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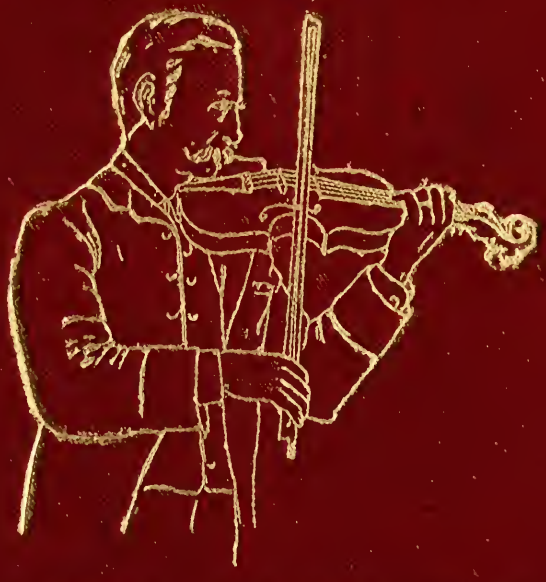
DR. JOACHIM writes, Nov. 3rd, 1894—"The best way of arriving at a correct manner of playing the violin." *(See Joachim's Letter in Preface).*

TECHNICS
OF
VIOLIN PLAYING
ON
JOACHIM'S METHOD



By CARL COURVOISIER

ONLY AUTHORISED EDITION

HALF-A-CROWN

THE TECHNICS OF VIOLIN PLAYING

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CARL COURVOISIER.

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TABLE OF CONTENTS.

PREFACE.

THE author has submitted the contents of this work, before publication in the present form, to Dr. Joachim, as he had done with his first little brochure over twenty years ago, and has received the following amiable and most gratifying reply:—

[Copy.]

MY DEAR MR. COURVOISIER:—I have read the book on Violin Playing you have sent me, and have to congratulate you sincerely on the manner in which you have performed a most difficult task, *i.e.*, to describe the best way of arriving at a correct manner of playing the violin.

It cannot but be welcome to thoughtful teachers, who reflect on the method of our art, and I hope that your work will prove useful to many students.

Believe me, my dear Mr. Courvoisier, to be

Most faithfully yours,

JOSEPH JOACHIM.

Berlin, November 3rd, 1894.

THE

Technics of Violin Playing.

INTRODUCTORY.

IN 1873 I published a small pamphlet, and in 1878 a larger one, on the subject indicated by the title. Both appeared in Germany.

It was with great pleasure that I accepted an invitation from the Editor of THE STRAD to write again on violin playing, for, apart from the fact that the several English editions of my work, which have all appeared *without my knowledge*, are incomplete and faulty, I have now a good deal more to say than years ago. The present edition is a reprint from THE STRAD, with a few alterations and additions.

I shall endeavour to exhaust the subject, if possible, and to furnish teachers and players with reliable information upon every detail about which they may be in doubt.

In this first article I deal with generalities. Afterwards I shall follow the plan of describing first the action of the left hand, which prepares the tones, and then that of the right hand, which sounds them. I shall refer to the combined action of both sides when occasion arises.

I wish to be short and yet not dogmatic. I dislike rules laid before the student in a cut and dried form, telling him: "This is allowed and that is forbidden." An artist is not a mechanic of such an inferior class that skill might be drilled into him without co-operation of his own intellect; such skill on a musical instrument would be on a low level indeed. I wish, on the contrary, to persuade students that, while there may be several ways of treating each detail of violin technic, there is one which forethought and experience prove to be the most suitable and reliable. Therefore I shall not lay down any rules without giving my reasons for their formulation.

I think it right to begin with this warning to the would-be student: do not think violin playing to be as easy as it looks! There is no instrument more difficult to treat correctly and tastefully than a bow-instrument. The cause of this exceptional difficulty is obviously this, that the actions of the two hands, or rather of the entire two sides of the body, are so utterly unlike each other as to require the player's attention to be continually divided. A very large amount of time and exercise must be spent, under the control of unflagging presence of mind, in order to obtain mastery over the combined action of both sides.

This warning is addressed to those young people especially who are fond of the violin, but unwilling to go through hard work. To such as are not even fond of the instrument I should say: "Don't try to play it!" and parents or guardians who want to compel a child to study the violin in spite of its own disinclination, inflict cruelty on pupil and teacher alike, and waste their own money and the child's precious time.

Another apparently formidable difficulty is the impossibility of *seeing* our finger-work properly during our own playing. The player of a keyboard instrument can have his eye on everyone of his actions, if he so pleases. And it is certainly desirable, for us violinists also, that our sense of touch should be drilled into skill with the

direct help of the eyesight, even though we foresee that in the end we must manage everything without that help. But this difficulty is much smaller than it seems at first to be, because we can indeed see a great deal of our doings, either with the help of a mirror when actually playing, or even directly—the latter, it is true, mostly when not actually playing. I shall give advice on this matter at the proper places.

To speak of requirements, it should be clearly stated that a violinist must possess not only the normal, that is, the musical ear, but also a pre-disposition for skill, usually termed "technical talent." This expression might be understood to mean a special aptitude of the joints and muscles, in some individual, for the peculiar purposes in question. But there is no such special aptitude, unless the normal structure of our limbs be considered as a special gift, when compared with tightness of joints and weakness of muscles, or with actual deformity.

Still it is true that a child who is rather slow and clumsy in its movements, has little chance to play any musical instrument well. Further, I might say that youths with very large limbs would perhaps do better to choose the violoncello for their instrument instead of the violin, or should at least take to the viola after learning the violin for a while. In passing, I wish to join in with those who hold that the violin is a very suitable instrument for ladies.

"Technical talent," then, if it is something more than ordinary bodily aptitude, is a mental quality, namely, quickness of imagination concerning the best mechanical process for serving a musical purpose. Happy is the child whose gift in this direction is so pronounced as to work almost instinctively. But wise is the student who, having become aware that fiddling somehow "comes to him naturally"—while he observes others struggling over easy tasks—does not take it easy, but sets his brain to work and develops his talents deliberately and steadily. He is on the way to mastery. Great performers are

invariably people of prominent intelligence. It makes indeed a great difference as to time and trouble spent over our studies, whether we think out, at a rapid rate, every detail of action, and give our hands and fingers literally *a dictation from the brain* at the very first real attempt to do the thing—or whether we try to accomplish it thoughtlessly, mechanically, with just a notion of the final result, namely, a certain musical effect upon the ear. Imagination is the only possible connection between the mechanical process and its expected audible result. If attention be paid to the latter only, and the limbs be left to do their work in a tentative way, we shall obtain our purpose with exceeding slowness, if at all. For we may form bad habits which directly prevent us from reaching the goal.

There is also strong doubt whether we shall *remember* how we have managed the thing, if it turns out aright for the ear with a thoughtless attempt, while we are sure of remembering and correctly repeating a process which has been deliberately chosen. In the latter case success is often instantaneous, at least in many an easier detail.

Consequently, with the thoughtful student, practising means only reassuring himself that he knows and remembers how to do the work. The thoughtless one, on the other side, has to go through so many fruitless attempts, that he may be fagged out at the point where the wiser man begins work.

And yet this work is very considerable. Many repetitions of detail are required to make the sense of touch understand and do the brain's will. It is indeed not the brain, but the mechanism, which requires these repetitions. And when all the details of a long and difficult piece, such as a modern "concerto," are mastered, they are not yet strung together. Now, "to know" a piece of music means for the performer really "to know it *by heart*," not only in its text of notes on the paper or in its musical sound, but also in its execution. Here then we find again that the thoughtful student has an immense advantage over the thoughtless. While the

latter struggles through the details over and over again, or perhaps not even picks the thing to pieces, but reads the whole a number of times, before the bright idea crosses his mind that he might try to play it from memory, the former begins with the *intention* of remembering every note and every detail of fingering and bowing. And experience shows that the faculty of recollection is very strongly pronounced in the sense of touch, as it is in all our senses. When well trained, we perform many an action by force of habit, thereby allowing our thoughts to occupy themselves more with the mental than with the mechanical side of our work. It is a fact that we are able to play quite correctly from memory a piece which we have not seen in print for years, while we would find it almost impossible to write it down.

Some teachers forbid their pupils to play by heart. They are right when they mean to prevent them from playing a piece from memory to anybody, when they are not yet sure of it. But beyond that the restriction is unwise. Playing by heart need not, as some say, leave the faculty of music-reading undeveloped; for reading, or rather playing at first sight, should in any case be practised beside the studying of pieces. On the contrary, even with a thorough knowledge of the elementary theory of music, playing at first sight is only possible when we know the technical capabilities of our instrument by heart, so that the reading eye meets with no detail the execution of which is a riddle to the reader.

I have not yet touched on the purely mechanical exercise, for the purpose of obtaining or preserving suppleness of joints and strength of muscles. A great deal of this is of course required, but much of it can be done apart from the instrument, by *gymnastics*, either quite free, or with an appliance such as Brotherhood's "*Technicon*," which I strongly recommend.*

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* Apply to Messrs. Augener and Co., 22, Newgate St., London, E.C.

The specially violinistic requirements of mechanism are the following:—

1. Strength of those muscles, situated in the neck, which bend the head forward (and slightly sideward), in order to press the violin against the collar-bone with the jaw.

2. Freedom of action in both arms, from the shoulder-joint down to the last finger-joint.

3. On the part of the left arm: (*a*) The faculty of turning the forearm (from the elbow-joint) well outward, in order to bring the base of the little finger as near as possible to the neck of the violin. (*b*) Agility of the thumb, especially in its root-joint, close by the wrist. (*c*) Strength of the flexor (bending) muscles for the two outer finger-joints, for the purpose of pressing the strings down on the board. These muscles are situated forward of the elbow, in the fore-arm. (*d*) Strength of the small muscles within the hand which move the fingers in their root-joints (knuckles).

4. On the part of the right arm: (*a*) The faculty of turning the fore-arm well inward, to procure a solid pressure, through the bow, on to the string, for accents or continuous loud tone. (*b*) Subtle feeling in the first finger, as the means of transferring that pressure into the stick of the bow. (*c*) Strength in the thumb, as the support against such pressure. (*d*) Strength in the little finger, for the purpose of balancing the weight of the bow.

As the exertion during actual play is considerable, the student should guard against waste of strength in the mere carriage of the instrument and bow. I shall at the right place, in the following articles, mention those efforts that are necessary, and also those that are not.

Over-exertion should certainly be avoided, firstly because it is injurious to health, and secondly because it is fruitless. Nobody does good work when tired out. It is, therefore, wise neither to practise any one detail for too long a time, nor to devote a number of consecutive hours to violin practice alone, but to stop as soon

as we feel tired, and to insert another occupation (for example, theoretical studies) between the violin practices. We must not overlook the fact that we may tire out our attention also. For most constitutions it is too hard to practise more than a few hours each day. Say that for a professional student three hours' thoughtful and vigorous practice should be sufficient, if there be some exercise in playing by sight or some ensemble playing to be gone through on the same day. To spend up to eight hours or more per day with the violin, during weeks and months, as some ardent workers have done, is really foolish! An amateur should consider one hour daily as the very minimum of practice, and do more as soon as school is absolved.

From all that has been said so far, the beginner should conclude that slow progress in violin-playing is the rule and rapid progress the exception. But let him take to heart every advice and criticism of his master, and he will make sure progress if at all gifted, and get on at a fair speed if his talent is evident.

Let him try to be as critical with himself as he finds his teacher to be, and he will see the reason why he should not be permitted to do any guess-work, or to rush to difficult tasks. Thus he will avoid both negligence and impatience.

PART I.

The Left Side—Tone Formation.

SECTION I.

Attitude of the Player and Position of the Violin.

In order to secure for the bow perfect certainty of attacking the strings at the right place, in the right direction, and with the exact degree of strength desired in every instance, it is necessary to choose for the violin one certain position to which we mean to adhere, and then, if possible, to hold the instrument immovable.

By observing the following rules, the above purpose will best be served, while a pleasing and dignified attitude will also be gained.

Rule I.—Stand upright, firm in the back, with the chest thrown out, not to hinder respiration, and hold the head as erect as possible.

If you can hold your head literally straight, so that your eyes are on a level, you will read your music with greater ease, than if one eye were placed lower than the other. But if you *must* incline your head at all, let it be rather to the left (over the violin) than to the right.

Rule II.—Place the weight of your body entirely on the left foot, resting the right foot loosely on the floor, a little forward and outward.

You secure thereby a quiet attitude for the left side

of your body, on which the instrument rests, and at the same time freedom of action for the right side, which handles the moving bow.

Rule III.—Place the broad end of the violin on the left collar bone, and hold it there as firmly as possible, by pressure of the head through the left side of the jaw —not the chin proper—on to the outer half of the instrument, to the left of the tail-piece.

Keep clear of the tail-piece with your chin ; pressure on it might put the strings out of tune.

The advice to hold the violin with the collar bone and the jaw exclusively, during actual playing, should be taken literally. For, as the left hand may have continually, and often very quickly, to move about along the neck of the violin, it would not be sensible to attempt keeping the instrument in position with that same hand.

Those who find difficulty in holding the violin firmly, because their neck is long, their jaw narrow and their shoulder sloping, should obtain the aid of a "chin-rest" on the instrument, and of a support in the shape of a small, firm cushion under the collar of the coat or vest (ladies might tie it round their neck with a ribbon), to hold up the outer edge of the violin. Even players with a favourable build should not despise these aids, as they obviate the very unpleasant necessity of raising the shoulder, and even minimise the jaw-pressure, thus preventing a waste of strength.

And even with these aids, you can further avoid useless exertion in the mere holding of the violin, if you judiciously seize every opportunity for resting from the jaw-pressure, during interruptions in the music, or during bits of melody which require no change in the hand's position, especially when that position is one of the higher ones, for which the lower part of the hand may lean against the body of the violin.

Some violinists flagrantly break the rule of keeping both their own body and the violin as quiet as possible. They meet the bow half-way when changing strings, by

turning the violin towards it or away from it, either with the hand or by a movement of their body in the hips. Or they sway their whole person from one foot on to the other when drawing the bow to and fro at full length, as if the violin were to play on the bow and not the reverse, and as if the right shoulder could possibly be kept in its place (for direction of the bow) when the body moves at all. Thereby they combine two or more actions instead of mastering one, and besides, they unintentionally present a comical aspect.

Which is then the most desirable position of the violin? It should fulfil the three requirements described under Rules IV., V., and VI.

Rule IV.—The strings should run horizontally, not down-hill, from the bridge to the nut, in order that the bow may not be in danger of slipping aside from the chosen point of contact with a string, whereby the tone would be interrupted.

I have read somewhere that we should *not* hold the violin in that way, because the strings of the *violoncello* cannot run horizontally. By all means let us pity our poor brethren labouring on the 'cello, for the greater trouble they have in handling the bow! But would not the monkey grin, if you forbade him to climb trees because the elephant cannot do it?

Rule V.—The violin should not be held straight forward, but decidedly toward the left side.

Some people have taught the contrary, which proves that they did not understand their own build; it is possible to hold the violin straight forward with the hand, certainly, but never with the shoulder and jaw. The deviation of the scroll or head of the violin toward the left side is, however, distinctly limited. It may not exceed such a position as still enables the right hand to draw the bow, down to its very point, at right angles with the strings.

Rule VI.—The violin should not lie in a level position from side to side, but should slope considerably from left to right.

This incline is limited by the necessity of avoiding to brush with the fore-arm against the body, when bowing on the nearest (E) string.

The incline will, on the average, be at an angle of about 45 degrees, or half-way between a horizontal and a vertical position, if the player's head is held upright, and if the surface of the violin adapts itself to the outline of the jaw. As this outline varies between individuals, so will the position of the violin slightly vary.

Apart from the consideration for the bow's convenience, mentioned under Rule IV., all three Rules, IV., V., and VI., are intended to greatly favour the attitude and action of the left arm. It is absolutely necessary to bring the left elbow under the violin (see next chapter) which position cannot be attained or kept without effort or inconvenience. But, the higher the violin is held, the farther it diverges toward the left, and the more it slopes toward the right, the less becomes that effort and inconvenience. Whoever does not his best to minimise the said discomfort—not by laziness, of course, but by the best balance obtainable between a comfortable position of the violin and the effort of his arm—imposes upon himself the greatest drawback to the development of skill.

Tall persons are better off than little ones in this respect, because a long right arm can follow the violin farther round to the left side than a short arm. Thus, very tall men can hold the violin almost literally due left.

SECTION II.

Position of the Arm and the Hand.

As the *fingers* work the strings for tone-production, the arm and the hand are bound to choose only such positions towards the violin as favour the action of the *fingers*; they cannot be allowed to assume any position according to their own convenience.

We shall see that the position of neither of those parts is quite fixed.

The hand approaches the neck of the violin with the palm turned towards the player's face, so that the knuckle of the forefinger comes into contact with the neck on the right or inside, and the thumb on the left or outside.

Now, in order that the fingers may be raised high enough to bring their tips vertically down on the strings, the Rules VII. and VIII. must be observed.

Rule VII.—The elbow must be pressed forward (inward) in front of the chest, so as to be under the violin. (This has been hinted at before.)

Rule VIII.—The base of the forefinger (its knuckle) must touch the neck of the violin, not below, but on its side, near the fingerboard, if not against its very edge.

These two rules are inseparable, for, if the hand be placed too low, the pressing in of the elbow will be of no use whatever; it will only cause an inconvenience by bending the wrist sideways. And if the elbow be held outside the violin, no raising of the hand will enable the fingers to stop the lower (farther) strings, except by again bending the wrist, in this case in the opposite

direction. The fact is, that the advance of the elbow has the purpose of placing the hand in the right position. So the former rules must be supplemented by

Rule IX.—Consider the hand to be one with the forearm, by forming, if possible, a perfectly straight line along the back of both, through the wrist. The wrist should be kept steady, though not stiff.

The straight position of the wrist is the best for a special reason. The sinews which work the fingers, both flexors (bending) and extensors (stretching sinews), are the thin ends of muscles which lie close before the elbow in the forearm; so, of course, they pass through the wrist. When they suffer curvature in this region, in whatever direction, the fingers cannot move quite freely; both the firmness of their grip on the strings and the speed of their action must thereby be lessened.

If the arm of a student be very short, while he plays a full-sized violin, he may be compelled to lean the hand towards his face in order to obtain a sufficiently upright position, and thereby to make the wrist protrude on the outside. For he holds his whole arm more outstretched, with the elbow nearer the violin (with a wider angle) than a longer arm would be held. If this bend of the wrist be so strong as to distinctly weaken the fingers, the violin is too large. But if it is less conspicuous, and the pupil is still growing, you may expect that after a while he will be able to hold his hand straight in the wrist.

Provided, then, that Rule IX. be observed, what variety of attitudes the hand may require for fingering, either on different strings in one "position," or in different positions on one string, will be worked, the former mainly from the shoulder-joint, and the latter mainly from the elbow-joint. Thus the position of the whole arm cannot be always the same. But whatever it may be, the arm must certainly carry its own weight, and never feel as if it were suspended from the violin. It should make no difference in feeling, whether the

hand stands at the neck of the violin, or beside it in the air.

In which ways must the position of the arm vary?

The fingers should not only beware of the contact with a nearer string when stopping a farther one; they should also avoid, if possible, being more stretched in their joints when they reach over to the farther strings, and thereby losing some strength of grip. In order, then, to procure for them a variety of attitudes, according to choice of strings, which might be almost, if not quite, similar to each other, the knuckle of the forefinger must glide upward or downward beside the neck. Very short fingers may require that knuckle to rise on to the edge of the finger-board for the use of the G string, while a hand with long fingers need not stand quite so high. The nearer the string, the lower can any hand be placed; and when the E string alone is being stopped, the knuckle of the forefinger will stand so low as to let only two thirds, or possibly one half, of that finger's first member protrude above the fingerboard.

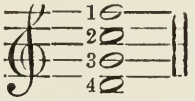
Now, if the whole arm moves with the hand in these up and down changes, the elbow will have to stand almost within the right edge of the violin (so that the player's own right eye can see it, while the head keeps upright) when the G string is used. But when the E string is fingered upon, the elbow may stand merely under the middle of the violin.

Correspondingly, the outer rim of the hand is visible to the player himself down to the wrist when playing on the G string, but only about halfway down when playing on the E string.

It might then seem as if we required four different positions of the hand and arm, one for each string. But it is better to think of three only, one for each *couple* of strings, because we seldom play many bars without requiring at least the notes of two adjoining strings, and because in other but elementary violin playing double stops are pretty frequent.

Many violin schools or methods state a fixed attitude

of the hand and arm for the "first position," and advise you to find it by stopping simultaneously these notes:



If you keep the hand in exactly the same place into which this queer group of stops has forced it, and then try to place all four fingertips on the E string, you will find that they drag that string towards the edge of, instead of pressing it down upon the fingerboard. To manage the latter, you are bound to drop the hand (and arm) a little. So the said theory is utterly wrong, except for continual distribution of the fingers on all four strings. This is the most advanced and rare task in violin playing, and requires developed skill in twisting one's fingers into extraordinary shapes, while the first tasks are to produce one tone at a time, and to group stops on each string by itself. To torture the beginner with the said example of quadruple stopping would therefore be quite unnecessary, even if it were not wrongly conceived and to him impossible.

Of course, there should not be any greater restlessness of the hand and arm than is absolutely necessary, least of all in the lowest positions, where the neck is narrowest and the strings are more nearly on a level with each other than in the upper regions, nearer the bridge.

While the attitude of the elbow (or, rather, of the whole arm) varies in the sense described—sideways—it also varies for the purpose of changing "positions" with the hand. Observe that it cannot be merely the forearm turning in the hinge of the elbow-joint toward your face, which makes your hand slip away from the region of the nut. Such a movement would lift the violin, and the reverse action would drop it, and thus bowing would be interfered with. You have to drop the back arm a little, thus approaching the elbow to the chest, when

shifting to a higher "position," and to lift it again when withdrawing to a lower "position." Thereby alone can you describe a straight line along the strings with the hand.

Here is the place for an important warning. Hold the forearm in the elbow quite loosely! When your hand is in the first position, do not feel as if you wanted to pull it toward you, so that the hand were forced to hold on desperately to the neck of the violin, not to slip away into a higher position. This temptation, namely, that of exerting the muscles in the upper arm which attract the forearm, is very great in many beginners, and easily explained. On one side, we have to apply decided will and perseverance to the bringing in of the elbow, which requires a continual exertion in the region of the shoulder. On the other side, we have to exert the muscles close in front of the elbow which work the fingers. No wonder, indeed, that the intermediate muscles—by misunderstanding our intention, or more probably *by obeying an uncertain intention* of our brain—take part in the exertion. Do not mix up the necessary constant readiness for shifting with an actual effort, or you will soon have too much of the latter.

Convince yourself especially of the fact that there is no difference of strength or freedom in the finger-action, when, for example, you clench your fist and open it again, whether you do so with your arm stretched out or folded up, if only the wrist is in a line with the forearm.

But now, what is position? How can any single "position" be described, and how does it affect the attitude of the hand and arm?

The hand must, of course, stand so as to allow all four fingers at the same time to stop their tones in any one key. Consequently, the regular range of any position on one string (without extension) is the interval of a *fourth*. This can be *perfect* (two tones and one semitone) or *augmented* (three tones, "tritone") or *diminished* (one tone and two semitones).

Among the seven fourths possibly found in a major key, one only is augmented against six perfect ones; and in a minor key two augmented fourths and one diminished may turn up against four perfect ones. So we may treat the perfect fourth as the *regular* measure for which to select positions of the hand, and the other intervals as exceptional ones, the positions for which should be derived from the others.

Is it then the first or the fourth finger which orders the hand into position for stopping any perfect fourth? Some say "the first finger," but it is certainly the fourth finger. The latter, being the highest in the group, tells the hand how far to come forward from the nut, to reach its place at all. Besides, the two uppermost fingers are the weakest and the least skilful by nature; to them every consideration should be shown, not only by the hand and arm, but also by the stronger and more self-reliant lower two fingers. Still, it is a fact that the first finger is best fit, and therefore naturally willing, to act as *leader* for the others. So we want a wording which describes the attitude of the first finger necessary for placing the *fourth* finger aright, and thus the hand also. Here it is:—

Rule X.—Place the tip of the first finger vertically in its proper place on the string (to stop its tone in the prevalent key). Then pull the knuckle of the same finger along the neck so near to its tip that the finger appears to be entirely folded up, its first and third members standing parallel to each other, and its middle members forming a slightly sloping bridge between the two.

Any hand should hereby be enabled to place all four fingertips firmly and neatly. For the hand is placed not only high enough beside the neck (compare former remarks), but also far enough forward to reach the proper spot with the little finger.

And it is especially satisfactory to find that, by the near approach of the forefinger's base to its tip, the outer rim of the hand approaches the neck of the violin

quite naturally, and so near as to place the little finger not only high enough, but well bent too.

When, in neglect of this rule, the knuckle of the first finger touches the neck at a considerable distance behind its own tip (the finger being very little contracted) the outer rim of the hand keeps away from the neck; and no admonition to approach it is of any avail, because the turning in of the hand twists the first finger when placed on a near string, and prevents it from regaining its position when once lifted.

It will appear, then, that Rule X. renders another rule unnecessary, namely this: that the palm should be turned well in toward the neck of the violin. But I mention that to people who begin the study of the violin or viola later in life, that action causes trouble, while to a child it hardly does so.

The range of the diminished fourth is managed by either advancing the first or withdrawing the fourth finger from its respective place in the perfect fourth, as circumstances induce us to do.

It is different with the augmented fourth, because the full-sized violin (and certainly the viola) requires an *extension* for that interval, from an average and even from a large hand, at least in the first and second positions. The inconvenience of this extension should be felt rather in the lower than in the upper fingers. Therefore, keep the hand in exactly the same place, as long as the fourth finger repeats the same tone, whatever tones may be stopped behind it. For example, fit the hand for:—

(A string)—B—C♯—D♯.E.
or B—C♯. D♮—E.
or B.C♮— D —E.
*or B♭—C— D —E.

Never allow a retiring second or first finger to force the hand back; do not push the hand into the low first position (see later) until the fourth finger stops E flat (or corresponding tones).

How then do your fingers feel in the group marked * ? The third finger feels low, being a whole-tone below the fourth; so does the second, being a major third (two tones) from the fourth; and the first finger feels shifted backward from its normal place. Unless your hand is very large indeed, you exaggerate the contraction of that finger, and even *bend its first member backward in the knuckle*. And the last joint of the second finger slightly overhangs its tip forward, so that the nail must touch the string, unless you can cut it very short.

The said inconvenience caused to the first finger is greatest when its tip stands on the E string, because the contraction is then the severest.

Those who cannot bend the forefinger backward in the knuckle at will, had better try to acquire this faculty soon! Otherwise they suffer a drawback which is more serious than the inability to span an octave on the pianoforte. For while in many a pianoforte piece octave-playing is not wanted, the simultaneous stopping of *any* four diatonic tones is the very foundation of systematic fingering on the violin.

If a child is compelled so to extend its fingers over a *perfect* fourth, as if it were an augmented fourth, the latter, when it occurs, will force the hand to shift where it should remain fixed. That child has been given too large an instrument.

For such scales (especially when played quickly) throughout the whole range of a position, which require the fourth finger to stop higher and lower alternately, we had better choose the hand's position suiting the higher stops of that finger, because these are—in major keys at least—invariably the stops on the more distant strings. This refers, for the first position, to the keys of E♭ and E♮, B♭ and B♮, F and F♯ major, and to corresponding minor keys.

On the other hand, I see no reason why I should not shift, for example, into the more comfortable medium first position, when playing, not a complete scale, but merely a phrase in E major which contains perchance

no D♯ on the G string, or into the low first position, when playing a melody in B♭ major which requires the use of the upper two strings only. When an advanced stop of the fourth finger is only occasionally required, I pull my hand forward while keeping some lower finger in position, and thereby reach the place of the fourth finger more safely and firmly, than by keeping the hand fixed and stretching the little finger out.

If then the *little* finger must in first line be considered, in order to at all discover suitable positions of the hand, and to understand fingering, how can any teacher allow beginners to *omit that finger?*

There are some other reasons also against such omission: the fourth finger requires quite as much practice as others, if not more than the clever two first fingers. And then, the third finger is at first very weak, unwilling to separate itself from the second, and hardly able to lift its tip from the strings, or even to glide along it, when the fourth finger is held down. To *evade* this special difficulty by omitting the fourth finger, instead of *overcoming* it by special attention and exertion, is indeed foolish. A difficulty throws itself all the more obstinately in our way, the longer we delay the fight against it.

I have now to discuss the designation of *various* positions.

The antediluvian expressions of the "shift" and the "half shift" are almost generally discarded, and I am not going to discuss them. The modern usage is to *number* the hand's positions according to the selection of any four consecutive tones, to be stopped on any string. The numbering is done diatonically, not chromatically, and this usage may mislead the feeling of the hand.

We call the hand's position the *first* when the fingers stop, for example, B, C, D, E on the A string, the *second*, when they stop C, D, E and F, and so on. Now some people actually write and teach that the hand must stand in exactly the same place, whether the said tones be all natural, or all flat, or all sharp. This is verily absurd, because not even a gigantic paw can do it. And fancy

the complication of feeling which would result, if you placed all four fingers with a medium bend on B, C, D, E, with a specially strong bend on B♭, C♭, D♭, E♭, and with an extension on B♯, C♯, D♯, E♯—why, you would create three different fingerings out of one! For it certainly is one and the same, theoretically and practically; you need only shift the *hand* backward or forward by the measure for a chromatic semitone, and you are sure of playing the right notes in all three cases, if your fingers in each case feel in the same position from their knuckles.

There is, therefore, no such thing as one fixed position, when we call it *first*, *second*, and so on. There is a low and a high one comprised in each nominal position, if not even a low, a medium and a high one, as in the case of C♭, C♮, and C♯ major. Further, when we play in "tempered" intonation, that is, with a pianoforte or the like (see the coming chapter on Intonation), we find that the tones B♭, C♭, D♭, E♭ are identical with A♯, B♮, C♯, D♯, and the tones B♯, C♯, D♯, E♯, identical with C, D♭, E♭, and F. Even if we play in "just" or natural intonation, in which the said tones of the first position are not quite as low as their counterparts in the half position, etc., this difference is only just perceptible, while the measure for a chromatic semitone, in the lowest region of the string, amounts to more than the breadth of the thickest fingertip. Consequently, the low "first" position is practically, if not always literally, identical with the "half" position, and the high "first" identical with the low "second" position. And similarly any two consecutive positions go over into each other.

Why not then number the positions chromatically? Some modern writers do so: and if our *notation* were chromatic, it would be the only sensible way to designate positions. But the notation is *diatonic* and will probably remain so. Therefore it is best, for the translation of the *notes* we read into finger-stops, to number the positions by diatonic degrees, while being always aware of their possible chromatic alterations.

The following is a list of *actual* positions in reference to *nominal* positions as we read them. The G string is chosen as an example :—

	Actual Position.	Nominal Position.
	(With the range of a perfect or augmented fourth.)	
1st.	G♯ to C♯	half
	or A♭ „ D♭	low first
2nd.	(A♭) A♮ „ D♮	medium first
3rd.	(A♮) A♯ „ D♯	high first
	or B♭ „ E♭	low second
4th.	(B♭) B♮ „ E♮	medium second
	or C♭ „ F♭	low third
5th.	(B) B♯ „ E♯	high second
	(C♭) C♮ „ F♮	medium third
6th.	(C) C♯ „ F♯	high third
	or D♭ „ G♭	low fourth
7th.	(D♭) D♮ „ G♮	medium fourth
8th.	(D♭) D♯ „ G♯	high fourth
	or E♭ „ A♭	low fifth
9th.	(E♭) E♮ „ A♮	medium fifth
10th.	(E♮) E♯ „ A♯	high fifth
	(F♭) F♮ „ B♭	low sixth
11th.	(F♮) F♯ „ B♮	high sixth
	G♭ „ C♭	low seventh
12th.	(G♭) G♮ „ C♮	medium seventh
13th.	(G) G♯ „ C♯	high seventh
	or A♭ „ D♭	low eighth

As the octave contains twelve semitone-steps, it will be (chromatically) the thirteenth position which produces, an octave higher, the same tones as the lowest position.

Observe the following points: mark the spot at which your first finger stands in important cases. When

stopping the perfect fourth F♯—B on the E string, you will see the back of the first finger standing some distance in front of the nut, while it may be just beside the nut, or perhaps a little behind it, when you stop the fourth F♮—B♭.

When you stop the same (corresponding) places on all four strings in succession, the back of the first finger seems to advance as you change to lower strings. But it does not glide, it *rolls* a little forward, and with this rolling the palm turns more and more toward the neck, thus enabling the three upper fingers to feel nearly alike, if not absolutely so, on whichever string the whole group may be placed. The first finger only must feel different, as its bend widens when its tip crosses to farther strings while its knuckle remains on one side of the neck. This widening of bend is, however, partially balanced by the gliding of the knuckle upward.

When you place all four fingers comfortably on the G string, and then bring them over to the other strings in succession (say in an ascending G major scale throughout the first position), your hand and arm are only too willing to sink lower in proportion. But you have to haul them up with a will, when running back again from the E string to the G string (in the descending scale).

When you advance in position up the string so far as to touch the body of the violin with the ball, or at least the block at the root of the neck with the inner member of the thumb (medium third position), the contact between the base of the forefinger and the neck of the violin becomes unnecessary. And the higher you go, from the fourth position onward, the more evident is it that such contact must be avoided. The hand should glide more and more away from the neck, round the curve of the violin's edge, in order to bring the fingers nearer and nearer to a position *rectangular* against the strings, otherwise, before you get far, the upper fingers will simply fail to reach their places, especially on the lower strings. Even with this habit of creeping along

the edge, you cannot altogether avoid bending the hand in the wrist towards your face, for very high positions.

If we could hold the fingers (on an average) rectangularly to the strings even down to the first position—as the violoncello players do—by never touching the neck at all with the hand, but only with the thumb, we would find intonation easier when stepping from one string to another. A modern German writer advocates this; but it is a practice suitable only for advanced players, and desirable only for special purposes, and it requires such an extreme twist of the forearm in the elbow, that to many individuals it may remain impossible for life. Still, there is no reason to forbid the removal of the knuckle of the forefinger from the neck in *any* position, down to the first (or "half"), if thereby complicated stopping becomes easier, or the contact of some fingertip with an adjoining string, or of the flesh of the first finger (near its knuckle), with the E string, can more surely be avoided. And this process does not lead to uncertainty of intonation, if one or more fingers meanwhile keep their places.

To guard against uncertainty of finger-feeling generally, the hand must, if possible, stand perfectly still, as long as we play in the same position and use no more than two strings. This steadiness of the hand becomes difficult when any finger performs a chromatic shift, and especially when several fingers in succession do this (in the chromatic scale).

Surely we should never correct an untrue stop of a single fingertip by moving the hand! Let first the wrongly placed fingertip be moved; probably only when you find that several stops go wrong, you will feel convinced that it is the hand which has not accurately found its position.

I have kept the discussion of the most serious fault—at the same time the most natural and therefore the most frequent—for the end of the present chapter. It is the bending of the hand *backwards* in the wrist, so that the ball of the thumb approaches the neck and even

touches it. This bend of the wrist is worse than any other, because it even withdraws the fingers from their stopping places, beside the weakening of their grip which results from any bend of the wrist.

There are no less than *three* causes for this fault; that is why I call it the most natural one.

The first cause is simply negligence in holding the instrument with the jaw. If the violin slips away from under the chin, or its weight is allowed to continually rest on the hand, the thumb-ball *must* offer a support.

The second cause is the temptation to drop the hand, in order to move a finger backward from a high to a low stop, especially the first finger from B to F in the first position (when describing the diminished fifth in C major). As before said, this sort of thing should be managed by the finger alone.

And the third cause of the fault is the temptation (described previously) of attracting the forearm, while it should stand freely in one place. If we drag the root of the hand (the wrist) forward under the fingertips, while the latter keep their places, the hand, of course, becomes bent backwards in the wrist.

I would therefore impress the fact on the student's mind, that Rule IX. is the most important of all hitherto given.

SECTION III.

Attitude and Action of the Thumb.

The pressure of the fingers on the neck of the violin (through the strings and the fingerboard) is often so great, that the pressure of the jaw on the other end does not suffice to balance it and thus to keep the instrument in position. So there is need of a local support under the neck, for which purpose the thumb lends itself naturally.

Should then the neck rest quite down in the groove between the hand and the thumb? No; that would lift the fingers too high above the neck. It might also cause uncertainty in shifting, as the loose fold of skin in that groove might stick to the wood, and thus mislead the feeling as to the exact distance of the shift.

The neck must then be supported at a somewhat higher level by the side of the hand. But, as hands differ in size, in plumpness, and in relative length of fingers and thumb, it is idle to give a measure for the width of the space left under the neck, as some do by saying that the point of the bow should just be able to pass through. One saying is generally correct, namely, that the *knuckle of the forefinger* should be in contact with the wood, and not the first member of that finger. For, when the finger moves in its knuckle joint while the contact is *above* that joint, the finger is greatly impeded and *the hand also moves* (in opposite direction to the finger) instead of standing perfectly still.

Now, for the thumb itself, there is a choice between

two sensible attitudes. It can either place its *inner member right across the back of the neck*, in a rather forward place against the fingers, so that the hand appears as a half-formed fist, with the thumb tending towards closing in over the fingers, when the latter are all placed on the strings; or the thumb can place its *outer member* only—that is the tip—*backward under the neck*, so that the palm becomes flattened out.

The attitude described first is far more natural than the other, as it hardly differs from the attitude of the hand and thumb when inactive, while the other requires training to become habitual; nobody goes about the streets with his thumb turned outward from the hand. Therefore that easier attitude of the thumb should be chosen as the regular one for all low positions, from the high or medium third position downward, when the hand remains stationary for a while. And the plainest way to find the best place for the thumb against the finger-tips is this: Glide forward along the neck till the inner member of the thumb comes into contact with the block by which the neck is inserted into the body of the violin. If the neck is in normal proportion to the body, the second finger, when standing right opposite the thumb thus placed, that is, over the curve from the neck into the block, cuts off exactly one-third of the string-length, and thereby stops, on a normal string, the perfect fifth to the tone of the open string (D on the G string, A on the D string, etc.).

The first finger then stands either a tone or a semitone (occasionally an augmented second) behind the second finger and the thumb. The medium third position, with the first and fourth finger on "natural" tones, is the most current; therefore let us make it

Rule XI.—That the best place for the thumb, in any low position, is the one *opposite the high rather than the low second finger*, or, more accurately speaking, at that distance in front of the first finger, which corresponds with the measure for the tone C—D (G string) in the medium third position. For, though the fingers should

not depend upon the thumb in taxing the distance of a shift into the medium third position (or any other shift) they must feel uncertain about reaching the said position from below, when the thumb has been in an attitude against them, different from the one which it is going to occupy, and thus glides a greater or lesser distance than the fingers. The thumb has surely no right, for a possible convenience of its own, to put the fingers out of their reckoning.

But there are some more reasons for preferring this attitude of the thumb to any other. Firstly, being rather forward, the thumb furnishes the desired support of the neck nearly under the centre of the whole group of fingers. Secondly, it underlies the neck broadside up and at right angles, which renders the support solid, while it is comfortable. Thirdly, it provides a warning against the backward bend of the hand in the wrist; for, as soon as this bend sets in, the thumb also is bent and turned over on its edge, so that its last joint presses against the wood, and feeling at once tells you what is wrong, without even the help of the eye.

When we intend to shift into the high third (low fourth) position, it is, of course, advisable to anticipate it by placing the thumb nearer the first finger. And when the position to be reached is the low third (identical with the high second), we might in advance place the thumb farther forward then usual. Only that position does hardly require the contact of the thumb with the block. For small hands it is even better to deliberately avoid the contact, as it causes the hand to hang backward and is distinctly uncomfortable.

For medium fourth position prepare by placing the thumb right opposite the first finger.

In any higher position the first finger stands over or beyond the block, consequently forward of the thumb.

Observe that the *ball* of the thumb will touch the body of the violin when you reach the high third (low fourth) position. It can, but must not, touch when you stand one or even two semitones lower, according to the shape

of the hand. But, while the contact of the ball may be with the *lower edge* of the violin, as long as you keep below the high third position, it must be with the *side* of the instrument, above its lower edge, from that position upward.

And do not fix the ball at one spot for any single position, but let it glide up and down beside the block, as far as the change of strings may require. The farther you move away from the nut, the more must the hand move to and fro in order to command all the strings at will, because the fingerboard gradually broadens and its curved surface makes itself felt more and more distinctly. (Compare the last section.)

Higher up, the thumb can no longer keep its *inner* member leaning against the block; it must withdraw a little along the side of the violin, so as to hang on to the block with its *tip* only. This necessity may arise, for small hands, in the low fifth position already, at least for a passage on the G string, and for larger hands in the high fifth (low sixth) or the medium sixth position. A very small hand, with an extra short thumb, may be compelled to let the tip of the thumb slip even off the block to the side of the violin, in order to reach the very highest notes. Very awkward that, because of the difficulty to hook the tip on again, when running down the strings at a rapid pace!

For the highest positions, at least on the lower strings, it may be necessary to draw the ball of the thumb right on to the upper edge of the violin.

The attitude of the thumb which I described as the less suitable one for stationary low positions, will now be seen to become necessary; in fact to be the only sensible one below in the case of wide skips into high positions, because the tip alone should arrive at the block. If we hold the thumb in the more comfortable way, we must stumble over the third or fourth position on the way up. Even when we can make a momentary station at an intermediate position, as in a long scale on one string, we had better not complicate matters by

trying to alter the attitude of the thumb on the way, but start with its backward attitude and treat the third or fourth position as a free one, like the first or second.

That backward attitude may also be found desirable in the case of extension, though it may be no more than the augmented fourth (tritone) in a low position, because the first finger, being displaced backward, may require a more direct opposition of the thumb, to secure itself against slipping forward. I have found this out by playing a very large viola, and have observed it in violin pupils with small hands.

The German writer (already quoted elsewhere) makes the backward attitude of the thumb an absolute rule, together with the avoidance of contact between the knuckle of the forefinger and the neck. He derives this rule from a description of Paganini's way of holding his left hand, which says that his thumb preserved always the same attitude. Possibly this is the truth—but we have not all hands of the same shape as Paganini's, which are said to have been very long and thin. And, curiously enough, someone else interprets the same sentence as meaning this, that Paganini's thumb stayed *in one place* always, which would necessarily be with the tip against the block, so that, for first position, the *little finger* would have come down to stand *opposite the thumb* or even a semitone behind it, at least with the modern shape of neck. I have tried both tricks and say: No, thank you!

When once the thumb is in contact with the violin, its joint with the root of the hand (close by the wrist) provides a pivot for shifting about between a few consecutive positions, as from the third to the fifth, or from the sixth to the eighth or ninth, and the like. But we can also place the thumb in a fixed position for the change between two free positions, first and second, or second and third. And, while a fixture of the thumb at some intermediate place, for a shift from the first into the third position, offers no advantage over a glide of the thumb together with the hand, there is an unmis-

takable advantage in the fixture of the thumb, when we shift *down* to a free position from the third or fourth, even fifth. A move of the whole hand might pull the violin away from under the jaw, or at least displace it, so that the desired position is not reached, and that the bow is displaced on the string, with the result of a scrape or an interruption. This fixture of the thumb is obtained by placing its tip backward and under the neck, *before* the hand moves. The thumb may afterwards regain its usual attitude as best it can. This practice not only guarantees a steady position of the violin; it is also the only way to safely produce an elegant "*portamento*" (audible glide) in downward melody skips.

The contact between the knuckle of the forefinger and the neck has the main purpose of *fixing* the hand, with the knuckles from which the fingers reckon their bends or stretches, in some definite position or other. It is quite a secondary consideration, that such contact should prevent the neck from slipping down along the thumb. Though it actually does prevent such slipping, *not the slightest pressure* is required for the purpose. Pressing the neck between thumb and hand would even be a serious fault, as it would not only waste strength, but also counteract the necessary constant readiness for shifting.

If so, how can great numbers of violinists choose an habitual position of the thumb which *forces* them to press the neck!? I mean the position with *the tip only beside the neck, about in line with the first finger.*

When placed there, the thumb is not under the neck at all, and so does not support it against the pressure of the fingers; their pressure works *along* the thumb, not against it. The thumb finds itself in opposition, not to the fingertips, but to the *knuckle* of the forefinger, and the two *must* press against each other to prevent the neck from giving way under the fingertips and slipping into the groove below. And what about the cramp which easily sets in in the ball, because the thumb becomes strongly bent when thus placed? Is that a desirable sensation?

I can imagine a hand with normal length of fingers, but quite abnormal shortness of the thumb, to naturally assume this attitude, because the tip of *that* thumb might be really under the neck, and no discomfort would result. But I have never seen such a hand in my life.

A little thought, and a little more freedom in choice of positions, is all that is required to avoid discomfort of the thumb. It wants some agility too, as it may have to change its attitude frequently and rapidly.

Taking it all in all, the thumb is a very useful support and steering gear to the hand of the trained violinist, but *not* a means of holding the instrument. Hold your violin well with the jaw and the shoulder, and you will free the thumb from clumsy slavery and train it into rendering you, as it were, intelligent and cheerful service.

SECTION IV.

Attitude and Action of the Fingers.

After all has been done by the body, the arm, the hand and the thumb, to favour the fingers, the latter have still to obey some important rules, one or two of which have already been alluded to.

Rule XII.—The tips of the fingers must stand on the strings vertically, in order to press them firmly down against the board. So there can be no question of touching the strings with anything but the very tip, near the nail, under ordinary circumstances. The nails must be cut short enough never to touch the strings, as they would bend when doing so, and thus fail to produce safe stopping, and also because they would ruin the strings by scratching them.

On the hands of some students, especially of those who begin later in life, the nails are found to adhere to the flesh so far forward that either they must touch the strings, or the fingertips cannot stand upright. This would be a reason for giving up violin-playing, were it not for the fact that by the gliding action of the fingertips, in shifting to higher positions, the nails gradually loosen from the fleshy tips, so that they can be cut shorter.

Wide stretches form an exception to the above rule. An extended fourth finger may have to lie flat with its tip, and the first finger, when displaced backward, will either do the same, or grasp the string with the side of its tip.

The finger pressure should have no forward, backward or sideways tendency; it should act plainly downwards, to neatly limit the vibration of the string at the edge of

the fingertip. Sometimes it is almost impossible to obey this law, namely, again in extension, where the fourth finger wants to slip backwards and the first finger forwards; also in some triple and quadruple stops, where some finger or other will pull a distant string nearer, or push a near string towards the far side of the board.

The pressure of the fingers should under any circumstances be greater than either the pressure of the bow, or its vigour in striving to move the string sideways. Otherwise the bow forces the vibration to continue under the fingertip, and the tone fails, or at least turns out too flat. Order your fingers to do their work always *fortissimo* and to leave the graduation of tone-power entirely to the bow. Even in *pianissimo*, clearness of tone is not obtained without solid finger pressure.

Rule XIII.—In order to place their tips vertically, the fingers must be bent in both their last joints, and they must remain so when lifted off the strings. That is, they must move in their first or knuckle joints only, like hammers. For, if a raised finger wants to come down again on exactly the same spot, it must remain literally suspended over that spot and aim at it.

The exception to part of this rule is at once evident. When a finger has to stop a tone different from the one produced before, either on the same or on another string, it must of course change its attitude in the air as soon as possible.

Observe that the fingers must separate right from the knuckles, when their tips should stand otherwise than close together. Not even the two lowest fingers can both place their tips vertically, at the distance of a tone or more, when their middle joints stick together.

Rule XIV.—The fingertips must never touch an adjoining string, except for the distinct purpose of pressing down two strings together to produce a perfect fifth. Such double stopping by one finger requires the placing of the real tip *between* the two strings, so that its sides may grasp the strings safely. It will be referred

to again. It mostly concerns the two lower fingers. But, of course, the danger of unintentionally touching the nearer string lies mostly in the upper fingers.

Rule XV.—The fingers should be placed with a blow, in order that the tone may set in clearly, and they should be raised with as much precision as they are put down, in order that a higher tone may be followed by a lower one with the same neatness as the reverse. Both sides of this rule apply especially to *legato* playing on one string, as it is then the duty of the fingers alone to mind the accuracy of rhythm.

You will notice that, unless the fingers be raised with decision and to a considerable height, little energy can be applied in replacing them. So do your best in raising them while practising, for the sake both of that energetic hitting and of independence of each finger from the others. But be aware that the greatest possible speed is obtainable by *moderate* lifting, combined yet with hard hitting, because you spend less time in moving to and fro when you lift less high. A shake, for example, cannot be very quickly done with a highly lifted finger, and the reason why the third and fourth fingers cannot perform a shake as quickly as the first or second finger, seems to be not so much a want of agility, as the necessity of replacing by high lifting what they lack in natural weight, in order to hit hard enough.

Rule XVI.—The fingers must not hinder each other by pressing or rubbing. To avoid this, place the first finger especially, also the second if you find it desirable, not with the very middle of its tip, but more with the side of it nearer the thumb, also as if you meant to form the double-stop of a fifth on the string in question and the nearer one. You thereby allow the *middle joints* of these fingers to lean farther in over the fingerboard, and so to keep away from the upper fingers. If you place the first or second finger with the opposite side of their tips, you put them in the way of the others.

Rule XVII.—Avoid all exaggerated, and especially all superfluous movements of the fingers. This rule

must be specified into two laws supplementing each other, the obedience to which is of the greatest advantage, if we wish speedily to obtain certainty of intonation, independence of action, strength and endurance. These laws you should strictly enforce with yourself and with pupils, in spite of inconvenience, and in spite of the hard work they impose at first both on our muscles and on our attention. The laws are these:—

(*a*) No finger should leave the string unless obliged to do so, and

(*b*) Wherever and whenever a finger can take its place, before the bow has to play its tone, it should do so.

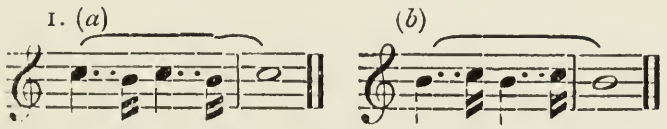
In other words, the proper place for the violinist's fingers, as long as he does not mean to pause, is not in the air but on the strings, while on the keyboard of the pianoforte or organ it is the very reverse. An experienced violinist's fingers appear to crawl rather than to fly about.

The absolute necessity of obeying these laws is evident in the case of slurring two tones which lie on two adjoining strings. The finger for the first tone must remain, and the finger for the second tone must be found standing, at the moment when the bow crosses over, otherwise a neat slur cannot result. Every such slur means a double stop. Equally plain is the necessity of keeping lower fingers in their places during a short run or an ornament on one string; upper fingers come and go, and simply uncover lower fingers whose tones are to reappear. Why should a finger be placed twice, or five, or twenty times, while it need only wait to be heard again after being placed once? Plain is also the necessity of placing fingers in advance for the lower tones of ornaments, or for detached strong tones to be uttered with the *martellato* (hammered) stroke, for as the bow, in this style of utterance, must be pressed against the string before the time of the tone, it had better meet with the string being defined as to its length by the finger. It may sound absurd, but it is true, that in this case a punctual finger comes too late; it cannot safely grasp

the string at the very moment when the bow breaks loose from its silent pressure, to utter the sound.

This practice of deliberate anticipation and delay does not favour a want of precision in the feeling of the fingers. On the contrary, it drills them into a far finer feeling for accuracy of time than the habit of playing the pianoforte on the violin, that is, of placing the fingers for the duration of their own notes only; for it compels them not merely to watch the moments of coming and going for their own sake, but also to keep in conscious communication with the other fingers, and with the bow, as to precision in time. Such communication is a strict necessity, because precision is rarely the work of either side alone, or of both sides simultaneously, for many notes running. Even a very short figure may require a complication of alternate actions, and there is no end to possible complications. If the bow and the fingers each mind their own business only, or, worse still, if each single finger minds its own business only, as if there were not four of them in partnership, we can never hope to play a single passage in time.

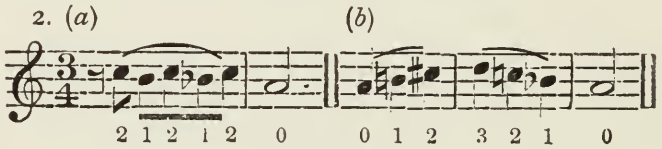
There is little to be added to the rules given. Rule XIII. is easy to observe, as it is in keeping with the natural structure of the hand. As to pressing and hitting the strings with the fingertips (Rules XII. and XIV.) we must discern a diversity of action. For sustained tones we require a continuous pressure, setting in with full force and lasting evenly to the end of the duration of the note. But for quick runs and for the upper notes in ornaments, when a single finger falls for a moment only, the mere hit does all the duty, the finger rebounding at once. Feel the difference by repeating the following formulas:—



The notorious difficulty of the shake lies, for the

violinist, in the simultaneous requirements of continuous pressure on the part of the lower finger, and of the rebounding action on the part of the higher one. This means, when well performed, a remarkable development of the several branches of certain common muscles.

As to the avoidance of superfluous movements, there is one exception. A chromatic shift of a fingertip might be thought plainest and safest, under any circumstances, when the finger is kept pressing the string down. But, when a finger has to change its stop while a higher finger is standing on the same string (see the example 2*a*), I prefer lifting and replacing it, though this means two movements instead of one. I extend this practice to two fingers, when turning back from the octave in a melodic minor scale (2*b*), and I think that most violinists will admit that therein lies greater safety.



When lifted, the fingers should feel like the arm, loose and freely suspended, but ready for sudden exertion. Utterly wrong is the reverse feeling, that of continual exertion. Such feeling is caused by simultaneous contraction of both the flexor (bending) and extensor (stretching) muscles. When two opponent muscles act at the same time with equal force, they press the finger (or any other limb) firmly into its joint, and the result is not motion at all, but stiffness. If any muscle wants to act with vigour, its opponent must relax at the same moment, and that willingly, not by being overpowered after obstinate resistance.

I will now mention the weaknesses and faults that are often found with the fingers of beginners:

1. The upper fingers, or even the lower ones, collapse in the last joint.

2. The little finger bends only its last joint, and allows the middle one to sink in, so that a straight or

even a concave line is formed from the first to the last joint.

3. The weaker, upper fingers stiffen, while the stronger ones work all right.

4. The upper fingers, when raised, withdraw towards the first finger, instead of simply rising above their places.

5. The two last fingers are clutched down into the hand, so that for every stop they have first to be hauled up again. Both the latter faults prove a false instinct, as if the first or second finger required the contraction and approach of the others, as an assistance to their own superior pressing power.

6. The fingers stretch themselves out when lifted, a complicated and entirely unnecessary proceeding, which loosens the grip of other fingers, and causes loss of time and complete uncertainty of stopping: for it means losing the measures from other stops and having to find them anew.

How ridiculous any of these faults would look in the attempt at a shake!

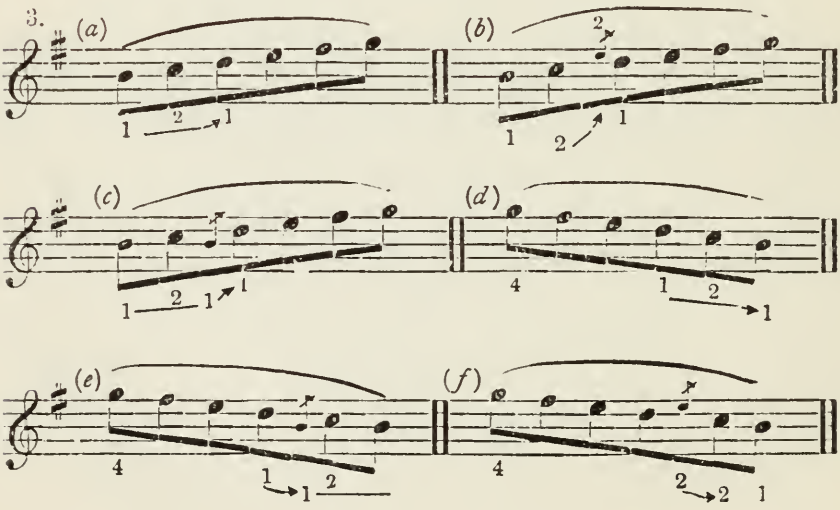
7. Many beginners form the habit of always placing the third (if not the second and third) finger together with the fourth, to help the latter in pressing the string down. This is not a fault when the tone of the third and second finger is expected after that of the fourth finger. But strict watch must be kept that the lower finger does not fall earlier than the fourth, causing an *acciaccatura*; also that the lower finger does not fall on any other than the exact spot on which it should afterwards be found standing. It is foolish to place a finger at haphazard, with a strong probability of having to correct it, and a stronger one that this correction will come too late. It is foolish also to drop the third finger together with the fourth on the same string, when the third is immediately wanted on another string.

This is a formidable list of faults, and teachers will find that some of them can be eradicated only by full strength of will and attention, both on their own and their pupil's part.

Concerning the behaviour of the fingers in the change of position, the following rules are important:—

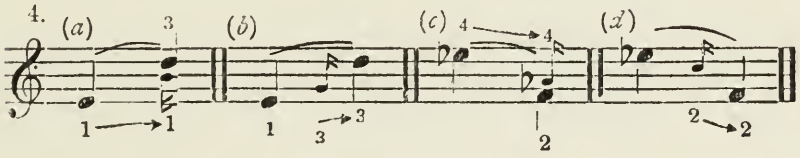
Rule XVIII.—When you choose a new position, after sounding an open string or after an interruption, attack it freely with your fingers. Do not follow the example of bad singers, who prepare every high tone by a groaning chest-tone and raise their voice to pitch with a howl!

Rule XIX.—When a lower finger should, as it were, glide past the place of a higher one, in the shift up the string, the higher finger must not glide away also, or it would produce the inaccurate figure (*b*) instead of (*a*) in the following example. Nor should the upper finger be lifted before the very moment when the lower finger advances together with the hand; otherwise the figure turns out as at (*c*). Similarly, inaccuracy of finger-action will produce figures like (*e*) or (*f*), instead of (*d*), in a downward shift.



In the latter case the first finger had better not leave the string, any more than in the former case, because the open string might be audible before the note C.

Rule XX.—When we shift to a higher position, and at the same time change from a lower to a higher finger (or the reverse in both respects), the hand must glide away, leaning on the finger last used, far enough that the said finger reaches its proper place in the new position, to let the other finger take measure from it with certainty. But the arrival of the gliding finger should not be heard; so the change of fingers must take place at the very moment of arrival. When the upper finger drops in before the upward glide, or is lifted before the downward one, the ugly figures 4 (*b*) and (*d*) will appear, instead of (*a*) and (*c*).



And when the glide is partially done, before this wrong action takes place, some distinct pitch may be struck on the way which is even strange to the key. Surely a glide with a station between is not one glide, but two glides, giving the impression of a stumble, and therefore is utterly devoid of sense and taste.

Many experienced players, to avoid a slip in this sense, or the audible arrival of the starting finger, lift it on the way. But a slip may then occur in another sense, namely an interruption, or even the sounding of the open string between the two tones. So the greatest care is needed with either form of execution.

After explaining the principles of intonation in the next section, I shall deal with the work of the fingers in detail, under the heading of "*Fingering*."

SECTION V.

Intonation.

As THE subject of intonation is too large to be dealt with in a short chapter, I have resolved to refer the reader of these pages to a separate pamphlet, published by me some years ago (price 6d).* It is the reprint of a lecture delivered in January, 1892, at the Conference of the National Society of Professional Musicians (now Incorporated Society of Musicians). Complete and detailed information will be found therein by those who wish to obtain an answer to every question at issue. Still I feel bound to add a few remarks and explanations here, such as concern the violinist in particular.

First, I wish the student of the violin to take this literally: You are bound to know the pitch of every tone before producing it, just as if you were singing! If your ear does not anticipate the pitch of a coming tone (by interval from some tone actually sounding, or from your own previous melody-tone), how can you tell whether it is right or wrong, after some finger has made a guess at it? You dare not wait for the fingers to tell you anything about pitch; they have no ears of their own.

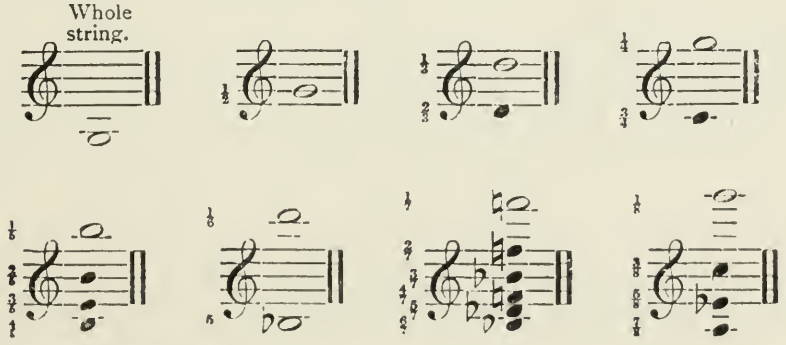
For this purpose, you require a perfect knowledge of all possible intervals, not in your ear only, but also in your fingers' feeling. The latter belongs to the next section.

Should you be in doubt about the accuracy of any pitch you utter, you will always be able to find a connection by concords from some open string, sometimes a direct one. You can, for example, tune all the tones

* To be had from Mr. D. R. Duncan, 186, Fleet Street, London, E.C., or from the author, 160, Chatham Street, Liverpool.

of the D-major scale, in its octave range from open D (first position), to adjoining open strings, thus: D, E, and F♯ must agree with open A, G with open G, A with open A; then B and D with open D, and C♯ with open C. And, to name just one tone not directly connected with an open string, D♭ may safely be found from an F which agrees with open A.

As to the *partial tones* (also called "overtones," and in practice mostly "harmonics"), you can test them on any of your strings. One half of your G string will vibrate at exactly double speed, as compared with the whole string, and thus produce the first octave of the open tone. One third will vibrate three times as quick as the whole, and thus produce the 12th, or 5th of the octave, and the like. Therefore, to stop the octave of the open G, you place your finger in the middle of the string; to stop the next D above, you place it at two-thirds of the string from the nut, leaving one third over to vibrate. Now, you can sound these harmonics of an open string also by a *light touch* of the finger, instead of pressing the string down on the board, because the string divides itself willingly not only into halves, but into thirds or quarters (and so on), when you touch *any* correct dividing point. So you may touch the lower instead of the upper third to get d," or the lowest instead of the highest quarter to get g." Here are the touching points for the more usual harmonics:



Of course, there is no occasion for the string to divide

itself into quarters or sixths, if you touch it in the middle or at one third, or the like. Observe the flatness of the seventh partial, or natural seventh, the six touching points for which are all a little lower than the notes indicate. On the other side, the touching point at seven-eighths (A) for the double octave, is a little higher; the real A point, when the wider major second from the nut, gives the harmonic A (one-ninth), and when the narrower major second, it produces B (one-tenth). Compare the example 5, on page 2 of "Intonation," to understand this fact.

Be sure to test Ex. 2, on page 6, and multiply the experiment by playing many minor thirds, major thirds, and so on, in various positions, and on different couples of strings. You will distinguish the combination tones rather more easily when you play both tones of a concord yourself, close to your ear, than when one of the tones is produced on another violin.

Go through the experiment with beats, as described on page 8, and observe that their unpleasant effect, after growing up to the width of about a semitone, becomes less harsh when the interval is further widened.

To perform the examples 4 or 7, you require the aid of another violin.

Take special notice of the fact, elicited by example 6, that the minor second is not at all as small a step as you can make it, not at least in the low positions. For most hands the position in which the minor seconds close in entirely will be about the fifth. In higher regions the fingertips must give way to each other to form the interval.

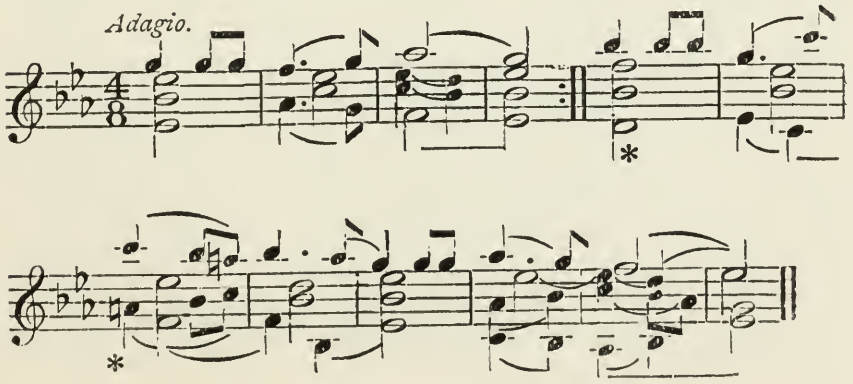
According to examples 5 and 13, it makes a difference in the pitch of a single tone, whether you derive it from a lower or from a higher string. Still more important is such choice of derivation, when it concerns the intonation of a whole key. The keys of F, C, G and D nominally admit of all open strings, while further sharps or flats exclude them, one by one, from one or the other side. Now, while in D all open strings are in tune (as

long as G and E do not meet in one chord), E is too sharp in G major; in C major A and E are too sharp, or G and D too flat; in F major G is too flat or the three other strings too sharp. In B♭, the three available open tones are right, when B♭ itself is in tune with G and D, and nobody would state the pitch of this tonic otherwise. So there could be some doubt only about F and C major. But in an ensemble with the viola and the violoncello the doubt is removed, because these instruments have an open C string, in tune with our G.

Mind the fact that, as a rule, the sixth degree of a major scale is flatter in comparison than the second degree. The sharper B in Ex. 5 is the correct tone in A major, but the flatter B is right in D major. Hold this together with the explanations on pages 13 and 14, and with the remarks just made, and you will agree with the conclusion that you must avoid the open strings altogether, if you want to play absolutely in tune under any circumstances.

To test example 17 properly, tune C♯ with the third finger to open E. That G which, together with C♯, produces the combination chord of A, will then be even more too flat against E than your open G.

For examples 18 and 19, four violins had best be used, and, having got them together, you might try the following experiment, in place of example 14, to prove the downward shifting of pitch.



Before beginning, the fourth violin should tune its E♭ to open G, but, of course, in the chords marked * no open string should be used. The pitch shifts three times, or with the repetition four times; and these four "syntonic commas" amount together to something between a chromatic and a diatonic semitone. If then, at the end, the first violin compares its open G with the last E♭ of the fourth violin, that G will very nearly appear as A♭.

For those readers who are not well up in theoretical knowledge, it may be wise to state all the intervals as they can be exchanged with each other in the "equal temperament," according to page 18.

1. Concords and discords:

Minor 3rd (C-E♭) with augmented 2nd (C-D♯♯)
Major 3rd (C-E) „ diminished 4th (C-F♭)
Perfect 4th (C-F) „ augmented 3rd (C-E♯♯)
Perfect 5th (C-G) „ diminished 6th (B♯♯-G)
Minor 6th (C-A♭) „ augmented 5th (C-G♯♯)
Major 6th (C-A) „ diminished 7th (B♯♯-A)

2. Discords and Concords:

Augmented Prime (C-C♯♯) with minor 2nd (C-D♭)
Major 2nd (C-D) „ dimin. 3rd (B♯♯-D)
Augmented 4th (C-F♯♯) „ dimin. 5th (C-G♭)
Minor 7th (C-B♭) „ augm. 6th (C-A♯♯)
Major 7th (C-B) „ dimin. 8ve (C-C♭)

Test example 21 (*a*) and (*c*) in just intonation; (*b*) and (*d*) leave the interval in question uncertain.

Finally I wish the reader to imagine this passage on page 21 to be printed in capital letters: Tune every tone into the best possible accord with the tones of the pianoforte (or any other instrument, of course) and so on. He will see why I lay such stress on this paragraph, if he refers back to the statement (on page 12) that the intonation of melody is derived from and subordinate to that of harmony.

SECTION VI.

Fingering.

FINGERING means locating tones on the strings for production.

After explaining the principles of intonation, two facts must here be stated. First of all:

1. Every interval has its mathematical measure on the string. For example: the major second is produced by cutting off, with a fingertip, either one-ninth or one-tenth of any given length of string, the minor second by cutting off one-sixteenth of any given length. Consequently, the higher up on the same string the same scale-step is repeated, the nearer must the two fingers stand together, because they describe one-ninth (or one-tenth) or one-sixteenth of a more and more *shortened* string. Any interval will one octave higher feel doubly as narrow, or one-fifth higher it will feel by one-third narrower than below. This variability of the actual measures, for intervals acoustically identical, causes the greatest difficulty of intonation on all bow-instruments.

2. As the strings are all given equal length by the parallel position of the nut and the bridge, their division-points for halves, thirds, quarters (and so on) must also be in a line parallel to either of those border lines. This explains why one finger, when placed on two strings equally, produces a perfect fifth everywhere, if the strings are each of even structure and well tuned

together. Do not tolerate strings on your violin which fail to give the perfect fifth at any place on the fingerboard; otherwise you never know whether you will be in tune when crossing from one string to another in any interval.

The next important statement is this: The whole of our intonation, in actual fingerwork, just as in the imagination of hearing, must be founded on the principle of *measuring intervals or distances between the fingers*, and not on that of finding correct single stops. For, as a rule, we stop tones in connection with each other, while the locating of single, detached tones is quite exceptional. Besides this plain reason, in support of the said principle, proof after proof will presently be brought forward that we are practically bound to apply it.

First, to locate any musical interval, we want two stops. Let us then state that every interval must assume one of these forms:

1. Stop with the same finger, or measure of the prime.
2. Stop with two adjoining fingers, or measure of the second.
3. Skipping one finger, or measure of the third.
4. Skipping two fingers, or measure of the fourth.

To reckon with the open string would be unsystematic. Those four possibilities combine with these following:

1. Stop on the same string.
2. Stop on two adjoining strings.
3. Skipping one string.
4. Skipping two strings.

All stopping of intervals on two different strings turns round the perfect fifth. You either add something to the 5th, or major 9th (second 5th) or major 13th (third 5th), or you deduct something from these intervals. In the following formula the signs + and — indicate these additions or deductions, made by measures upward or downward on one string. If you want to find all intervals in the downward reckoning, reverse the formula from right to left, as well as upside down.

FORMULA OF INTERVALS.

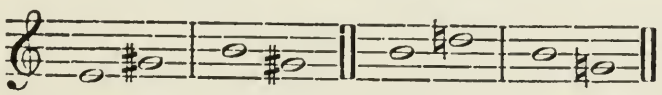
4th String:	10	11	12	13	14	15	16
3rd „ :	6	7	8	9	10	11	12
2nd „ :	2	3	4	5	6	7	8
*1st „ :	4 —	3 —	2 —	1 +	2 +	3 +	4

Try to write this out in musical notation, choosing A (first finger) on the G string for the + side, but D (fourth finger) on the G string for the — side.

Now, this refers merely to the number of *diatonic* steps in any interval. You must know all the *chromatic varieties*. You find that the *perfect* prime (identical stop), corresponds with the *perfect* 5th, *major* 9th and 13th. The *augmented* prime (chromatic shift forward), with the *augmented* 5th, 9th, and 13th, and the *diminished* prime (chrom. shift backward) with the *diminished* 5th, *minor* 9th and 13th. And so, throughout, in the transition to higher strings, the widening of an ascending measure will widen the intervals, but the widening of a descending measure will shorten the intervals. For example, the *minor sub-second* produces, in the crossing to the next string above, the *augmented fourth ;* the *major* sub-second gives the *perfect* fourth; the *augmented* sub-second gives the *diminished* fourth.

Write all this out in notation, and take special notice of the fact that the interval of the *third* is always stopped by the first and third, or by the second and fourth fingers, be it located on one or on two strings. But the measure for the major third on one string produces the minor third on two strings and the reverse.

Wide measure: Narrow measure:



Major Minor Minor Major

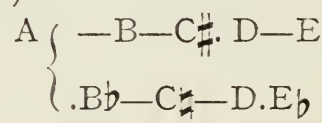
* The first string here means the lowest or G string.

This apparent contradiction is confusing in the first attempts at double stopping, as thirds are very frequent double sounds. To clear the situation up, do not search with both fingers for correction of a false interval, but take the double stop to pieces, settling first the easier stop, and then the other.

I will now show how dependent the single finger is upon its comrades. As they are grown close together, it makes a great difference to one finger whether others are present on the strings, or whether they are all lifted. The presence of other fingers may cause discomfort and even serious difficulty.

The single finger does not even learn to locate a single tone by itself. The hand must first be placed at that spot from which all four fingers can best stop their tones belonging to the key; then only can the single finger find its place, by assuming the same attitude which if would hold in the complete group of fingers.

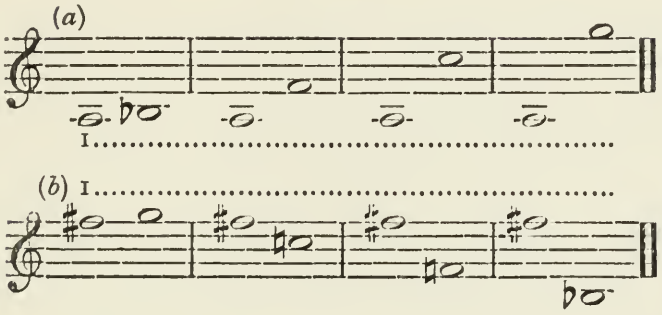
Moreover, it is a fact that a finger may feel different on the hand with the same stop, while it may feel exactly alike in two different stops. Compare the notes belonging to A major and to B flat major, on the A string (first position):



The third finger stops D in both keys: yet it feels low in A and high in B flat, if you take the sensible advice to shift the hand back for the flatter key. But the three other fingers all feel alike in both keys, because they simply shift with the hand. Observe that there is a small difference in the width of the measures, those for the flatter key being by $\frac{1}{25}$ wider than those for the sharper key. In the example above, the fourth finger stands a little farther from the first and second fingers in B flat than in A major, though it stops a tone noted as flat.

Fingers can even mislead each other in measuring.

Try this example with the measure of the minor second, which is more striking than with wider intervals:



Under (*a*) the upper portions of the fingers become gradually more separated, while under (*b*) they get more and more crammed; and yet, in both cases, the tips step farther apart with every bar. Now, the fingers will try to meet with the same neighbourly feeling all the time, if they perceive that the measure in string length is always the same, while this feeling cannot possibly remain the same. Hence a strong tendency *to advance in the transition to a lower string, or to retire in the transition to a higher string*. I have marked with * the frequent interval of the augmented fourth (crossed minor second on two adjoining strings).

The said wrong tendency is experienced in every double-stop, and is aggravated by the circumstance that our fingers stand *obliquely* to the strings, not at right angles. If the latter were their attitude, a simple widening or tightening of their bend would place them over correctly. As it is, this simple process must be combined with more or less of a twist in the knuckle; for the finger must manage the change of strings by itself, because the hand cannot undertake to lift it over, for fear of dislodging other fingers.

The well-known fact that every student places his fingers too far apart in his first attempt at higher positions, proves that the fingers do measure intervals

unconsciously. They are acquainted with certain distances between them, those fitting the first position, and now apply them in the wrong place. Had we not better order our fingers, from the beginning, to measure intervals *deliberately*, and inform them that the measures are variable?

Observe especially that the *chromatic* shift is practically, just as it is theoretically, the *difference between two measures* (major and minor second), and cannot be learnt by any finger directly, without reference to its neighbours. Generally speaking, you are safest when you take every "accidental" on the paper as meaning an accidental stop, namely one which depends on other stops, and must beware of interfering with them.

As to major seconds, apart from the fact that, even within the finger-group in any position, they (and minor seconds also) are narrower between higher fingers than between lower ones, you will find that the major second between the second and third fingers is the least comfortable to span, because the third finger is rather unwilling to separate itself from the second finger. The third finger will therefore be inclined to be too flat, or to collapse in its last joint; or the second finger will be tempted to go to the third's assistance by advancing beyond its proper place. This gives it no trouble; the second finger is able to exaggerate its distance from the first so much as to actually take the third finger's place.

Observe also that a diminished or augmented fifth on two strings must be stopped with two fingers, and that in just intonation these double stops are tighter than the similar ones of the augmented fourth or the minor sixth.

Consider wider intervals on one string always to be sums of diatonic steps, and hold intermediate fingers ready for correct stops, so as not to deceive the feeling of a more distant finger.

The augmented second, however, treat as the interval found by fitting into the perfect fourth a semitone at each end. It is unfortunate that you can do this literally in the one case only that this interval falls between the

second and third fingers. In any case, treat it as an "accidental" interval; and likewise the augmented third.

A teacher should be an expert at judging by sight, before anything is heard, whether the hand and the fingers of the pupil stand at the right place. For this purpose the pupil must be watched from the left side.

But the student should try to gain such judgment for himself, by first fixing stops tested by hearing, then taking the violin with the right hand down before his chest, and having a good look at the attitude of the fingers and at the measures between them. Nothing is more useful than silent finger-exercises made in this attitude, under the supervision of the eye. The control of sight educates the sense of touch directly, while that of hearing does nothing of the kind. You can hear it when a scale step is false, and you may conclude that the fingers are too near together when the interval appears too short. But you cannot hear that the fingers should be (for example) an inch apart; you want to *see* the mechanical measure, to judge in that sense. (See my "Systematic finger-exercises," in the first book of "School of Velocity," Augener Edition, No. 7603.) The taking down of the violin allows us to obtain a regular side-view of the fingers, also of the hand and the thumb as they stand against the neck, while, when the violin is in place, we can only glance *along* the fingers. A pretty good side-view can, however, even then be obtained, if we stand with our left shoulder opposite a mirror and, turning our back half-way toward it, twist the head strongly to the left to look over the raised side of the violin.

I will now expound a

System of Fingering.

It has hitherto been the custom to begin the study of the violin with the tones of C major; then to proceed to the keys with sharps and flats, taking one by one, but not all of them (in most schools), and not keeping

the minor mode apart from the major. This was a system of *elementary theory of music*, but never of *violin technique!* For on the violin, or any bow instrument, the difficult keys are not those with many sharps or flats, but those with uncomfortable fingerings. On the violin, C major happens to be the most difficult key to finger in the first position. Though it requires the easiest fingering (that with the semitone 2.3) on the G string, it also requires the two most awkward fingerings on the higher strings. And it is worse than F (F sharp) or B flat (B natural) or E (E flat) major, which also place the tritone between the four fingers on one of the strings, in so far as in C this happens on the E string only, so that the first finger must retire to a lower place on the near edge of the fingerboard, close to the spot where its own knuckle touches the neck. Further, in C major, both the strongest and cleverest fingers (first and second) have to stop differently on different strings; so they must either alternate in the part of leader to the other fingers and keeper of the hand's position, or they must hand the leadership over to the weaker and unreliable higher fingers. Besides, the row of notes for C major, on the violin, begins with the fifth (G) and ends with the seventh (B), into which musically senseless scale an octave-range from C to C drops in only casually. And then, as the leading note B is unwelcome as the highest note of a melody, occasion arises to extend the tritone F-B to a perfect fifth, by stretching the little finger up to C; and this occasion is eagerly seized by many writers who pretend to know the violin. Have pity with the beginner! Have you ever met one who could really do that trick? And yet some teachers even place full-sized violins in the hands of half-grown children, thereby compelling the beginner to labour under difficulties of which the virtuoso knows nothing.

There are also grave omissions in many schools, such as the habit of putting before the pupil one octave-range only of a scale, like (for example) D major, and then an

exercise or piece which roams over all four strings, perhaps even modulating; and yet in D major the fingering on both outer strings is different from that on the two inner ones. The gravest of all omissions is that the pupil is never told this fact; on the violin there is *not* a special fingering for each scale or chord; but, in the short range of one octave, there are, in each position, *from four to six major scales* (or minor scales, or chords of each kind, and so on) *with an identical fingering;* and even in the complete range of a position, there are always *two* exactly alike, as for example A and A flat major. And if we choose to select positions for the purpose, we can play *all* major scales (etc.) with the same fingering. Further, after tracing a complete system of fingerings in any one position, we find that it repeats itself in every other position, relating, of course, to other keys.

What is a "fingering"? A grouping of fingers. What distinguishes one fingering from others? The order of diatonic steps within the group. As there are so few minor seconds in the ordinary scale that, in major at least, two minor seconds never fall into one group of four stops, we need only ask: *Where is the semitone* or minor second? to find any scale fingering. If then we group those scale-fingerings together which are alike, and those nearest together which are the least unlike, we have a system. If, on the other side, we proceed according to elementary theory, we preclude the possibility of beginning with the easiest task—which in itself is intolerable—and we do not proceed in the order of increasing difficulties, but mix them all up. And further, we undertake to learn a heap of details without even an attempt at surveying their totality, which is an extremely thoughtless proceeding!

If then elementary theory of music and violin technique will not go together, we must keep them apart. And that really does not matter; for a distinct notion of the major scale, even only as far as the fifth (dominant), is all that is required to begin violin playing. All know-

ledge beyond that can easily be acquired during the first bowing and fingering exercises. And the best way to acquire it practically is by *singing*, as eminent teachers of the violin have always said.

Well, the system of fingerings is indeed easy enough to explain.

The *major scale* consists of two halves of equal structure: both contain the semitone as the highest of the three steps between their four tones. As soon, then, as we have decided which finger should start the scale, we know where the semitone must turn up. And as we have only four fingers to choose from, there can be no more than *four different* fingerings for anything that does not exceed the range of *one octave*.

Major scales are played thus:—

(*a*) the fingers 1—2—3.4 (twice over)
(*b*) 2—3—4.1
(*c*) 3—4—1.2
(*d*) 4—1—2.3
(o)

The fingerings (*b*), (*c*) and (*d*), when they turn up on one string, as they surely do somewhere in the scale, appear thus:—

(*b*) .1—2—3—4. (tritone)
(*c*) 1.2—3—4
(*d*) 1—2.3—4

The easiest of the four is (*d*) with the semitone 2.3; then comes (*a*) with the semitone 3.4, because here the poor third finger has at least one neighbour standing near; then (*c*) with the semitone 1.2; and the worst is the tritone fingering (*b*). The beginner should study the four fingerings in this order. As the open string is, with the beginner at any rate, a clearer tone than any of his fingerstops can produce, it is a lucky circumstance that the easiest fingering fits the choice of an open string for the tonic. And as therewith we command the range of five notes on one string, we can limit the

beginner to the use of each string by itself, and yet offer him sufficient range for the playing of melody; so he will be happy. This is how I have begun my *Violin School* (Augener Edition, No. 7600). The reader will easily follow my plan as applied there, after reaching the end of this section.

It cannot make any difference in the fingering, on which string or in which position we place the starting finger. The following is then a list of major scales, in the range of one octave, playable in the first position :—

Fingering : 0—1—2.3

(4)

G (lower octave)
D . . . . . and D♭
A (higher octave) and A♭

Fingering : 1—2—3.4

A (lower octave) and A♭
E . . . . . and E♭
B (higher octave) and B♭

Fingering : 2—3—4.1

B (lower octave) and B♭
F♯ . . . . . and F♮

Fingering : 3—4—1.2

C♯, C♮, . . . and C♭ (lower octave)
(G♯), G♮ . . . and G♭ (higher octave)

The scales of C (C♯ and C♭) in the higher octave, complete except the octave itself, belong to the third group.

You can survey all the scales in their order of signatures, if you shift C major into the left or right column, and read the former downwards, but the latter upwards. That this list cannot close into a circle with its extremes is a matter of course, because the keys of G♭ and F♯, or of D♭ and C♯, or of C♭ and B♮ are not fingered alike, as

they are on the pianoforte. You can finger them alike; but then you read one key (in each couple) as first position, and the other either as half, or as second position.

When we play the major scales *through the whole range of the first* (or any other) *position*, the fingering must change as soon as we step out of any octave-range, upwards or downwards. An octave is not stopped by the same finger at both ends (the same finger would stop a ninth), but by two adjoining fingers, the lower of the two being above. Therefore *the semitone must turn up by one finger lower in the group, when we rise beyond the octave, but by one finger higher, when we descend below the tonic.* And this change is managed, technically, by the finger for the leading note (seventh degree) leaving the close neighbourhood of the octave (tonic) finger and stepping back to the close neighbourhood of its lower comrade, to form the semitone III. IV. in the higher octave-range, or the reverse. The finger in question thereby decribes the one *diminished fifth* which is peculiar to each major key.

Thus, the four possible octave-fingerings follow each other always in the way shown by the formula below, which allows, as practice requires, each fingering to repeat itself once. The positions of the tonic are marked by larger figures:

	∧	etc.
10		1—2.3—4
9		1—2—3.**4**
8		**1**—2—3.4
7		1—2—3—4
6		1.**2**—3—4
5		1.2—3—4
4		1—2.**3**—4
3		1—2.3—4
2		1—2—3.**4**
1		**1**—2—3.4
		etc. ∨

The three highest lines are indentical with the three

lowest. If we had eight strings on the violin, we would return to the same finger for the tonic on the last string, which we chose on the first, after passing backwards through the whole set of fingers with the tonic. But I have constructed the formula up to ten lines, for this purpose: we can pick any four consecutive lines out of the ten, and find in them the complete fingering of any major key.

The lines

1 to 4	represent	A	or	A♭	major.
2 „ 5	„	D	„	D♭	„
3 „ 6	„	G	„	G♭	„
4 „ 7	„	C, C♯,	„	C♭	„
5 „ 8	„	F	„	F♯	„
6 „ 9	„	B	„	B♭	„
7 „ 10	„	E	„	E♭	„

in the first position.

Similarly, the lines from one to four give you B or B♭ major in the second position, C, (C♭, C♯), in the third, and so on.

To place these wider scales in a surveying list, proceed in this way:

Lowest tonic: the open string or fourth finger

G and G♭ major
D „ D♭

Lowest tonic: the first finger

A and A♭
E „ E♭

Lowest tonic: the second finger

B and B♭
F♯ „ F♮

Lowest tonic: the third finger

C♯, C♮ and C♭
(G♭, see G major)

Again we may place C major into either column, and read the two sets of keys off in their usual order.

In each position, there are two couples of scales in which only *one* finger stops differently on different strings, because the leading note does not appear on the G string, nor the sub-dominant on the E string, so that the diminished fifth can appear only once in the whole set of sixteen fingerstops. These scales are G and G♭, A and A♭, in the first position; A and A♭, B and B♭ in the second position, and so on.

In all other major scales *two* fingers (never more) stop differently, and these two are an octave apart, consequently they are neighbours in the fingergroup. Thus, in C major the first finger stops a diminished fifth B—F on the higher, and the second finger on the lower strings; in D major the second finger stops the diminished fifth C♯—G on the higher, and the third finger on the lower strings, and the like.

Exchange of one key for another (modulation) with stationary hand, shifts all the semitones by as many fingers as the tonics are distant from each other by diatonic steps. When the change is the very frequent one into the key of the dominant or sub-dominant, that is, a fifth up or down, we need only transpose our complete fingering by one string up or down. But, naturally, we thereby throw off the fingering of either the highest or the lowest string, and bring in a new one at the opposite side. This is at once understood by referring back to our formula of ten lines in figures.

But we can manage an exchange of keys otherwise. We simply shift the hand into the suitable position to apply the same fingering as in the former key, which is easy at least in the case that the two tonics are very near together. This proves that the accomplishment of *transposing* should present no difficulty to the violinist.

The *minor* scale does not consist of two similar halves. Among the lower four tones the semitone is in the middle, which requires no new fingering to be learnt, but only the replacing of one fingering, known from major

scales, by another. But in the higher group of four notes, in the harmonic form, an *augmented second* should appear *between two minor seconds*. And in the melodic form, as the seventh and sixth degrees are lower in descending than in ascending, the semitone, immediately on turning back from the octave, must be transferred from the highest to the lowest place in the group.

If then two fingers must stop differently within the octave-range while in major scales none are changeable, the minor mode is so much more difficult than the major that it should not be touched before the student is well at home in the whole system of major fingerings for the first positions. This is the reason why I have relegated the minor mode to the second volume of my *School*.

The difficulty is threefold. First: the augmented second requires an extension, uncomfortable even to the longest fingers. Second: while one finger describes a diminished fifth, as it happens in major also, another describes an augmented fifth, which never occurs in major. Third: the very same two fingers which at first had the minor second between them, must step extra far apart to form the augmented second. And though the melodic form avoids this awkward interval, it presents the other peculiar difficulty of shifting two fingers together in the group. The number and kind of displacements is the same in both forms: the lower of the two fingers steps backwards and forwards, and the higher one the reverse.

These are the new fingerings required in the harmonic form:

(*e*) 1.2—.3.4

(*f*) 2.3—.4.1, or on one string 1—2.3—.4.

(*g*) 3.4—.1.2, „ „ „ „ 1.2—3.4—.

(*h*) 4.1—.2.3, „ „ „ „ 1—.2.3—4.

(o)

I represent the augmented second by the sign for the

major, together with that for the minor second, though it is really the chromatic semitone.

As the augmented second is most easily spanned from the first to the second finger, less easily from the third to the fourth, and least from the second to the third finger, the order of difficulty among those fingerings is (*h*), (*f*), (*e*). The fingering (*g*) I place last because of its peculiarity of contracting the whole group of fingers to a diminished fourth, consequent upon the crossing over from one string to the other of the augmented second. The whole group measures a perfect fourth in (*e*) only, while in (*f*) and (*h*) it is an augmented fourth.

The formulas for complete octave-ranges are the following:

including fingering (*h*): .1—2.3
0—1.2—3—4
(4)

„ „ (*f*): 1
1 —2. 3 —.4
2—3.4

„ „ (*e*): 1 .2—. 3.4
1—2.3—4

„ „ (*g*): 1.2
1—2—3.4—.
3—4

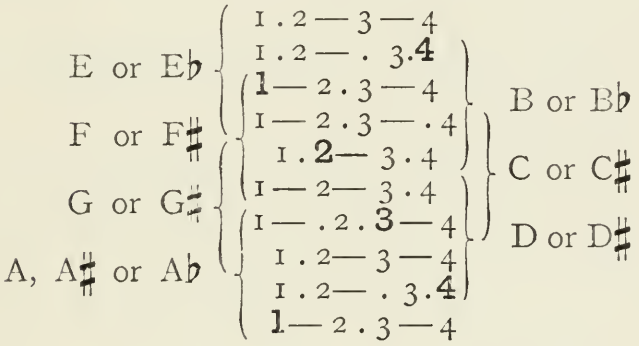
The reader may write out for himself the four plans for melodic scales, placing the ascending and descending forms side by side.

The list of all the minor scales in the first position is identical with that given for the major scales, for octave-ranges or for the whole position, with these few excep-

tions: replace the tonics G flat and D flat by G sharp and D sharp; to A and A flat add A sharp, and strike out C flat.

The minor scales, as well as the major, can all be represented in one formula of ten lines as follows:

Minor Harmonic.



(*Ascending*)	*Minor Melodic*	(*Descending*)
1 .2 — 3 — 4	. . . . .	1 . 2 — 3 — 4
1 — 2 — 3 . **4**	. . . . .	1 . 2 — 3 — **4**
1 — 2 . 3 — 4	. . . . .	**1** — 2 . 3 — 4
1 — 2 — 3 — 4	. . . . .	1 — 2 . 3 — 4
1 . **2** — 3 . 4	. . . . .	1 — **2** — 3 . 4
1 — 2 — 3 — 4	. . . . .	1 — 2 — 3 . 4
1 — 2 . **3** — 4	. . . . .	1 — 2 — **3** — 4
1 . 2 — 3 — 4	. . . . .	1 . 2 — 3 — 4
1 — 2 — 3 . **4**	. . . . .	1 . 2 — 3 — **4**
1 — 2 . 3 — 4	. . . . .	**1** — 2 . 3 — 4

(Keys the same as above.)

In the following keys *one* finger keeps the same place on all strings, in the first position:

The 1st finger in E and E♭ minor
„ 2nd „ „ F „ F♯ minor
„ 3rd „ „ G „ G♯ minor
„ 4th „ „ A, A♭ and A♯ minor

It is the finger which gives the tonic on the D string.

In the remaining keys not a single finger keeps its place throughout.

It invariably happens in minor that fingers step forward and backward, or the reverse, while the scale proceeds in the same direction.

Observe these details: In the harmonic form the augmented second is reduced to a major second when you go beyond the octave, while in the melodic form, at the same place, the same retiring action of two fingers is necessary as if you turned back from the octave. Further: a diminished fourth appears regularly between the leading note and the third of the key above, which is the inversion of the augmented fifth previously formed by one finger. And also this: the diminished fifth which in a major key falls between the leading note and the subdominant above it (with the tonic between them), comes within the octave-range of the minor tonic (in the relative minor key), between the sixth and second degrees. Compare the positions of B—F (or F—B downwards) in C major and A minor.

The patterns for *major* and *minor triads* (common chords) are these:

(*a*) 1 . . . 3 . . . 1
(*b*) 2 . . . 4 . . . 2
(o)
(*c*) 3 . . . 1 . . . 3
(*d*) 4 . . . 2 . . . 4
(o) (o)

The finger in the middle stops high in major, but low in minor chords. As the fifth in either is perfect, it should regularly be fixed, as a double-stop with the root, by the first finger, and also by the second finger whenever we must (or choose to) stop the third of the chord with the fourth finger.

In a diminished or augmented triad the starting finger retires or advances respectively.

The finger for the octave is the next above that for the third, and the next below that for the root and fifth. Thus, in major, the semitone peculiar to the scale-fingering appears in the tonic triad also, only it is distributed on two strings, as a minor sixth.

Major triads appear thus:

(*a*) 1—0—0.**4**
1—0—3.0

(*b*) **1**—0
0—2—0—0.
2—0—4.

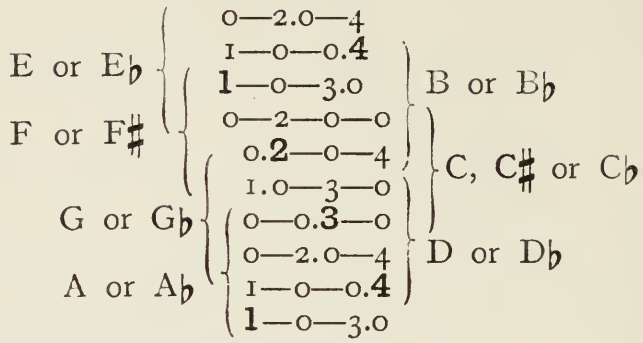
(*c*) 0.**2**
1.0—3—0—
3—0—

(*d*) (0)—0—0.**3**
(**0**)—0—2.0—4
0.0—**4**

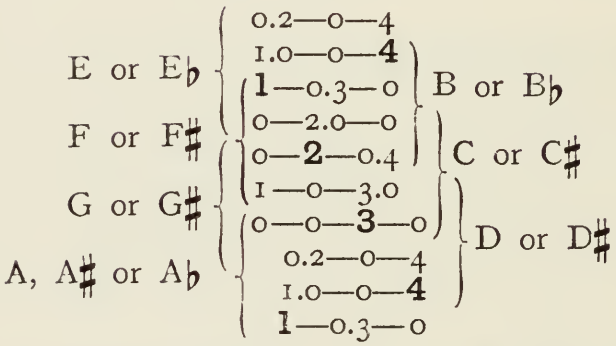
Write out the schemes for minor, diminished and augmented triads.

The following are the formulas for arpeggios over all four strings in one position (first), in major, minor, diminished and augmented triads. As before with the scales, any four consecutive lines represent a definite chord. The small rings represent the scale-stops left out.

Major Triads.



Minor Triads.



Diminished Triads.

(roots as above)

0—2—0.4
1—0—0—4
1.0—3—0
0.2—0—0
0—2.0—4
1—0.3—0
0—0—3.0
0—2—0.4
1—0—0—4
1.0—3—0

Augmented Triads.

(roots as above)

0—2—0—4
1.0—0.4
1—0—3—0
0—2.0—0
0.2—0—4
1—0—3.0
0—0.3—0
0—2—0—4
1.0—0.4
1—0—3—0

We find that in major the one finger stops differently which gives the third on the lowest and the octave on the highest string, and in minor that finger which gives the fifth on the lowest and the third on the highest string. Whenever the same finger is changeable in two different triads, these must be a relative major and minor; see here:

The 1st finger	in F & F♯	maj.,	D & D♯ min.
„ 2nd „	„ G „ G♭	„	E „ E♭ „
„ 3rd „	„ A♯ „ A♭	„	F♯ „ F♮ „
„ 4th „	„ B „ B♭	„	G♯ „ G♮ „

In the remaining major and minor triads no finger changes its height, though there may be two or more fingers changeable in the corresponding scale.

All diminished triads show two changeable fingers, except those on F♯ or F, and on G♯ or G (in the first position); compare the statement about the diminished fifth in major scales.

All augmented triads show three changeable fingers, except those on C or C flat (in the first position).

The patterns for *chords of the seventh* are these:

					(octave).
(*a*)	1 . . .	3	1 . . .	3 . . .	. (4)
(*b*)	2 . . .	4	2 . . .	4 . . .	. (1)
		(0)		(0)	
(*c*)	3 . . .	1	3 . . .	1 . . .	. (2)
(*d*)	4 . . .	2	4 . . .	2 . . .	. (3)
	(0)		(0)		

If the chord is that of the dominant seventh the finger for the third must retire to give the seventh, while in the chord on the seventh degree (leading note) in major keys, the same is the task of the starting finger. The latter chord in the minor key is that of the diminished seventh; it compels *both* fingers in use to retire from their first to their second places. Among the remaining chords of the seventh, there are two which cause the one or the other finger to advance, and two which require no change of stop from either finger.

The formulas for *arpeggi* in the chord of the dominant seventh, and in that of the diminished seventh are here given, to be understood as former formulas:

Chord of the Dominant Seventh.

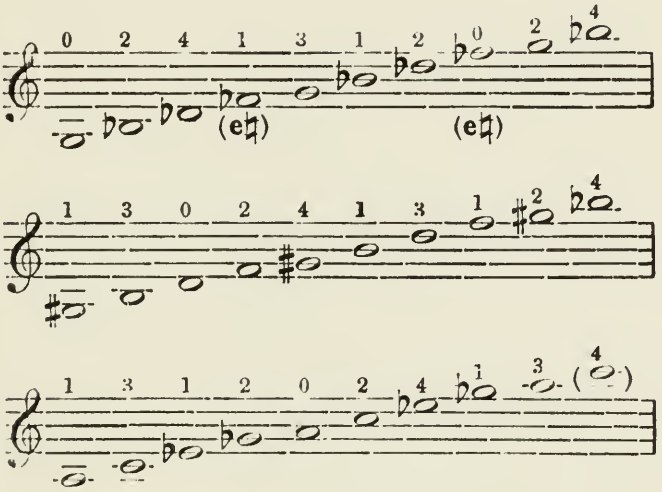
Keys:
- A or A♭ major, B or B♭: 0—2.0—4 / 1—0.3—**4** / **1**—0—3.0 / 0—2—0.4 → E or E♭
- C, C♯ or C♭: 1—**2**—0—4 / 1.0—3—0 / 0.2—**3**—0 → F or F♯
- D or D♭: 0—2.0—4 / 1—0.3—**4** / **1**—0—3.0 → G or G♭

Diminished Seventh.

Keys:
- F or F♯ minor: 0—2.0—4 / 1—0.3—.**4** / **1**.0—3.0 → C or C♯
- G or G♯: 0—2—0.4 / 1—.**2**.0—4 / 1.0—3—0 → D or D♯
- A, A♯ or A♭, B or B♭: 0.2—.**3**.0 / 0—2.0—4 / 1—0.3—.**4** / **1**.0—3.0 → E or E♭

In these arpeggi every chord of the dominant seventh shows up the one or the two changes of stop peculiar to the major key to which it belongs. And every chord of the diminished seventh shows up all the main changes (three or four) peculiar to the minor key to which it belongs. As these latter changes, intermixed with the spans for the augmented second (the inversion of the diminished seventh) follow each other very closely, there can be nothing more difficult to play in tune than this rather frequent chord. To some extent, however, we can escape the difficulty by choosing, for the first position, three (for higher positions two) different

fingerings, irrespective of spelling on the paper, for use in the temperament :



Here the immediate sequel of two changes in stopping is avoided by substituting one finger for another, so that occasionally a minor third is spanned by two neighbouring fingers, like an augmented second, or an augmented second is treated as a minor third, by skipping a finger. In applying these fingerings to just intonation, we must be specially careful to feel the correct intervals.

The augmented fifth, in arpeggio, may also occasionally be replaced by the stop for the minor sixth.

To the fingering of scales and arpeggi *with change of position* (through two or three octaves) a regular system can hardly be applied. But to some extent regularity can be introduced. We shall be well off, if we can apply the *same fingering to each octave-range*. Do so as much as ever you can. Besides, take these hints :—

Do not begin a long scale or arpeggio in the first position, unless you cannot help it ; surely not in the case of awkward fingering below.

Do not make a change of position which must be immediately followed or preceded by a change of stopping of some finger. For example, in G major, do not

change from the first to the third position on the A string, but on the D string, or you will compel the second finger to retire to the semitone from the first finger and, after the change, to again separate from it—why run the risk of stumbling ?

For the highest positions, in which the semitone step becomes too tight for any couple of fingers, choose that fingering for major scales which brings none but major seconds between your fingers, that is, bridge the semitones over by change of string or of position. For example, play D major through three octaves like this:

6th pos. 9th pos.
E string . . . . . 1—2—3. 1—2—3—4.4
A „ . . . 1—2—3. 1—2—3—4.
D „ 0—1—2. 1—2—3—4.
or
G „ . . . . 2—3—4.
3rd pos.

Or play A (and A♭) even through four octaves with this fingering in each octave:—

1—2—3.1—2—3—4.

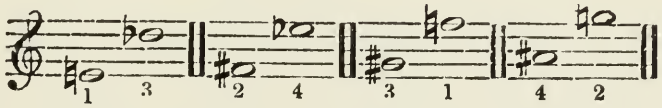
each octave on one string.

Whoever forms a habit of first running across three or four strings, and then scrambling up on the E string with a series of first and second fingers, so that the major, minor and augmented seconds fall between his fingers in a confused way, will have the pleasure of practising every run a thousand times more than other people, because the planless is, of course, less easy to grasp and to remember with the sense of touch than the clearly planned.

Beside the eight fingerings for groups of the four fingers on one string, which we have found to apply to scales, and which we must call *regular* fingerings, there are *exceptional* ones also, occasioned by accidentals. Their characteristics are: either that two semitones follow each other directly, or that a major and an

augmented second become neighbours; that is, the occurrence of a diminished or of an augmented third.

But observe that in the distribution on different strings even these measures are regular; the diminished seventh is a diminished third in measure when stopped on two adjoining strings, or an augmented third when stopped with a string between:



In the *chromatic scale*, each finger in succession must shift by a semitone, except either the first or the fourth finger. Some people prefer shifting with the fourth finger, because the first is thereby enabled to keep the hand steady. Others shift with the first and stop only one tone with the fourth, not trusting the latter finger with a shift. I agree with the latter plan. When loud, you may use the open string (in *piano* it would be too prominent) and then finger thus:

0.1.1.2.2.3.4.0. and so on.

For longer runs on one string I recommend this fingering, 1.2.3., 1.2.3., 1.2.3., in triplet rhythm, and this one: 1.2.2.3., 1.2.2.3., etc., for groups of four notes. When you must change position within a chromatic scale, beware of preceding or following the hand's shift by that of a finger. Running up from an open string, finger thus:

0.1.1.2.3., 1.2.2. etc., not 0.1.1.2.2, 1.2, etc.
3rd pos. nor 0.1.1.2.3, 1.1.2 etc.

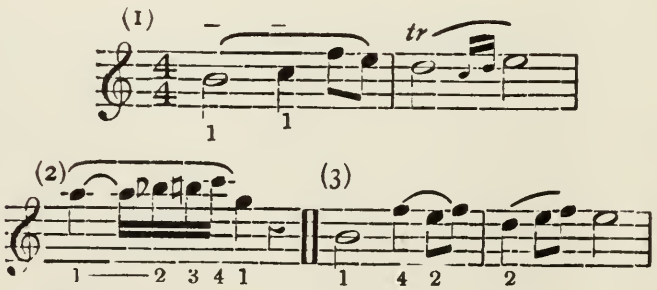
In *enharmonic changes* we are not expected, as a rule, to replace one finger by another on the stop with the ambiguous meaning. Such changes, even when they concern several stops at one time, place us only theoretically in a different position. Don't move the hand until some further development compels you to do so.

The fact then, that the so-called "positions" glide

over into each other, should teach us never to be timid in the choice of positions. The preference of many violinists for the first, third and fifth positions, as against the second, fourth and sixth, has no right to exist. The first position is not easier than the second, but less easy, because its measures are wider, while in both the hand cannot touch the body of the violin. And the fourth position is more reliable than the third, because the hand leans more closely against the violin.

If there be any difference, it is one of *reading* only. But why should notes on lines always be stopped with the first or third finger, and notes in spaces always with the second or fourth? Do not read single notes, but intervals and groups of notes, and you read yourself with equal ease into any position.

The transition into an *adjoining* position, shirked by most players as if it were a break-neck enterprise, is the simplest thing in the world; and if you have followed former advice you are by this time quite at home in it, because you do the same thing *within* each so-called position. That change, moreover, when it is a change on paper also, can often be rendered smooth and imperceptible in one of these ways: (1) by shifting a finger across a diatonic semitone, as if it were a chromatic one; (2) by cramming several fingers together on semitone measures; and (3) by extending an outer finger, and then taking ordinary measures from it—in each case the hand following at once with its own shift.



(BEETHOVEN, Rom. in F).

To avoid discomfort in keys with many sharps, acquaint yourself well with the "half" position, for use in the lower regions of the violin. Viola players will find this hint still more important.

As to selection among positions, as well as to choice between the fourth finger and the open string, you should be led least of all by simple necessity. In first line consider the *musical phrase!* Play no melody or distinct part of a melody (motive) on two strings, when you can manage it on one. Consider each string as a special "*register*," just like the three distinct forms of tone production in a human voice. For even the oldest instruments show still a slight difference of tone colour, when you play the same tones low on one string and again high up on another (lower) string.

In second line, select a position, or choose between the fourth finger and the open string, according to convenience either of the fingers or of the bow. And the bow has often a stronger claim than the fingers, because it is by far the clumsier thing to handle; and the bow, for the sake of accuracy in time, prefers crossing from one string to another with a pulse or beat, to crossing with same intermediate particle of time.

Seen in this light, the old rule for beginners, faithfully handed down by tradition, that in ascending scales (first position) the open string should be used, and in descending scales the fourth finger, appears absurd. It can apply to a few keys only, and, according to the place of starting, it will fit one half of these keys, but not the other half, when scales are played more quickly. Besides, there is exactly the same need for learning to slur neatly across from the fourth to the first finger, as the reverse.

When the bow detaches the notes, you will prefer the down-stroke on the lower, and the up-stroke on the higher string, and select the fourth finger or the open string according.

I must not fail to say that the rigorous exclusion of

every open string is a necessity in an advanced stage only, both musically and technically.

When you do not stroke the strings with the bow, but pluck them with the fingers (which must be done with the fleshy part of the tips, not with the nail), let the left fingers grasp the strings more firmly than ever, to guarantee a clear sound.

PART II.

Right Side—Bowing.

SECTION VII.

How to Hold the Bow.

The conditions which the hold of the bow should fulfil, are these:

1. The hold should be *safe*, in the sense that the bow may not slip from the chosen grip, and should remain safe during all possible actions of the arm and the hand.

2. Yet the hold should be *as loose as possible*, in order to keep all joints of the thumb and the hand, especially the wrist, perfectly supple, and in order to avoid waste of strength; also in order that the bow may glide smoothly along, undisturbed by possible roughness of the string or of the hair, and even uninfluenced by the trembling of a nervous hand.

3. The attitude of the hand should be such as to allow the wrist *to turn the bow over* from one string to another by its most natural action, the bending up and down in its longest axis.

4. Sufficient *pressure* for strong tone should be ready for use, above the stick and to the left of the thumb. But this pressure must be of an *elastic* nature.

5. It should be easy to *balance the bow's weight*, with the purpose, either of preventing its falling over on to a farther string, or of lifting it off altogether.

The normal hold, which satisfies all these claims, is described in this

Rule XXI.—(*a*) Place the thumb well into the nut or heel, not merely in front of it. Its opening may be enlarged, if necessary, by removing the prominent corner of the wood. The soft side of the tip touches partly the stick and partly the wood of the nut, and that *obliquely*, while the nail rests against the metal ferrule of the hair, of course also obliquely. The reason for this oblique position is, that the tip of the thumb confronts those of the two inner fingers in a one-sided fashion; and we mean to lay the *latter* flat against the stick.

The outermost joint of the thumb should keep loose, preserving its usual slight bend, as if inactive.

(*b*) Opposite the thumb, lay the four fingers across the stick, neither crammed nor separate, two before or ahead of the thumb (to the left), and two behind it (to the right).

Mark this well, that not the forefinger only should be ahead of the thumb, but the middle finger also. Should your thumb not like to keep this attitude, being bent into the hand so far as to reach with its tip behind that of the middle finger, tell it that it *must* stay. It can reach farther than that, and the discomfort it suffers is no more than the thumb of the pianist has to undergo in playing the scale of A or E major.

Now take these hints as to details:

The middle finger is the main holder of the bow. It should bend its extreme member around the stick, so as to allow the latter to rest in its last joint. That brings its tip near enough to that of the thumb (though the two had better not meet) as to simply not leave space enough for the stick to drop out. The tip of the middle finger literally carries the bow, at least when the hand is held hanging from the wrist; and the tip of the thumb prevents it from slipping off. Therein lies safety, and yet no exertion whatever.

The third finger assists the second, but, being shorter, it must not reach equally far across, to avoid wresting the hand towards the right.

The little finger should just be able to lay its tip flat on the stick, and by moderate pressure to keep up the balance of the bow. It is advisable never to take the little finger off, though you can do without it, whenever the bows leans against a string with some part higher up than about one third of its length from the nut, which is (or should be) approximately the bow's balancing point.

The forefinger, like the little one, has a special task to perform. It should lay its middle member across the stick, in order to communicate to the bow the pressure of the hand. Avoid closing the tip of this finger against the stick, or you will press the bow towards the bridge instead of purely down on the string.

The fingers (except the little one) should be kept loosely bent in all their joints. They will naturally be held thus, if you perceive with your feeling that the only effort in holding the bow is the very slight one made by the little finger to balance it.

Beware of using too heavy a bow, which would render that effort too great or cause you to place the little finger farther out towards the screw. The bow should weigh *rather less than two ounces.*

The means of pressing the bow against the string, to produce a loud tone, is the leaning over of the hand to the left. This is not done by the hand itself turning in the wrist, which is impossible, but by the fore-arm turning in the elbow-joint. When the hand thus presses over, the thumb, as the support, must make a counter-effort; and this effort should be combined with the feeling rather of bending the thumb more strongly in its last joint, than of stretching it out.

Any other effort is absolute waste. Besides, a tight grip interferes with the freedom of the wrist-action; so does the spreading of the fingers.

When we hold the bow vertically, we see the first finger point downwards very slightly, but the thumb very strongly, its tip running towards that of the third finger. It is impossible for the thumb to stand at right

angles against the stick, if we mean to draw the bow down to its very point (or head).

When we hold the bow horizontally before us, we see the back of the hand, and with it also the longest axis of the wrist, stands quite parallel to the stick, when we think of playing *pianissimo*, and therefore do not lean the hand over to the left. And when we mean to give pressure on the bow, by leaning over, we find the deviation of the wrist from that parallel position small enough to still warrant a free wrist-action even in *forte* playing. That action is straight up and down in *pianissimo*, but a little oblique through the wrist in *forte*.

Which are the commonest faults in the holding of the bow?

Some people write that the bow is held by the thumb and the two *outer* fingers; and many do it. Nonsense! The two *inner* fingers have nothing else to do but to hold the bow, while the outer ones have special functions. What is to become of these, if you bother them with holding?

Many place the second finger merely opposite the thumb, and not ahead of it; but many more place barely the tip of the first finger ahead of the thumb. In these cases the lever for hand-pressure is too short; consequently they allow the middle joint of the first finger to slip beyond the stick, and thereby tilt the hand so strongly down to the left that the axis of the wrist stands more nearly at right angles than parallel with the bow. Hereby the pressure is made inelastic and rough; and there is a strong temptation to raise the elbow and thus render it rougher still. And with such position there is no possibility of using anything like the easiest wrist-action for change of strings. As a rule, the wrist-action fails altogether, and some action from the elbow or shoulder-joint takes its place, which is clumsy, being a large action applied to a delicate purpose.

Some place the tip of the thumb flat against the stick instead of obliquely. This also tilts the hand over leftwards; the two last named faults go mostly together.

Some place the tip of the middle finger only *on* the stick, instead of around it; so they must grasp the bow tightly, not to drop it. It is true that a very large finger-tip runs the risk of stumbling over the string, when the stroke approaches the nut. But if such a finger-tip may not reach right round the stick, it can find some intermediate position which still permits it to *carry* the bow.

Some push the tip of the thumb so far in between the stick and the hair, that they must press the last joint firmly in. Such an attitude, whether thus caused or not, takes all suppleness out of the other two thumb-joints also, as it bends them to their utmost.

The opposite fault is that of placing the tip of the thumb so gingerly into the nut, that the last joint is compelled to stick out almost at right angles, if one wishes to enjoy the very desirable support of the nail by the ferrule. This attitude may give you a cramp in the ball of the thumb; it certainly tires you out all up the fore-arm. Some place the thumb quite outside the nut, so that the nail leans against the hair instead of the ferrule, surely not a reliable support. Some don't try to get any such support.

Observe that, if you were to exaggerate the leftward attitude of the violin, you would have to alter the normal style of holding the bow, as otherwise you could not reach its point with your downstroke.

SECTION VIII.

Position of the Bow on the String.

Attitude and Actions of the Right Hand and Arm— Equalisation and Graduation of Tone-Power— The Wrist-Action for change of Strings.

The bow is best placed on the string, on an average, at about one to one-and-a-half inches from the bridge, above the end of the sound-holes. This point of contact is, however, not stationary. For very delicate tone it may or should be farther away, even above the finger-board, while it must be nearer the bridge to produce great strength of tone. On the thicker strings, especially on the D, it cannot approach the bridge as closely as on the thinner ones; but the higher the fingers ascend on any string, the nearer can the bow come to the bridge, nearest of all, then, on the E string, *fortissimo*, and in the highest positions. In low positions, and almost on the bridge, a light touch produces a peculiarly flimsy, husky and whistling tone, which is sometimes demanded by composers, by writing "*sul ponticello*" (on the bridge).

The point of contact, when once chosen, must of course be kept during any one stroke, or while the bow turns smoothly back; otherwise scraping or interruption is inevitable. There are two possible causes for dislocating the bow on the string. One is a sloping instead of horizontal position of the string, which allows the bow to slip sideways, when held (as it should be) very loosely. The other is some wrong movement of the arm.

The most important requirement is that the bow should always keep *at right angles with the string* (parallel to the bridge), because the string must be moved into purely *lateral* vibrations, to give a good tone quality.

A further requirement is that we should be able to produce the most delicate touch even with the heaviest part of the bow, that close by the nut. For that purpose we must place the bow on the string, not with the full breadth of the hair, but *with its edge* only, by leaning the stick over, away from the bridge.

In trying to fulfil the specified requirements, insist upon feeling your hand in one with the bow, and upon moving both together in a straight line, parallel to the bridge, imagining the arm to be entirely absent. As this cannot really be, command the arm, with the joints of the wrist, the elbow and the shoulder perfectly loose, not to guide the hand but to serve it, just as the left hand and arm serve the stopping fingers.

In order to observe your own bowing, stand with your right side opposite a mirror; turn half-way towards it, so that the violin, conveniently held, stands parallel to the glass, and the bridge appears as a mere vertical line under the horizontal strings. The bow also should then appear vertical.

If you succeed in guiding the bow correctly, you may consider as a mere description of your actions, what I must here put down in the form of rules:—

Rule XXII.—The stroke with the whole length of the bow is worked partly from the elbow-joint (fore-arm stroke), and partly from the shoulder-joint (back-arm stroke).'

Roughly speaking, these two actions do not mix, but alternate.

In an average arm the fore-arm stroke commands nearly two thirds of the bow's length from the point inwards, while the back-arm stroke is required for hardly more than the one third by the nut. A very long arm may manage nearly the whole length from the elbow alone, when the violin is held in a direction moderately

to the left. But, as an alternative, the long arm permits its owner to hold the violin farther away towards the left than a short-armed player could do, and then there will be hardly any difference as to the proportion of bow-length commanded by the two sections of the arm.

Now, should the fore-arm move while the elbow remained fixed in one place, the hand would describe a curved instead of a straight line; and the result would be the same, if the whole arm (stretched or bent) were to move purely in the shoulder-joint. It is consequently a mistake to say that the back-arm should stand perfectly still during the fore-arm stroke, or the reverse. The fact is that:—

Rule XXIII.—The back-arm must advance, not only towards the end of the up-stroke, but also towards the end of the down-stroke. The fore-arm, on the other side, must continue slightly narrowing the angle in the elbow, after the main action of the up-stroke has been taken over by the back-arm.

The elbow stands farthest back when the stroke passes through the "*neutral point.*" This name I give to that point at which the fore-arm and the hand run in one straight and horizontal line towards the bow, with the wrist not bent to either side.

So, after all, the actions from the shoulder and elbow-joints do get partly mixed. The best view of it is this, that *the forearm should be the principal motor*, and that the back-arm should not come into requisition unless absolutely necessary. It seems to me that the reverse view is very prevalent among violinists, unconsciously of course; this is why I am so explicit on this point of great importance.

Now about the wrist!

Rule XXIV.—At the neutral point only can the wrist-joint disappear in a straight line. When we pull the bow down from that point, the hand must be bent towards the left, so that the wrist protrudes onwards. And when we push the bow up from the said point, the hand must appear bent towards the right, so that the

wrist protrudes inwards on arrival at the nut, in the direction of the player's nose or chin, according to the string chosen.

In saying this, I take it for granted that the hand keeps in one with the bow.

RULE XXV.—The fore-arm must, towards the end of the up-stroke, be lifted high enough to let the hand *hang* from the wrist (instead of standing out straight) and thus to turn the bow over on to the edge of the hair. The wrist will therefore appear raised or "arched."

Some writers say that it is this raising of the wrist which keeps the bow in line—how very intelligent!

On the other hand, some say that the wrist should be kept arched all through the down-stroke; and perplexed readers often ask whether this should really be, as they simply cannot do it. Don't trouble, dear readers! That is as insane a rule as could ever be framed by anyone who has neither a conception of mechanics nor eyes or feeling wherewith to make observations. On the contrary, the wrist *cannot* remain raised, and it should not if it could. It is true that for a long *pianissimo* stroke it appears desirable to keep the bow on the edge of the hair down to the point, and it may appear as if you had to keep the wrist arched all the way for the purpose. Try this; unless your arm is very long, you will find that you have to spoil your reliable hold of the bow towards the end, and that you have trouble in restoring it, after turning back into the up-stroke. Now watch with your eye whether your wrist really must remain arched to keep on to the edge of the hair—*it need not*; it sinks into a level with the hand and the fore-arm. For any other but *pp* touch, a plain fact disposes of the doubt whether the wrist may not even sink *below* that level. At the beginning of the down-stroke the hand is above the elbow, but at the end it is below it; how then can the wrist protrude upwards when the fore-arm runs *down*-hill to the hand, if the latter keeps its own level with the bow? And if we want

strength at the end of the bow, how can we get it, if the forefinger does not press *on* the stick, but *past* it, as it surely will when the wrist is kept high? If we further consider that with a very slight pressure, even quite near the ends of the bow, all the hair will touch the string; also, that the contact had better be gradually fuller, the less the bow weighs on the string, there can be no objection against turning the bow gradually up on to the full surface of the hair during the down stroke, by allowing the wrist to sink slowly in. In the up stroke it must gradually rise again. We are even justified in settling the bow with full breadth at every nut, for *ff* attack; it is better to press evenly with all the hair, than to force one edge strongly against the string and to allow the other edge to glide loosely along, mixing a husky whisper with the solid tone.

Short-armed players will find that the sinking in of the wrist assists the bend of the hand to the left (inwards) which in itself is very limited. The combination of both bends is, of course, an oblique one, and directly opposite to the complex bend of the hand (downwards and to the right) at the nut.

Now, if it is quite beyond doubt that the attitude of the hand in the *wrist* changes continually, when the bow runs straight, is it not amazing that Spohr should, instead, have written in his Violin School (and that others should have copied it from him) that the means of keeping the bow straight is a change of attitude of the fingers on the bow, in the sense that, when the stroke approaches the nut, the first finger retires and the fourth advances on the stick, while, of course, the thumb also plays to and fro below it, and that at the other end the reverse takes place! Such alterations of our grip mean unsafety. Instead of being taught, they should be warned against. If they happen, they are the outcome of a little move in the wrist, in the direction not against the stroke (as happens generally within the full-length stroke), but with it, for the purpose of *smoothing the turn of the bow*, which might appear stiff when worked purely

from the elbow or shoulder. The said move is identical with that which produces the wrist-stroke (see next section). Now, during this move, the bow would be thrown out of its direction (with the point running backwards behind the player's ear, on arrival at the nut) without a little connivance on the part of the fingers. But nothing more than suppleness of all their joints, especially those of the thumb and middle finger, is required. Dislocation of the forefinger would remove the pressure; dislocation of the fourth finger would endanger the balance; and both, combined with that of the thumb, would throw the bow out of its direction (in the opposite direction, point forward) and so cause a jerk and a scrape. If you strictly avoid those dislocations, but feel very supple, you will *feel* no change in the attitude of the hand towards the bow, though such change may be apparent to the *eye*.

Another slight change of attitude is real, namely that of a gradually tightening contact between the forefinger and the stick in the down stroke, and the reverse in the up stroke, consequent upon your permitting the wrist to sink in, and to rise again on the backward way. This change is certainly welcome, as it serves the correct purpose of *increasing the pressure on the bow when its own weight decreases*, and thus producing *equal tone power* throughout the full-length stroke. If you want a decrescendo, you simply do not drop the wrist quite so low.

About the pressure applied to the string, through the bow, the following must be said: Some players are inclined (through natural delicacy) to feel as if the bow should really be carried along *through the air*, perchance just near enough the string to touch it. Others (the majority) have the instinctive desire to be noisy, and therefore exert all the muscles of their right arm to coerce the string into vibration. Both are wrong. On the one side, the weight of the bow itself, leaning against the string, is never too great for delicate tone, not even at the nut, if only the bow moves slowly enough. On the

other side, *pressure* alone does not produce vibration; so it may only be applied *in addition to the moving on of the bow*, which is the real means of tone production. When the pressure is audible in the tone, its quality being squeezy, there is too much of it in proportion to the speed of the stroke. We may even go farther and say this: As *greater speed of the stroke* is in itself a means of widening the vibrations, that is, of making the tone louder, let it be the *principal* means to that end; let us not apply any pressure when increased speed can be applied, but only when the latter is not available or insufficient, as in long sustained *forte* strokes. Thus, and not otherwise, can we preserve a good tone-quality. This advice should especially be followed in very quick legato passages and in the shake.

Further: The muscles which work the leaning of the hand inwards, to produce pressure, are situated in the fore-arm itself, and possess sufficient strength and endurance. If then the back-arm has nothing directly to do with this work and need not even assist the fore-arm, it is wrong to lift the elbow, or (worse) to raise the shoulder, to get the pressure on the bow; such pressure would surely be too great.

If the weight of the arm has any influence on the tone-power, it will tell just as well when it hangs from the bow, so to speak, as if it were placed above it. That influence can be on the down stroke only, rendering it naturally louder than the up stroke; therefore choose the down stroke for the first and other accented parts of the time-measure, and avoid it for the lighter moments as much as possible.

Having considered severally the various influences on comparative strength of tone, we conclude that, when a strong *crescendo* is required, we should give it, if possible, to the *up* stroke, but *decrescendo* to the *down* stroke. If you combine increasing pressure and speed with the natural increase of weight of the bow itself in the up stroke, your crescendo must be effective; but if you allow the natural *decrease* of weight in the down stroke

to work against your artificial means of increase, you take a great deal of wind out of your own sails. The reverse applies to decrescendo.

Now comes an important question: *What various degrees of lateral elevation* from the body does the *elbow* assume? Find them out for yourself by placing the bow on the various strings alternately, with its *point*. As the arm is then entirely or nearly stretched out, it has no choice of attitude in each case. So there are *four degrees* of elevation, one for each string, and further three intermediate ones, one for each couple of strings in double sounds. The elbow will be very near the body, hanging about straight down, in the use of the E string; but it must not touch the body or brush against it in moving. When the bow is on the G string, the elbow will still be a little lower than the shoulder, unless the violin is too little inclined inwards. But, whatever the elevation may be, the following rule, deduced from previous explanations, is absolute:

Rule XXVI.—The elbow must always move plainly in the direction of the bow-line, behind the hand. It must not, in the up stroke, rise above the hand after the neutral point is passed.

Nor need the elbow be pressed down in the course of a stroke on a lower (more distant) string, as some players will have it. What is the good of caricaturing a swan's neck with one's arm, in an affected attempt at elegance, if thereby we render an already complex action more complex still, and at the same time take all strength out of the middle portion of the stroke? That pressing down of the elbow is the direct consequence of a vague wording of the same rule, which is very common: "that the elbow should always keep as near as possible to the body." This wording suggests the wrong idea of *one* normal elevation of the elbow. Spohr adds that, when the elbow must be raised to bow on a more distant string, it should be lowered again as soon as possible! Of course, we must not forget to reduce the elevation when coming back to a nearer string; but that wording

sounds as if it were faulty, in itself, to bow on a distant string at all.

Two more observations on the attitude of the arm and the hand:

1. If at the nut, for gentle tone, the hand hangs from the wrist (as described), being drawn down by its own weight together with that of the bow, we can let that weight tell on the string with full elasticity. Only a slight sinking of the wrist is then required, to change a most delicate touch into a somewhat heavier one. This proceeding is very suitable for refined accentuation, leaving the more vigorous measure of pressure to be used for stronger accents. Observe that any other attitude of the hand than that of loose suspension must be a fixture in the wrist, which means more or less of an interference with its flexibility.

2. The direction of the bow would be parallel to the player's shoulder-front, if the violin were held straight forward. As it is not, the bow-line is oblique enough to place the hand, at the end of a down stroke on the G string, right in front of the right shoulder; and under the same condition on the E string, right in front of the middle line of the body.

Something more must also be said about the equalization and graduation of tone power. The weight of the bow tells least on the E string, because its position there is not far from vertical: as the bow leans over more to the left, on each successive string, it weighs on it more heavily. To balance this inequality, add a little more pressure, the nearer (higher) a string you are just using—unless you find that your instrument appears equal in strength without this means. That may well be, because, the higher the pitch, the greater is the natural carrying power of the tone.

Further, we have often to vary the tone power, not only in a single long stroke, but also in a regular or irregular series of strokes. The more regularly the bow moves to and fro, the easier it will be to simply *treat forte with longer and piano with shorter strokes.* Some people

will always have "tone, tone!" and never apply what the French call "demi-jeu," thus never getting *below mezzoforte*, while others never rouse themselves to a quick full-length sweep of the bow, and so hardly get *above mezzoforte*. In the latter case, the fault generally is shyness of rushing the bow right up to the nut, due to a feeling of weakness in the little finger. Well, if your little finger cannot support the bow properly, that bow is too heavy. It is surely against your purpose to shorten your stroke by several inches, just when you might wish for more length than you can get.

By the way, some pupils will invariably lift the bow off when admonished to push it quite up to the nut. That means cutting every melody up into little bits, perchance mostly in flat contradiction to its natural punctuation or "phrasing."

As to *accentuation*, which is nothing else than graduation of tone-power, observe that, while for delicate accents a slight dip of the wrist, and for moderate ones some extra pressure of the hand suffices, strong accents require a sudden rush of the bow to avoid harsh tone-quality. A real *fp* may want the bow to sweep quickly on right to its middle or farther, and then to flow on quietly. And when a slur should end in a heavy accent, the stroke must begin slowly, with careful saving of space, and at last suddenly rush to the end. The former of these tasks falls best to the down-stroke and the latter to the up-stroke, like the regular *decrescendo* and *crescendo*. Of course, you are at liberty to produce delicate accents also by a slight rush in the stroke.

The wrist-action for changing the bow from one string to another wants some detailed description. The *dropping* of the hand takes the bow over to the nearer string, which happens to be that tuned to the *higher pitch*, and the *raising* of the hand leads to the farther, *lower string*. Some beginners are thereby very much puzzled; don't doubt that contradiction of the low hand meaning high pitch, and the reverse, and you are all right.

For the sake of punctual transition, the motion of the

wrist must be decisive. If it is quiet and gradual, how can you tell *when* the bow will arrive on the other string? Make your wrist beat its own time, just like the falling or rising fingers. But avoid such vehemence of action as would make the bow shake and tremble.

For continual change of two strings, choose that elevation of the elbow which would suit the stroke on both strings together, so that the hair will lie full on the farther (thicker) string, but with the edge only on the nearer (thinner) one. Should you choose the elevation according to any one string among the two, you would either roll the bow over backwards on the far string, or overdo the bend of the hand on the nearer one.

Close by the nut, the wrist-action is naturally so small, that its place can be taken by a little more or less pressure from the little finger. But the farther you move away from the nut, the wider must be the bend of the hand. Therefore, near the point of the bow is the place where you should principally practice the wrist-action, to feel it distinctly; and to train your feeling, have your *eye* on the wrist!

Even near the point it is just possible to command three strings with pure wrist-action, the elevation of the elbow being that for the middle one of the three strings. But for arpeggio over all four strings some co-operation of the arm is not avoidable.

Even when fore-arm or full-length strokes alternate on two or more strings, it is wise, for the sake of smoothness and accuracy, to work the transition with the hand first, and then let the arm quietly glide into its new position.

Wrist-exercise should be done by the beginner, as soons as he knows the fore-arm stroke, with the smallest amount of bow-length and very gently, in order that neither a larger move of the arm nor the leaning over of the hand may interfere with the purpose. Some beginners attempt to *press* the bow over to another string, instead of tilting it over.

SECTION IX.

Fundamental Kinds of Bowing.

Apart from detailing the several actions in the joints of the right arm, as they appear when forming part of a full-length stroke, I have now to deal with "kinds of bowing" proper, that is, with such styles of using the bow as serve to produce a series of tones of equal duration and tone-power, but of various speed and expression.

Which part of the bow to use, and in what manner, depends on two conditions: firstly, whether the duration and strength of each tone in the series permits us to use the whole bow or only a part of it; and secondly, whether the tones should follow each other closely and smoothly, or whether they should be detached.

Let us then distinguish:

1. *Stroke with full length*, (*a*) *with a smooth turning* at the ends, (*b*) *detached* (sometimes rushed through very briskly).

Enough has been said about the smooth turning. In contrast to it we must cultivate the distinct, or, according to circumstances, the biting *attack*.

For this it is not sufficient to touch the string at the very moment when the tone should appear. The bow must be *settled on the string* and *pressed* against it *before* the intended appearance of the tone, so as to start it with an effect similar to that of a strong consonant in speech, *k* or *t* or *p*. When, after the attack, the bow is to proceed at a moderate speed, to give a sustained tone

(however detached from the following tone), the amount of pressure applied to the attack need not be diminished; or, to express it more clearly, we need not apply greater pressure to the attack than to the continuation of the tone, unless an *accent* at the beginning is indicated. There is no difficulty in producing a neat start or attack in *pp* as well as in any greater strength.

But, when the bow is meant to rush through its full length, to produce an abrupt, powerful tone, like a cry or shout, the pressure of the attack suffices and must be withdrawn at once. The string is thereby enabled to swing out freely, which materially adds to the carrying power of the tone. If, on the contrary, the pressure remains, the stick will grind against the string, through the hair or beside it, in the middle portion of the bow, and at the end of the stroke the vibration will be choked, and the tone will thus be turned into a nasty noise.

In very vigorous passages the full-length stroke, like smaller strokes (see later), is sometimes not started while touching the string, but by beating the bow down upon it from the air. This is easy at the nut, while at the point we are in danger of going out of direction. So be cautious with up-strokes of this kind. In any case, don't form a habit of this attack!

We must further distinguish as special kinds of bowing, to be used regularly:

2. *Fore-arm stroke*, (*a*) turning back softly, (*b*) *detached* and 3. *Back-arm stroke* in the same way.

All that has been said about the smooth or detached full-length stroke applies here again. But this must be said specially, concerning the detached fore-arm stroke with the bow settled on the string: The Italian term for it is *staccato*, the French *détaché*. When it goes to extreme shortness, so as to give the single tones no duration at all, merely marking moments, the term is *martellato* (*martelé*) that is, *hammered*. Another suitable English term would be *stitching*.

Its attack must be made with free hair, even in greatest strength. Therefore, besides giving the bow

sufficient tension with the screw, do not begin the down-stroke at the middle of the bow, but a little higher up, to avoid the contact between the stick and the string. In *forte* you may rush through the whole remainder of the bow down to the point, close to which your up-stroke will then start. Decide before-hand how long a part of the bow you mean to use. Otherwise there is, in the feeling of your arm, no limit for the move, and your up-stroke especially will come to a vague end. An effort is required to render the up-stroke as loud as the down-stroke, so you may expect to get tired very soon in the region just before the elbow. The hammered stroke can be graduated down to *pp*, when a very small part of the bow is required. This is best chosen near the point, but not necessarily quite close to it.

For strong *martellato*, it is as essential as for quick detached full-length strokes, that the pressure of the attack should cease immediately after the start. You should feel like *breaking the tone loose* from the string. As, then, the stroke undoubtedly requires *two* "*times*" of action for every tone, namely the pressure for attack and the start, and as you have also to mind the stoppage, to gain time for a new attack, which makes *three* "*times*," it follows that the speed of true *martellato* in repetition is very limited. You can hardly furnish more than five or six stitches per second of time.

We can easily detach several tones in succession in one direction, up and down, at a moderate speed. But peculiarly charming is the effect produced by detaching a row of *quick* tones in the *same direction*. This is what violinists usually understand to be meant when the term "staccato" is used, though this Italian word simply means "detached." This quick staccato causes trouble to many a player, and when he succeeds in producing it, he generally finds it reliable in the upper third or half of the bow, and in the up-stroke only. The difficulty lies partly in the fact that *each bow dictates its own speed* to the player's hand, in consequence of a variety in weight and in readiness to rebound; some bows will not

do it at all. And the same player produces staccato with different bows at a different speed. When once the most reliable speed of a bow is found out, it can more easily be accelerated than slackened.

The action of the hand and arm can best be described thus: The bow is kept closely attached to the string. The place of a deliberate attack for each note, with intermittent pushes of the fore-arm, is taken by a mere swinging of the hand downwards to the left and upwards again (really a turning of the whole fore-arm from the elbow), which alternately presses the bow firmly against the string to stop it, and loosens it again, allowing it to proceed. Meanwhile the stroke-movement of the fore-arm is *continuous* but very slow. The space of bow allowed to each tone is thus extremely short; and therefore staccato does not allow of very great tone-power. If care is not taken to attack the first note very crisply, the succeeding attacks will probably fail. The swing of the hand can easily be controlled as to the number of stitches intended. Stiffness of the wrist, or too tight grasp of the bow, directly prevents the effect. The natural preparation for "staccato" is "martellato." Whoever has not mastered the latter had better not yet try the former.

The *back-arm stroke* with a soft turn is seldom used as a special kind of bowing, because it rests on the string with the heaviest part of the bow, and so endangers the clearness and fluency of the tone. Any smooth bowing on a smaller scale should in preference be fore-arm work.

The *detached* back-arm stroke, kept touching the string, is still more rarely chosen. But an excellent means of producing short detached tones is:

(4) The *carried or thrown stroke* with the back-arm, from the shoulder.

This is a sudden short grazing or beating of the string, with the bow freely suspended in the air between the touches. This style of bowing also can vary from *ff* to *pp*, when we choose the point of contact close to the nut,

and then farther and farther away from it, at the same time rendering the movement of the arm smaller and smaller. Close by the nut and strong, the stroke may be called "*chopping*."

For *pp* we can pass from the region of the back-arm into that of the fore-arm. But above the middle of the bow, the throwing may degenerate into *whipping*.

From the nut to about the middle, it is possible also to graze the string for some duration, instead of hitting it for a moment only, so as to sustain single tones a little, or to slur two or three quick tones. Both kinds of touch can be mixed. That longer touch becomes unreliable beyond the middle, because the bow, instead of immediately lying still and flowing on after falling on the string, rebounds several times. When this sort of dancing is desired, there is, of course, no choice but that of the upper part of the bow.

For the thrown stroke especially, the wrist must be held quite loosely, the hand hanging from it. We can even give delicate touches of the string from the wrist alone, dropping the hand a little and swinging it sideways at the same time, while the arm stands perfectly still. When, then, we increase the speed of this wrist-action, we manage an imperceptible transition from the thrown stroke, or "*spiccato*" from the shoulder (or elbow) into the quicker "spiccato" from the wrist, or "*springing bow*" (or later).

Alike to the firm detached stroke, the thrown stroke can be repeated several times in the same direction, either with the same part of the bow, by fetching the bow back, or by lifting off while simply continuing the main stroke; compare the next section on this point.

For very quick passages, especially more graceful than toneful ones, any kind of arm-action is too clumsy. There remains only

(5) the *wrist-stroke* (smooth or detached).

The action of the hand in the wrist, for this purpose, must be strictly distinguished from that which serves to transfer the bow from one string to another. While the

latter is up and down, *rectangular to the direction* of the stroke, the one now wanted must go sideways to and fro, exactly *in the direction* of the stroke. Still, it is not literally right across the wrist (which action is not very free and easy), but slightly oblique, because the hand leans a little towards the left. To feel loose enough, carry the hand, as usual, hanging from the wrist.

Some players will carry the hand stretched straight out; others bend it more decidedly down than its own weight together with that of the bow gives cause for. In the first case the stretching sinews, in the other case the bending sinews of the hand (which like those of the fingers run through the wrist) are exerted, and thus the greatest possible legerity is not obtained. Some violinists lean the hand very much towards the left, so that the longest axis of the wrist is more nearly rectangular than parallel to the bow. It cannot be said that this is utterly wrong, if anyone derives greater legerity from it. But, apart from the danger of getting mixed in one's feeling about a real *stroke* or a *change of strings*, both done by the wrist, that attitude can only be called for when the bow rebounds too wildly, or when the intention is to produce such tone-power as a wider swing of the hand alone cannot furnish. And with this very oblique attitude it is especially difficult to prevent the down-stroke from turning out louder than the up-stroke.

Many lift the little finger off the bow, or even the third finger also. This again is not necessary; only these fingers should not press on the bow, so as to resist its quick movement, possibly in an intermittent way.

An essential requirement for this stroke, beside the looseness of the wrist, is that also of *all the three joints of the thumb*, because the joints have to play a little, while the tip must remain immovable in or against the nut. The joints of the fingers will also be felt to play about.

The wrist-stroke can be produced at any place along the whole length of the bow, with the result of graduation from a good *forte* to *pp*. It is most easily found out close by the nut. Take the arm up and pull it together,

settling the bow on any string. Then keep it perfectly still, while the hand moves the bow softly to and fro, keeping the little finger well on the stick. Don't try to make the wrist-stroke long! It is naturally very short. Have your eye well on the bow and on the hand, especially on the knuckle of the forefinger, at the same time, to find out the proper movement.

After this, change to about the middle of the bow, to the spot where the stick comes nearest the hair, and you will observe that the stick swings down and up with every stroke. When then you swing the hand out more briskly, even the hair will spring off the string, and you have "*spiccato*" or "*springing bow*" done by the wrist, sounding exactly like the slower spiccato described previously, into which you can go over by slackening speed. The exact spot where the springing succeeds best, where consequently it can be produced with very delicate tone, must be found out in each single bow. It is therefore more correct to say that we *permit* the bow to spring, than that we *make* it spring. But even in springing the tone-power can be varied considerably by approaching the nut, or retiring to the middle of the bow or even beyond it, together with a longer or shorter swing of the hand. Care must be taken that the springing should never suddenly begin or cease against the player's will.

The "springing bow" of course, delivers the tones decidedly detached, while the smooth wrist-stroke keeps between staccato and legato, distinctly articulating the single notes without actual separation. Call that "*non-legato*" if you like.

The wrist-stroke can be brought to such a speed that it becomes impossible to count the strokes. The effect of such bowing, especially in orchestral playing, is that of vehement trembling; so it is generally called "*tremolando*." It is mostly executed with the bow keeping in touch with the string, but sometimes springing. In the latter case the term "*feathering*" might be adequate.

For not too quick and very toneful non-legato passages,

such as are peculiar to the style of composition of P. Rode, R. Kreutzer, Viotti, etc., we can apply a combination of the fore-arm and wrist-strokes, with the bow clinging to the string.

Let us call it (6) *the long detached stroke* ("*grand détaché*" of the French) though it is really not detached, but sounds like any smooth bowing to and fro. We may explain it as a fore-arm stroke lengthened at either end by a swing of the hand, or as a wrist-stroke widened by a slight movement of the fore-arm. It is less tiring and sounds much better than the ordinary fore-arm stroke of similar length. Distinguish the two well. While in the normal fore-arm stroke, taken as a part of a full-length stroke, the hand bends in the wrist in an opposite direction to that in which the fore-arm naturally bends in the elbow, you mean now to bend them both in the same direction, and thus to sum up two small movements into a larger one. Don't exaggerate the length of this stroke, or you will be unable to preserve the straight line in bowing. With some carelessness the bow will also roll over, and it may easily touch adjoining strings.

You will understand the value of this style of bowing, when you consider that real legato-bowing (slurring), however frequently the bow may turn, cannot attain to the same tone-power as this style of bowing to and fro for each note of a quick passage; that therefore the solo-violin would surely be overpowered by a grand pianoforte and especially by an orchestra, if it ventured to slur everything that is not staccato. Trust that this long-detached stroke, like smoothly turning longer strokes, has the effect of legato for a distant hearer, though you treat it as non-legato.

The "*arpeggio*," that is, the breaking up of chords into their single tones, can on the violin be treated legato, non-legato or staccato; and even spiccato with two or three or four notes in one direction of stroke, when the notes are regularly distributed on several strings, with a very charming effect. Naturally the

down-stroke takes the series of notes passing from the farther to the nearer strings, and the up-stroke the reverse series.

Since there is a natural tendency in the down stroke to appear heavier than the up-stroke, while we should be prepared to produce accents in either direction, it is advisable to practise all kinds of bowing, applicable to notes of equal value, in *triplet* figures, which allot the accent to both directions alternately; and also to sometimes *reverse* the bowing of even figures, using the up-stroke for every accent.

Of the three forms of detaching notes of smaller value:

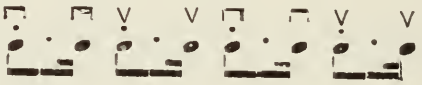
1. Fore-arm staccato or martellato,
2. Back-arm spiccato, and
3. Wrist-spiccato,

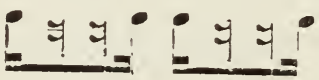
the first is best suitable for very strong, or at least very solid utterance of well-measured passages, while the second suits airy, light expression at a moderate speed. When the latter grows very quick and at the same time heavy, degenerating into regular chopping, it is apt to run wild altogether, striking a wrong string or two strings together. The third form has to take the place of both the others, when the speed is too great for them.

The proper treatment of the dotted note with its accessory note of smaller value, when not slurred, might also be called a special kind of bowing. It is a repeated attack in the same direction for that accessory note. The dotted note must for this purpose lose some particle of its duration, to give time for the new attack; and, indeed, composers often write a rest instead of the lengthening dot like this:

Especially in quick tempo the hearer understands the little note to belong rhythmically and melodically to the following, not to the preceding dotted note; therefore such spelling is undoubtedly correct. The player, then,

is bound to understand the figure, with his mechanical feeling, in the same sense as the author and the hearer. For the dotted notes mainly he changes the stroke direction, preceding each by an attack in the opposite direction, to deliver the little note before each dotted one:



while he does *not* detach the little note from the following dotted one. About the abbreviating sign of a dot *over* a note, I shall speak at the end of the next section. Now, the dotted note has the accent, and, therefore, however short the accented note may be rendered, greater length of bow must be given to it than to the little note. Thus a fore-arm stroke may be required for the dotted note, while a mere swing of the hand may deliver the little note. At a very great speed it becomes difficult to follow this plan of bowing; so, long ago, violinists have hit upon returning to the simple bowing to and fro, but giving the accented note by the *up-stroke*, close to the point of the bow. I cannot agree with this practice, because it is almost impossible to avoid accentuating the wrong note, even when the original dotted note lasts no longer than the other, in this way:  The avoidance of wrong accentuation is the very reason for bowing the figure in that special way described above.

SECTION X.

Distribution of Bowing.

We know that a stroke proceeding at even speed will produce even tone-power, provided that the varying weight of the bow be counterbalanced by varying pressure from the hand. Consequently, when even strength is wanted in bowing to and fro, on notes of equal or unequal value, we must follow this natural

Rule XXVII. (*a*) *Strokes of the same duration must have the same length.* (*b*) *Strokes of unequal duration must be handled so as to let their respective lengths correspond with their respective duration.*

Thus, in a melody composed of whole, half and quarter notes (semibreves, minims and crotchets) which are neither slurred nor detached, but simply *non-legato*, we must give the whole length of bow to the whole note, half length to the half notes, etc. This plan must repeat itself on any smaller scale, that is: when either the speed is too great to allow full-length even on the longest notes, or when the notes are of smaller value at the same speed. Thus in *Allegro* passages, the notes of which are of unequal value, or if of equal value, are to be partly slurred and partly bowed singly, a move of the fore-arm may be wanted for the greater values only, while a swing of the hand suffices for the single notes.

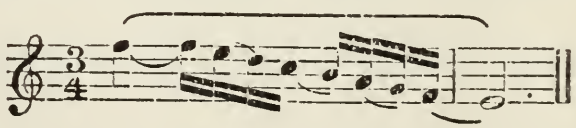
If these natural rules are not observed, the absurdest mistakes in accentuation will surely happen. I will give a striking example: When a phrase begins with a single crotchet or quaver before a bar, while the whole contents of the next measure are to be sustained in one stroke, is anything more required for that short preceding note than the last quarter or eighth of an up-stroke,

close by the nut, or even less, because that note is not accented? Unless we mean to scream out that note much louder than we can possibly render the accent after the bar, dare we rush the short note up through the whole length of the bow? Wrong as this practice is, it is by no means uncommon.

There is a way of correcting wrong distribution, or helping one's self out of uncertainty about the best distribution. It is the most recommended for the dotted rhythm in the preceding section: a repeated attack in the same direction as before. Of course, it can never sound exactly like a smooth turn of the bow; it means detaching. If we don't detach distinctly, we will slur two tones against the author's indication, or, if the second note happens to mean the same pitch as the first, we will even sustain one tone instead of articulating the same tone twice. But that detaching effect of the repeated attack is as a rule exactly what is required, especially when it is applied to the break between two phrases.

The repetition of attack can be managed in three ways:

1. By leaving the string and starting again at the former point of attack (either end, or any place within the bow), that is: 1. by fetching the bow back, which causes rather a long interruption, and is therefore often out of place; 2. by stopping on the way and starting again at the point reached, the plainest and safest form; 3. by momentarily lifting the bow off while the stroke-movement of the arm goes smoothly on. This last form is difficult; but being the softest, it gives a charming effect to "cantabile" strains like this:



It is rather unsafe in the upper half of the bow, because the stick is inclined to rebound.

Insist upon strict observance of all bow-marks on the paper, on the part of a young pupil! Otherwise you will see him form a habit of indecision and clumsiness, which results in a feeble, toneless style of bowing, that exasperating habit of fiddling away with a maximum of six inches length in the middle of the bow, which is quite as unsatisfactory in tone results, as insufficient grip of the left fingers.

I cannot here show all the usual or possible formulas of stroke distribution, for passages in triplets, groups of four, six, eight, nine notes, etc. But this I must mention, that, on one side, such distributions as *involuntarily* produce an accent on the beginning of the group, that is on a rhythmic pulse or beat, by bowing for example the first note down and the other two or three up, are as a rule right; only they should not be chosen when that accent tells too heavily. On the other side, unless the composer has deliberately placed an accent on an intermediate note or on the last note in the group (in an humoristic or passionate mood) such distributions as place an accent on those light particles of the measure, or cut up the whole into jerky irregular bits, are invariably wrong. There is no sense in a rhythmical effect which leads the hearer to believe that we have got out of time, or that we are mixing up groups of two, three and four notes. We are reproducing *music* when we play the fiddle; anything that is musically incorrect or unintelligible, must never be made an object of technical exercise. If the idea of such tricks is that we should work the wrong accentuation out of such figures by persistent practising, it is an insane idea, because nobody will ever succeed—we would only waste our time and patience—it would, besides, be a thing that only a fool would consent to deal with, the introduction of *fancy difficulties* into a study which is already crammed full of natural difficulties!

As the distribution of strokes is closely connected with the graduation of tone-power, we must mind the exception also, which proves the rule: The choice of

length for a set of strokes according to the duration of notes is wrong, when *strokes of shorter duration* are meant to sound *fuller than strokes of longer duration.* You have often enough to give a full length to a crotchet, but only half the bow to a minim which follows, because you are asked to deliver the crotchet *forte* but the minim *piano.*

Conclusion.

I wish all violinists would come to an understanding as to bow-marks on the paper, on the following lines.

The "*slur*" in violin music means *legato*, as in any other music; for us then: smooth flow of the bow in one direction, and smooth turning, if we cannot get all the notes into one bow-length.

The *dot* over or under a note means a slight shortening of its duration, procuring a break or interruption. This sign, apart from its application to each single note of a series that should be detached (staccato), is also specially suitable as a mark for indicating the end of a phrase, by being placed over its last note, just as a *comma* would be placed after the last word of a sentence in written speech, when no sign for *greater* interruption is wanted. For the latter we have the *rest* signs in musical notation.

The sign for extreme shortness of utterance, the *vertical dash* over a note, has been in general use formerly, and has wrongly been superseded by the mere dot. We *must restore this sign for use beside the dot*, for reasons to be explained presently.

So far no alteration is required, only greater accuracy in the use of signs. But of late years some new and combined signs have crept into use which call for investigation. One of these is a *horizontal dash* over a note, meaning the sustaining of the tone to its fullest duration.* On the pianoforte this is equivalent to a *legato* sign, but on the violin it is clearly the right form of demanding a *smooth turn of the bow* after the note in question. This sign is therefore valuable. I would

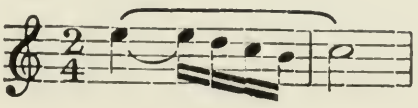
* "Tenuto" stroke.

place it deliberately everywhere over those single notes (in patterns of bowing which mix short slurs with single notes) which are by many writers actually furnished with dots (!) where there can be no question of staccato or spiccato. Why these dots? to show *inattentive* readers once more that this note is not included in a slur? Is it not sufficient to write the slurs as you mean them? I shall presently show by example what I mean.

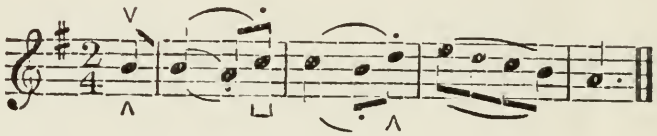
Further there is a *combination of the horizontal dash with the dot* (), which cannot either be misunderstood. It asks us to sustain that note broadly, but still to allow a slight interruption before the next note. This style of utterance is called *semi-staccato*. When there is a series of notes to be treated in this way, the more usual sign is the *slur over dots* (), which should be understood by violinists just as well as by players of wind or key-board instruments. Pianists call this sort of broken legato "*portato*" (carried) which term is not so clear as "semi-staccato."

Unfortunately violinists misread this sign, and so the players of a violin and pianoforte sonata interpret the same passage differently. Why that? Because for us the real "staccato" (in one direction) is marked that way. To avoid this confusion, semi-staccato has of late been marked by horizontal dashes instead of dots under the slur (). But this again looks for the pianist like a double legato-sign. The better correction is, to place not dots, but *vertical dashes under the slur* () in violin music for *real staccato*, and use the dots for semi-staccato.

Now I come to the marking of *shorter slurs within longer ones*, against which I want to raise an emphatic protest. It is, no doubt, right to place a *tie* within a slur, like this:

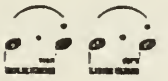
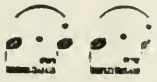


or a series of short slurs, giving a neat articulation of the details of a musical phrase within a long slur which is read as one stroke (see the last example in Section X). But as the slur, ordinary or broken, will naturally be supposed to contain only such notes as belong to *one musical phrase*, it is surely misleading when a *break within a slur* means the *break between two phrases*, such as in this example the upper bow-marks indicate:



What reader, however experienced, will not at first sight conclude that the last quaver in measures (1) and (2) belongs to the same phrase as the preceding notes, while I mean to have a regular comma after the third quaver?

Why should a thing appear twisted in sense at the first reading, and therefore require closer inspection to be understood? What is to become of our playing music at first sight, if the music appears to the eye different from what it should sound like? Will not the inexperienced even overlook the shorter slur within the longer one, and slur away across my comma? I have placed the correction of the marks below the notes. I put my dot under the third quaver in the measure outside the slur. Is that misleading? No; it says that the slur ends in a note which does not get its full duration. If I placed that dot within the slur, the meaning would be less clear. And then I simply place a sign for bow direction (⊓ or ∨) under the last note of the measure because I want that note to be attacked in the same direction in which the crochet and quaver have been delivered. If I meant to use the longer or *sham* slur outside the real one, I would write: ⌒·— deliberately marking the break at the right place, and demanding a smooth turn

of the bow from the last quaver into the new measure. What does that dot over the *last* quaver (in the upper marks) mean? NOTHING, unless it means separation of that note from the PRECEDING one, instead of from the following one. *The dot has never yet meant such a thing.* This absurdity of placing a dot over a note, to demand *detaching backwards* instead of forwards has lately been indulged in by some writers to a great extent. We actually see this in print nowadays:  instead of:  or correcter and completer: with a horizontal dash over the semiquaver. Dots over *both* notes in this rhythm, are quite the usual thing, though they are very rarely right, and surely never at a great speed. The best spelling is with a dot over the longest note and no slur at all, but marks for bow-direction (see also the end of Section IX).

I conclude the description of bowing with this advice to the young violinist: As the bow-instruments approach nearest to the most perfect instrument, the *human voice*, draw as close a parallel as you can between the two. Sing yourself, if you possibly can. If not, observe good singing in others as much as possible. *Your bow is your breath*, wherewith to articulate, to phrase, and to infuse with lyric expression the contents of the music, while the left hand hardly does more than furnishing the notes to be converted into tones.

Of the means of musical expression I may treat at another place. And now, coming to the end of this long treatise on the technical side of violin-playing, I hope that nothing in it may prove unintelligible or misleading, and that I have neither said too much nor omitted anything of importance.

[THE END.]

EXPLANATION OF THE ILLUSTRATIONS.

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FIG. I.—The whole position, front view. The right arm in both its extreme attitudes, with the point of the bow on the first and on the fourth string (Sections I. and VIII.).

FIG. II.—(*a*, *b*, *c*). Positions of the right arm while bowing, with the bow at the nut, in the middle, at the point (Section VIII.).

FIG. III.—Natural form of contact (oblique) between the thumb and the two middle fingers, important for the manner of seizing the bow (Section VII.).

FIG. IV.—How to hold the bow (*a*) inside view; (*b*) outside view in *pianissimo* touch. To put pressure on the bow, the hand leans over towards the side of the first finger (Section VII.).

FIG. V.—(*a*) (*b*). Medium and low first positions of the left hand, on the E strings, with the fingers stopping these tones

(*a*) F♯—G♯.A—B

(*b*) F♮—G♮.A♭—B♭ (Sections II. and III.).

FIG. VI.—Medium first position on the G string; stops A—B.C—D (Sections II. and III.).

FIG. VII.—Side view of medium first position on the G string (Section III.).

FIG. VIII.—The same of the medium fourth position.

FIG. IX.—The same of the seventh position. For figures 8 and 9, the violin is represented as lying more horizontally, to let the fingertips appear above its edge.

N.B.—The bend in the last joint of the fourth finger, in fig. 5, 6, and 7, should appear much more pronounced. So should the bend of all fingers in fig. 8 and 9 (Section IV.).

FIG. X.—Front view of the fourth position. The knuckle of the first finger is removed from the edge of the fingerboard (Section II.).

FIG. XI.—Linear scheme of the fig. 2*a*, *b*, *c*. Here (*a*) stands for the shoulder, (*b*) for the elbow, (*c*) for the wrist. At the "neutral point," when the forearm and the hand form one straight line (between the wrist-positions of C1 and C2), the elbow stands a little farther back than B1 (Section VIII.).