

Jo my talented pupil

Jack Fracht

in remembrance

Orof. O.J. Severity.

# The Violinist's Handbook

Scientific Gymnastics for the Violinist

by

J. ALBERT FRACHT

REMSEN PRESS • New York

## © 1979

REMSEN PRESS DIV.

Chemical Publishing Co., Inc.

ISBN 0-8206-0256-6

#### WHAT THE CRITICS SAY ...

"Albert Fracht made his New York debut last night at the Lewisohn Stadium, where 5,500 persons listened to music by Serge Rachmaninoff. Mr. Fracht, who has been directing the Charleston (S.C.) Symphony Orchestra for the last thirteen years, also conducted the Vocalise and the Second Symphony in E Minor. He gave an impression of ability and experience, and also of a devotion to Rachmaninoff's music . . . its singing, richly melodic climaxes were voiced with their full inherent eloquence; various other episodes were convincingly proclaimed; the playing was well unified and the tempi duly flexible."

-Francis D. Perkins-New York Herald Tribune

"He is a man of enormous vitality and humble faith, of contagious enthusiasm and great curiosity about persons and things he encounters in the course of his diverse activities."

—Gateway

"Conductor Albert Fracht, regularly musical director of the Charleston (S.C.) Symphony Orchestra, was making his debut conducting the Stadium Symphony, and he gave the patrons plenty for their money... Fracht is obviously a maestro of experience who knows his way with a baton. A sensible man on the podium, he conducts without making undue fuss and achieves creditable results...the Symphony was notable for its broad singing line and romantic expressiveness."

-Harriett Johnson-New York Post

"The outstanding musical events of December were the two concerts of the Charleston Symphony Orchestra under the meticulous direction of J. Albert Fracht, with Dorothy Warenskjold, soprano, as soloist."

-Musical Courier

"Mr. Fracht did a thoroughly competent job with all the music on the program. What he does, he does with taste. Neither mannered nor inhibited, Mr. Fracht presents readings that never misrepresent the idea of the composers." -H.C.S., New York Times

"Mr. Fracht is sensitive to human values, as he is sensitive to music. His lectures, even his conversations with friends, make music seem a very intimate, a very living thing."

—International Musician

"For his third and last program of the season yesterday evening at the Lewisohn Stadium, Albert Fracht conducted the works of Johannes Brahms for an audience of 5,000. The 'Academic Festival' Overture and the First Symphony which opened and closed the concert have often been heard in this series, but the Rhapsody for Alto Solo, Male Chorus and Orchestra, Op. 53, may have been a Stadium novelty, although it was not announced. Martha Lipton, of the Metropolitan Opera, was the soloist with twenty men from Margaret Hillis' American Concert Choir . . . In the program as a whole Mr. Fracht provided the most convincing interpretation. The Overture had a spirited close. There was considerable sensitiveness in the orchestra's playing of the Rhapsody, and the C-Minor Symphony revealed the conductor's objective devotion to the music along with his knowledge of the score." —Francis D. Perkins—New York Herald Tribune

### ABOUT THE AUTHOR

J. Albert Fracht began studying the violin at the age of four and made his public debut when he was seven. He began his long teaching career at thirteen, interested even then in the possibility of developing sounder more scientific methods of playing than those currently in use.

In his search for perfection, Fracht studied with Franz Kneisel in New York, Alexander Fiedeman and Willy Hess in Berlin, Germany, and with Ottakar Sevcik in Czechoslovakia. It was Sevcik who convinced Fracht that he had a "gift" and advised him to put it in print.

In the years that followed celebrated violinists came to Fracht from all over the world for instruction and advice including former concert-masters of the Metropolitan Opera, Israel Gralnick and Naumburg prize winner Frederick Buldrini. Also members of the New York Philharmonic, The NBC Symphony, The Boston Symphony, Los Angeles Philharmonic, The Dallas Symphony, The Detroit Symphony, etc. His method attracted concert violinists Elliot Magaziner, Emmanuel Compinsky, Elias Breeskin, David Sackson and Yehudi Menuhin.

Years of devoted attention to violinistic problems, their causes and "break-down-clarifications," have been a continuing source of inner satisfaction and joy to Fracht. At long last, Sevcik's advice to "put it in writing" has born fruition.

J. Albert Fracht conducted the Charleston (S.C.) Symphony Orchestra for 18 years and organized and conducted the South Carolina Philharmonic as well. During this time he was head of the music department of the College of Charleston, Head of the music department of Ashley Hall, lecturer at the Citadel, music editor of the Charleston News & Courier. In recent years he organized and conducted the Long Island Festival Ensemble. He has also been guest conductor of the Charlotte Symphony, The Westminster Choir, The New York Concert Choir and the New York Philharmonic.

Presently residing in Great Neck, N.Y., Mr. Fracht continues to teach, is music editor of the *Great Neck News*, and is preparing more books for publication.

#### **FOREWORD**

To play the violin on a high level of art demands skill and a deep understanding of the body itself as an instrument. These basics dominated by calm self-control should obviate physical and mental problems that have destroyed the careers of many highly gifted men and women. "Know how" and its application are the bone and muscle of this book.

#### INTRODUCTION

Despite the many books that have been published about violin techniques, there is a need for a book which gives specific mechanical instruction in how to avoid the many physical ills which heretofore have been considered occupational hazards of violinists. The purpose of this book is to present daily routines to the teacher, student, and accomplished artist, to follow as a way of life, no less important than the study of music and interpretation for the purpose of a superb performance. My thesis is that the artist may realize his potentialities with security, only as long as he can prevent such conditions as undue tensions, frustrations, headaches, cramped muscles, neck boils, swollen fingers, stiffened joints, and resulting neuroses.

# TABLE OF CONTENTS

What the Critics Say	
About the Author	
Foreword	
Introduction	
Massage	1
When to Massage	1
Start the Day's Work with A Massage	1
Massaging Neck and Shoulders	2
Massaging Arms	2
Massaging Wrists	3
Massaging Palms	4
Massaging Fingers	4
Massage and Finger-Stretching Treatment	4
Relax Fingers, Wrists, and Arms of Both Hands	5
Two Extra Minutes for General Well-Being	5
Relaxing Gymnastics for Rest Periods	7
Some Facts About the Violin	8
Two Extreme Models	8
Bridge Problems	8
Care in Tuning	9
Some Facts About the Bow	10
Thick Fingers—String Spread	10
Long Fingers—Thicker Neck	10
Selecting a Bow	10
Some Bow Characteristics	10
Bend in the Bow	11
Natural Tremble in Bend of Bow	11
Preliminary Gymnastics	13
Basic Preparations for Various Bow Techniques	13
Relax Bow Hand, Clutch, and Release	13
Release from Hand Tensions—Bow Catching	14

Balanced Weight Control for Smooth Bow Changes	15
Comment on Bow Exchange Methods	16
The Thumb	18
Balancing Right-Hand Thumb for Legato	19
Balanced Bow Arm	20
Speed-Up Balanced Bow Arm	21
Gymnastics for Balanced Bow Movements	22
Gravity and Body Balance	22
Gravity Stance	23
Smooth and Balanced Bow-Exchange Movements	24
Body Gravity for Smoother Bow-Changing Strokes	24
Comments on Bow-Exchange Methods	25
Gymnastics for a Flexible Bow Arm	25
Flexible Wrist and Hand Combination	26
Hand and Bow Become One	28
Free-Swinging Action and Birth of Legato-Spiccato	28
Body Balance for Rapid-Bow Movements	29
Let Gravity Work for You	29
Fast Bowing Weight Balance	29
Balanced Stance	30
High Bow Arm	32
Arm, Wrist, Hand, Fingers Coordinated for Speed	33
Faster Spiccato	34
Slower Spiccato	34
Comment on Spiccato	34
Developing in Depth the "Feel" of the Bow in Movement	35
Staccato	37
Gymnastic	37
The Down-Bow Staccato	38
Left-Hand Gymnastics	39
Know Your Hand Flex And Unflex	39
Stretch and Flex	39
Hand and Wrist Combination	40
Give and Take Pressures of Left-Hand Fingers	40
Finger and Thumb Relationship	40
Thumb and Finger Relationship in Upper Register of Violin	42
Finger Stretches for Left Hand	43
Stretching Gymnastics	44
Stretching Left-Hand Gymnastics in the Lower Positions	45
Thumb Stretches	45

Developing the Rounded-Finger Technique	46
Dynamic Energy -Left-Hand Finger Thrusts: Pressure and	
Resistance	46
Gymnastic	46
The Vibrato	47
Importance of Wrist in the Vibrato	49
Gymnastic for the Vibrato	50
Further Comment About Vibrato Wrist Control	50
Vibrato Gymnastics in the Lower Positions	52
Gymnastics for Lower Position Vibrato	53
Arm Involvement in the Vibrato	55
Arm Gymnastic for the Vibrato	55
Further Use of Left Elbow for the Vibrato	55
The Shift	56
Synchronizing Bow and Left Arm	56
Combining Rhythmic Flow and Balance in Movement	
Between Both Arms	56
Arm Movement as a Base for Shifting Technique with	
Fingering Involvement	58
Shifting to a Definite Finger-Stop Position Using	
Left-Hand Thumb	59
Shift on a Slur or Tie	60
Arm Shifting with Various Fingers	60
Shifting Away from the Wall and the Use of the Neck	60
Left-Hand Thumb as a Shifting Base	61
Left-Hand Thumb Gymnastic	61
The Trill	62
Finger Gymnastic for the Trill	63
Combining Up-and-Down Finger Movement with Sliding	
Finger Action	64
Harmonics	66
Coordinating Left-Hand Fingers and Bow for Harmonics	66
Left-Hand Pizzicato	68
Gymnastic for Left-Hand Pizzicato	68
Left-Hand Pizzicato with the Bow	69
Thirds	70
Thirds as a Basic Gymnastic for the Shift, Glissando, and	
Strengthening of the Fingers and Thumb	70
Gymnastics for Thirds	70
Octaves	72

A Basic Gymnastic for the Shift, Glissando, and Strengthening	
of the Fingers and Thumb	73
Making Exercises out of Violin Pieces	75
Novacek: "Perpetuum Mobile"	75
Bach: "Prelude in E"	76
Paganini: "Motto Perpetuo"	78
Twelve Masterpiece Concertos	80
Lalo: "Symphonie Espagnole"	81
Mendelssohn: "Concerto in E Minor"	90
Beethoven: "Concerto in D Major"	100
Brahms: "Concerto in D Major-Opus 77"	108
Joachim Cadenza for the Brahms Concerto	111
Wieniawski: "Second Concerto in D Minor-Opus 22"	112
Bruch: "Concerto in G Minor"	131
Vieuxtemps: "Concerto No. 4 in D Minor"	137
Paganini: "Concerto No. 1 in D Major"	149
Sauret Cadenza for the Paganini Concerto	163
Tschaikowsky: "Concerto-Opus 35"	184
Mozart: "Concerto in D Major"	196
Mozart: "Concerto No. 5 in A Major-K. 219"	199

#### **MASSAGE**

Every athlete knows the values of the massage. The violinist no less an athlete will be wise to make use of the massage technique.

## When to Massage

Massage before and after each playing period. This will help prevent muscle fatigue.

# Start the Day's Work With A Massage

The following massage should be adhered to before breakfast. Be

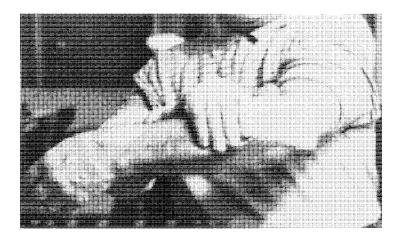


sure that any part of the body being massaged is in a thoroughly relaxed condition. The actual massage treatment is affected by a squeeze-release or a kneading movement of the massaging hand. For working purposes we will call the thumb reaching as far back as the wrist, the "heel" of the hand.

#### Massaging Neck and Shoulders

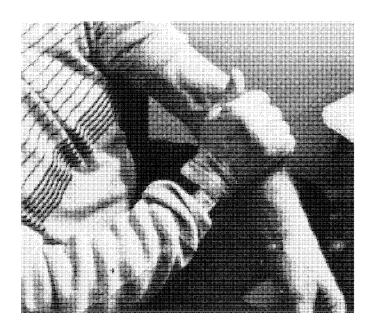
Because of the natural "unnatural" position necessary in playing the violin, the neck and shoulder muscles continue to stiffen after a day's work is done.

Using the right hand, start the kneading movement on the back of the neck pressuring the neck between the heel and fingers of the hand. Reach around the ears as well. Dig deeply into the shoulder and back muscles. Repeat the same technique with the left hand. Now tense the muscles of the neck for a moment and let go. Do the same with the shoulder muscles.



### **Massaging Arms**

The right hand kneads into the upper left arm working its way from that position down to the wrist. Pay special attention to the hollows in and around the elbow. Repeat the treatment with the left arm massaging the right.

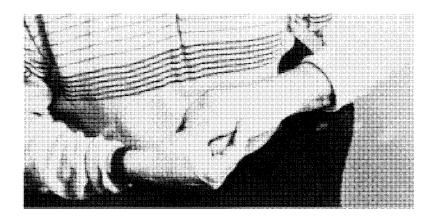


## **Massaging Wrists**

Place thumb of the right hand firmly on the front (palm side) of the left hand wrist with the right hand fingers on the back of the left hand wrist. Begin with a gentle kneading movement increasing pressure as you continue. Added pressure of the right hand effects an involuntary response-movement (back and forth) of the left hand. This is a desired movement and benefits the left hand fingers as well as the wrist. Now turn the left hand around (fingers of the left hand will now face the floor instead of the ceiling) and continue the same treatment. Change hands and massage the left hand keeping in mind that the massaged hand must be completely relaxed.

## **Massaging Palms**

Continue the kneading movement digging deeply into the palms with the massaged hand free to respond to the massaging movement.



## **Massaging Fingers**

Use the kneading movement. Place the right hand thumb on the small knuckle of the left hand with the other fingers of the right hand on the palm side of the left hand and resting directly on the small knuckle as well. Making sure that the left hand is completely relaxed, knead deeply into the knuckle and the space between the fingers as well. Do the same with each finger of the left hand. It might help to relax the left hand in this treatment by leaning the left hand lightly against the body. All the muscles and joints of the left hand fingers should get this treatment. It saves hours of practice.

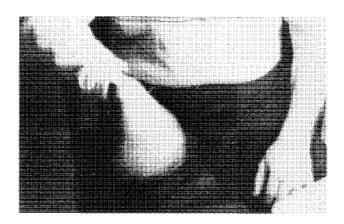
## Massage and Finger-Stretching Treatment

No good dancer would begin dancing without first exercising, stretching, and massaging his leg muscles. This rule fits the violinist's fingers as well.

Spread the left hand fingers as far apart as possible. Keep them stretched and in this position. Place the index and third fingers (held together) of the right hand in the grooves of the left hand. Rub the right hand fingers in a forward-backward as well as a rounded movement deeply in each finger groove. This treatment may be painful but the benefits are worth a little pain.

#### Relax Fingers, Wrists and Arms of Both Hands

Clasp hands with fingers interlocked. In this position begin a round of up-down and circular movements that creates a corresponding series of wrist-action responses. Follow this treatment with alternating finger pressures against each other while keeping them interlocked. This includes alternating finger pressures against each of the knuckles. Now dangle each arm loosely at the sides of the body and in that stance shake them from side to side in a semicircular movement permitting them to respond as they will. Enjoy this treatment for as long as you wish. Now tighten the whole body for a moment and then let go suddenly. Finish with a healthy rigorous drying period.



## Two Extra Minutes for General Well-Being

Stretch towel as far apart as possible in both hands. Raise the arms in a stretched position straight up and in this pulling position, pull the

arms to the right side while at the same time resist the pull with the left arm. Now switch to a left arm pull with arms behind the head. Use the same pull.

Now with arms in front of the chest, use the same pull-and-resist movement. Bend the torso as far forward as possible and use the same pull-and-resist movement. Bend torso as far back from the waist as possible and continue with the same pull-and-resist movement. Raise the arms above the head and bend the knees, putting the body into a sitting position—with arms extended swing the body gently for a few up-and-down movements. Stand upright and indulge in a last stretch movement bringing the whole body into a delicious, tight feel—let go suddenly and enjoy your breakfast.

### RELAXING GYMNASTICS FOR REST PERIODS

#### Comment

Practice long enough to feel the need for a rest period making certain that the need is conditioned by fatigue and not by laziness.

Lie down quietly for a few moments, then mentally, begin to tell yourself using the word "relax" that your feet are relaxing, that your ankles are relaxing, then the calves, the knees, the hips, the stomach, the chest, the back, the shoulders, the neck and any other part of the body in which you have felt any pressure. This is a kind of self-hypnosis but after several attempts it really works and in a matter of minutes, the body should react with a long quiet sigh and you will be at rest. You may even fall asleep for a short period. With calmness in charge, begin a series of relaxed stretches in the lying down position. Start with the toes, and then a few stretching gyrations of the ankles, and so on, through the entire body. Take a few deep breaths holding them for long pauses before exhaling. All of these movements must be done in an easy, relaxed manner to get the best results. When your energies begin to come back, get up on your feet and do some body bends and a few lazy arm swings. If there is time, take a short walk at a good pace, taking an occasional deep breath, then come back to work with renewed energies.

#### SOME FACTS ABOUT THE VIOLIN

#### Two Extreme Models

Every violin has its own peculiar traits. We will analyze a few of them. First consider two extreme models; the flat-bellied model (Stradivarius) and the high-bellied (Stainer) model. The flat-bellied violin sounds softer under the ear but projects a tone much better, particularly in a large concert hall; the high-bellied violin sounds bigger under the ear (than the flat-bellied violin) but does not project as well. Hence, the deep-bellied violin, if one must use one, is well suited to a small concert hall while the flat-bellied violin is essential for a large concert hall, or for that matter, any type of concert hall. The Stradivarius type of violin will take more punishment from the elements as well as abuse from a performer; one may "dig" into it with greater abandon, and it is a better balanced instrument, generally speaking, from top to bottom. It is true that some high model violins like the Amati possess a beautiful tone and are perfect for chamber music; but for all practical purposes we recommend the flat-bellied violin.

## Bridge Problems

Finding a violin maker who knows how to fit a bridge is a problem. He must be able to judge the best sounding wood, know the exact thickness needed for a particular instrument, know the exact height, to allow breathing ease for the various hot and cold seasons, know the exact spot for the legs and, also, the correct thickness of the legs. A properly fitted bridge is a heaven-sent gift. A good violin maker is of invaluable assistance in choosing the proper strings for the individual violin. Always get the very best strings, and with these you must be sure to get the correct weight

A Major Concerto No. 5, Mozart.	balanced bow arm, 202
199-201	speed-up, 21
A Major-K219, Concerto No. 5	balanced bow exchange move-
in,	ments, 24
Adagio, 199	balanced bow movement gym-
Aperto, 199	nastics, 22-36
The Turkish, 199	balanced stance, 30
Adagio Religioso, 143	balanced weight control, 15
Alla Zingara, 126	Beethoven,
Allegretto non troppo, 96	Concerto in D Major, 100-107
Allegro con Fuoco, 126	Rondo, 106
Allegro Energico, 134	between bow-exchange, 22
Allegro ma non troppo, 197	body balance, 29
Allegro Molto Vivace, 96	body-weight pressure, 20
Allegro Vivacissimo, 193	bow, 10-11, 13
Andante, 82	arm synchronizing, 56
Aperto, 199	bend, 11
arm, bow synchronizing, 56	catching, 14
arm vibrato, 55	changes, 15
arm, wrist, hand coordination,	characteristics, 10,35
33-34	exchange methods, 16, 20
arms synchronizing, in shift, 58	movement, 35
	selection, 10
	strokes, 11
Bach, 76-77	tremble, 11
balance,	bow arm,
body, 29	balanced, 20-21
gravity and body, 22	high, 32-33

bow arm, high, 32-33 Concerto in D Major—Opus 77, bow changes, smooth, 15 Brahms, 108-111 bow-changing strokes, 24-25 Joachim cadenza, 111-117 bow-exchange, between, 22 Concerto in E Minor, bow-exchange technique, 16 Allegretto non troppo, 96 bow-violin contact, 23 Allegro Molto Vivace, 96 bowing, Appassionata, 90 Franco Belgian school, 18 cadenza, 92 German school, 18 Mendelssohn, 90-99 Russian school, 18 Presto, 95 Brahms, 149 Rondo Capriccio, 96 Concerto in D Major—Opus Concerto in G Minor, Bruch, 77, 108-111 131-136 Joachim cadenza, 111-117 Allegro Energico, 134 Bruch, 131-136 Largamente, 132 Allegro Energico, 134 Presto, 136 Largamente, 132 Concerto, No. 1 in D Major, Presto, 136 Paganini, 149-183 Concerto No. 4 in D Minor, Vieuxtemps, 137-148 cadenza, 46,92 Adagio Religioso, 143 Joachim, 103, 111-117, 200 Finale Marziale, 143 Sauret, 149, 163-183 Grandiose Concerto No. 4, calm control, 18,54 143 Canzonetta, 193 Royal Fireworks, 147 catching, bow, 14 scherzo, 143 characteristics, bow, 35 Concerto, No. 5 in A Major, chin pressure, 49 Mozart, 199-201 clutch-hand position, 13 Adagio, 199 combination, wrist, hand, 26, 40 Aperto, 199 Concerto, second, in D Minor-The Turkish, 199 Opus 22, Wieniawski, 112-130 Concerto-Opus 35, Tschaikow-Concerto in D Major, sky, 184-195 Beethoven, 100-107 Allegro Vivacissimo, 193 Rondo, 106 Canzonetta, 193 Concerto in D Major, Mozart, Moderato Assai, 184 196-198 Concerto, Second in D Minor— Allegro ma non troppo, 197 Opus 22, Andante Grazioso, 197 Alla Zingara, 126 Rondeau, 197 Allegro con Fuoco, 126

Romance, 126 contact, bow violin, 23 control, muscle, 39 coordinating, arm, wrist, hand, fingers, 33

D Major, Concerto in, Allegro ma non troppo, 197 Andante Grazioso, 197 Beethoven, 100-107 Mozart, 196-198 Opus 77, Brahms, 108-117 Rondeau, 197 Rondo, 106 D Major, Concerto in, -Opus 77, Brahms, 108-117 Joachim Cadenza, 111-117 D Major Concerto No. 1, Paganini, 149-183 D Minor, Concerto No. 4 in, Vieuxtemps, 137–148 Adagio Religioso, 143 Royal Fireworks, 147 scherzo, 143 D Minor, Second Concerto in, -Opus 22, Wieniawski, 112-130 Alla Zingara, 126 Allegro con Fuoco, 126 Romance, 126 down-bow staccato, 38 dynamic energy, 46

Einstein, 196
Elman shift, 56
energy, dynamic, 46
E Minor, Concerto in, Mendelssohn, 90-99
Appassionata, 90

cadenza, 92 Presto, 95 exercises, violin, piece, 75-79

Finale Marziale, 143 Finger, Thumb relationship, 40 upper register, 42-43 finger control, in trill, 62 finger gymnastic, for trill, 63-65 finger massage, 4 finger stretches, 4 left-hand, 43 lower positions, 45 finger vibrato, 55 fingers, straining, 50 fit, bridge, 8 Flesch, Carl, 90-91 Flex and stretch gymnastic, 39 Franco-Belgian school, bowing, 18

G Minor, Concerto in, Bruch, 131-136 Allegro Energico, 134 Largamente, 132 Presto, 136 general well-being, 5 German School bowing, 18 glissando, 70, 73, 74, 83 Grandiose Concerto No. 4, 143 gravity, 29 and body balance, 22 stance, 23 Guarnarious, 149 gymnastic, arm for vibrato, 54 balanced bow movement, 22 bow exchange, 16

finger, thumb, 40-41 harmonics, 66-68 left-hand, 39-55 octave, 73-74 pizzicato, 68 preliminary, 13-19	kneading, 2, 3 knuckle joint, 50 stretches, 44 Kreisler, 37, 49, 91, 96, 103, 143, 196, 197, 200 shift, 56
staccato, 37 stretch and flex, 39 thirds, 70-72 vibrato, 50 gymnastic, vibrato, lower position, 52, 53	Lalo, 81-89 Andante, 82 Intermezzo, 82 Rondo, 84 Scherzando, 82 Symphonie Espagnole, 81-89 Largamente, 132
hand, arm, wrist, coordination, 33-34 hand, wrist combination, 40 flexible, 26 hand tension, 14 release, 13 hand-wrist vibrato, 47 Handel, 149 harmonics, 66-69 gymnastic, 66-68 Haydn, 149 Heifetz, 49, 56, 83, 115, 131 high bow arm, 32-33	Largamente, 132 left elbow in vibrato, 55 left hand, finger pressures, 40 finger stretches, 43 gymnastics, 39 in shift, 59, 61 lower positions, 45 pizzicato, 68-69 legato, 15, 18 tone, 13 legato-spiccato, 28 Liszt, 149
Intermezzo, 82 involuntary response movement, 3	massage, 1-6 arms, 2 fingers, 4 neck, 2
Joachim Cadenza, Brahms, 103, 111-117, 200 joint, 46 knuckle, 50	palms, 4 shoulders, 2 when to, 1 wrists, 3 Masterpiece Concertos, Twelve, 80-201

Mendelssohn, Allegretto non troppo, 96 Allegro Molto Vivace, 96 Appassionata, 90 cadenza, 92 Concerto in E Minor, 90-99 Presto, 95 Rondo Capriccio, 96 scherzi, 96 methods, bow-exchange, 25 Moderato Assai, 184 Motto Perpetuo, 78-79 movement, bow, 22-36 balanced bow exchange, 24 pull-and-resist, 6	Perpetuum Mobile, 75, 79 pizzicato, 68-69 bow, 69 gymnastic, 68-69 left-hand, 68-69 neck involvement, 69 practice, resistance, 46 Preliminary gymnastics, 13-19 Prelude in E, 76-77 position, clutch-hand, 13 pressure, body-weight, 20 chin, 49 left-hand finger, 40 Presto, 95, 136 pull-and-resist movement, 6
rapid bow, 29 Mozart, 196-201 Allegro ma non troppo. 197 Andante Grazioso, 197 Aperto, 199 Rondeau, 197 The Turkish, 199 muscles, 46, 47 muscle control, 39	Rachmaninoff, 149 rapid bow movements, 29 relaxing, 5 arms, 5 fingers, 5 gymnastics, 7 wrists, 5 resistance practice, 46, 47 response movement, involuntary,
natural spiccato, 12 neck, in shift, 60 neck tension, 50 Novacek, 75, 79  octave, 72-74 gymnastic, 73-74 shift, 73	3 rest periods, 7 right hand- left hand shift, 59 Romance, 126 Rondo, 84, 106 rounded-finger technique, 46 Royal Fireworks, 147 Russian school bowing, 8
Paganini, 78-79, 112, 149-183 Sauret Cadenza, 163-183 palm massage, 4	saltando, 160, 166, 172 Sauret Cadenza, Paganini Concerto, 149, 163-183 Scherzando, 82

scherzi, 96, 143	thumb, 45
Scotch Fantasie, 131	stretches, finger,
Second Concerto in D Minor-	left-hand, 43
Opus 22, Wieniawski, 112-130	lower positions, 45
Alla Zingara, 126	stretching fingers, 4
Allegro con Fuoco, 126	strings, violin, 10
Romance, 126	strokes,
Sevcik, 9, 127, 150	bow, 11
shift, 56-65	bow-changing, 24-25
arm, 57, 60	scratching, 24
Elman, 56	Symphonie Espagnole, Lalo,
Heifetz, 56	81-89
Kreisler, 56	Andante, 82
left-hand, 59-60	Intermezzo, 82
left-hand thumb, 59,61	Rondo, 84
neck, 60	Scherzando, 82
octaves, 73	synchronizing arms,
right-hand, 59-60	in shift, 58
short, 61	synchronizing,
slur, 60	bow and arm, 56
thirds, 70-72	Szigeti, 114
tie, 60	
short shift, 61	
slur, in shift, 60	technique, bow exchange, 16
smooth bow changes, 15	rounded-finger, 46
speed, 33-34	tendons, 46,47
speed up balanced bow arm, 21	tension, hand, 14
spiccato, 12, 34-35, 37-38, 97-	neck, 50
99, 121	release, 13
down-bow, 38	vibrato, 52
faster, 34	wrist, 53
natural, 12	thirds, 70–72
slower, 34	gymnastics, 70-72
stance,	in shift, 70-72
balanced, 30	thumb, 18–19, 40, 47
gravity, 23	in legato, 19
straining fingers, 50	left-hand, 40, 59, 61
stretch and flex gymnastic, 39	right-hand, 19
stretches,	stretches, 45
knuckle joints, 44	thumb, finger relationship, 40

upper register, 42-43, 47 tie, in shift, 60 tone, 25 legato, 13 tremble, bow, 11 trill, 62-64 finger control, 62 finger gymnastic, 63-65 Tschaikowsky, 184-195	high-bellied model, 8 pitch, 9 Stainer, 8 Stradivarius, 8 strings, 8-9, 10 tuning, 9 violin piece exercises, 75-79
Allegro Vivacissimo, 193 Canzonetta, 193 Moderato Assai, 184 tuning the violin, 9 Turkish, The, 199 Twelve Masterpiece Concertos, .80-201	weight control, balanced, 15 Wieniawski, 37, 99, 112-130 Alla Zingara, 126 Allegro con Fuoco, 126 Romance, 126 staccato, 37 wrist control, vibrato, 50 wrist, hand, arm coordination, 33-34
vibrato, 44, 45 arm, 55 arm gymnastic, 54-55 arm involvement, 54 finger, 55 hand-wrist, 47 left elbow, 55 vibrato gymnastic, 50 lower position, 52, 53 tension, 52 wrist control, 50 Vieuxtemps, 137-148 Adagio Religioso, 143 Finale Marziale, 143 Grandiose Concerto No. 4, 143 Royal Fireworks, 147	wrist, hand combination, 40 flexible, 26 wrist, in vibrato, 49 massage, 3 tension, 53
scherzo, 143 violin, 8-9 Amati, 8 bridge, 8 flat-bellied model, 8	