th Finger on G#

4th Finger on F#

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on G#

4th Finger on F#

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on G#

4th Finger on F#

Melodic Minor in similar motion

4th Finger on D# ascending and G# descending

4th Finger on F#

Scale of D Flat Major (Enharmonic C Sharp)

Pupils will frequently meet with pieces written in the key of D flat major (five flats) but the enharmonic key of C sharp major is more rarely encountered, as it has seven sharps in the signature and

proves awkward for the novice to read. However, the minor scale almost invariably appears as C sharp minor with the signature of four sharps, and not D flat minor, as this would require the complicated signature of eight flats.

Right hand: 4th finger on top key of group of three black piano keys
Left hand: 4th finger on bottom key of group of three black piano keys

Right hand fingering above

RADIATING EXERCISES

Left hand fingering below (play two octaves below)

Metronome plan to regulate speed same as with C major

Major in similar motion

Major in contrary motion

4th Finger on Bb (top of group of three black keys)

4th Finger on Gb (bottom of group of three black keys)

Major in Thirds, or in Tenths

Major in contrary motion, commencing with the Third

4th Finger on Bb

Play left hand one octave lower

4th Finger on Gb

Major in Sixths

Major in contrary motion, commencing with the Sixth

4th Finger on Bb

4th Finger on Gb

Scale of C Sharp Minor

Right hand: 4th finger on D sharp; Left hand: 4th finger on F sharp.
(Note that in the right hand fingering of the C sharp minor scale in the harmonic form the fingering differs from the rule. Instead of the fourth finger going on the top of the group of three black piano

keys it goes upon D sharp. This is also true of the descending melodic scale, but in the ascending melodic scale the fingering in the right hand may follow the regular rule which permits the fourth finger to go on the uppermost note of the three black piano keys, A sharp.)

Harmonic Minor in similar motion

Harmonic Minor in contrary motion

4th Finger on D#

4th Finger on F#

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on D#

4th Finger on F#

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on D#

4th Finger on F#

Melodic minor in similar motion

4th Finger on A# ascending and D# descending

4th Finger on F#

Scale of A Flat (Enharmonic G Sharp)

Right hand: Fourth finger on B flat

Left hand: Fourth finger on fourth degree of scale (D flat)

(The major scale of A flat is frequently encountered in pieces. The major scale of G sharp is rare, as the signature is eight sharps)

RADIATING EXERCISES

Right hand fingering above

Left hand fingering below

Metronome plan to regulate speed, same as with C major

Major in similar motion

Major in contrary motion

4th Finger on Bb

4th Finger on Db (Fourth degree of scale)

Major in Thirds, or in Tenths

Major in contrary motion, commencing with the Third

4th Finger on Bb

4th Finger on Db

Major in Sixths

Major in contrary motion, commencing with the Sixth

4th Finger on Bb

4th Finger on Db

Scale of A Flat Minor (Enharmonic G Sharp Minor)

Right hand: 4th finger on B flat; Left hand: 4th finger on 4th degree Db
 Note the difference in the fingering in the descending melodic minor scale in the left hand, in which the fourth finger goes on G flat, the

seventh degree, instead of on D flat, the fourth degree
 All special directions same as in scale of C.

Harmonic Minor (Enharmonic G# minor) in similar motion

Harmonic Minor in contrary motion

4th Finger on Bb

4th Finger on Db

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on Bb

4th Finger on Db

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on Bb

4th Finger on Db

Melodic Minor in similar motion

4th Finger on Bb

4th Finger on Db ascending and Gb descending

Scale of E Flat Major

Right hand: 4th finger on B flat; Left hand: 4th finger on 4th degree

RADIATING EXERCISES

Right hand fingering above

Left hand fingering below (play two octaves below)

Metronome plan to regulate speed same as with C major

Major in similar motion

Major in contrary motion

4th Finger on B \flat

4th Finger on A \flat (4th degree of scale)

Major in Thirds, or in Tenths

Major in contrary motion, commencing with the Third

4th Finger on B \flat

4th Finger on A \flat

Major in Sixths

Major in contrary motion, commencing with the Sixth

4th Finger on B \flat

4th Finger on A \flat

Scale of E Flat Minor (Enharmonic D Sharp Minor)

Right hand: 4th finger on B flat; Left hand: 4th finger on G flat.
(Note that in the left hand fingering in this scale, in both the harmonic and the melodic forms, the fourth finger goes upon G flat in -

stead of upon the fourth degree A flat as in the major scale of E flat. To finger the left hand like the left hand of the major scale would be somewhat awkward.) All special directions same as the scale of C.)

Harmonic Minor in similar motion

Harmonic Minor in contrary motion

4th Finger on B \flat

4th Finger on G \flat

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on Bb

4th Finger on Gb

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on Bb

4th Finger on Gb

Melodic Minor in similar motion

4th Finger on Bb

4th Finger on Gb

Scale of B Flat Major

Right hand: 4th finger on B flat; Left hand: 4th finger on 4th degree

RADIATING EXERCISES

Right hand fingering above

Left hand fingering below (play two octaves below)

Metronome plan to regulate speed, same as with C major

Major in similar motion

Major in contrary motion

4th Finger on Bb

4th Finger on Eb (4th degree of scale)

Major in Thirds, or in Tenths

Major in contrary motion, commencing with the Third

4th Finger on Bb

4th Finger on Eb

Major in Sixths

Major in contrary motion, commencing with the Sixth

4th Finger on Bb

4th Finger on Eb

Scale of B Flat Minor (Enharmonic A Sharp Minor)

Right hand: 4th finger on B flat; Left hand: 4th finger on G flat.
(Note: In this scale the left hand fourth finger falls on G flat (harmonic form) or on G natural in the ascending melodic.)

It would be extremely awkward to attempt to apply the regular finger of scales in this class to the left hand of this scale.
All special directions same as the scale of C.

Harmonic Minor in similar motion

Harmonic Minor in contrary motion

4th Finger on Bb

4th Finger on Gb

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on Bb

4th Finger on Gb

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on Bb

4th Finger on Gb

Melodic Minor in similar motion

4th Finger on Bb

4th Finger on Gb ascending and Gb descending

Scale of F Major

Right hand: 4th finger on 4th degree; Left hand: 4th finger on 2d degree
(The pupil should note in this case that the left hand fingering does not follow the regular fingering of the class of scales with four flats

or less. In the scale of F the fingering for the left hand is the same as in the case of the scales with no more than four sharps, and the 4th finger goes on the second degree of the scale.)

RADIATING EXERCISES

Right hand fingering above

Left hand fingering below (play two octaves below)

Metronome plan to regulate speed same as with C major

Major in similar motion

Major in contrary motion

4th Finger on Bb

4th Finger on G

Major in Thirds, or in Tenths

Major in contrary motion, commencing with the Third

4th Finger on Bb

4th Finger on G

Major in Sixths

Major in contrary motion, commencing with the Sixth

4th Finger on Bb

4th Finger on G

Scale in F Minor

Right hand: 4th finger on B flat; Left hand: 4th finger on 2d degree
All special directions same as scale of C

Harmonic Minor in similar motion

Harmonic Minor in contrary motion

4th Finger on Bb

4th Finger on G

Harmonic Minor in Thirds, or in Tenths

Harmonic Minor in contrary motion, commencing with the Third

4th Finger on Bb
4th Finger on G

Harmonic Minor in Sixths

Harmonic Minor in contrary motion, commencing with the Sixth

4th Finger on Bb
4th Finger on G

Melodic Minor in similar motion

4th Finger on Bb
4th Finger on G

Additional Forms for Practicing the Scales

While many systems require the pupil to practice all of the scales in the following forms as well as the preceding forms, the author does not generally advise it in the cases of many pupils.

It is far better to practice these and other more arbitrary forms of the scales in actual pieces when such scale passages are encountered.

The Major scale in similar motion

The Major scale in contrary motion

4th Finger on B
4th Finger on D

The Major scale at intervals of Thirds (or Tenths)

The Major scale in contrary motion, commencing with the Third

4th Finger on B
4th Finger on D

The Major scale at intervals of Sixths

The Major scale in contrary motion, commencing with the Sixths

4th Finger on B
4th Finger on D

The Harmonic Minor Scale in similar motion

The Harmonic Minor Scale in contrary motion.

4th Finger on B \flat

4th Finger on D

The Harmonic Minor Scale at intervals of Thirds (or Tenths)

The Harmonic Minor Scale in contrary motion, commencing with the Third degree

4th Finger on B \flat

4th Finger on D

The Harmonic Minor Scale at intervals of Sixths

The Harmonic Minor Scale in contrary motion, commencing with the Sixth degree

4th Finger on B \flat

4th Finger on D

Fingering the Chromatic Scale

The fingering of the chromatic scale is very much simpler than that of either the major or the minor scale. Because of the elevated position of the hand forced by the nature of the scale itself and the short distance covered in putting under the thumb, the scale may be played with great smoothness with slight difficulty.

Three fingerings of this scale are in use and they are here given in the order most frequently seen.

The French fingering: Thumb on all white keys in right hand except C and F. Third finger on all black keys. Thumb on all white keys in

left hand except B and E. Third finger on all black keys. This fingering is firm and vigorous.

The English fingering—same as the French fingering except that in the right hand, the fingers 1, 2, 3, 4 fall in succession on the keys G, G sharp, A and A sharp; in the left hand the fingers 1, 2, 3, 4 fall in succession upon the keys A, A flat G and G flat. This fingering has the advantage of being more rapid than the French.

The German or Mixed fingering. This fingering is not so frequently seen in modern editions, as it is not quite so effective as the English or the French fingerings, which are now widely used in Germany.

Right Hand	{	German 2												
		English 2	3	1	2	1	2	3	1	3	1	3	1	2
		French 2	3	1	3	1	2	3	1	3	1	3	1	2

Left Hand	{	French 1	3	1	3	2	1	3	3	1	3	2	1
		English 1	2	1	3	2	1	4	2	1	2	1	3
		German 1											

I
The Chromatic Scale
(So-called French Fingering)

In similar motion

In contrary motion

3d Finger on all black keys

3d Finger on all black keys

In Thirds, or in Tenths

In contrary motion, commencing with the Third

3d Finger on all black keys

3d Finger on all black keys

In Sixths In contrary motion, starting from the Sixth

3d Finger on all black keys

3d Finger on all black keys

II The Chromatic Scale (So called English Fingering)

In similar motion In contrary motion

4th Finger on Bb

4th Finger on F#

In Thirds, or in Tenths In contrary motion, starting from the Third

4th Finger on Bb

4th Finger on F#

In Sixths In contrary motion, starting from the Sixth

4th Finger on A# ascending and Bb descending

4th Finger on F#

The Chromatic Scale at Intervals of Major Thirds

3d Finger on black keys

Method of Fingering Occasionally Employed

4th Finger on A#

4th Finger on F#

Accented Scales

The principle of accent is very important in scale playing. Thus far the student's scales have been played practically without noticeable accents. In the following a pronounced accent is given to the first note in each measure, and lesser accents to the notes indicated in other parts of the measure. In no case should the accent be accompanied by any jerky motion of the hand (except in special cases where the teacher employs a special touch.)

Play all the scales in the following designs in all keys. The work must be adjusted to the pupil's time and needs. The scales should

be practiced alternately with and without the metronome. The entire series should be played through from beginning to end at the same speed. That is, set the metronome at a sufficiently slow rate in playing the half notes so that the section in thirty-second notes may be played without stumbling. Gradually advance the metronomic speed, always returning to a slower speed at the first sign of stumbling. Do not depend upon this section for great speed as this branch of the work will be taken up in the chapter devoted to that purpose.

First system of musical notation, featuring two staves with complex rhythmic patterns and sixteenth-note runs. The notation includes accents, slurs, and sixteenth-note groupings.

Second system of musical notation, continuing the piece with intricate sixteenth-note passages in both staves.

Third system of musical notation, showing further development of the sixteenth-note textures.

Fourth system of musical notation, featuring a prominent eighth-note triplet in the upper staff.

Fifth system of musical notation, with eighth-note triplet markings in both staves.

Sixth system of musical notation, continuing the eighth-note triplet patterns.

Seventh system of musical notation, concluding the page with eighth-note triplet markings.

Scales in Double Thirds

C Major and Minor

5th Finger on G

5th Finger on C and F

Detailed description: This block contains the musical notation for the C Major and C Minor scales in double thirds. The C Major scale is shown in two parts: the right hand (treble clef) and the left hand (bass clef). The right hand starts on G4 with the 5th finger, and the left hand starts on C3 with the 5th finger. The C Minor scale is also shown in two parts, with the right hand starting on G4 and the left hand starting on C3. Fingerings are indicated by numbers 1-5 above or below the notes.

G Major and Minor

5th Finger on A

5th Finger on G and C

Detailed description: This block contains the musical notation for the G Major and G Minor scales in double thirds. The G Major scale is shown in two parts: the right hand (treble clef) and the left hand (bass clef). The right hand starts on A4 with the 5th finger, and the left hand starts on G3 with the 5th finger. The G Minor scale is also shown in two parts, with the right hand starting on A4 and the left hand starting on G3. Fingerings are indicated by numbers 1-5 above or below the notes.

D Major and Minor

5th Finger on A

5th Finger on G and D

Detailed description: This block contains the musical notation for the D Major and D Minor scales in double thirds. The D Major scale is shown in two parts: the right hand (treble clef) and the left hand (bass clef). The right hand starts on A4 with the 5th finger, and the left hand starts on A2 with the 5th finger. The D Minor scale is also shown in two parts, with the right hand starting on A4 and the left hand starting on A2. Fingerings are indicated by numbers 1-5 above or below the notes.

A Major and Minor

5th Finger on E

5th Finger on E

Detailed description: This block contains the musical notation for the A Major and A Minor scales in double thirds. The A Major scale is shown in two parts: the right hand (treble clef) and the left hand (bass clef). The right hand starts on E4 with the 5th finger, and the left hand starts on E3 with the 5th finger. The A Minor scale is also shown in two parts, with the right hand starting on E4 and the left hand starting on E3. Fingerings are indicated by numbers 1-5 above or below the notes.

E Major and Minor

5th Finger on B

5th Finger on A

Detailed description: This block contains the musical notation for the E Major and E Minor scales in double thirds. The E Major scale is shown in two parts: the right hand (treble clef) and the left hand (bass clef). The right hand starts on B4 with the 5th finger, and the left hand starts on B3 with the 5th finger. The E Minor scale is also shown in two parts, with the right hand starting on B4 and the left hand starting on B3. Fingerings are indicated by numbers 1-5 above or below the notes.

B Major and Minor

5th Finger on F# and C#

5th Finger on A# and D#

5th Finger on A#

5th Finger on A#

F# Major and Minor (Enharmonic Gb)

5th Finger on F# and C#

5th Finger on A#

5th Finger on E# and B

5th Finger on A and D

C# Major and Minor (Enharmonic Db)

5th Finger on F# and C#

5th Finger on A# and D#

5th Finger on B# and F#

5th Finger on A and D#

Ab Major and Minor (Enharmonic G#)

5th Finger on G# and Db

5th Finger on F and Bb

5th Finger on Gb and Db

5th Finger on Fb and Bb

Eb Major and Minor (Enharmonic D#)

5th Finger on G and D

5th Finger on C and F

5th Finger on Gb and D

5th Finger on Eb

Bb Major and Minor

5th Finger on G

5th Finger on G

5th Finger on Gb

5th Finger on Bb

F Major and Minor

5th Finger on G

5th Finger on G

5th Finger on F

5th Finger on F and B flat

Double Thirds, C Major and C Minor, similar motion

5th Finger on G

5th Finger on C

5th Finger on C

5th Finger on C

Double Thirds, C Major, contrary motion

5th Finger on G

5th Finger on G

5th Finger on C

5th Finger on C

Double Thirds, C Minor, contrary motion

5th Finger on C

5th Finger on C

5th Finger on C

5th Finger on C

The Chromatic Scale in Double Minor Thirds

5th Finger on G and D

5th Finger on D and A

The Chromatic Scale in Double Major Thirds

5th Finger on G# and D#

5th Finger on D and A

Detailed description: This system shows the first two staves of a piano exercise. The top staff is in treble clef and the bottom in bass clef. Both staves contain a chromatic scale of double major thirds. The top staff starts on G# and the bottom on D. Fingerings are indicated by numbers 1-5 above or below notes. The exercise consists of 12 measures.

5th Finger on G# and D#

5th Finger on D and A

Detailed description: This system shows the next two staves of the exercise. The top staff starts on G# and the bottom on D. Fingerings are indicated by numbers 1-5. The exercise consists of 12 measures.

The Chromatic Scale in Double Minor Sixths

4th Finger on F#

2d Finger on A#

Detailed description: This system shows the first two staves of a piano exercise. The top staff is in treble clef and the bottom in bass clef. Both staves contain a chromatic scale of double minor sixths. The top staff starts on F# and the bottom on A. Fingerings are indicated by numbers 1-5. The exercise consists of 12 measures.

2d Finger on F#
4th Finger on A#

The Chromatic Scale in Double Major Sixths

3d Finger on C# and G#

3d Finger on Eb and Ab

Detailed description: This system shows the first two staves of a piano exercise. The top staff is in treble clef and the bottom in bass clef. Both staves contain a chromatic scale of double major sixths. The top staff starts on C# and the bottom on Eb. Fingerings are indicated by numbers 1-5. The exercise consists of 12 measures.

Chromatic Scale Chords of the Sixth with an inner voice added

3d Finger on F and Bb

3d Finger on all black keys

Detailed description: This system shows the first two staves of a piano exercise. The top staff is in treble clef and the bottom in bass clef. Both staves contain a chromatic scale of chords of the sixth with an inner voice. The top staff starts on F and the bottom on Bb. Fingerings are indicated by numbers 1-5. The exercise consists of 12 measures.

Chromatic Scale Chords of Diminished Sevenths

3d Finger on Eb and Bb

3d Finger on B and F#

Detailed description: This system shows the first two staves of a piano exercise. The top staff is in treble clef and the bottom in bass clef. Both staves contain a chromatic scale of diminished seventh chords. The top staff starts on Eb and the bottom on B. Fingerings are indicated by numbers 1-5. The exercise consists of 12 measures.

Major and Minor Scales in Double Sixths

In Scales in this form employ the third finger only once in each Octave

C MAJOR

C MINOR

3d Finger on E

3d Finger on Ab

3d Finger on G

3d Finger on B \flat

G MAJOR

G MINOR

3d Finger on E

3d Finger on Eb

3d Finger on G

3d Finger on F \sharp

D MAJOR

D MINOR

3d Finger on B

3d Finger on B \flat

3d Finger on G

3d Finger on C \sharp

A MAJOR

A MINOR

3d Finger on F \sharp

3d Finger on F

3d Finger on G \sharp

3d Finger on A

E MAJOR

E MINOR

3d Finger on C \sharp

3d Finger on E

3d Finger on G \sharp

3d Finger on E

B MAJOR

B MINOR

3d Finger on G#

3d Finger on B

3d Finger on G#

3d Finger on G

F# Major and Minor (Enharmonic Gb)

3d Finger on G#

3d Finger on F#

3d Finger on G#

3d Finger on G#

C# Major and Minor (Enharmonic Db)

3d Finger on G#

3d Finger on C#

3d Finger on G#

3d Finger on G#

Ab Major and Minor

3d Finger on Ab

3d Finger on Ab

3d Finger on Eb

3d Finger on Eb

Eb Major and Minor

3d Finger on Ab

3d Finger on Eb

3d Finger on Bb

3d Finger on Bb

B \flat major and minor

3d Finger on A

3d Finger on F

3d Finger on D \flat

3d Finger on D \flat

F major and minor

3d Finger on E

3d Finger on C

3d Finger on D \flat

3d Finger on A \flat

Double Sixths, Major and Minor in similar motion

3d Finger on E

3d Finger on G

3d Finger on A \flat

3d Finger on B \flat

Double Sixths, Major in contrary motion

3d Finger on E

3d Finger on G

Double Sixths, Minor in contrary motion

3d Finger on A \flat

3d Finger on B \flat

The Scales in Octave Form

In all octave scales employing one or more black piano keys *the fourth finger is used on the black keys and the fifth finger on the white keys*. This is particularly the case in playing legato as it insures better connection between the tones. In staccato octaves it is customary to employ the fifth finger on all octaves white or black to secure velocity.

In the following exercises where no fingering is given use the fifth finger. In playing legato it is customary to elevate the wrist slightly when the black keys are used and depress it slightly when the white keys are employed. This leads to a more fluent performance and avoids the tendency to stiffen at the wrist.

C Major and Minor

Two systems of musical notation for C Major and C Minor octave scales. Each system consists of a treble and bass clef staff. The C Major system (left) shows ascending and descending scales with fingering: 5 4 3 2 1 etc. for the treble and 1 2 3 4 5 etc. for the bass. The C Minor system (right) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. Both systems include a repeat sign at the end of each scale.

G Major and Minor

Two systems of musical notation for G Major and G Minor octave scales. Each system consists of a treble and bass clef staff. The G Major system (left) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. The G Minor system (right) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. Both systems include a repeat sign at the end of each scale.

D Major and Minor

Two systems of musical notation for D Major and D Minor octave scales. Each system consists of a treble and bass clef staff. The D Major system (left) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. The D Minor system (right) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. Both systems include a repeat sign at the end of each scale.

A Major and Minor

Two systems of musical notation for A Major and A Minor octave scales. Each system consists of a treble and bass clef staff. The A Major system (left) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. The A Minor system (right) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. Both systems include a repeat sign at the end of each scale.

E Major and Minor

Two systems of musical notation for E Major and E Minor octave scales. Each system consists of a treble and bass clef staff. The E Major system (left) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. The E Minor system (right) shows ascending and descending scales with fingering: 5 4 3 2 1 for the treble and 1 2 3 4 5 for the bass. Both systems include a repeat sign at the end of each scale.

B Major and Minor

Two systems of musical notation for the B Major and B Minor scales. Each system consists of a treble clef staff and a bass clef staff. The first system shows the B Major scale (one sharp) and the B Minor scale (no sharps or flats). The second system shows the B Major scale and the B Minor scale. Fingerings are indicated by numbers 1-5 above or below notes. The scales are written in a continuous, flowing style with slurs and ties.

F# Major and Minor (Enharmonic Gb)

Two systems of musical notation for the F# Major and F# Minor scales. Each system consists of a treble clef staff and a bass clef staff. The first system shows the F# Major scale (two sharps) and the F# Minor scale (two sharps). The second system shows the F# Major scale and the F# Minor scale. Fingerings are indicated by numbers 1-5 above or below notes. The scales are written in a continuous, flowing style with slurs and ties.

C# Major and Minor (Enharmonic Db)

Two systems of musical notation for the C# Major and C# Minor scales. Each system consists of a treble clef staff and a bass clef staff. The first system shows the C# Major scale (three sharps) and the C# Minor scale (three sharps). The second system shows the C# Major scale and the C# Minor scale. Fingerings are indicated by numbers 1-5 above or below notes. The scales are written in a continuous, flowing style with slurs and ties.

Ab Major and Minor (Enharmonic G# Minor)

Two systems of musical notation for the Ab Major and Ab Minor scales. Each system consists of a treble clef staff and a bass clef staff. The first system shows the Ab Major scale (four flats) and the Ab Minor scale (four flats). The second system shows the Ab Major scale and the Ab Minor scale. Fingerings are indicated by numbers 1-5 above or below notes. The scales are written in a continuous, flowing style with slurs and ties.

Eb Major and Minor

Two systems of musical notation for the Eb Major and Eb Minor scales. Each system consists of a treble clef staff and a bass clef staff. The first system shows the Eb Major scale (three flats) and the Eb Minor scale (three flats). The second system shows the Eb Major scale and the Eb Minor scale. Fingerings are indicated by numbers 1-5 above or below notes. The scales are written in a continuous, flowing style with slurs and ties.

Bb Major and Minor

Two systems of musical notation for the Bb Major and Bb Minor scales. Each system consists of a treble clef staff and a bass clef staff. The first system shows the Bb Major scale (two flats) and the Bb Minor scale (two flats). The second system shows the Bb Major scale and the Bb Minor scale. Fingerings are indicated by numbers 1-5 above or below notes. The scales are written in a continuous, flowing style with slurs and ties.

Two systems of musical notation for F Major and Minor. Each system consists of a treble clef staff and a bass clef staff. The first system is in F Major (one flat), and the second is in F Minor (two flats). Both systems feature a continuous eighth-note scale in both hands, with fingerings (1-4-1-4) and slurs indicated above and below the notes.

Special Exercises in Octave Scale Playing
Octaves, C Major and C Minor, in similar motion

Two systems of musical notation for C Major and C Minor octave scales in similar motion. Each system has a treble and bass staff. The first system is in C Major, and the second is in C Minor. The scales are played in similar motion (both hands moving in the same direction). Fingerings (1-5) and slurs are clearly marked.

Octaves, Major, in contrary motion

Two systems of musical notation for Major octave scales in contrary motion. Each system has a treble and bass staff. The first system is in C Major, and the second is in F Major. The scales are played in contrary motion (one hand moving up while the other moves down). Fingerings (1-5) and slurs are clearly marked.

Octaves, Minor, in contrary motion

Two systems of musical notation for Minor octave scales in contrary motion. Each system has a treble and bass staff. The first system is in C Minor, and the second is in F Minor. The scales are played in contrary motion. Fingerings (1-5) and slurs are clearly marked.

Octaves, Major, in Thirds

Two systems of musical notation for Major octave scales in thirds. Each system has a treble and bass staff. The first system is in C Major, and the second is in F Major. The scales are played in thirds (e.g., C4 and E4 together). Fingerings (1-5) and slurs are clearly marked.

Octaves, Major, in contrary motion, starting from the Third

Two systems of musical notation for Major octave scales in contrary motion, starting from the third. Each system has a treble and bass staff. The first system is in C Major, and the second is in F Major. The scales start on the third degree (E and C). Fingerings (1-5) and slurs are clearly marked.

Octaves, Major, in Sixths

Two staves of music showing octave exercises in a major key, starting with the sixth finger. The right hand plays a sequence of eighth notes in sixths, while the left hand plays a similar sequence. Fingering numbers (5, 4, 3, 2, 1) are indicated below the notes. The piece concludes with a final chord.

Octaves, C Major, in contrary motion, starting with the Sixth

Two staves of music showing octave exercises in C major, starting with the sixth finger. The right hand moves up while the left hand moves down. Fingering numbers are provided for both hands. The exercise ends with a final chord.

Octaves, C Minor in Thirds

Two staves of music showing octave exercises in C minor, starting with the third finger. The right hand plays eighth notes in thirds, and the left hand plays a similar pattern. Fingering numbers (4, 5, 4, 3, 2, 1) are shown. The piece concludes with a final chord.

Octaves, C Minor, in contrary motion, starting with the Third

Two staves of music showing octave exercises in C minor, starting with the third finger. The right hand moves up and the left hand moves down. Fingering numbers are indicated. The exercise concludes with a final chord.

Octaves, C Minor, in Sixths

Two staves of music showing octave exercises in C minor, starting with the sixth finger. The right hand plays eighth notes in sixths, and the left hand plays a similar pattern. Fingering numbers are provided. The piece ends with a final chord.

Octaves, C Minor, in contrary motion, starting with the Sixth

Two staves of music showing octave exercises in C minor, starting with the sixth finger. The right hand moves up and the left hand moves down. Fingering numbers are indicated. The exercise concludes with a final chord.

Chromatic Scales in Octaves

When the Chromatic Scale is played staccato, the fifth Finger may be used in every Octave in both the right and the left hands

Octaves in contrary motion

3d Finger on Eb and Bb

3d Finger on Db and F#

Detailed description: This musical exercise consists of two systems of piano accompaniment. The first system shows the right hand (treble clef) playing a chromatic scale in descending motion (5-4-3-2-1) and the left hand (bass clef) playing a chromatic scale in ascending motion (1-2-3-4-5). The second system shows the right hand playing a chromatic scale in ascending motion and the left hand playing a chromatic scale in descending motion. Fingerings are indicated by numbers 1-5 above or below notes. The key signature has one flat (Bb) for the right hand and one sharp (F#) for the left hand.

Octaves in Thirds

3d Finger on Eb and Bb

3d Finger on Db and F#

Detailed description: This exercise features two systems of piano accompaniment. In the first system, the right hand plays a chromatic scale in descending motion while the left hand plays a chromatic scale in ascending motion, with the two hands moving in parallel thirds. The second system shows the right hand ascending and the left hand descending, also in parallel thirds. Fingerings are indicated by numbers 1-5. The key signature is one flat (Bb) for the right hand and one sharp (F#) for the left hand.

Octaves in contrary motion starting from the Third

3d Finger on Eb and Bb

3d Finger on Db and F#

Detailed description: This exercise consists of two systems of piano accompaniment. The first system shows the right hand playing a chromatic scale in descending motion starting from the third degree (3-2-1) and the left hand playing a chromatic scale in ascending motion starting from the third degree (1-2-3). The second system shows the right hand ascending and the left hand descending, both starting from the third degree. Fingerings are indicated by numbers 1-5. The key signature is one flat (Bb) for the right hand and one sharp (F#) for the left hand.

Octaves in Minor Sixths, in similar and contrary motion

3d Finger on Eb and Bb

3d Finger on Db and F#

Detailed description: This exercise consists of two systems of piano accompaniment. The first system shows the right hand playing a chromatic scale in descending motion and the left hand playing a chromatic scale in ascending motion, with the two hands moving in parallel minor sixths. The second system shows the right hand ascending and the left hand descending, also in parallel minor sixths. Fingerings are indicated by numbers 1-5. The key signature is one flat (Bb) for the right hand and one sharp (F#) for the left hand.

Octaves in Major Sixths

3d Finger on Eb and Bb

3d Finger on Db and F#

Detailed description: This exercise consists of two systems of piano accompaniment. The first system shows the right hand playing a chromatic scale in descending motion and the left hand playing a chromatic scale in ascending motion, with the two hands moving in parallel major sixths. The second system shows the right hand ascending and the left hand descending, also in parallel major sixths. Fingerings are indicated by numbers 1-5. The key signature is one flat (Bb) for the right hand and one sharp (F#) for the left hand.

Developing the Greatest possible Velocity

The highest speed suggested in any of the previous exercises has been two hundred and eight notes a minute. This is a very comfortable rate, even for the player of moderate ability. In fact, the demand for a very great velocity in the actual performance of even advanced pianoforte pieces is very limited. However, it is impossible to overestimate the "tonic" effect of the ability to play scales at a very high rate of speed to say nothing of the acquisition of the ability to meet any speed emergency which may arise in the performance of any piece.

The scales employing five black piano keys conform to the natural shape of the hand. The shortness of the thumb in comparison with the fingers seems to fit these scales with black keys far better than those in which fewer black keys are used. Possibly the most difficult of all scales to play is the scale of C major as it is the one least adapted to the natural shape of the hand. For this reason, the scale of D flat major has been generally employed by experts in technic.

The experienced teacher knows that velocity developed in connection with one scale will also affect all other scales. That is, velocity developed in the scale of D flat will enable the player to execute any of the other scales at a much more rapid rate.

It is possible to develop scale playing until a rate considerably higher than one thousand notes per minute is reached. Of course, this pre-supposes perfect touch conditions and careful systematic playing.

There comes a time, however, when the gradual development by means of advancing the metronome step by step seems to fail in producing results. Then it will be found that progress will depend upon many repetitions of what might be called "spurts" of speed. The method given hereafter is thoroughly scientific and innumerable experiments made by the author with his own pupils have invariably been attended with satisfactory results.

The principle of the following series of exercises is that of developing separate sections until a very high rate of speed is attained and then uniting the sections. The system requires patience and perseverance, but will surely repay the student who persists until the desired speed is accomplished.

Accent only the first and last notes of each section. The intervening notes are played so lightly that the player hardly knows that the hand has passed over them. In fact the performer should think only of the first and last notes of each section. He seems to leap from the first "Pier Note" to the last "Pier Note" as the mountain deer leaps from crag to crag. The notes in the interim are played in passing almost without conscious thought. Poise the hand and arm in relaxed condition over the first note and with a kind of muscular impulse like a "swoop," pass easily to the last note. Play at all times without the least suggestion of strain. Invariably rest the hand for a few seconds before repeating the exercise.

For our purposes we shall employ the four octave scale and divide this scale into sections of eight notes each.

The first note of each section we shall term a Pier Note.

This name has been adopted because we shall now attempt to build up the scale between these pier notes as though the scale notes formed a series of bridges between the Pier Notes.

The first step in the development is that of accustoming the hand to the general contour of the scale by playing the Pier Notes in succession until the highest speed of the metronome is reached. Starting at about 100. Gradually raise the speed until 208 is attained.

Play first the left hand and then the right hand, always playing each hand separately at first. The right finger must invariably be placed upon the right note. It is better to employ the finger touch in these exercises.

Right Hand Fingering above
 ♩ = 100 to ♩ = 208

Each hand plays separately

Left Hand Fingering below

When the pupil is able to play the Pier Notes at the highest rate of speed, each section or bridge should be developed.

Play the first section, starting at about the rate of ♩ = 60. Gradually raise this rate step by step until a rate of about ♩ = 132 is reached. Do not try to reach ♩ = 208 at first. After the pupil can play the first section at this rate with ease and fluency, play the second section and develop it in a similar manner. Then proceed with the other sections until each one of the seven sections has been developed to the speed of ♩ = 208.

SECTION II

Period of rest during which the hand and arm are completely relaxed

SECTION I

Period of rest during which the hand and arm are completely relaxed

SECTION III

Period of rest during which the hand and arm are completely relaxed

SECTION IV

SECTION V

SECTION VI

SECTION VII

When all of the sections have been developed singly, the student's next step is to play two sections at a time in the following order. The pupil will find advancement a trifle more difficult than encountered in playing single sections.

A very important point is that of giving the arm and hand sufficient rest between the repetitions. Under no conditions should the muscles be exerted beyond the point of the slightest fatigue.

SECTIONS I and II united
Accent on the first and last notes only

SECTIONS II and III united

SECTIONS III and IV

SECTIONS IV and V

In similar manner unite: Sections V and VI
" VI " VII
" VII " I

The next step is to unite three sections and advance each section as indicated in the previous examples. The rate of advancement may be a little slower than with two sections.

SECTIONS I, II and III united
Accent on the first and last notes only

SECTIONS II, III and IV united

In similar manner unite:
Sections III, IV and V
" IV, V " VI
" V, VI " VII
" VI, VII " I
" VII, I " II

The next step is to unite four sections as previously indicated. Start each section of four groups beginning with each consecutive Pier Note in succession. Always give the hand abundant rest and relaxation between each section.

SECTIONS I, II, III and IV united

In similar manner unite:
Sections II, III, IV, V
" III, IV, V, VI
" IV, V, VI, VII
" V, VI, VII, I
" VI, VII, I, II
" VII, I, II, III

With this drill, the pupil can undoubtedly play the entire four octave scale (each hand separately) at the rate of ♩ = 132. This will then be 1056 notes a minute.

In order to advance the speed beyond the above rate, the entire process should be repeated, developing each section but starting at the metronomic rate of about 100. Working in the foregoing manner the limits of speed can only be measured by the pupil's ambitions and will ingness to work. When the metronomic speed of 160 is reached, the pupil will be playing at the rate of 1280 notes a minute. Beyond this, the greatest possible clearness must be preserved. Unless this precaution is taken, it will be difficult for the ear to hear each note of the scale distinctly. The writer found in the cases of many pupils that a speed of 1400 and more notes a minute was not only possible, but could invariably be accomplished when this system was pursued with minute attention to detail. Good results cannot be expected unless the pupil has had a thorough preparation in touch and in elementary scale work.

The ambitious pupil will not be content to develop velocity in one scale alone. He should apply the same principles to one or two other major and minor scales. However, the writer does not advise even the most industrious to attempt to develop a great velocity in all scales. The pupil will notice that the dexterity he acquires will influence his playing in all the other scales.

PART III

THE STUDY OF ARPEGGIOS

All arpeggios are based upon chords. When the chord is *struck*, that is all notes played together, it is said to be played *firm*. (French *plaque*). When the notes of the chords are struck one after the other the chord is said to be *arpeggio*. The word is Italian and signifies "like a harp". The Italian plural is *arpeggi* although the English plural Arpeggios is more generally used.

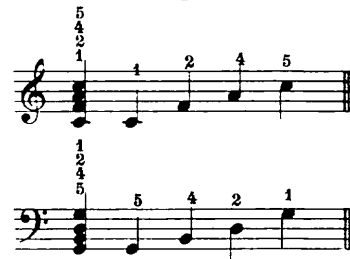
A series of notes not derived from a chord in this way could not properly be called an arpeggio although the name is often loosely applied to such groups of notes. The arpeggio may consist of one chord broken in this manner or it may consist of an extension of the chord through repetitions of the same notes in different octaves.

The difficulties in fingering arpeggios successfully are slight when compared to those encountered in scale playing. They are chiefly concerned with the proper position of the third finger in the chord. The general rule applied to cover this in both hands is

1. When the distance between the two outer notes of the arpeggio is a fourth, use the third finger.



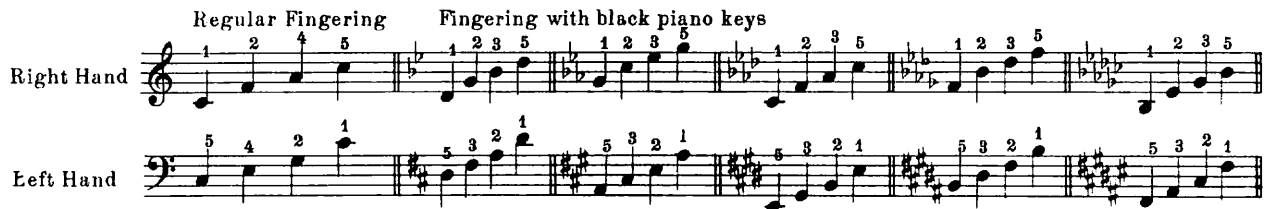
2. When the distance between the two outer notes of the arpeggio is a third, use the fourth finger.



Young pupils have difficulty in fixing the degrees of a fourth and a third in their minds. In such cases it is better for the teacher to talk in piano keys and say

1. When the number of piano keys between the two outer keys is six (including the piano keys themselves) use the third finger.
2. When the distance in piano keys between the two outer keys is four (including the piano keys themselves) use the fourth finger.

Exceptions are made in some cases by editors, notably in the case where the outer fingers of the hand play a triad in which the interval that falls between the notes thus ordinarily would be played by the fourth and fifth fingers form a *major* third requiring either one or two black piano keys. This has the effect of making the interval of such a nature that it may be better played with the third and fifth fingers. This principle is better learned by example.



Expanding the Hand without Injury

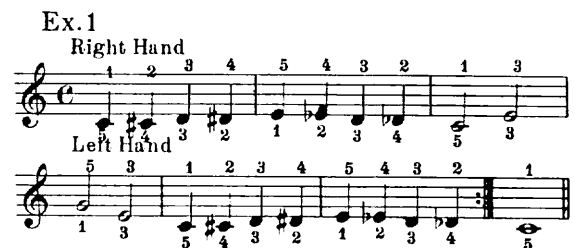
In arpeggio playing it is very necessary to expand the hand without injury.

One of the most annoying conditions that can confront the teacher is that of having an exceptionally bright little pupil with a hand far too small to stretch the chords in pieces that would otherwise be within the pupil's grasp. There are hundreds of such children who are unfortunately limited to pieces with no stretches over the seventh or the octave. They are unable to play many of the most interesting things in the third, fourth and fifth grades. The compositions of Rubinstein are particularly trying to the teacher placed in the above mentioned position. Some of the most attractive things that Rubinstein wrote are marked by enormous stretches. Although his own hand was small, he seemingly delighted in using extended arpeggios and overcoming them by a skilful use of the pedal and by digital quickness.

There is, of course, a danger in stretching the hand, and many injuries and strains have resulted from the indiscriminate use of exercises. All development in this direction must be very slow. This is a foundation principle which the teacher is compelled to observe, or pay the penalty of failure. It takes some months to expand the hand, and the greatest care must be used to avoid over-doing any particular exercise. In some cases the bony structure and development of the hand make rapid advancement impossible. In many cases, however, the difficulty lies in the elasticity of the fleshy and muscular part of the hand itself.

One thing which the teacher must observe is to avoid strain by alternating expansion with contraction and with periods of complete rest. The following exercises have been found exceptionally valuable, and have been successfully employed for many years.

By means of transposition they become a "System of Expansion," which should fill every need of this kind. They are based upon the principle that in piano playing there are two distinct lines of movement, *i. e.*, (I) up and down, (II) right and left. By continually exercising the hand in both directions and allowing sufficient time to develop naturally, the author has found very few cases that would not respond to this treatment. The first exercise is founded on the simple triad, and is little more than a contraction exercise.



The second exercise is founded on the dominant seventh chord, and in it the expansion combined with contraction commences. This should be given to pupils with very small hands for several months before Ex. 3 is attempted.



The third exercise represents a still greater expansion

Ex. 3

The fourth exercise given below can only be used by pupils who are able to strike an octave, but who desire to make their grasp larger, in order to play tenths, such as found in the piano compositions of Brahms, or as in the Chopin "Funeral March":

Ex. 4

These exercises should be transposed into all the keys, and the stretches in the arpeggios should invariably be played legato.

The Chords Employed in Arpeggios

It is not the province of this book to give instruction in harmony, but since an understanding of the character of the chords mostly employed in arpeggio form is needed, the following is presented.

An arpeggio may be made from any chord. It may appear in simple broken chord form or in extended form covering two or more octaves. However only four species of chords are customarily studied in this connection, since these chords are the ones most generally used in arpeggio study and since the mastery of the arpeggios of these chords makes the study of other chords in special pieces and Etudes comparatively simple, the fingering principles being in the main exactly the same. The chords used in the general study of arpeggios are

The triad (sometimes called the Common Chord of a Key).

Triads may be major or minor. A change in the Position of the triad may compel an entirely different fingering. The following shows the triads of C major and C minor in three different positions.

1st Position 2d Pos. 3d Pos. 1st Pos. 2d Pos. 3d Pos.

The Dominant seventh chord.

This is a chord of four notes and takes its name from the fact that it is the seventh chord founded upon the dominant (fifth degree) of a scale. It is common to both the major and the minor keys of a given scale. It is formed from the fifth, seventh, second and fourth degrees of the scale. The following illustration shows the four positions of this chord.

1st Position 2d Pos. 3d Pos. 4th Pos. 1st Pos. 2d Pos. 3d Pos. 4th Pos.

The Diminished Seventh Chord.

This chord is frequently found. It consists of a series of super-imposed minor thirds. Its natural location is on the seventh step of the minor scale.

The contraction part of the exercise may occasionally be played with either the finger or hand staccato for the sake of variety. The author has personally found this exercise of great value in stimulating the technic after a long lapse from practice, or in exercising the hands for a few moments prior to a concert performance. He attributes this to the universal finger motion this exercise necessitates. The fingers are not only trained to move up and down, as in scales, but they are trained to move in a lateral direction as well. The continued practice of arpeggios without the alternation of periods of rest or periods of contraction almost invariably results in strain. The great technicalist, Taussig, was a strong believer in contraction exercises, and the first exercises in his famous technical studies are devoted to this subject.

The author has also used a variant of these exercises by placing the period of contraction at both ends of the arpeggios. This may be applied to all of the exercises. Thus arranged Exercise 3 would appear:

Ex. 5

In C minor it would appear

In A minor it would appear

In F sharp minor it would appear

In E flat minor it would appear

Examine these chords closely and you will observe that the notes contained in each chord are as far as the keyboard is concerned identical with the notes found in the other chords. That is, it is the same chord, in different position, expressed in different notation. Therefore, there can be but three of these chords although twelve different means of writing the chords should be employed as the harmony demands. The three chords may be represented as follows.

Diminished seventh of C minor
(Also employed with different notation in A, F sharp and E flat minor)

C minor A minor F# minor Eb minor

Diminished seventh of B minor
(Also employed with different notation in G sharp minor, F minor and D minor)

B minor G# minor F minor D minor

Diminished seventh of B flat minor
(Also employed with different notation in C sharp minor, E minor and G minor)

Bb minor C# minor G minor E minor

The diminished seventh is used in connection with major keys, as well as minor keys and is frequently used by composers in effecting modulations.

Preparatory Exercises after the Forms Suggested by Leschetizky

Right Hand

Left Hand

Broken Chords and Arpeggios

C MAJOR

1st Position 2d Pos. 3d Pos.

This section shows three positions for C Major broken chords and arpeggios. The first part shows 1st, 2nd, and 3rd positions for both the right and left hands. The second part shows three variations (I, II, III) of the arpeggio pattern, with fingerings and accents indicated.

I. II. III.

Three variations of C Major arpeggios, labeled I, II, and III. Each variation shows a different fingering and articulation pattern for both hands.

C MINOR

This section shows three positions for C Minor broken chords and arpeggios. The first part shows 1st, 2nd, and 3rd positions for both the right and left hands. The second part shows three variations (I, II, III) of the arpeggio pattern, with fingerings and accents indicated.

I. II. III.

Three variations of C Minor arpeggios, labeled I, II, and III. Each variation shows a different fingering and articulation pattern for both hands.

G MAJOR

This section shows three positions for G Major broken chords and arpeggios. The first part shows 1st, 2nd, and 3rd positions for both the right and left hands. The second part shows three variations (I, II, III) of the arpeggio pattern, with fingerings and accents indicated.

I. II. III.

Three variations of G Major arpeggios, labeled I, II, and III. Each variation shows a different fingering and articulation pattern for both hands.

G MINOR

First system of the G minor exercise, featuring a treble and bass clef with a key signature of two flats. The music consists of a continuous sequence of eighth and sixteenth notes with various fingering numbers (1-5) indicated above and below the notes.

Second system of the G minor exercise, labeled with variations I, II, and III. Each variation shows a different fingering approach for the same melodic line, with the bass line providing harmonic support.

D MAJOR

First system of the D major exercise, featuring a treble and bass clef with a key signature of two sharps. The music consists of a continuous sequence of eighth and sixteenth notes with various fingering numbers (1-5) indicated above and below the notes.

Second system of the D major exercise, labeled with variations I, II, and III. Each variation shows a different fingering approach for the same melodic line, with the bass line providing harmonic support.

D MINOR

First system of the D minor exercise, featuring a treble and bass clef with a key signature of one flat. The music consists of a continuous sequence of eighth and sixteenth notes with various fingering numbers (1-5) indicated above and below the notes.

Second system of the D minor exercise, labeled with variations I, II, and III. Each variation shows a different fingering approach for the same melodic line, with the bass line providing harmonic support.

A MAJOR

Main piano exercise for A Major, featuring a complex melodic line in the right hand and a supporting bass line in the left hand, with numerous fingering numbers.

I. II. III.

Three variations (I, II, III) for the A Major exercise, showing different fingering and articulation techniques.

A MINOR

Main piano exercise for A Minor, similar in structure to the A Major exercise but with a different key signature and fingering.

I. II. III.

Three variations (I, II, III) for the A Minor exercise, showing different fingering and articulation techniques.

E MAJOR

Main piano exercise for E Major, featuring a complex melodic line in the right hand and a supporting bass line in the left hand, with numerous fingering numbers.

I. II. III.

Three variations (I, II, III) for the E Major exercise, showing different fingering and articulation techniques.

E MINOR

First system of musical notation for E minor, featuring a grand staff with treble and bass clefs. The music consists of eighth and sixteenth notes with various fingering numbers (1-5) indicated above and below the notes.

Second system of musical notation for E minor, divided into three measures labeled I, II, and III. Each measure contains a single melodic line with detailed fingering instructions.

B MAJOR

First system of musical notation for B major, featuring a grand staff with treble and bass clefs. The music consists of eighth and sixteenth notes with various fingering numbers (1-5) indicated above and below the notes.

Second system of musical notation for B major, divided into three measures labeled I, II, and III. Each measure contains a single melodic line with detailed fingering instructions.

B MINOR

First system of musical notation for B minor, featuring a grand staff with treble and bass clefs. The music consists of eighth and sixteenth notes with various fingering numbers (1-5) indicated above and below the notes.

Second system of musical notation for B minor, divided into three measures labeled I, II, and III. Each measure contains a single melodic line with detailed fingering instructions.

F SHARP MAJOR

First system of musical notation for F Sharp Major, featuring a treble and bass clef with a key signature of three sharps (F#, C#, G#). The music consists of a series of eighth-note patterns with various fingering numbers (1-5) indicated above and below the notes.

Second system of musical notation for F Sharp Major, divided into three variations labeled I, II, and III. Each variation shows a different fingering approach for the eighth-note patterns in both hands.

F SHARP MINOR

First system of musical notation for F Sharp Minor, featuring a treble and bass clef with a key signature of three sharps (F#, C#, G#). The music consists of a series of eighth-note patterns with various fingering numbers (1-5) indicated above and below the notes.

Second system of musical notation for F Sharp Minor, continuing the eighth-note patterns with various fingering numbers (1-5) indicated above and below the notes.

D FLAT MAJOR

First system of musical notation for D Flat Major, featuring a treble and bass clef with a key signature of two flats (Bb, Eb). The music consists of a series of eighth-note patterns with various fingering numbers (1-5) indicated above and below the notes.

Second system of musical notation for D Flat Major, divided into three variations labeled I, II, and III. Each variation shows a different fingering approach for the eighth-note patterns in both hands.

C SHARP MINOR

First system of musical notation for C Sharp Minor, featuring a grand staff with treble and bass clefs. The music consists of a series of eighth and sixteenth notes with various fingering numbers (1-5) written above and below the notes.

Second system of musical notation for C Sharp Minor, divided into three variations labeled I, II, and III. Each variation includes a grand staff with treble and bass clefs and contains specific fingering instructions for the notes.

A FLAT MAJOR

First system of musical notation for A Flat Major, featuring a grand staff with treble and bass clefs. The music consists of a series of eighth and sixteenth notes with various fingering numbers (1-5) written above and below the notes.

Second system of musical notation for A Flat Major, divided into three variations labeled I, II, and III. Each variation includes a grand staff with treble and bass clefs and contains specific fingering instructions for the notes.

G SHARP MINOR

First system of musical notation for G Sharp Minor, featuring a grand staff with treble and bass clefs. The music consists of a series of eighth and sixteenth notes with various fingering numbers (1-5) written above and below the notes.

Second system of musical notation for G Sharp Minor, divided into three variations labeled I, II, and III. Each variation includes a grand staff with treble and bass clefs and contains specific fingering instructions for the notes.

E FLAT MAJOR

First system of musical notation for E Flat Major. It consists of a grand staff with a treble clef on the upper line and a bass clef on the lower line. The music is written in 3/4 time and features a complex, flowing melody with many slurs and ties. Numerous fingerings are indicated by numbers 1-5 above or below the notes. The key signature has two flats (Bb and Eb).

Second system of musical notation for E Flat Major, containing three variations labeled I, II, and III. Each variation shows a different fingering approach for the same melodic line. Variation I uses a sequence of 2-1-2-4-2. Variation II uses 1-2-4-1-2. Variation III uses 2-4-1-2-1-4. The bass line also shows different fingering patterns for each variation.

E FLAT MINOR

First system of musical notation for E Flat Minor. It follows the same grand staff format as the E Flat Major section. The key signature has three flats (Bb, Eb, and Ab). The melody is more somber and features similar slurs and ties to the major version, with detailed fingering instructions throughout.

Second system of musical notation for E Flat Minor, containing three variations labeled I, II, and III. Variation I uses a fingering of 1-2-3-1-3-5. Variation II uses 1-2-4-1-4. Variation III uses 1-2-3-1-3. The bass line variations include patterns like 5-4-2-4 and 5-4-2-1-4-1.

B FLAT MAJOR

First system of musical notation for B Flat Major. The grand staff format is consistent. The key signature has two flats (Bb and Eb). The melody is bright and features many slurs and ties, with extensive fingering notation provided for both hands.

Second system of musical notation for B Flat Major, containing three variations labeled I, II, and III. Variation I uses a fingering of 2-1-2-4-1. Variation II uses 1-2-4-1-4. Variation III uses 2-4-1-4-1-4. The bass line variations include patterns like 5-4-2-1-4-1 and 5-3-2-1-4.

B FLAT MINOR

First system of the B Flat Minor exercise, featuring a treble and bass clef with a 3/4 time signature. The piece is in B-flat minor, indicated by two flats. The music consists of a series of eighth and sixteenth notes, with some chords. Fingerings are indicated by numbers 1-5.

Second system of the B Flat Minor exercise, divided into three variations labeled I, II, and III. Each variation includes fingerings and alternative phrasings. Variation I starts with 'or' and shows two different ways to play the first few notes. Variations II and III show further melodic and rhythmic developments.

F MAJOR

First system of the F Major exercise, featuring a treble and bass clef with a 3/4 time signature. The piece is in F major, indicated by one flat. The music consists of a series of eighth and sixteenth notes, with some chords. Fingerings are indicated by numbers 1-5.

Second system of the F Major exercise, divided into three variations labeled I, II, and III. Each variation includes fingerings and alternative phrasings. Variation I starts with 'or' and shows two different ways to play the first few notes. Variations II and III show further melodic and rhythmic developments.

F MINOR

First system of the F Minor exercise, featuring a treble and bass clef with a 3/4 time signature. The piece is in F minor, indicated by two flats. The music consists of a series of eighth and sixteenth notes, with some chords. Fingerings are indicated by numbers 1-5.

Second system of the F Minor exercise, divided into three variations labeled I, II, and III. Each variation includes fingerings and alternative phrasings. Variation I starts with 'or' and shows two different ways to play the first few notes. Variations II and III show further melodic and rhythmic developments.

Arpeggios in the Key of C

The following indicates the various forms in which an arpeggio upon a common chord may be treated by the ambitious pupil. The principle of fingering remains the same. To write all the chords in

all keys out in similar manner would extend this book beyond practicable limits. The pupil who has studied carefully will have no difficulty in making the application himself.

CHORD OF C MAJOR, IN SIMILAR AND CONTRARY MOTION

3d Finger on G
4th Finger on E

This section shows arpeggios for the C major chord in its first position. The right hand starts with the 3rd finger on G, and the left hand starts with the 4th finger on E. It includes similar motion (upward and downward) and contrary motion (upward in the right hand and downward in the left hand).

2d POSITION C MAJOR, IN SIMILAR MOTION AND IN CONTRARY MOTION

4th Finger on C
4th Finger on G

This section shows arpeggios for the C major chord in its second position. The right hand starts with the 4th finger on C, and the left hand starts with the 4th finger on G. It includes similar motion and contrary motion.

3d POSITION C MAJOR, IN SIMILAR MOTION AND IN CONTRARY MOTION

4th Finger on E
3d Finger on C

This section shows arpeggios for the C major chord in its third position. The right hand starts with the 4th finger on E, and the left hand starts with the 3rd finger on C. It includes similar motion and contrary motion.

CHORD OF C MINOR, IN SIMILAR MOTION AND IN CONTRARY MOTION

3d Finger on G
4th Finger on Eb

This section shows arpeggios for the C minor chord in its first position. The right hand starts with the 3rd finger on G, and the left hand starts with the 4th finger on Eb. It includes similar motion and contrary motion.

2d POSITION C MINOR, IN SIMILAR MOTION AND IN CONTRARY MOTION

4th Finger on Eb
4th Finger on Eb

This section shows arpeggios for the C minor chord in its second position. Both the right and left hands start with the 4th finger on Eb. It includes similar motion and contrary motion.

3d POSITION C MINOR, IN SIMILAR MOTION AND IN CONTRARY MOTION

3d Finger on Eb
3d Finger on C

This section shows arpeggios for the C minor chord in its third position. The right hand starts with the 3rd finger on Eb, and the left hand starts with the 3rd finger on C. It includes similar motion and contrary motion.

A Useful Arpeggio Variant

The following exercise employs the arpeggio fingering throughout and affords such a useful variant that it has been widely used by teachers in this connection. A few minutes practice upon this exercise daily invariably produces good results.

C MAJOR **C MINOR**

G MAJOR **G MINOR**

D MAJOR **D MINOR**

A MAJOR **A MINOR**

E MAJOR **E MINOR**

B MAJOR **B MINOR**

F SHARP MAJOR

F SHARP MINOR

Musical notation for F Sharp Major and F Sharp Minor scales. The F Sharp Major scale is shown in the left system, and the F Sharp Minor scale is in the right system. Each system includes a treble clef staff and a bass clef staff with fingering numbers (1-5) written below the notes.

C SHARP MAJOR

C SHARP MINOR

Musical notation for C Sharp Major and C Sharp Minor scales. The C Sharp Major scale is shown in the left system, and the C Sharp Minor scale is in the right system. Each system includes a treble clef staff and a bass clef staff with fingering numbers (1-5) written below the notes. The text "Enharmonically D flat Major" is written below the C Sharp Major scale.

A FLAT MAJOR

A FLAT MINOR

Musical notation for A Flat Major and A Flat Minor scales. The A Flat Major scale is shown in the left system, and the A Flat Minor scale is in the right system. Each system includes a treble clef staff and a bass clef staff with fingering numbers (1-5) written below the notes.

E FLAT MAJOR

E FLAT MINOR

Musical notation for E Flat Major and E Flat Minor scales. The E Flat Major scale is shown in the left system, and the E Flat Minor scale is in the right system. Each system includes a treble clef staff and a bass clef staff with fingering numbers (1-5) written below the notes.

B FLAT MAJOR

B FLAT MINOR

Musical notation for B Flat Major and B Flat Minor scales. The B Flat Major scale is shown in the left system, and the B Flat Minor scale is in the right system. Each system includes a treble clef staff and a bass clef staff with fingering numbers (1-5) written below the notes.

F MAJOR

F MINOR

Musical notation for F Major and F Minor scales. The F Major scale is shown in the left system, and the F Minor scale is in the right system. Each system includes a treble clef staff and a bass clef staff with fingering numbers (1-5) written below the notes.

Broken Chords and Arpeggios of the Dominant Seventh

C MAJOR AND MINOR

Introduction for C Major and Minor dominant seventh chords. The piece is in 2/4 time. The right hand plays broken chords and arpeggios, while the left hand plays a steady bass line. The key signature has one flat (Bb).

Two systems of fingerings for the C Major and Minor dominant seventh chords. System I shows the right hand (F) and left hand (B) with fingerings 1-2-3-4 and 5-4-3-2-1. System II shows the right hand (G) and left hand (D) with fingerings 1-2-3-4 and 5-4-3-2-1. A dashed box highlights a specific fingering pattern in system II.

Two systems of fingerings for the C Major and Minor dominant seventh chords. System III shows the right hand (B) and left hand (F) with fingerings 1-2-3-4 and 5-4-3-2-1. System IV shows the right hand (D) and left hand (G) with fingerings 1-2-3-4 and 5-4-3-2-1. A dashed box highlights a specific fingering pattern in system IV.

G MAJOR AND MINOR

Introduction for G Major and Minor dominant seventh chords. The piece is in 2/4 time. The right hand plays broken chords and arpeggios, while the left hand plays a steady bass line. The key signature has two sharps (F# and C#).

Two systems of fingerings for the G Major and Minor dominant seventh chords. System I shows the right hand (C) and left hand (F#) with fingerings 1-2-3-4 and 5-4-3-2-1. System II shows the right hand (F#) and left hand (C) with fingerings 2-1-2-3 and 4-3-2-1-4-3-2-1. A dashed box highlights a specific fingering pattern in system II.

Two systems of fingerings for the G Major and Minor dominant seventh chords. System III shows the right hand (F#) and left hand (C) with fingerings 1-2-3-4 and 5-4-3-2-1. System IV shows the right hand (A) and left hand (D) with fingerings 1-2-3-4 and 5-4-3-2-1. A dashed box highlights a specific fingering pattern in system IV.

D MAJOR AND MINOR

Piano introduction for D Major and Minor, showing a grand staff with treble and bass clefs, key signature of two sharps, and a 2/4 time signature. The music features a sequence of chords and a melodic line with fingerings.

I. II.

4th finger on G 4th finger on C#

First exercise for D Major and Minor, consisting of two parts labeled I and II. Part I shows a scale starting on G4 with the 4th finger on the G. Part II shows a scale starting on C#4 with the 4th finger on the C#. Both parts include fingerings and repeat signs.

III. IV.

C# E

G A

Second exercise for D Major and Minor, consisting of two parts labeled III and IV. Part III shows a scale starting on C#4 with the 4th finger on the C#. Part IV shows a scale starting on A4 with the 4th finger on the A. Both parts include fingerings and repeat signs.

A MAJOR AND MINOR

Piano introduction for A Major and Minor, showing a grand staff with treble and bass clefs, key signature of three sharps, and a 2/4 time signature. The music features a sequence of chords and a melodic line with fingerings.

I. II.

D G#

G# G#

First exercise for A Major and Minor, consisting of two parts labeled I and II. Part I shows a scale starting on D4 with the 4th finger on the D. Part II shows a scale starting on G#4 with the 4th finger on the G#. Both parts include fingerings and repeat signs.

III. IV.

G# B

D E

Second exercise for A Major and Minor, consisting of two parts labeled III and IV. Part III shows a scale starting on G#4 with the 4th finger on the G#. Part IV shows a scale starting on B4 with the 4th finger on the B. Both parts include fingerings and repeat signs.

E MAJOR AND MINOR

First system of musical notation for E Major and Minor. It consists of a grand staff with a treble clef and a bass clef. The key signature has three sharps (F#, C#, G#). The music features a series of ascending and descending eighth-note patterns in both hands, with fingerings indicated by numbers 1-5. The piece concludes with a whole note chord in the treble clef.

Second system of musical notation, divided into two parts: I and II. Part I is marked with '4th finger on' above the treble clef. Part II is also marked with '4th finger on' above the treble clef. The notation includes treble and bass clefs, fingerings, and repeat signs. The system ends with a whole note chord in the treble clef.

Third system of musical notation, divided into two parts: III and IV. The notation includes treble and bass clefs, fingerings, and repeat signs. The system ends with a whole note chord in the treble clef.

B MAJOR AND MINOR

First system of musical notation for B Major and Minor. It consists of a grand staff with a treble clef and a bass clef. The key signature has two sharps (F#, C#). The music features a series of ascending and descending eighth-note patterns in both hands, with fingerings indicated by numbers 1-5. The piece concludes with a whole note chord in the treble clef.

Second system of musical notation, divided into two parts: I and II. The notation includes treble and bass clefs, fingerings, and repeat signs. The system ends with a whole note chord in the treble clef.

Third system of musical notation, divided into two parts: III and IV. The notation includes treble and bass clefs, fingerings, and repeat signs. The system ends with a whole note chord in the treble clef.

G FLAT MAJOR AND MINOR

Enharmonically F#

Musical notation for G flat major and minor scales. The top staff is in treble clef and the bottom staff is in bass clef. The key signature has two flats (Bb and Eb). The music includes fingering numbers (1-5) and an annotation "Enharmonically F#" in the treble clef.

4th finger on D \flat 4th finger on D \flat

Musical notation for G flat major and minor scales, labeled I and II. The top staff is in treble clef and the bottom staff is in bass clef. The key signature has two flats (Bb and Eb). The music includes fingering numbers (1-5) and annotations "4th finger on D \flat " in both staves.

Musical notation for G flat major and minor scales, labeled III and IV. The top staff is in treble clef and the bottom staff is in bass clef. The key signature has two flats (Bb and Eb). The music includes fingering numbers (1-5) and annotations "4th finger on D \flat " in both staves.

D FLAT MAJOR AND MINOR

Musical notation for D flat major and minor scales. The top staff is in treble clef and the bottom staff is in bass clef. The key signature has three flats (Bb, Eb, and Ab). The music includes fingering numbers (1-5).

Musical notation for D flat major and minor scales, labeled I and II. The top staff is in treble clef and the bottom staff is in bass clef. The key signature has three flats (Bb, Eb, and Ab). The music includes fingering numbers (1-5).

Musical notation for D flat major and minor scales, labeled III and IV. The top staff is in treble clef and the bottom staff is in bass clef. The key signature has three flats (Bb, Eb, and Ab). The music includes fingering numbers (1-5).

A FLAT MAJOR AND MINOR

First system of musical notation for A Flat Major and Minor. It consists of two staves: a treble clef staff and a bass clef staff. The key signature has two flats (Bb and Eb). The music features a series of chords and melodic lines with fingerings indicated by numbers 1-5. The piece concludes with a double bar line and repeat dots.

4th finger on Eb

I

Second system of musical notation, divided into two parts labeled I and II. Each part has two staves (treble and bass clef). The treble clef staff is labeled '4th finger on Eb'. The music includes fingerings and concludes with a double bar line and repeat dots.

4th finger on Bb

III

Third system of musical notation, divided into two parts labeled III and IV. Each part has two staves (treble and bass clef). The music includes fingerings and concludes with a double bar line and repeat dots.

IV

E FLAT MAJOR AND MINOR

First system of musical notation for E Flat Major and Minor. It consists of two staves: a treble clef staff and a bass clef staff. The key signature has three flats (Bb, Eb, and Ab). The music features a series of chords and melodic lines with fingerings indicated by numbers 1-5. The piece concludes with a double bar line and repeat dots.

I

Second system of musical notation, divided into two parts labeled I and II. Each part has two staves (treble and bass clef). The music includes fingerings and concludes with a double bar line and repeat dots.

II

III

Third system of musical notation, divided into two parts labeled III and IV. Each part has two staves (treble and bass clef). The music includes fingerings and concludes with a double bar line and repeat dots.

IV

B FLAT MAJOR AND MINOR

First system of musical notation for B Flat Major and Minor. It consists of two staves: a treble clef staff and a bass clef staff. The treble staff begins with a key signature of two flats (Bb and Eb) and a 2/4 time signature. The music features a series of chords and melodic lines with fingerings indicated by numbers 1-5. The bass staff continues the harmonic accompaniment with similar fingerings.

Second system of musical notation, divided into two parts: I. and II. Part I shows a treble staff starting on Eb and a bass staff starting on A. Part II shows a treble staff starting on F and a bass staff starting on C. Both parts feature ascending and descending melodic lines with detailed fingerings. The text "4th finger on" is written above the treble staff in both parts.

Third system of musical notation, divided into two parts: III. and IV. Part III shows a treble staff starting on A and a bass staff starting on Eb. Part IV shows a treble staff starting on Eb and a bass staff starting on Eb. The notation includes complex melodic patterns and fingerings.

F MAJOR AND MINOR

First system of musical notation for F Major and Minor. It consists of two staves: a treble clef staff and a bass clef staff. The treble staff begins with a key signature of one flat (Bb) and a 2/4 time signature. The music features a series of chords and melodic lines with fingerings indicated by numbers 1-5. The bass staff continues the harmonic accompaniment with similar fingerings.

Second system of musical notation, divided into two parts: I. and II. Part I shows a treble staff starting on Bb and a bass staff starting on E. Part II shows a treble staff starting on C and a bass staff starting on G. Both parts feature ascending and descending melodic lines with detailed fingerings.

Third system of musical notation, divided into two parts: III. and IV. Part III shows a treble staff starting on E and a bass staff starting on Bb. Part IV shows a treble staff starting on Bb and a bass staff starting on Bb. The notation includes complex melodic patterns and fingerings.

Extended Exercises in the Arpeggios of the Dominant Seventh

(These exercises may be transposed to other keys by advanced pupils.)

ARPEGGIOS OF THE DOMINANT SEVENTH CHORD AND ITS DIFFERENT POSITIONS IN SIMILAR MOTION

Musical score for similar motion arpeggios of the dominant seventh chord. The score is written for piano and consists of two staves. It features four measures of music. Each measure contains a series of arpeggiated chords in similar motion. The first measure starts with a G7 chord in root position, followed by first, second, and third inversions. The second measure starts with a C7 chord in root position, followed by first, second, and third inversions. The third measure starts with an F7 chord in root position, followed by first, second, and third inversions. The fourth measure starts with a D7 chord in root position, followed by first, second, and third inversions. Fingerings are indicated by numbers 1-5 above or below the notes. A '6' is written above the first measure, and '8' and '5' are written above the second and third measures respectively.

ARPEGGIOS OF THE DOMINANT SEVENTH CHORD AND ITS DIFFERENT POSITIONS IN CONTRARY MOTION

Musical score for contrary motion arpeggios of the dominant seventh chord. The score is written for piano and consists of two staves. It features four measures of music. Each measure contains a series of arpeggiated chords in contrary motion. The first measure starts with a G7 chord in root position, followed by first, second, and third inversions. The second measure starts with a C7 chord in root position, followed by first, second, and third inversions. The third measure starts with an F7 chord in root position, followed by first, second, and third inversions. The fourth measure starts with a D7 chord in root position, followed by first, second, and third inversions. Fingerings are indicated by numbers 1-5 above or below the notes. A '6' is written above the first measure, and '8' and '5' are written above the second and third measures respectively.

Musical score for similar motion arpeggios of the dominant seventh chord. The score is written for piano and consists of two staves. It features four measures of music. Each measure contains a series of arpeggiated chords in similar motion. The first measure starts with a G7 chord in root position, followed by first, second, and third inversions. The second measure starts with a C7 chord in root position, followed by first, second, and third inversions. The third measure starts with an F7 chord in root position, followed by first, second, and third inversions. The fourth measure starts with a D7 chord in root position, followed by first, second, and third inversions. Fingerings are indicated by numbers 1-5 above or below the notes. A '6' is written above the first measure, and '8' and '5' are written above the second and third measures respectively.

ARPEGGIOS OF THE DOMINANT SEVENTH CHORD IN SIMILAR MOTION, STARTING WITH DIFFERENT NOTES

Musical score for similar motion arpeggios of the dominant seventh chord starting with different notes. The score is written for piano and consists of two staves. It features four measures of music. Each measure contains a series of arpeggiated chords in similar motion, starting with different notes. The first measure starts with a G7 chord in root position, followed by first, second, and third inversions. The second measure starts with a C7 chord in root position, followed by first, second, and third inversions. The third measure starts with an F7 chord in root position, followed by first, second, and third inversions. The fourth measure starts with a D7 chord in root position, followed by first, second, and third inversions. Fingerings are indicated by numbers 1-5 above or below the notes. A '6' is written above the first measure, and '8' and '5' are written above the second and third measures respectively.

Musical score for contrary motion arpeggios of the dominant seventh chord. The score is written for piano and consists of two staves. It features four measures of music. Each measure contains a series of arpeggiated chords in contrary motion. The first measure starts with a G7 chord in root position, followed by first, second, and third inversions. The second measure starts with a C7 chord in root position, followed by first, second, and third inversions. The third measure starts with an F7 chord in root position, followed by first, second, and third inversions. The fourth measure starts with a D7 chord in root position, followed by first, second, and third inversions. Fingerings are indicated by numbers 1-5 above or below the notes. A '6' is written above the first measure, and '8' and '5' are written above the second and third measures respectively.

ARPEGGIOS OF THE DOMINANT SEVENTH CHORD IN CONTRARY MOTION, STARTING WITH DIFFERENT NOTES

Musical score for contrary motion arpeggios of the dominant seventh chord starting with different notes. The score is written for piano and consists of two staves. It features four measures of music. Each measure contains a series of arpeggiated chords in contrary motion, starting with different notes. The first measure starts with a G7 chord in root position, followed by first, second, and third inversions. The second measure starts with a C7 chord in root position, followed by first, second, and third inversions. The third measure starts with an F7 chord in root position, followed by first, second, and third inversions. The fourth measure starts with a D7 chord in root position, followed by first, second, and third inversions. Fingerings are indicated by numbers 1-5 above or below the notes. A '6' is written above the first measure, and '8' and '5' are written above the second and third measures respectively.

Arpeggios of the Diminished Seventh (Four Positions)

C MINOR

I. II.

4th finger on 4th finger on

Ab B
D F

III. IV.

D Ab
Ab Ab

G MINOR

I. II.

F# F#
Eb C

III. IV.

A F#
Eb Eb

D MINOR

I. II.

C# C#
Bb G

III. IV.

E C#
Bb Bb

A MINOR

4th finger on G#

I. II.

G# D

III. IV.

B F

E MINOR

I. II.

F# D#

III. IV.

F# C

B MINOR

I. II.

C# A#

III. IV.

C# G

F SHARP MINOR

4th finger on D

I. II.

4th finger on G#

III. IV.

C SHARP MINOR

I. II.

III. IV.

F MINOR

I. II.

III. IV.

G SHARP MINOR

4th finger on

I. II.

E C#

A# A#

III. IV.

C# C#

A# F#

E FLAT MINOR

I. II.

C# D

F A#

III. IV.

A# A#

A# D

B FLAT MINOR

I. II.

G# A

C Eb

III. IV.

G# G#

Eb Eb

ARPEGGIOS OF THE DIMINISHED SEVENTH CHORD IN ITS DIFFERENT POSITIONS (C MAJOR AND MINOR, SIMILAR MOTION)

Musical notation for arpeggios of the diminished seventh chord in similar motion. The piece is in 4/4 time and consists of two systems of two staves each. The first system covers C major and C minor. The second system covers F# minor and F# major. Each system contains four measures of music. The notation includes fingerings (1-5) and articulation marks (accents) above and below the notes.

ARPEGGIOS OF THE DIMINISHED SEVENTH CHORD (C MAJOR AND MINOR, CONTRARY MOTION)

Musical notation for arpeggios of the diminished seventh chord in contrary motion. The piece is in 4/4 time and consists of two systems of two staves each. The first system covers C major and C minor. The second system covers F# minor and F# major. Each system contains four measures of music. The notation includes fingerings (1-5) and articulation marks (accents) above and below the notes.

Musical notation for arpeggios of the diminished seventh chord in similar motion. The piece is in 4/4 time and consists of two systems of two staves each. The first system covers C major and C minor. The second system covers F# minor and F# major. Each system contains four measures of music. The notation includes fingerings (1-5) and articulation marks (accents) above and below the notes.

CHORD OF THE ELEVENTH, (KEY OF C MAJOR AND MINOR, SIMILAR MOTION AND CONTRARY MOTION)

Musical notation for chord of the eleventh in similar and contrary motion. The piece is in 4/4 time and consists of two systems of two staves each. The first system covers C major and C minor. The second system covers F# minor and F# major. Each system contains four measures of music. The notation includes fingerings (1-5) and articulation marks (accents) above and below the notes.

Musical notation for chord of the eleventh in similar and contrary motion. The piece is in 4/4 time and consists of two systems of two staves each. The first system covers C major and C minor. The second system covers F# minor and F# major. Each system contains four measures of music. The notation includes fingerings (1-5) and articulation marks (accents) above and below the notes.

Musical notation for chord of the eleventh in similar and contrary motion. The piece is in 4/4 time and consists of two systems of two staves each. The first system covers C major and C minor. The second system covers F# minor and F# major. Each system contains four measures of music. The notation includes fingerings (1-5) and articulation marks (accents) above and below the notes.

Varied Form of Arpeggio Exercise on the Dominant Seventh and on the Diminished Seventh

The first system of musical notation consists of two staves, treble and bass clef. The treble staff contains a series of arpeggiated chords, primarily in a major key, with fingerings indicated by numbers 1-5. The bass staff contains corresponding arpeggiated chords, also with fingerings. The exercise is divided into two measures by a bar line.

The second system of musical notation consists of two staves, treble and bass clef. The treble staff contains a series of arpeggiated chords, primarily in a major key, with fingerings indicated by numbers 1-5. The bass staff contains corresponding arpeggiated chords, also with fingerings. The exercise is divided into two measures by a bar line.

The third system of musical notation consists of two staves, treble and bass clef. The treble staff contains a series of arpeggiated chords, primarily in a major key, with fingerings indicated by numbers 1-5. The bass staff contains corresponding arpeggiated chords, also with fingerings. The exercise is divided into two measures by a bar line.

The fourth system of musical notation consists of two staves, treble and bass clef. The treble staff contains a series of arpeggiated chords, primarily in a major key, with fingerings indicated by numbers 1-5. The bass staff contains corresponding arpeggiated chords, also with fingerings. The exercise is divided into two measures by a bar line.

The fifth system of musical notation consists of two staves, treble and bass clef. The treble staff contains a series of arpeggiated chords, primarily in a major key, with fingerings indicated by numbers 1-5. The bass staff contains corresponding arpeggiated chords, also with fingerings. The exercise is divided into two measures by a bar line.

The sixth system of musical notation consists of two staves, treble and bass clef. The treble staff contains a series of arpeggiated chords, primarily in a major key, with fingerings indicated by numbers 1-5. The bass staff contains corresponding arpeggiated chords, also with fingerings. The exercise is divided into two measures by a bar line.

The first system of music consists of two staves. The treble staff begins with a treble clef, a key signature of two sharps (F# and C#), and a 2/4 time signature. It contains two measures of music, each with a repeat sign at the end. The bass staff begins with a bass clef and contains two measures of music, also with a repeat sign at the end. Fingering numbers (1-5) are placed below the notes to indicate fingerings.

The second system of music consists of two staves. The treble staff begins with a treble clef, a key signature of two sharps (F# and C#), and a 2/4 time signature. It contains two measures of music, each with a repeat sign at the end. The bass staff begins with a bass clef and contains two measures of music, also with a repeat sign at the end. Fingering numbers (1-5) are placed below the notes to indicate fingerings.

The third system of music consists of two staves. The treble staff begins with a treble clef, a key signature of two sharps (F# and C#), and a 2/4 time signature. It contains two measures of music, each with a repeat sign at the end. The bass staff begins with a bass clef and contains two measures of music, also with a repeat sign at the end. Fingering numbers (1-5) are placed below the notes to indicate fingerings.

The fourth system of music consists of two staves. The treble staff begins with a treble clef, a key signature of two sharps (F# and C#), and a 2/4 time signature. It contains two measures of music, each with a repeat sign at the end. The bass staff begins with a bass clef and contains two measures of music, also with a repeat sign at the end. Fingering numbers (1-5) are placed below the notes to indicate fingerings.

The fifth system of music consists of two staves. The treble staff begins with a treble clef, a key signature of two sharps (F# and C#), and a 2/4 time signature. It contains two measures of music, each with a repeat sign at the end. The bass staff begins with a bass clef and contains two measures of music, also with a repeat sign at the end. Fingering numbers (1-5) are placed below the notes to indicate fingerings.

The sixth system of music consists of two staves. The treble staff begins with a treble clef, a key signature of two sharps (F# and C#), and a 2/4 time signature. It contains two measures of music, each with a repeat sign at the end. The bass staff begins with a bass clef and contains two measures of music, also with a repeat sign at the end. Fingering numbers (1-5) are placed below the notes to indicate fingerings.

Enharmonically G flat major

Enharmonically D flat major

First system of musical notation, featuring a grand staff with treble and bass clefs. The music consists of continuous eighth-note patterns in both hands, with various fingering numbers (1-5) indicated below the notes.

Second system of musical notation, continuing the eighth-note patterns from the first system. The notation includes treble and bass clefs and detailed fingering instructions.

Third system of musical notation, showing further development of the eighth-note exercise. The piece maintains a consistent rhythmic and melodic structure.

Fourth system of musical notation, continuing the piece with eighth-note runs. The notation is clear and includes all necessary fingering and clef markings.

Fifth system of musical notation, showing the progression of the eighth-note exercise. The piece continues with the same rhythmic intensity.

Sixth system of musical notation, the final system on this page. It concludes the eighth-note exercise with a final cadence.