The Violin Makers Journal

FEBRUARY - MARCH, 1962

THE OFFICIAL PUBLICATION OF
THE VIOLIN MAKERS ASSOCIATION OF BRITISH COLUMBIA

Nocola Cosimi, noted Violinist of 17th Century
(See story, page 1)

Issued as an Educational Feature to encourage and develop the art of violin making.

The Violin Makers Journal

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MEETINGS HELD THE SECOND SATURDAY OF EACH MONTH AT 4360 MAIN STREET.

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FRONT COVER STORY

Nocola Cosimi, violinst and composer, was born in Rome 1660, died 1724. He concerted in London around 1702. Composed 18th Century sonatas described in The Strad magazine by Edward van der Straeten. The portrait was taken from one of the rare books in Mr. Herbert Goodkind's collection, see article on page 31 of this issue.

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EDITORIAL PAGE OF *The Violin Makers Journal*

DON WHITE, EDITOR-MANAGER

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REGARDING ACCURACY

Mr. Norman Miller, in his column in this issue, brings forward a subject which the writer has often wondered about, viz.: Just how accurate are some of the plans submitted in many textbooks and also the outlines of different famous violins supplied even by the most reputable firms?

Let me hasten to say that these are supplied by very earnest and sincere men and firms with the sole idea of assisting the beginner to the very best of their ability, but in many instances these men are not draftsmen. Often they copy from some outline they have perhaps been presented with. This plan was probably copied from some previous copy and so on ad inifitum. It would be interesting to see how close the last copy is compared to the original.

Take the most common outline in circulation, that of the famous? "Messiah" by Stradivari. How many makers have taken the trouble to compare the many different outlines that they come across.

We are often told to take the half outline of a violin, mark it on our plate-wood, then turn it over and mark the other half. This when it is well known that, in many instances, the old master violins were not always exact on each side, whether purposely or by accident we do not know! This is particularly noticeable in the design and location of the F holes. Some of the masters are said to have the left F hole slightly lower than the right. They must have had a reason for this for they were super-craftsmen with a perfect "eye" for balance, yet a modern maker is criticised if his F holes are not exact.

It is quite possible that writers of textbooks have "corrected" many of the (as they thought) errors and have come up with a perfectly balanced outline.

The same may be said of the graduations. We are told to follow these and they are declared to be those of some particular "Old Master."

How were these graduations obtained? Did the author have the top and back plates completely removed from the instrument? For with the top only removed it is not easy to get accurate readings of back graduations. It would seem that here is a grand opportunity for some modern draftsman with the necessary measuring instruments--and old master violins!--to submit accurate outlines and graduations for the violin maker. These could be reproduced by a photostatic process instead of each copyist running a pencil round the outline.

"Smiley", the author of Science for the Maker, declares that all Strad's violin plates have the same surface area. Here, perhaps, is one way we can check the outline we are working on. And why has no one ever thought of taking a plaster cast of an old master?

Another, and perhaps the best method, is for the maker to follow the pattern from which he has produced his finest instruments, or would it not be more in character for the craftsman to design his own model.

Why are we so persistent in following someone else?

LOCAL NEWS

by GEORGE FRIESS

On the sick list this month: President G. Heyworth, Captain N. F. Macdonald, and Mr. Gordon Cummings. Our best wishes for a speedy recovery.

The February meeting was not very well attended. No doubt the balmy spring weather had something to do with it.

This not being a business meeting it was decided to have an information discussion on fiddle making, and anything else that was of interest to Violin Makers. Various aspects of violin making were discussed, including bass bars, sound post, bridges, string stop and the relationship between these. A fine discussion ensued, the individual members relating their experiences and findings on the various experiments which they had conducted.

Some time was spent on the subject of a closer liaison between violin teachers and violin makers. It was agreed that an invitation should be extended to the teachers to attend a special meeting for a friendly get together.

Cardo Smalley displays, with pride, his miniature violin.

An exchange of Tapes for comparison with other modern violins met with approval. It was suggested that tapes could be sent to groups in the U. S., Australia and Europe, thus establishing a closer bond between violin makers all over the world.

Only one new violin was introduced by Mr. C. Miller. "Fine work, Courtland." The meeting adjourned at 10:30 p.m.

Illustrated here is the miniature violin which was presented to Mr. Cardo Smalley, Assistant Concert Master of the Vancouver Symphony Orchestra, in appreciation of his kindly interest in our Association, the individual members and our instruments, an interest which has acted as a stimulus, and resulted in a higher standard of violines being made in this area. Mr. Smalley also heads the Committee which judges our instruments at the Pacific National Exhibition every year, and is the donor of the Cardo Smalley award for the "best instrument in the exhibition".

This miniature was made by the writer for presentation by the association to Mr. Smalley.

The back, sides and neck are of curly maple; the top of spruce, graduated, with bass bar and sound post. The purfling is inlaid. The sound post setter is the pointer type and made from a piece of steel E string. The fittings are ebony and include chinrest and mute. The pegs are also hand fitted. Strings are of nylon. Body length 4 1/16 inch. Upper bouts 1 13/16 inch. Middle 1 1/4 inch. Lower Bouts 2 3/8 inch. Ribs are 1/4 inch full.

The bow is octagon, ivory tip, frog of ebony, mother of pearl slide and spots. Silver ferule, screws and eyelet of brass. The hair is nylon and wedged in cavities as in a regular bow.

The case is of wood with ivory finish and lined with silk.

THE SEASONING OF WOOD AND OTHER NOTES

by H. C. Hayes
New South Wales, Australia.

Two methods are used to remove moisture from green timber.

A. Air seasoning

B. Kiln seasoning.

Kiln seasoning has advantages over air-seasoning in the following respects.

A. Carefully controlled conditions can minimise the cause of seasoning defects.

B. Moisture content can be reduced to any desired percentage and to a value lower than that practicable by air seasoning.

C. A considerable reduction in the time required for seasoning.

D. Refractory timbers that cannot be seasoned by air drying without serious degrade can be kiln-seasoned to a low moisture content without loss.

Electrical Moisture meters are used to determine the moisture content of wood. Green timber contains a large quantity of liquid, usually termed "sap" which is mainly water. Sap exists in wood in two forms--as free "moisture" contained within the cells which make up the wood, and as "combined moisture" which is absorbed within the cell walls.

When seasoning, the cells nearest the outside of the wood will dry to, and below fibre saturation point before those on the inside, or core, has reached this condition. The outer portion will shrink before that of the interior, thus setting up a condition of surface tension. If seasoning conditions are too severe, surface tension becomes excessive and to relieve the strain the fibres separate at the surface of the wood, causing cracks or checks often resulting in considerable loss.

Wood is hygroscopic, that is it possesses the property of yielding or of absorbing moisture to or from the surrounding air, its moisture tending always to effect balance with that in the atmosphere. When this balanced condition is reached, and the wood does not tend either to absorb or to lose moisture, its moisture content is said to be in equilibrium. Variations in the relative humidity of the surrounding air, however, will create a tendency in the timber to absorb or lose moisture according to whether the air becomes moister or drier.

The following table gives the moisture equilibrium for timber in three widely separated centers in N. S. Wales Australia.

Town	Maximum	Minimum	Mean
Sydney	13.8	10.0	12.3
Broken Hill, far west	13.7	5.5	9.9
Murwillumbar, far North Coast	17.1	11.1	13.2

The higher figure was obtained during the winter months, and the lower moisture content during the summer

It is generally thought that the older a piece of wood gets the drier it becomes, with a resultant gradual shrinkage. This is not so, for once the wood has air dried to a state of equilibrium moisture content in any particular locality it will not become any drier and the process then becomes one of aging with particular reference to violin wood.

"What is known about the effect of age on violin wood," has it been proved that very old wood gives a better tone than wood which has been seasoned to an equilibrium moisture content in, say, 5 years.

There is also need here for some experimenting to prove whether wood which has been naturally seasoned over a long period is superior in tonal qualities to that which has been scientifically kiln-dried to a low moisture content in a few months.

As Mr. Carmen White says in paragraph 8, page 17, in the February Journal, quote "Old and expensive woods are not necessarily better than newer and plainer woods. Some of the old masterpieces are really made from plain wood--particularly the backs of some Gaglianos and Stradivaris" end quote "Quite so;"plain fissile wood generally speaking gives the best tone.

Curly Maple can look very beautiful in a violin back, but owing to the tough interlocked nature of the grain it is not the ideal violin wood for tone production.

There are two species of Maple common in Europe, both of which were used by the Italian masters for the backs of their violins. Acer pseudoplatanus commonly known as sycamore, or Great Maple, has the lightest wood with an average weight of 38 lbs. per cubic ft. Acer platanoides commonly known as European Maple, or Norway Maple, which has an average weight of 43 lbs a cubic ft.

Today, 400 years after the invention of the violin, we are still using, and striving to make the "best violin" from the same woods as were used then. Perhaps the wood to make the best violin with has yet to be found.

Mr. Thomas Pidcock, a saw miller of Casino, New South Wales, spent many years experimenting with Australian woods for the backs of his violins, sometimes using Picea abies for the fronts. Some of his violins were considered to be very good by experts who played on them. Unfortunately he left no data behind to help those of us who are following in his foot steps.

Another maker still living and making violins at the age of 95 is Mr. Thomas Richards of Camp Mountain, Queensland, who has made 100 violins. It appears as if he has already beaten the great Stradivari by three years and is probably the oldest maker in the world. Mr. Richards made violins only as a hobby, and as far as I know, using only Australian woods. I have not seen any of his violins.

AIR CAPACITY AND BALANCED DESIGN

By Arthur Johnston
Wellington, New Zealand

One must first get rid of the misconception over the wrongly applied term or incorrect term recently used - called "Air tone". It is quite evident there is no scientific knowledge behind that expression. Here again the ? ugly science of Physics will upset those theories of imagination by getting down to hard facts. It is useless writing an article unless fundamental facts are made clear. Dr. Saunders has given some mild and courteous lessons gently chiding some for not learning the A B C of science but I also may have a gentle modest reminder for him and he will be the type who will appreciate it and chuckle.

However, Dr. Saunders and Mr. Skou are correct in some phases, especially Mr. Skou with his stethoscope idea. So should you still wish to raise a controversy I am thinking the ugly face of physics will spoil some lovely 2 a penny ideas and it's all too easy to be wrong. Norman Miller's suggestion that the bass bar should follow the arching of the top, in reverse, as it were, shows how without structural stress knowledge one can go wrong. Mr. Hoing was quite right in pointing out that a flat arch is weaker than a high one and therefore needs a stronger bar than the high arched front whereas Mr. Miller's sketch as shown in the Journal showed that a bar should equal the arch of the front in depth inside below a certain line. According to him that a flat front would have no bar at all - illogical. These kind of statements show how one can easily jump to wrong conclusions without elementary knowledge of fundamentals. You have so little to work on in material size and weight. Seeming comparative small things are comparatively, in fact, very wide and far reaching in effect.

It may be an idea if in a certain technical difficulty, "write Clifford Hoing but give him a good heading" and he will help.

Diagrams with explanations are far better than a lot of writing in which as makers may and often do, put their own interpretation.

Absurdities in nomenclature, in referring to tap tones = Mr. Skou - Micro tones. The only thing in that is you cut away more wood micro tone.

However, an article on "Air Capacity and Resonance," and, certainly there must be a link up with the misconception called Air tone. You cannot clear cut any one branch of science and say its complete in itself. Scientifically, there is no such thing as Air tone. What a shame, as Dr. Saunders says "I am sure you will agree that 'Physics pokes its ugly nose into a lot more subjects than we like, and spoils many pretty ideas'" (page 17, July-August 1961).

However, there is the fact most writers are sincere in their articles. My objection arises when a person, who is ignorant of facts, endeavours to mis represent his wishes as facts.

Well, Physics, 'The master science (light, heat, energy, sound) it comes into everything." We cannot escape its "ugly nose" so one must use it to help us.

* * * * * * * * *

HUMAN STORY

A few months ago John Dennis brought his violin to Ben Berg of Mpls. for a new bass far. Ben, after removing the top, noticed the corners sagged in. To prevent this he placed a couple of cross pieces from corner to corner which he forgot to remove. It didn't take John long to get back to Ben with the question "Are you putting in your bass bars crosswise now?"

The Technique of Violin Making

By Harry Wake

Chapter 3. The Back

Inasmuch as the making of a two piece back involves the extra operation of jointing the two halves, we will assume that you have selected your wood for this type in order that the procedure of jointing can be dealt with.

The wood (if cut on the quarter) Fig. 1 is supplied as a pair of wedges (Fig. 2) and it will be our immediate

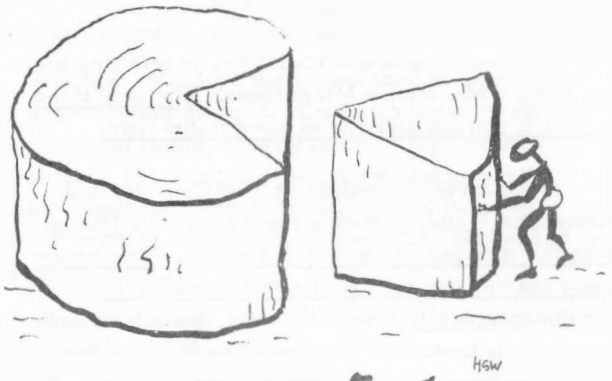


Fig. 1

Fig. 2

concern to glue the thick edges of the wedges together to form a slab with a peak running lengthwise down the center (see Fig. 5.)

Place the two pieces face to face so that the thick edges are uppermost and clamp them in the vise (Fig. 3) with a keen sharp plane take several cuts to bring the edges level and true then test the edges for trueness

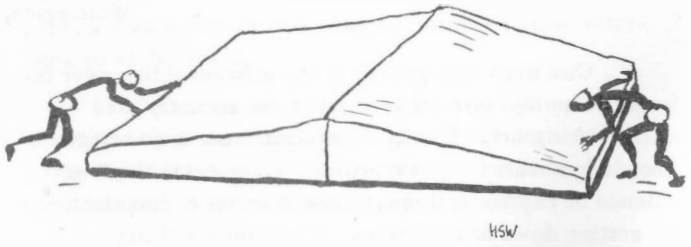


Fig. 5

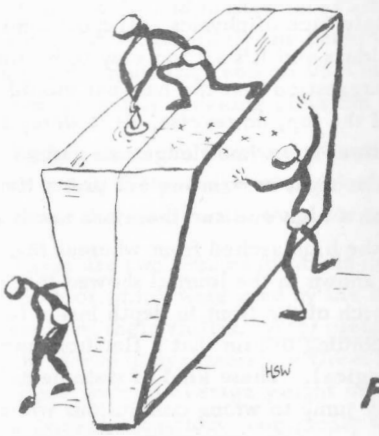


Fig. 3

by holding them together and looking through towards the light (Fig. 4) if you are able to see any light you will have to plane off the high spots until the jointing surfaces are as level as possible; a couple of good strokes with the plane are usually enough, however you must remember that this edge was the outside of the tree and we must try to avoid using the undesirable wood close under the bark; for this reason, examine your wood carefully and try to plane out any sap stains or other discolorations; Should you have difficulty in planing to a good level surface you can finish the fitting of the joining surfaces by laying them with the flat face down on a level table or bench top and rubbing them together with dry pumice powder between them; it's a good idea to glue a temporary small block of wood to the top of each piece for holding while you do

the rubbing; when satisfied that you have a good fit between the two pieces brush on some fresh hot glue (after warming the work) and wring the two pieces together;

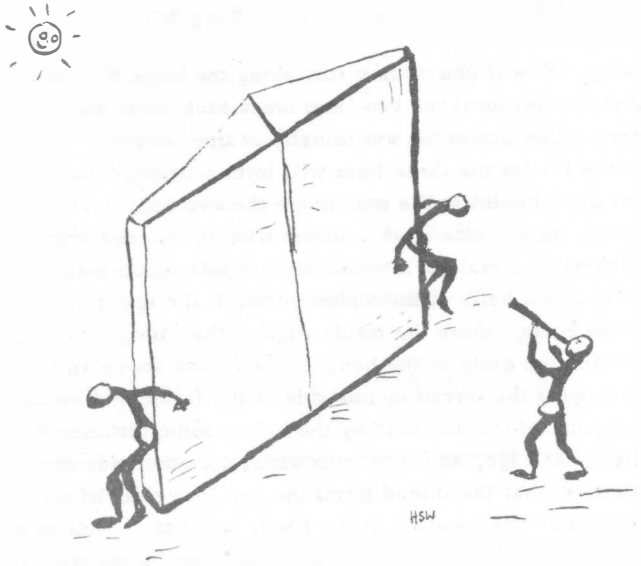


Fig. 4

some may ask what is meant by wringing the pieces together; Well let's take as an example two small flat pieces of wood about an inch or so square and a quarter inch thick; two of these flat surfaces are to be glued together so make sure that they are quite flat, brush some hot glue on each piece and just place the glued faces together, now squeeze them together and while squeezing add a slight twist to the pieces and bring them to the position desired; It can be easily understood that two pieces glued together in this manner do not need any clamp, but we usually put a clamp on just to make sure they don't come apart, then we make the mistake of clamping too tight and squeezing out all the glue; and so it is with the two pieces for our fiddle back: Small engineering gauge blocks of steel are ground flat and true to such great accuracy that several fractional sized pieces can be wrung together to make a desired dimension of unbelievable accuracy, and they will not come apart until you 'unwring' them; these are known in the profession as 'Jo blocks' after the originator of the system 'Johansen'. Now what I am getting at here is that if two flat pieces of steel can be wrung together so that they will hold, surely two flat pieces of wood with glue between them can be wrung together to hold tightly, and the use of clamps is sometimes necessary.

With our two pieces joined together we must now decide which end is which for our fiddle back, in other words do you want the flame of the wood to run upwards or downwards, having decided on this point take the plywood outline pattern that we made earlier and lay it on the flat surface of the back wood with the centerline of the pattern lined up with the center join of the back (Figure 6). Put clamps on to prevent slipping and mark

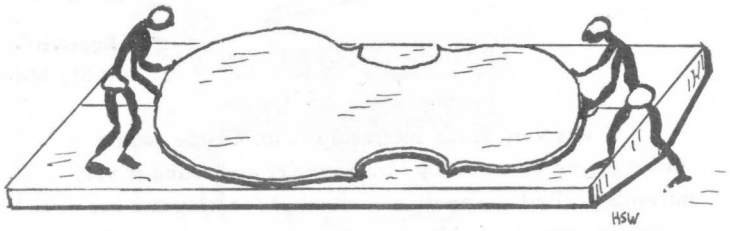


Fig 6

a line around the pattern with a hard pencil; now don't forget the button at the top, and don't make it too small; about 3/4" wide and 3/4" high is a good size for this so you can lay it out at top center.

With coping saw or bandsaw, cut around to the line but stay at least a quarter inch away from the line; use a narrow blade for ease in making the short curves, and don't forget the button; I did forget about this once and inadvertently cut it off; leave plenty of wood in this area as it can always be trimmed off later. With this much accomplished you can now get ready for some good hard work because there is a lot of wood to be removed and a lot of chips to be made, however we will first make something to hold our work in.

Take a piece of quarter inch plywood by about 14"x20" and two strips of the same wood about one inch wide by 20" long; lay the fiddle back with flat face down, lengthwise on the board in the approximate center and place the one inch strips, one on each side, and flat on the board touching the edges of the back; fasten the strips in this position down to the baseboard with small screws; you can now see that your fiddle back can be laid on this board with the flat face down, and pushed into the 'V' you have formed with the strips, and it will be held securely; it remains now only to fasten the baseboard down to the bench with a couple of clamps and you can work on the fiddle back comfortably.

Having completed this project we can now mark a line on the edge of the roughed out back as a guide in our next step of reducing to rough edge thickness; this line will be just a rough guide as to our limits so make it 3/16" from the flat face of the back, even a little more than this would be all right.

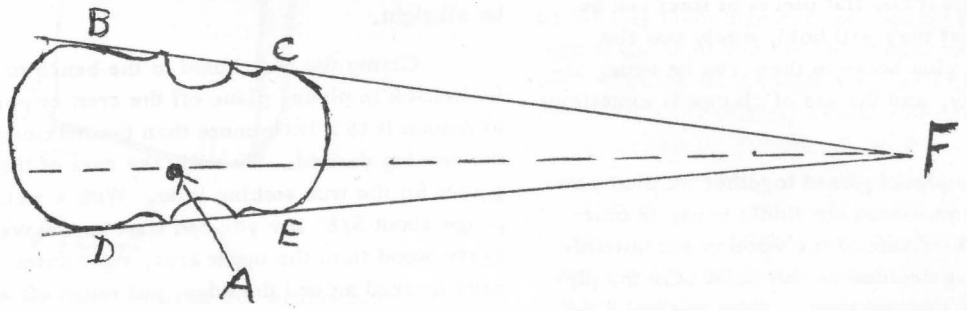
Clamp the base board to the bench top and push the fiddleback in place, plane off the crest or peak of your work to reduce it to a little more than the maximum height of the arching desired. We will take care of the patterns or guides for the true arching later. With a well sharpened gouge about 5/8" size you can start to remove some of the heavy wood from the upper area, right down to the line you have marked around the edge; just rough off all this excess wood by any means available beside the gouge mentioned. However, you will find the gouge very effective if kept very sharp; follow the same procedure with the lower part of the back; also the sides, reducing to the line all the way around. (To be continued)

"BASS BARS AGAIN"

by Egerton W. Shrubsole
Sault St. Marie, Ontario

I was very much interested in an article, some time ago, on bass bars by Mr. Sangster and found it very intriguing. Perhaps another method of locating the bar and some remarks on Mr. Sangster's method will not be out of place. First I want it to be understood that what I have to say is not written in a spirit of criticism but only to compare the two methods. I am totally in agreement with Mr. Sangster when he measured 1 3/4 inches from either end to locate the ends of the bar. Also, I agree completely with the measurement of 17/32 from the centre join at the location of the bridge, but I am at a loss to understand why he arbitrarily decided that 3/8" is the proper distance from the centre join to place the top end of the bar. This measurement controls the angle that the bar makes with the centre join. Surely it is obvious that a fiddle with wide upper bouts should have the bar at its upper end further from the centre join than one with narrow upper bouts. Also how about the Cello, and even more so; how about the viola where measurements vary greatly? Does Mr. Sangster use a definite measurement at the top of the bass bar and hence an identical angle with the centre join on these instruments also? I have checked Mr. Sangster's method with my own on my own outline--uper bouts 6 9/16", lower bouts 8 1/16"--and have found that his method places the bar at a slightly more acute angle (about 1/16" at each end of the bar) than my method does.

Here is my line of reasoning. If the outline of the fiddle were rectangular then the bar would be parallel to the centre join. Also I think you will concede that if the outline of the fiddle were triangular the bar should be on a line drawn from the apex of the triangle through the foot of the bridge. Now fasten your violin top to your work bench by means of short boards, one on each side, touching the outline at the widest point of both the upper and lower bouts. These boards if long enough will touch each other at a point some distance beyond the upper end of the belly. Now if you mark a line along the edge of each of these boards until the two lines meet each other and draw a line across the violin belly at the notches in the f holes the three lines will form a triangle and the bar should point at the spot where the two long lines meet. In practice I get a helper with an awl and a spool of thread. I make a mark an inch or so long on both sides of the belly at the widest points of the upper and lower bouts, where the inside edge of the linings will go. I fasten the belly to the bench as described above and by passing the thread up one side of the fiddle and around the point of the awl held by the helper some distance from the upper edge, and then back along the other side of the fiddle so that the thread forms the two long sides of the triangle. The location at the f hole notches has been marked, 17/32 from the centre join. Now by manipulating the awl and the thread I get the thread to pass exactly over the 4 marks made at the widest parts of both the upper and lower bouts. When this has been achieved the awl is at the apex of the triangle. Now swing one piece of thread towards the centre of the fiddle until it passes directly over the mark made between the f hole notches. A mark is now made at the top and bottom edge of the outline where the thread passes and these marks are then joined with a line by means of a ruler. This line gives the deviation of the bass bar and it will work on any instrument no matter what the measurements are. In actual practice I have made a little nick on the metal outline pattern where this line crosses the top and bottom edges of the outline and hence all I have to do is place the outline pattern on the fiddle belly and make a mark where these nicks are and I have the angle of deviation marked exactly. Perhaps I have not made myself clear, so I'll add a bit of a diagram.



Let BCD & E be the widest points of both the upper and lower bouts and A the spot at the bridge where the bar will be located. Extend the lines BC and DE until they meet at F. The bar will lie on a line drawn from A to F. Very simple and I believe the absolutely correct slant. The bar is distant from the centre join or from the outside edge the same ratio in both the upper and lower bouts. I would welcome comments on this system.

The four "first chairs" of the Portland Symphony are here seen with instruments made by one of our associate members, Dr. Dan N. Steffanoff. Tonal quality of instruments was pronounced first class. The musicians are: Hugh Ewart and Carl Ottobrino, violins; Glenn Reeves, viola, and Roman Dukson, cello, while the maker stands in the rear. Further particulars in next issue.

NATIVE WOODS OF BRITISH COLUMBIA SUITABLE FOR VIOLIN CONSTRUCTION, by Don White

Chapter 4. Broad Leaf Maple

In the Garden of Eden, planted by God,
There were goodly trees in the springing sod--
Trees of beauty and height and grace,
To stand in splendour before His face:

He made them of every grain and girth
For the use of man in the Garden of Earth.
Then lest the soul should not lift her eyes
From the gift to the Giver of Paradise,
On the crown of a hill, for all to see,
God planted a scarlet maple tree.
.... Bliss Carman.

Instead of discussing Engelman spruce in this issue as I promised in my previous article on trees, I should like to talk about our wonderful Broadleaf Maple. Of the three species of Maple native to B.C., the Broadleaf Maple (Acer macrophyllum) is the only one that reaches tree-size proportions, so is the only variety suitable for making violins.

It is frequently a medium sized tree of 50 to 70 feet in height and about 2 ft. or more in diameter. Sometimes it reaches a height of 100 ft. or more. In open spaces it forms a very beautiful tree. In Canada its growth is confined to the coast and islands of British Columbia

The maple leaf is the official emblemof Canada, but not the variety now under discussion. The sugar maple is the "official" tree. The sugar maple (Acer saccharum Marsh) is one of the most conspicuous features of the Eastern Canadian woods. In autumn its leaves turn to brilliant shades of deep red scarlet, golden orange and bright yellow; one has to see such colouring to believe it.

The grain, flame or pattern of the Broad Leaf Maple varies to some extent, according to locality of growth. The reason for this change of flame pattern in all maples is still a mystery to science. Trees grown in close proximity will often be entirely different, some having plain wood, others curly and again others will be 'fiddle-back' maple.

'Fiddle-back' maple is not too plentiful in B. C. Most of it running to the curly type. Our curly maple, called by some 'quilt maple' is most beautiful to behold and has proven itself as a fine violin wood by producing some most excellent instruments. The viola made by our local member Peder Svindsay, was of curly maple. It won the silver medal when exhibited at Ascoli Piceno, Italy, in 1959.

Before proceeding it might be well to define more clearly the flame patterns of our maple. Some readers might not understand, for instance, the term 'fiddle-back'.

By 'fiddle-back' I refer to the most common type of maple. The type which, when used as a two piece back, forms a "v".

The following diagrams, while not works of art, will indicate the different types of flame.

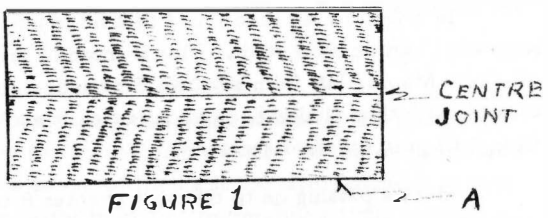


FIGURE 1

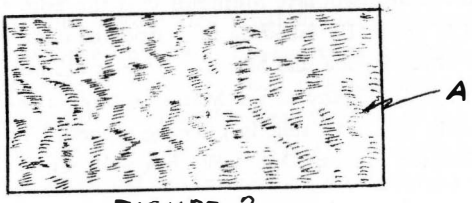


FIGURE 2

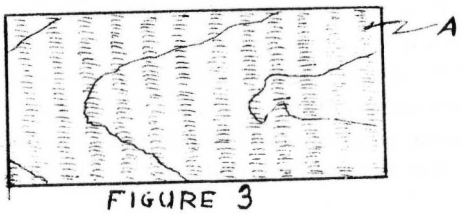


FIGURE 3

Fig. 1 is Fiddle-back and shows a two piece back with center joint. A indicates the "hill" portion of flame. Fig. 2 is curly maple (or quilt) and shows a one piece back. Curly maple is generally used in one piece but very beautiful effects can be obtained in a 2 piece back. Thus:

The A in the diagram again indicates the "hill" portion and the remainder must be imagined as "valleys". These "valleys" in a choice piece of curly maple show great depth. Looking at them with the correct light and angle they appear to be sometimes an inch or more deep. This where the graduation shows not more than 1/8 inch.

To get this 3rd dimensional effect requires correct varnish and skill in applying same. This, of course applies to all flame maple and is an art in which otherwise good workmen sometimes fall down.

Richly colored varnish, of poor quality, is brushed on coat after coat and kills the illusion of depth. The varnish after application must show complete transparency, the color aiding and not destroying the 3rd dimensional effect. A yellow "ground" coat followed by coats of different colored varnish assists the artist to a great extent in securing the desired results.

A third type of flame is shown in Fig. 3. This is obtained by cutting curly maple on the "slab". A again shows the "hills" which run right across the wood but faint in character. The real "grain" of the wood shows in irregular patterns, mostly of a circular nature. The writer's best toned violin and viola were of the Fig. 3 pattern. Also the violin made by Mr. Fred Fehr of Kankakee, Ill. and featured in the July-Aug. issue of the Journal, page 11 . A violin Mr. Fehr is very pleased with.

In a letter Fred mentioned that he found the wood somewhat hard to work with. This is more or less true of all Curly Maple, but from my own experience not harder to work with than fiddle-back which often has a very firm, hill part, of the flame.

(Before passing on to the next chapter it might be well to advise Associate Members that the editor of the Journal is gradually building up a stock of choice wood, mostly Sitka Spruce and Maple. This is all well seasoned but not aged.) Many of our Members have already tried this maple and have sent in glowing reports. To mention one, Kristian Skou of Denmark, has written:

"What splendid wood! I couldn't help it. I just had to plane one side of the plates to see the grains and the figures exactly--it is wonderful. I will build a violin from it -- certainly, but I am not sure I will have the heart to sell the violin. I will keep the violin for my own use, and I will call the violin "Don" -- I like to call some of my violins by someone's name.

When covered with my golden-red varnish (with iron as the colouring agent) the figures of the maple will look like hammered gold.

The maple is unusual compared with European maple, but very, very beautiful. When first I took it in my hands I thought it a little heavy in weight, but in fact it isn't.

I have tested its specific weight to 0,59, and ordinary European maple has a specific weight of 0,6 or a little more. It is said that American maple contains more sugar etc. in the sap than European maple. I don't know if this is correct, but it doesn't matter. The only drawback will be that the hardening process will last somewhat longer, as all the sap substances have to be oxidized -- but I am in no hurry.

The Sitka Spruce is likewise excellent wood. Specific weight 0,43 -- the same as for good Swiss "pine" (spruce). The elasticity coefficient seems to be nearly the same as for Picea abies, but the elasticity limit and the breaking limit is much greater.

"The "bear scratches" are a delight to the eye. These figures are very likely -- and may have the same origin -- to the figures in "Haselfichte" which in German are called "Hühnertritte" (fowl's foot prints)."

* * * * * * *

Pete Blackstad received a violin from Benson, Minn. telling him to do whatever necessary to improve the tone. He decided that it needed a new bass bar. He removed the old one but somehow forgot to put in a new one. It wasn't long until he got a letter saying the violin sounded even worse. You can imagine his surprise when he discovered his mistake.

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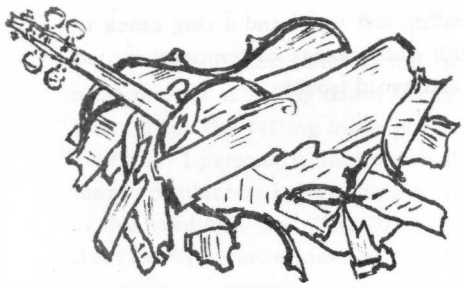

Fiddle Fix.

By H.S. Wake.

It is always good to see a well finished neck on a violin; highly polished for easy playing, and with the wood grain well defined to accent its beauty and blend with the rest of the fiddle.

Most necks are finished too light in color; this makes sharp contrast with the rest of the fiddle and I feel that by making the neck a little darker, or of equal density in color with the rest of the instrument, it will then not be as it were, a bridge between the body and the head, but in appearance, a part of the whole concept.

I won't go into actual shaping of the neck at this time; its proper curves, length and thicknesses; just the finishing.

Assuming that all is correct and the neck is ready for finish, all sanding has been done and the wood is very smooth: Mix a good strong solution of permanganate of potash and water with just a few drops of vinegar (dilute acetic acid) added: With a soft brush or piece of rag, sop the solution onto the wood while holding the fiddle in a horizontal position, this is to prevent any streakiness; Allow a few seconds for it to soak in and then wipe off the excess with a damp rag and hang the fiddle to dry: The wetting will have brought up the fibers of the wood and it will look very dark but most of this is on the surface; be sure that the wood is dry and then rub in linseed oil with the fingers; apply it freely and rub in well, then allow a few minutes for penetration before wiping off the excess oil. Now with the very finest garnet paper dipped in oil, sand down carefully to a nice finish, using plenty of oil and a light circular motion to avoid streaks; watch the work carefully so that you don't get it too light in color and when satisfied, wipe off and prepare for the final step.

Take a piece of lintless material, men's white shirt material is excellent; wrap this around your index finger and put just the slightest touch of linseed oil to it, now dip the rag covered finger in orange shellac and quickly and smoothly, with a light circular motion rub the shellac over the surface of the neck; replenish the shellac to the rag occasionally and also a tiny touch of oil if there is any tendency to stick, but keep it moving and with light circular motion until the neck shows a nice french polish all over.

Note: Permanganate stain on fingers or wood can be completely and safely bleached out with a solution of photographic hypo.

Dissolve two tablespoons of sodium thiosulfate (hypo) in eight ozs. warm water.

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When removing a fingerboard in the customary manner with a dull knife, there is a little trick that will make it easier and with less risk of splitting the wood.

Get the knife blade well started and with a medicine dropper inject a few drops of alcohol into the opening.

This does <u>not</u> soften the glue, but the alcohol moving in just ahead of the blade appears to make the dry glue release its hold, and the fingerboard lifts off easily in most cases. (Note.: Keep the alcohol off the fiddle and keep a rag over your left hand; even a dull knife can give you a nasty dig should the fingerboard let go suddenly.)

. . . . . .

When fitting the ebony saddle at the bottom of your fiddle (or anyone else's fiddle for that matter) don't make the mistake of fitting it too tight; make it so that it just fits easily in place, preferably a little loose.

You must have noticed that so many fiddles have a crack, and sometimes two of them starting at the bottom on each side of the ebony saddle; if not properly taken care of, this crack will extend right up to the sound post or up alongside the bassbar. Ebony is a dense heavy wood that does not expand or contract much during changes of temperature and humidity; in other words, it stays right where you put it; also the top is glued firmly to the block in this area and will change little, if any; on the other hand, the top being what it is, will expand and contract with every whim of the elements, except at the block; there being no purfling where the saddle lies, something has to give; and the line of least resistance is with the

grain of the top wood.

The saddle being fixed and solid, if fitted tightly in place with its ends bearing on the soft spruce, offers resistance to the expanding soft wood and a tiny crack is started which grows with each change of temperature, so fit the saddle loosely and avoid trouble.

THE ARCHING OF PLATES

by Jack Batts

Johnston City, Illinois

Editor's Note: In our Editorial last month, it was suggested that Professional Makers were sometimes reluctant to supply information. Mr. Jack Batts has produced some of the finest violins in America and is a Repairer by trade. In a letter to me he says: "Regardless of Public Opinion I feel confident that this day finds more good violin makers in the world than ever before." We thank Jack for telling us "all he knows" on the subject of Arching. D. W.

. . . . . .

Many pages have been written on the subject of plate arching. Each advanced violin maker has his own concepts of the ideal plate shapes. Usually the principles of Stradivari are accepted by every one as being worthy of reproduction. The truth concerning the matter is somewhat hard to come by, as few of us have the opportunity to study the original instruments made by the Italian masters.

While I have had the good fortune to examine violins by most of the old Italians, I can only come to the conclusion that the archings were never exactly the same, even by the same makers. The archings of some could not by the wildest stretch of the imagination be tolerated today, nor could they have been capable of producing the ultimate in the desired tone of their day.

It is not enough just to have a set of guides to follow, and follow them blindly plate after plate. The arching concept should be flexible to conform to the wood. The thickness problem is constantly discussed in our journal, but before we can discuss thickness intelligently we must establish shape and height of plates. When this subject has been settled, the problem of thickness is then in order, and only then.

In order to better cope with the different plate woods, it is necessary to understand the principle of arching. First we should learn to use our planes from end to end of plates. When the arching is finished it should have the appearance of having been worked from end to end rather than around and around the edges. This latter method will give only a hill and valley arching that is its own shackles. Besides lacking the beauty of a well designed plate, it is bound down by its erratic contour.

One of the most common faults is the scooped out shape at the upper end of the F holes usually caused by the around and around manner of workings. The archings at this point should move across with a somewhat wide table and a gentle arch to fall suddenly into the purfling. The arching throughout the plate should grow out of the purfling without a hint of ditching inside the purfling. The only perceptible rise anywhere on the edge of plate would be the delicate rise of edge outside purfling.

When this end to end use of the plane has been completed and the F hole drawn, allowing at least 1MM of wood on each side of a standard bridge (this measurement being at upper inside F.), the layout should show a parallel line with the ribs. Never, as in the case of the around and around shaping, where the F holes kick up at the lower ends. This is the way to build a free plate.

Now let us go a bit further, when I speak of flexibility of manner of arching, I have reference only to a slight change in height of plates and degrees of arching of this plate. Never a change of principle. But, in the case of softer wood the arching both transverse and longitudinally should be slightly more abrupt. A firmer wood needs to be more gentle in arch, which gives one to a certain extent the same results, as more or less wood. However, the more or less wood is used in conjunction with the varied plate shapes. One plus the other allows the plate to be brought to its maximum production without too much wood or too much arch.

Now the parallel FF holes within themselves do not make better tonal production, but only on a plate arched correctly do they lay parallel with the ribs in a natural manner. I have seen some very famous violins with the lower end of FF kicked up to a degree, and, I must add that some of our fine concert violins are wonderful despite this arrangement of F holes. We can only wonder whether they would have been better yet had they laid straight.

The highest point of top arching is accepted by most makers as laying under the bridge. I also accept this. Then the falling away is a matter of individual conception. I personally feel that a slight flatting along the length of plate in bridge vicinity is desirable more or less as the need may be. The flatter the bridge table the freer the vibration; but remember that too much freedom is not desirable. A certain amount of resistance is necessary, whereby comes the application of the principles of arching.

It does seem likely that when templates were used by the old masters, they were used as guides rather than as a method of producing a duplicate shape one after another.

An overall equal thickness is hard to beat. Usually somewhere between 2.5 and 3.0MM will catch everything suitable for use in a violin top. But please permit me to add hastily that I am aware that many good violins have been made by using entirely different methods and measurements.

If you do not have the years of experience, or the confidence in your own judgment, try the method Carmen White advocates for weight and resonance. Journal Dec. 1960, page 11. It will get as close as any guess I know of, and it is simple enough for a beginner to handle, and accurate enough for a professional to use. This method will tell you where between 2.5 and 3.0 the proper thickness lies. The height of the top plate at bridge through plank after arching and before inside is disturbed should be 16MM. This is a good all around measurement.

To be sure that everything is growing away from the center point under bridge when belly is finished, block up on both ends, plate upside down, level lengthwise, and crosswise with carpenter level. Make your point on center join (if it is in center) and on a line crossing from one inside F hole nick to the other. Place a ball bearing on the rim of plate at any point and permit it to seek its lowest level. If you have established your highest point of arching in the right place, you can go to lunch and when you come back the bearing will be laying dead on your point. Such arching will not damage the overall results of violin tone production.

May I add a word of caution here. Be sure that slightly more wood is left in the near vicinity of F hole edges, and at FF ends and in the general areas of the C's including edges of plates. Edge here should be 3.9MM upper and lower edge 3.6MM. A half MM or so additional wood over the post will give added strength and does not damage tone. I use an extension of wood, a tapered spring so to speak, extending 15MM or so from edge, which allows the edge thickness to taper into the plate and work nicely into the 2.5 overall plate thickness at this 15MM margin. This taper can be used to good advantage by slightly lengthening or shortening it, depending on the firmness of wood. I find this method useful on back plate as well, and, on the belly it serves to confine the vibration mainly to the central or F hole region of plate, which seems to add a solid quality to the feel of the violin, while still allowing the plates to be light enough in wood to vibrate freely.

Permit me to add a word here in self defence, and also in your defence. If you use the average violin supply house wood, and cut it 2.5 all over from lining to lining, it will almost certainly be too light. So unless you use the additional thickness in the right places, and may I add, varnish it properly, giving proper consideration to the wood treatment before varnishing, you had better stick to the text book methods of so called violin making.

I may write something on this subject later if I survive the results of this article. One thing is certain, no part of violin making is so controversial, as that of varnish and wood treatment. The most unbelievable part of the utter confusion concerning the subject is the fact that the differences are not confined to the beginners. The question has not been answered to an absolute conclusion by the world's greatest repairmen and makers. Some of these men who have been inside the finest Italian violins in the world, patched and cut those plates like a carrot, tell me, in speaking of Italian varnishes of the classic period, "the best ones are soft, tender and chippy by nature, in their present state. They wore off easily, yet were applied so as to be in the pores on the woods surface. Our personal opinion is that the Italians applied varnish to the wood without sizing, yet, in some cases one cannot be sure."

So gentlemen, when men of world wide acclaim such as the man whose words I just quoted say, "yet, we cannot be sure," those of us who work a few hours a week for past time, can't hope to establish an absolute truth by a, "they did"--"they did not," sort of journalism. Therefore I offer my opinion only as an opinion to this date, subject to change and not as a positive assertion regarding the method used by the masters.

After years of trying many "sizings," fillers and varnish only on bare wood, I feel that my best results have come from plates filled partly or all the way through, so that they literally acted as a light wooden diaphragm. We must go into this in the next article. For the measurements I have given you will be too light without the fillers.

Let us now take up the problems of the back plate. Many of the text books and some of our most famous violin makers use the well known method of forming the highest point of arching at the central point between the C's and therefore and rightly so they also build their heaviest part of the graduation at this point, which by my calculation places the heaviest weight 1 1/2 inches from the base of the post and up hill all the way. It also is placed in the narrowest part of the plate where it has the

shortest lever. Incidentally, after many years of serious consideration of the matter (it, as of now) seems to me, that the violin operates on the world's most perfect system of leverage. Following this concept through to its logical conclusion, places the highest point of arching on a line drawn across the plate and through the base of the sound post. Highest point of arching then established at a point where this line crosses center joint and the thickest part of plate is also located here. All of which is contrary to the most usual method of arching and graduating. Again use the level and steel bearing to test the highest point of arching as we did in top. 15MM should be used as a height of back arching.

A word about top wood. It is my belief that the grain should be well defined straight and regular if possible. But regularity is not absolutely necessary. The plank or quarter should give off a clear bell like ring when handling, and with a high pitch. The wood between the grain should not be too hard. One should be able to dent it with the thumb nail rather easily. Here is another important feature in choosing top wood. When the plate is joined and arched an examination of the ends of grain should show a slight toeing in at ends of plate. The wood should be cut from the log with this important feature in mind, but it seldom is.

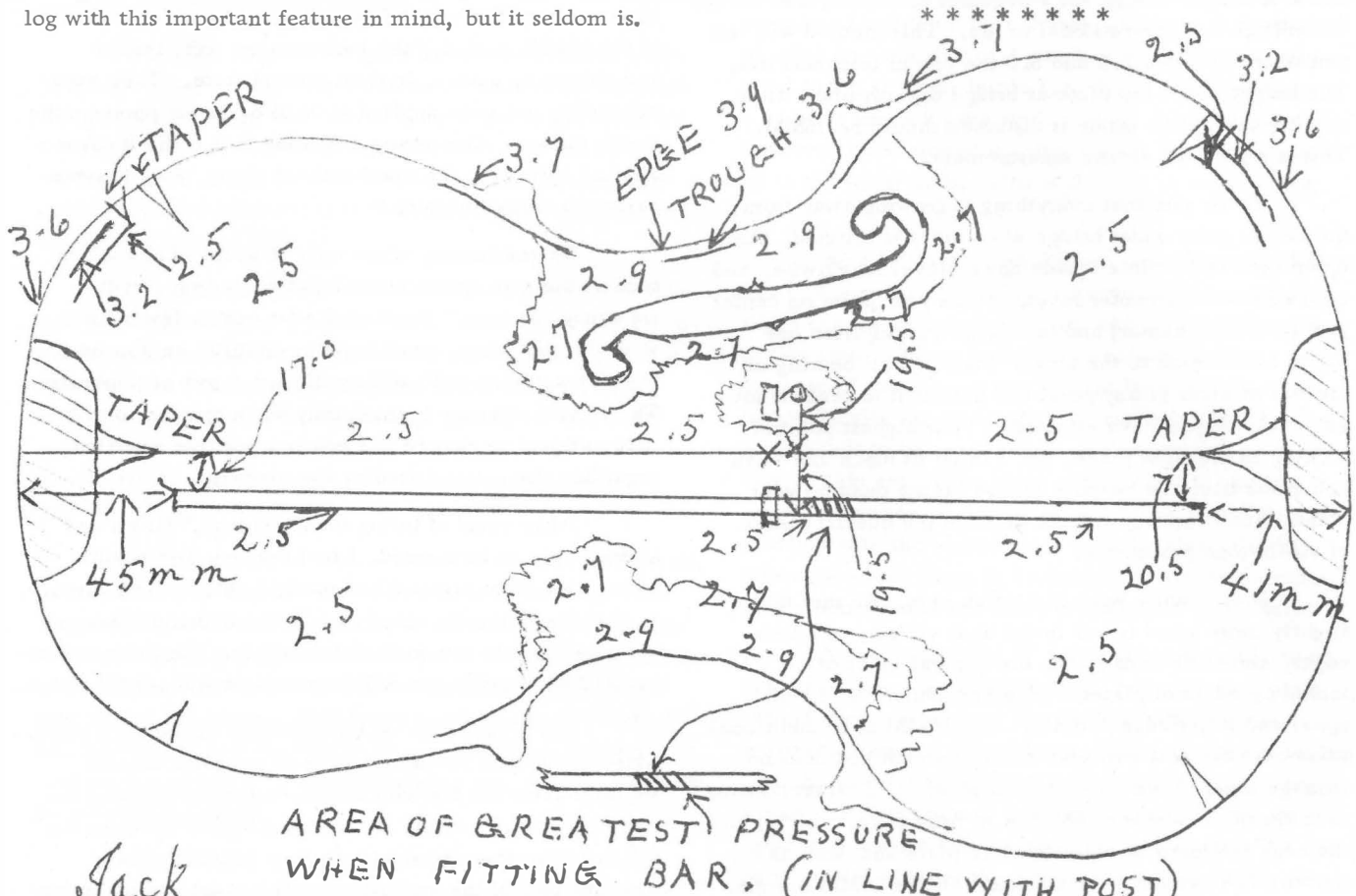
Many makers leave the ribs too heavy. They should be 1MM thick except at chin rest area where they may be made 1.3MM for added strength, and a direct quote from one of the world's finest makers, "this is very essential to good tone."

Now that we have the top and back completed allow me to refer you to an article on the placing and shaping of the bass bar. Which article also gives instructions concerning the building of a guitar shaped ring to be used in conjunction with a bar fitted with spring.

You will find these instructions in the July and August 1961 Journal on page 4.

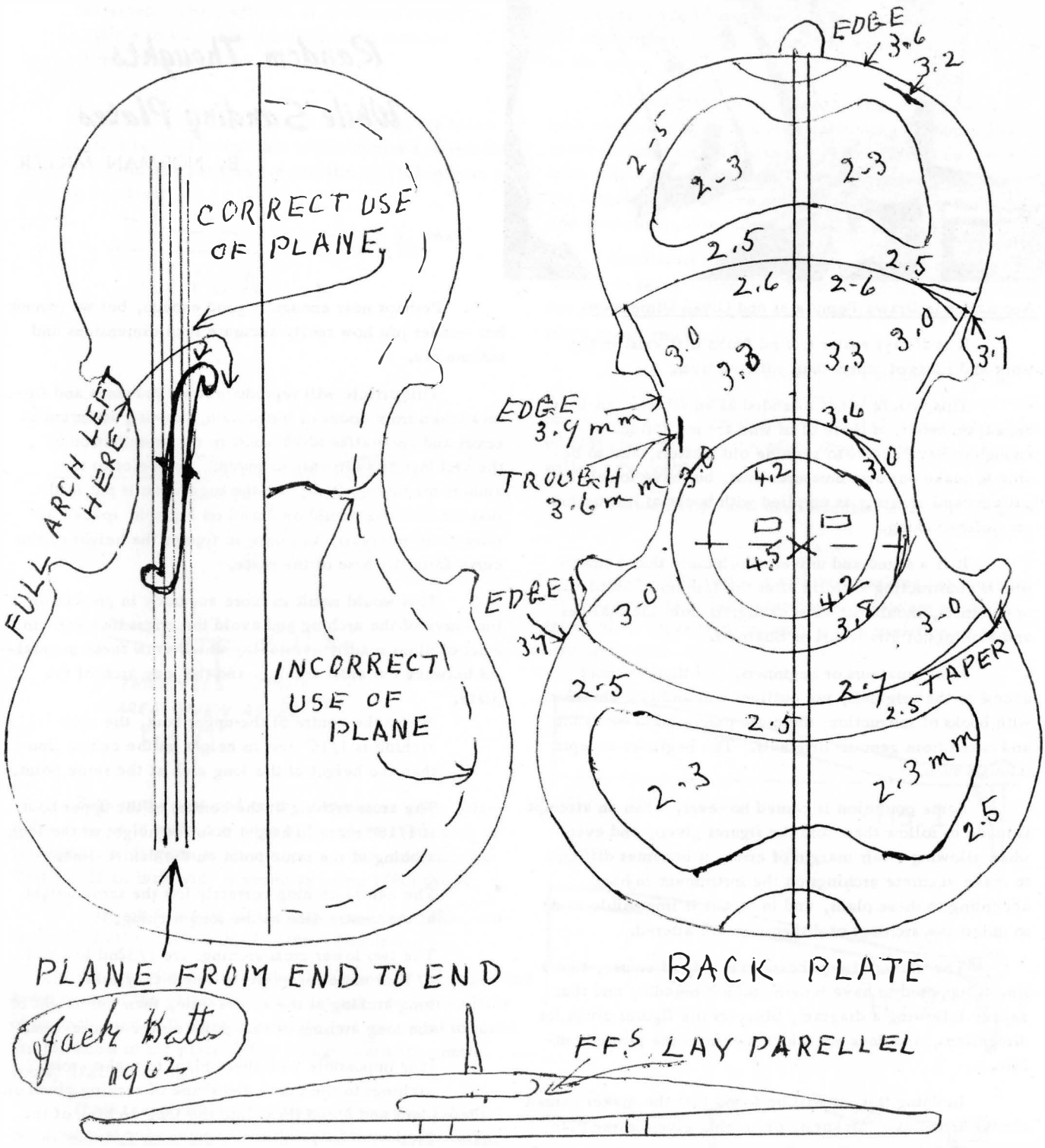
These two articles plus perhaps one more, on varnishing and fitting will, I feel certain, give any beginner a firm and dependable footing for his sojourn into the wonderful world of violin-making.

And something keeps telling me that had Stradivarius shared his hard earned advantages with his future fellow violin makers, we would have fewer talented violinists giving up the business because they find little pleasure in a losing battle with a glorified packing box.



Jack Batts 1962

TOP PLATE



Arching of Plates by Jack Botts

Random Thoughts While Sanding Plates

By NORMAN MILLER

Anomalies in Drawn Templates and Given Dimensions

It is always easier to find faults that exist in the work and ideas of others than with our own.

This article is not intended as an attack, but is an appeal on behalf of those of us who are not fortunate enough to have access to genuine old masters, and so be able to make our own measurements, but have to rely on patterns and archings as supplied with books of instruction on violin-making.

It is a sound and universal principle that a maker who is constructing a violin after the fashion of Stradavari or Guarneri, should not alter or digress from the outlines and archings of Stradavari or Guarneri.

Most amateurs or beginners, and those without access to the originals, use outlines and archings obtained with books of instruction; these are purported to be exact and taken from genuine originals. The beginner accepts them as such.

Some confusion is caused however, when an attempt is made to follow these and the figures given, and even when allowing a fair margin of error, it becomes difficult to make accurate archings on the instrument in hand according to these plans, and in fact it is impossible to do so unless the archings or dimensions are altered.

The maker always bears in mind, of course, that a line is supposed to have length and not breadth, and that anyone following a diagram, observes the figures given for dimensions, and does not take them from the printed outline.

In doing this, it will be found that the maker cannot always arrive at a thickness, or height, given in the plan, finding that an error of 1/32nd of an inch and even as much as 1/16th of an inch exists.

Perhaps the small margin of 1/32 is not enough to worry about, and could be considered as splitting hairs. Perhaps the maker should finish as near as he can and blithely imagine that he has not altered the arching.

Perhaps near enough is good enough, but we cannot but wonder just how really accurate such dimensions and outline are.

This article will reproduce some drawings and figures taken from books of instruction, drawing attention to errors and anomalies which exist in the presentation of the archings and dimensions given. Apologies to the authors for finding fault, but the suggestion is put forth that all archings should be drawn on a graph, spaced at reasonable intervals, and show in figures the height of the curve from the base of the plate.

This would result in more accuracy in presenting the curve of the arching and avoid the errors that exist in a set of plans readily available, which show these anomalies between the cross archings and the long arch of the plate.

Across the centre of the upper bout, the cross arching is 1/16" less in height on the centre line than the height of the long arch at the same point.

The cross arching at the corners of the upper bout is 1/16" more in height than the height of the long arching at the same point on the centre-line.

The centre arching correctly has the same height at the centre-line as the long arching.

The two lower cross archings are 1/32nd less and 1/32nd more respectively where they meet the long arching at the centre-line, than the height of the long arching at that point on the centre-line.

It is impossible with these plans to make cross archings to the curve and shape of arching given on these plans and blend them into the long arching of the plate. Either the long arching or the cross archings are incorrect. The maker now has the problem of deciding which to take as the true arch, and which of the unalterable will he alter to make an evenly gradated profile. In the text of the book, the author admonishes us and says: "It is a waste of time and effort to try and improve on the design finalised by Stradavari. If you alter the height of

arching, height of sides etc., the quantity and quality of tone are almost sure to be adversely affected. The craftsman is cautioned strictly to adhere to the plans and dimensions detailed throughout this book."

. . . . . .

The following drawings and dimensions are taken from another book of instruction which carries a statement that the figures and patterns are full size and taken from a genuine Stradavari.

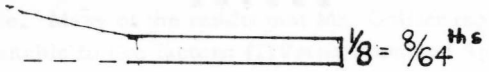


FIG. A.

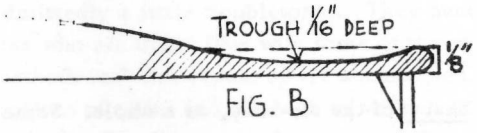


FIG. B

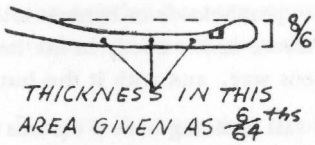


FIG. C.

Both in the text and on the dimensions given this author asks us to make the edge of the plate 1/8th inch in thickness. A diagram is given showing this, and also the 'flat', half an inch wide is shown as being 1/8th thick.

A trough is shown all the way round the fiddle, cut into this 'flat' to the depth of 1/16th of an inch.

We are asked to make the thicknesses of the upper and lower bouts of the plates at the linings not less than 6/64ths of an inch, and still more impossible, we are asked to make the thickness of the plate at the linings across the centre bouts, 1/8th of an inch.

If we take 4/64ths away from the existing 8/64ths, when we make the trough, it is impossible to finish with even 6/64ths, and how it is expected to give a plate with a thickness at the linings of 1/8th is beyond comprehension.

It is impossible to use the curves given for the archings and the dimensions given. Either the arching curves are incorrect or the dimensions are. The book has been on the market for a long time and no doubt many fiddles have been made with its use. It is to be wondered how the maker overcame the error. He would have to alter one or the other.

Although this book gives the flat as being half an inch wide, if you use the archings given, the upper and lower archings do not begin to rise for one and one-eighth inch. Note this in diagram 'B' and 'C'. (The archings on the diagrams above have been taken from those in the book, and they sweep down into the 'flat' as shown.)

Stradavari has been given acclaim for having the wisdom to remove from the Amatise arching a "scoop" from the edge to the rise of the arch, and in so doing obtained more power and quality.

It will be seen on drawing 'B' that the sweep in these archings dips under the level of the edge for one and one-eighth inch. Could this trough, 1/16" deep in a plate of 1/8th inch thick at the edge, dipping for over an inch be called a "scoop"?

Incidentally, how deep was the "scoop" of Amati?

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It could be that this article is making too much of the difference of 1/32nd. Submitted below are some diagrams of an upper bout arching, with a variation of 1/32 here and there.

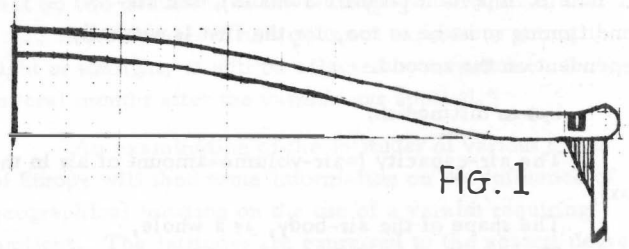


FIG. 1

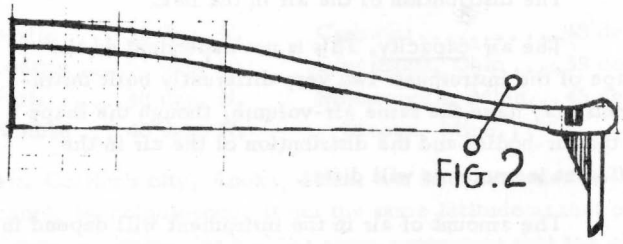


FIG. 2

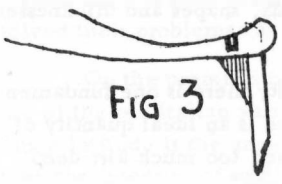


FIG 3

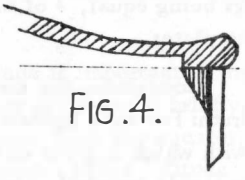


FIG. 4.

(continued on next page)

Fig. 1 Shows plate with the same thickness (1/8") all over. Inside curve follows outside curve. Edge 5/32". 'Flat' half an inch wide before the arch starts to rise. Depth of trough does not exceed 3/64ths. Wood left in the plate 1/8" over the ribs and linings.

Fig. 2 Shows a taper which is 1/16 at the point marked 0--0. Thetaper increases again to 3/32 fairing off the sweep to the linings.

To make a plate with a thickness of less than 1/8" at the linings without scooping the outside arch (as at Fig. 3) is to make a "shoulder" as at Fig. 4. This is not advised as it appears to, and no doubt does weaken the plate at this point and suggest that it would be of little benefit tonally.

On the face of it, it appears that it is not truly possible to taper a plate all the way to the linings, unless a change is made to the outside arching.

These diagrams show that a difference of 1/32 is enough to make a great deal of change to the arching, which could affect tonal results, and strengthens the need for archings to be available from a reliable source, preferably drawn on a graph, giving the dimensions and measurements of the height from the base of the plate.

* * * * * *

THE AIR-CONDITIONING OF BOW-INSTRUMENTS

by Henry van der Smagt,
Hadhoevedorp, Holland.

A subtle problem, not easily solved, concerning a very complicated matter.

"Some seem to think it is important" ... I think so too, but what are their arguments? Ignoring these, I must do without and my answer may be incomplete.

That it is important can not be denied, for if the air-tone is important (askMr. Sanborn), the air-conditioning must be so too, for the first is naturally dependent on the second.

Let us distinguish:

The air-capacity (=air-volume=amount of air in the box),

The shape of the air-body, as a whole,

The distribution of the air in the box.

I. The air-capacity. This is not dependent on the shape of the instrument: two very differently built instruments may have the same air-volume, though the shape of the air-bodies and the distribution of the air in the different instruments will differ.

The amount of air in the instrument will depend in the first instance on the height of the ribs; then, - other things being equal, - of the heights, shapes and thicknesses of the plates.

Concerning the air-capacity there is one fundamental truth: For each instrument there is an ideal quantity of air with which it gives its best tone; too much air: deep tones feeble and dull, high tones thin.

Lowering of the ribs (= decrease of air) drives up the body-tone.

II. The Shape of the air-body, as a whole. Some attach great weight to the shape of the air-volume. Years ago, a certain (Austrian or German) Dr. Stelzner supposed that the curves of the inner archings of a bow-instrument ought to be conic sections, so that the air-body became a sort of paraboloide or hyperboloide: then the air would vibrate undisturbed, in the most regular and harmonious way, and with it the instrument.

You will not fail noticing here a curious correspondence with Mr. Sanborn's idea of building a violin roundabout an air-tone. Dr. Stelzner meant that the instrument ought to be built up roundabout the air-body, like a shoe roundabout a last! Air-body here, air-tone there, the relation is undeniable.

III. The Distribution of the air in the instrument. This is of course partly dependent on the shape of the air-body. They are not the same thing but they are "unseparated-distinguished". Different shapes of instruments give different distributions of air.

Other things being equal, a high-arched instrument with thin plates will have more air in it, especially in the breast, than a lower-arched one with thicker plates.

I think that such a reverse of proportions must influence the tone.

I believe definitely that a lack of air in the breast must badly influence the "timbre" (think of this connection in the pattern of Amati and the fine "timbre" of his instruments.)

I hope the arguments here displayed may convince you that the air in a bow-instrument plays its undeniable, indispensable and unavoidable part.

PROBLEMS ASSOCIATED WITH THE "MICHELMAN" VIOLIN VARNISH

by Joseph Michelman

First, I want to thank the Editor of 'The Violin Makers Journal" for his invitation to reply to an article by George Collier entitled: "My Experience With Michelman Varnish" which appeared in the October-November 1961 issue of the Journal. Mr. Collier is to be commended for his initiative in trying the varnish and especially for giving the violin world the benefit of his experience. Many of the results that Mr. Collier reported are attributable to two factors: (1) Preparation and Application of the Varnish and (2) Geographical location where the varnish is used. As other violin makers may have similar experiences, we should discuss the two fundamental factors first, which will lead to a better understanding in general.

The preparation and the application of the varnish are admittedly a little troublesome. They become more so to those who are unfam iliar with some of the materials and the methods and who expect or are accustomed to simple concoctions of resins and oils with or without solvents. Such mixtures have been tried unsuccessfully since the lost art of the old Italian violin makers of 1550 to 1750 has been sought for the last hundred years. Mr. Collier, Mr. Carmen White and others are to be complimented on being sufficiently open-minded (an attitude that more violin makers should adopt) to depart from the old and to try the new.

The fact that the varnish is troublesome to make and use may be the reason that it was abandoned about 1750. It imparts a beautiful finish to violins, violas and 'cellos, which is universally acknowledged. Then why was its use discontinued? The logical answer is that newvarnishes were developed about 1750 that were easier to make and use, and it would be only human to discard the troublesome product.

Today, the old Italian violin finish is more deeply appreciated than ever--not only because of its beauty but also because of its influence on the tonal properties of the wood. Violin makers who want it should be ready and willing to expend the time and the effort required in making and using it. That they will be handsomely rewarded is indicated in Mr. Collier's experience. Mr. Collier, after inspecting a Guarneri, a Strad, a Guadagnini and an Amati in the Ford Museum in Dearborne, Michigan, writes as follows: "All these varnishes, especially that on the Guadagnini, look like my work with Michelman's formulas....". Mr. Collier has learned from a visual examination the same information that chemical research has established--that the rediscovery of the lost art of the old Italian violin makers is being realized.

(The term 'Michelman varnish" has been used merely for identification purposes. If it is a recreation of the old Italian violin finish, then it is not "Michelman" varnish, obviously. The reader may have noticed that the words "varnish" and "finish" have been used in this article. As the writer pointed out in an article in "THE STRAD", August 1960 issue, a distinction should be made between the two words. The use of the term "varnish" should be limited to the protective and decorative coating on the exterior surfaces of the violin. The pre-treatment of the wood is a separate and distinct operation. Together, the pre-treatment of the wood and the varnish constitute the finish.)

Geographical location was a deciding influence on the use of the varnish in olden times. Why did the varnish remain indigenous to Italy? Why did its use in two hundred years by several hundred luthiers (some of whom may have migrated) not spread to more northern countries of Europe? As I have pointed out in my book sunlight was a necessity in "drying" the varnish and particularly in developing the color of the brown varnish. Mr. Collier found this to be true when he states: "Outdoor drying, in bright sunlight, reduces drying time to about two days." Otherwise, he states "... a fiddle varnished via Michelman's technique will consume a rather long summer." I mentioned this fact on two occasions in my book (pages 40 and 56) that " ... if the varnished surface is not exposed to strong light or sunlight, it will be affected by turpentine several months after the varnish was applied."

An examination of the latitudes of various cities of Europe will shed some information on the influence of geographical location on the use of a varnish requiring sunlight. The latitudes are expressed to the nearest degree:

Berlin ... 52 deg. N.	Cremona.....45 deg.N.
London ... 51 deg. N.	Cincinnati, Ohio ....39 deg.N.
Paris ... 49 deg. N.	Minneapolis, Minn...45 deg.N.
Madrid ... 40 deg. N.	(Anoka, Minn.)

Mr. Collier's city, Anoka, Minn. has been included because, by coincidence, it has the same latitude as that of Cremona, Italy. He had the same experience that the old Italian luthiers may have had, but by perseverance they solved their problems, as he will.

On the premises that latitude is important to the use of the old Italian varnishes, let us discuss it briefly. Since latitude is the angular distance from the equator, then the intensity of sunlight decreases as the latitude becomes more northerly in our hemisphere; the sunlight must traverse greater thicknesses of the atmosphere

because the angle of incidence is more oblique. It is the intensity of sunlight (its ultra-violet content) and not the total insolation that affects the "drying" of the varnishes. Altitude may also be a factor. Living in Cincinnati, I have learned from over twenty-five years experience, that violins can not be varnished with the "Michelman" varnish and dried by natural means, between the months of October to April, and I discussed this problem in a chapter in my book. I also investigated the use of Ultra-violet light, which Mr. Collier also proposes to do, and I hope that he will pursue and solve this problem, so that we shall no longer be dependent on sunlight.

It should not be overlooked that violin making in Italy between the years 1550 and 1750 may have been another art, the development of which was inspired by the Renaissance. Then, we can summarize that the "climate" of Italy, geographically and culturally, was conducive to the production of those masterpieces that the old Italian luthiers have bequeathed to us. This may also explain the reason that violin making did not spread to Spain, which was more occupied at that time with exploration and colonialization.

The technical difficulties that Mr. Collier reports specifically can be solved after a little more experimentation. For example: the fineness of his precipitate may be caused by using insufficient precipitant. Adequate precipitant will cause a clear "break" in the mixture because the precipitated resins tend to coalesce. They will now filter readily through cloth and better quality and more soluble resins will result. Heat should not be used to dry the resins because they are still rosinates in a very fine form and liable to oxidation and loss of solubility. I have no explanation at this time for the "white feathery fuzz" which Mr. Collier obtained. If he will send me some, I shall analyze it and try to help him. I always preferred to use materials of which I was certain of the origin and for this reason I boiled the linseed oil myself. I am not acquainted with "Cast oil" and cannot offer any comments on its use in the varnishes.

I especially want to thank Mr. Collier for his report that he found everything in my book as it should be, with the only exception for which I have suggested a solution, as it is merely a matter of technique. I hope that more violin makers will be encouraged by the reports of Mr. Collier, Mr. Carmen White and others, and relate their experiences similarly.

Joseph Michelman
6316 Wiehe Road,
Cincinnati 37, Ohio.

PROFILE: Clifford A. Hoing
by John Lawson

Editor's Note: The "living" maker presented to you in this issue is none other than my sincere friend Clifford A. Hoing. Mr. Hoing's instruments are well known throughout the whole world and he probably leads the field with his violas. He has won numerous awards; among them: Festival of Britain Diploma & Award of Merit, Bournemouth, 1951. Diploma of Honour, International Exhibition, The Hague, 1949, culminating in Premier Award for Viola of "Outstanding Artistic Character," International Exhibition, Ascoli Piceno, Italy, 1959.

The "Profile" is written by a former local member now residing in England. "John" and I were very close friends during his stay in Vancouver. He knows a good instrument when he handles one.

It is hardly surprising to find the craft of violin making flourishing in the heart of Buckinghamshire, at High Wycombe - England's traditional centre of fine furniture production.

Clifford Alfred Hoing, born and bred in High Wycombe, naturally followed his father and forebears into furniture, certainly with no thought ever of leaving the industry in later years to make fiddles for a career. Learning to carve reproduction furniture (the skillful copying of the Masters - Chippendale, Hepplewhite, etc.) was probably the finest grounding for any violin maker aspiring to the heights of those other Masters.

After putting in a day's work at the factory, young Hoing spent several nights a week at the local technical technical school, styding wood carving (with the emphasis on faces and figures), modeling and drawing. His talent with wood and chisel soon marked him for a career outside the furniture industry, although circumstances forced him to suppress dreams of becoming a professional sculptor in wood. But winning several prizes for wood carving helped to keep the vision undimmed.

When he began making violins as a hobby in 1930, Hoing chose the way of experimentation rather than follow the existing manuals of violin construction. By the mid-1930's his work was good enough for him to earn his living, either making or repairing.

Nowadays, a Hoing instrument fetches £100 in England and many have gone overseas - to Canada, U.S.A.,

Australia, Ceylon, Venezuela and Belgium, mainly to members of orchestras. They include the Chicago N.B.C., London Philharmonic (two instruments) and the Boston Symphony, whose members own between them six Hoings, with another on order.

The specialization in violas dates from 1945. Hoing felt the instrument was neglected by makers and decided to concentrate almost exclusively on its design and construction. Many violas came under close scrutiny and from early on, Hoing firmly rejected the large body theory.

The Hoing viola emerging from all this study and experiment weighs around 20 ounces, complete with strings, measures 16 to 16 1/2 inches and is based on Guadagnini.

The viola, he says, should be constructed in proportion to the violin. Its air space above and below the point where the bridge and post stand should be equal.

Hoing expresses his disappointment with those makers who, he says, show a deplorable lack of initiative in unconcernedly sacrificing correct proportion or appearance to obtain ease of playing. It is not enough, he says, to use a good outline and then place the f-holes and bridge in the most convenient position. If placed higher up the body than normal, in order to shorten string length to make the instrument easier to play, they should be compensated by enlarging the upper part of the viola and lessening the lower part.

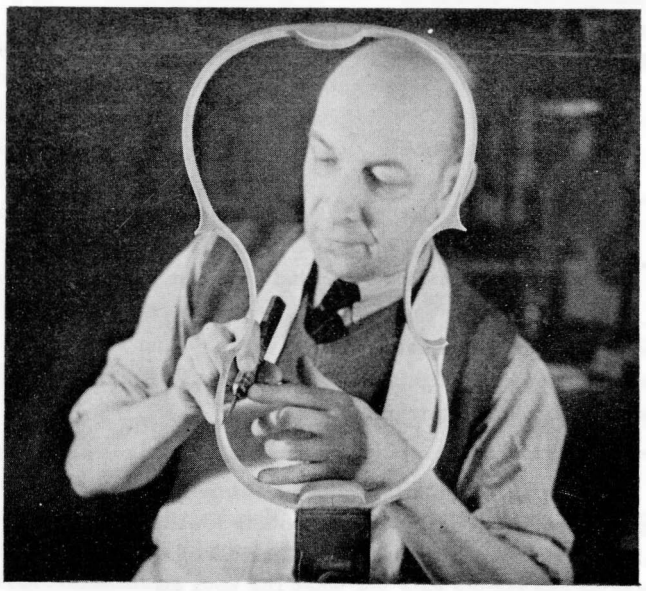
Like any other fiddle maker, Hoing has gathered together an interesting collection of tools, some of his own design and making. Although he has several kinds of calipers, he says a man's fingers are by far the most sensitive discerners of variation.

This alone illustrates Hoing's impatience when the subject of science in violin making crops us. Coming from a long line of practical craftsmen, perhaps he has the right to be touchy! What use is science, he asks, without the practical know-how to apply it in the work involved.

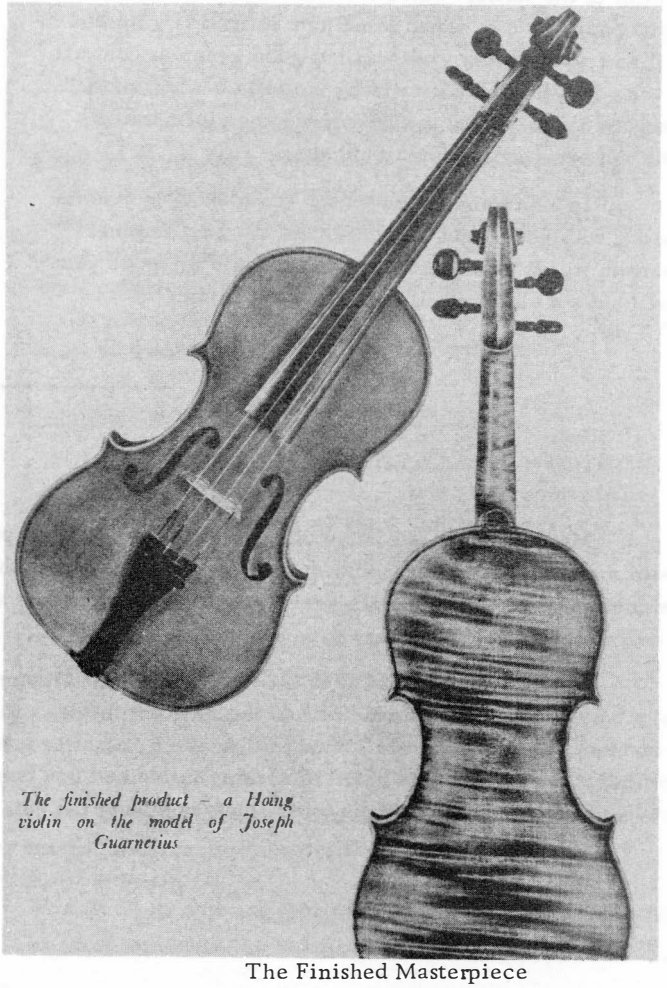
His patience for finely detailed work is seen to good effect in the two-inch-long violin which he spent weeks carving. The correct woods have been used and the tiny fittings are all delicately fashioned. The strings, made of fined-down fuse wire, pass through microscopic holes in each peg. There is a bow to match.

Apart from his work, Hoing--who is a bachelor--is a keen photographer and is extensively equipped. He also has a good library which contains some rare violin books.

* * * * * * *



Clifford Hoing and Workshop



The finished product – a Hoing violin on the model of Joseph Guarnerius

The Finished Masterpiece

MY METHOD OF VIOLIN MAKING

by E. H. Sangster

As I do not expect to live to be as old as Stradivari I would like to have recorded in the pages of The Violin Makers Journal my ideas on violin making.

The last five years have taught me a great deal on the method used by the old Italian maker to produce the beautiful tone, articulation and volume of their violins. Any good violin maker can make a violin equal to a fine old Italian if he will use a good back at least twenty-five years old and a good top ten or twelve years old and this is what he must do.

Make the arching on the back no higher than 9/16 and the highest point of the arching must be at the sound post point. Make it 10/65 thick in the center and 6/64 all around at the purfling. If the maple back is very hard make it 1/2 / 64 thinner all over. The arching of the top should not be over 5/8 at the highest point which should be at the bridge point. If your top wood is good and strong make it 6/64 all over.

Assuming you have a set of ribs made to standard, glue violin together and set the neck, you now have a violin in the white. Smooth it all over with the finest sand paper. Now, warm some pure refined raw linseed oil and with a brush give violin a good generous coat all over. If it is winter time hang violin in a warm room in good light. When spring comes hang violin out in the sun every sunny day all summer.

In September bring violin in and hang in a warm place with good light all winter and the next summer varnish it. If your wood and workmanship are good you will have a violin equal to a fine old Italian.

Yet, it tries the patience but I am certain that this was what the violin maker in Cremona meant when he wrote Gallileo in April 1638 and I quote: As we wish to send an instrument of exquisite work it cannot be brought to perfection without the strong heat of the sun. (End of quote).

This is just as true today as it was in the seventeenth century and you can use tap tones, micro tones, or any other tone system you wish but you wont produce the tone, articulation and volume of the old Italians unless you use the sunlight and oil. It was not any secret in Italy every maker from Gasparo da Salo to Guadagnini knew what to do and did it to a greater or less degree.

Now, I hope every violin maker who reads this will try the above method just once. It takes patience but the result is well worth the time.

.....

By the way! I might add that Francois Tourte's Bows owe their superiority to raw linseed oil. It is not generally known or taken into account that he never varnished his bows but only oil polishes them. When bending a bow coat it first with raw linseed oil and heat the oil into the stick which gives it more strength and elasticity.

Matthias Dahl was busy cooking varnish on his little peninsula on Horseshoe Lake. It was very dry that fall with many leaves nearby. Suddenly a gust of wind caused his gasoline stove to cough which ignited his varnish, which ignited the leaves. He never moved so fast before or after for his cabin was nearby.

.....

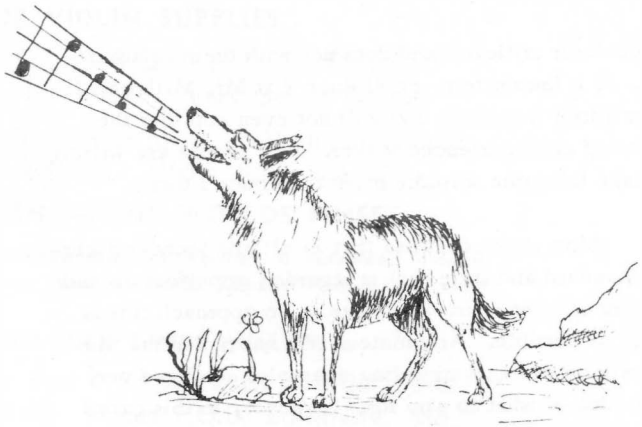
There is some doubt as to the veracity of this last story, but it seems Pete Blackstad was cleating the ribs of a bass and for convenience he had the glue pot inside. The next morning the fellows were looking for the glue pot when Pete arrived. He joined in the search and after several minutes, he decided to move the bass to look behind it. Thereupon he heard something inside and you can imagine the razzing Pete got when the boys discovered Pete had replaced the top without removing the pot.

.....

Gordon Lundberg, Dahl's Violin Shop,
89 So. 10th St.,
Minneapolis, Minn.

Wolf Notes

by The Editor



The Mail Bag

Incoming mail has, during the last six weeks, been very heavy. Many letters still remain unanswered, but be patient I'll soon get round to your letter.

Those who have already received their Associate Membership Certificates, write in, praising its appearance. Many already have them framed and hung in their workshops. We hope the time will soon come when every maker and repairman will, with pride, display one of these certificates as an indication that he is much alive to the interest of perpetuating the noble art of Violin Making. With this issue all should have received their certificates, with the exception of those whose renewal is due during the next six weeks. If you have been overlooked, please write in and advise us.

New Departments

You will notice several "Human Stories" inserted in this issue. We believe these will serve as an enjoyable "break" between articles. These stories are supplied by Mr. Gordon Lundberg of Dahl's Violin Shop, 89 - S. 10th St., Minneapolis, Minn., U.S.A., who has now been appointed "Human Story" Editor. If you have any stories of this nature, send them in to Gordon. I am sure he will be glad to receive them. Gordon has made a hobby of collecting such material but as time passes, naturally his "stock" will get lower.

Instrument Repair and Adjustment Column

How much more beautiful would our gardens be if every flower, tree and shrub received correct treatment and attention? It is the same with a musical instrument. How many violins struggle away to produce beauty of sound but are fighting a losing battle owing to the handicap of Poor Adjustment.

Mr. Henry Littleboy of Littleboy & Son, 7 Sentry Hill Place, Boston, Mass., is a specialist in repairing and adjusting string instruments and, starting with the next issue, will conduct a column telling us all he knows, developed from a wide experience in bringing to life and beauty poor old handicapped instruments. This column should prove helpful to players as well as makers. Thank you for your help, Henry.

"Smiley's" Science for the Maker

The final instalment of this series appears in this issue. However, we did not print "The End" as we hope to have the author present a summing up and review of this important work, together with comments from some of those who have faithfully followed, in a practical manner, the "Findings" disclosed by a person whose love for violins encouraged an investigation into the scientific aspect of the instrument, sparing neither time or money to impress upon us the importance of "Science for The Maker."

Vitali Import Co. Sale

We all delight in bargains! so why not send to Vitali's and ask for a list of their "Winter Clearance Sale". Violin fittings, varnish, tools, strings, in fact everything for the maker or player, including violins of every description. Also ask for their "Green Covered" small catalogue. While mostly concerned with Guitars it also illustrates many old fashion Lutes - very interesting. Their address? well, look up their advertisement.

Communication from Mr. Clifford Hoing

Mr. Hoing, as a professional maker, writes in criticizing an Editorial appearing in the September issue of the Journal. This was by Mr. Norman Miller, as Guest Editorial writer.

Norman suggested that some professional makers could help the amateur more than they do. Here, in part, is Mr. Hoing's criticism.

Advice and Tolerance
by Clifford Hoing

The editorial published in the Sept. 1961 issue of the Journal is quite in opposition to that on page of the April-May copy.

While denying that professional makers are willing to assist amateurs, he states in his next paragraph that he

rejects their criticism and does not wish them to advise him. It is known from experience that Mr. Miller will never admit a mistake and will not even consider the advice of an experienced maker. Few people are willing to make the same mistake more than once I think.

Most makers realize that in all arts there is a certain standard and style that is regarded as perfection and the aim of most artist-craftsmen is to approach this as nearly as possible. An amateur who has never had the opportunity of examining fine examples can have very little idea of what to aim for. However, in this case I think that even Strad's advice (if it could be given) would only be regarded as a different method to that pursued and would certainly not be regarded as a suggested improvement.

There is food for thought in the saying that he who never made a mistake, never made anything- much.

Best wishes to all readers."

This Month's Testimonial

From the many received, I select one from far away Norway, the home of many good makers.

"Dear Don White:

Herewith I take the pleasure to express my satisfaction with your "Journal" which new look and interesting contents gives me many fine tips regarding violinmaking.

I find it the finest violin publication available here in Europe.

Yours faithfully,

"Kolbjorn Haal"

Oslo, Norway. "

Dr. Saunder's advice about "Ray Lamps"

The following was received from our friend Dr. F. A. Saunders, quote:

"I noted that somebody in your last number recommended an Ultraarch (or Infra-red) lamp for heating a just-varnished violin. The "drying" of most oil varnishes would not be hurried up by this sort of lamp. The blue end of the spectrum, or the part beyond the visible part (the ultraviolet) encourages the chemical action whereby the oil gets oxidized (dried). I want to stop the disappointment that would come from buying the wrong sort of lamp.

I don't know how to order one of these in Vancouver. The best are mercury lamps, and very expensive. An ordinary 100-watt house lamp will contribute a little ultraviolet (but a lot of heat with it). The cheapest and most successful light is that of the sun, but no glass should be between the sun and the violin or most of the good rays will be absorbed before reachingthe varnish. Turn on the sunshine."

F.A.S.

We get the sweetest comfort . . . When we wear the oldest shoe . . . We love the old friends better . . . Than we'll ever love the new . . . Old songs are more appealing . . . To the wearied heart-and so . . . We find the sweetest music . . . in the tunes of long ago . . . There's a kind of mellow sweetness . . . In a good thing growing old . . . Each year that rolls around it . . . Leaves an added touch of gold.

Author Unknown

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GUNNILSE, SWEDEN

The String Section

Conducted by
CARMEN WHITE

Let us turn from the task of selecting a violin and give attention to the bow. No great violin can sing with out a fine bow to bring out its lovely voice. It may be hard to convince some of our readers that a poor bow may actually cause one to misjudge a fine violin. Nearly every really fine bow has a distinctive tone of its very own. By this, we mean that a discriminating judge can actually tell a difference in the quality and quantity of sound brought from the same violin and by the same player - but with different bows. Poor and inferior bows also bring out a disti. ctive tone a tone marked with such labels as "poor", "thin", "scratchy", "raspy", and other adjectives denoting inferiority These we will wish to avoid wherever possible. How, then, shall we go about selecting a suitable bow?

First: the name can tell us much to begin with. We all know that Francois Tourte, the great French bow maker, stands on the pinnacle of the art of bow making, but on account of scarcity and price, few people can afford a Tourte bow. After him, the young artist should certainly familiarize himself with such names as: Lamy, Sartory, Vuillaume, W. E. Hill and Sen, Tubbs, Vigneron, Paccate, or Peccatte, Albert Nurnberger, C. Otte, Hell mer, Lupot, Voirin, and others who have made fine bows. Bows from these makers may be had from about seventy five dollars to three or four hundred dollars in price, depending on the maker, the condition of the bow, and the type of mounting. The more expensive bows are usually gold mounted, but the presence of gold mounting does not always indicate a superior bow--in fact, we have seen some gold mounted bows from some of the above makers which were not as good as the same maker's less expensive bows. The presence of gold mounting does mean a higher price, however, and many players are willing to pay the higher price for the dressy appearance of a fine gold-mounted bow. The above list of fine bow makers is not complete at all; there are many more old and modern makers who should be included, but we wish to give a representative list of the more commonly found names. The reader should keep in mind that the name on the bow does not always indicate that the maker actually made it--many lesser bow makers have branded their bows with the above names in order to sell them at a higher price. These imitations are as false as the "imitation Stradivarius" violins we find priced from $39.95! You can buy bows branded "Tourte" from about $5.00 up! So before paying a high price for a big name bow, one should be sure that it is a genuine specimen of the maker's art. Vuillaume bows frequently are not branded at all. The writer owns a Vuillaume bow of the highest grade from the private collection of one of the greatest masters of the last century--but it has no name at all on the stick. Connoisseurs and persons who study these matters can instantly identify a given maker's bow by the workmanship, particularly on the head of the bow. Like the ff hole of the violin, the maker identifies himself perfectly by the style and manner of cutting the head of the bow, and once a Lamy head and a Peccate head are examined, even a beginner would be able to tell the difference.

So much for the names. The next important test is simple indeed--it can be expressed in a few words: "Can you play with the bow"? That is, does the bow produce a fine sympathetic tone? Does it do brilliant spicatto bowings? How about springing arpeggies, such as are found in the Mendelsohnn Concerto? Many bows fail here, or require special coaxing. Try the Martele stroke and note whether the stick feels like a strong steel spring in the hand. Try up and down-bow staccato bowing and see whether the stick rebounds fast and elastic enough to make fine tone without scratching. In legato bowing, the stick should follow the hand and produce good tone all the way to the tip. No wobbling! The most common fault among the less expensive bows is that the stick feels "dead" and has no elasticity.

Physical appearance and characteristics: a good bow should be strong and healthy in appearance. The frog should fit the stick snugly but the screw should work easily and the bow should tighten and loosen easily. The tip area should be strong and well made. Many inexpensive new bows and modern bows satisfy all these requirements and are suitable for students. The finish or varnish on the stick is not so important--certainly no one would compare its importance to that of the varnish on the violin. Some of the old bows by famous makers were not varnished at all, but are supposed to have been rubbed to a glossy finish with some oil, such as linseed oil. These points, of

course, involve technical details for discussion by trained bow makers, who may differ with these opinions of an untrained bow maker.

If the player is an advanced student or orchestra player, special consideration should be given to his bowing style and to the purpose for which the bow is to be used. For example, an orchestra player who plays light and on top of the string would be happier perhaps with a little heavier bow, especially if the bow handles well. An orchestra player must be able to perform instantly all the fancy bowings, but more especially spicatto and martele bowings. A fine solo violinist who expects to perform in public with piano or orchestra will want a strong, live bow which pulls a beautiful tone. He must give more attention to his tone and to the beauty of sound produced by the bow than an orchestra player would have to do. Again, the bowing style of the player must be considered. If he is one of those who plays lightly with an arched wrist and very little bow pressure, he may like a little heavier bow. If he keeps the hand and forearm more or less in line, keeps the wrist down at the frog and plays into the string, he will want a little lighter bow but one with a "live" feel. The latter style of bowing is apparently coming into more general use among some great artista and teachers in recent years--many fine players now keep the bow flat on the string and use all of the hair, with the wrist level or slightly depressed instead of arched. Tone production from a stringed instrument is a life time study in itself, and naturally the bow used by the player is a most important factor in his tone production and in his over all final result and in the impression he makes on his audiences.

Many modern American bow makers are now producing bows as fine as any made in Europe. Only recently, one of our greatest violinists played with a bow made here in the mid-west, while his Tourte bow valued at several thousand dollars rested in his case! He said the American bow was just as fine, and that he actually preferred it because it was just a little lighter in weight than the Tourte. His performance of the Brahms violin concerto was masterful and tonally beautiful with the light bow, the depressed wrist, with all hair on the string and the bow kept flat. His tone was powerful and beautiful.

As a final word to the student, it should be noted that during the first two or three years of study, the bow is not quite as important as the violin. It is only after the student has progressed enough to do well all the fundamental bowings that he should make his final choice of a bow in the higher price range. Only then will the player have enough command of the bow to make an intelligent choice. He must play well enough to put the bow through its paces and determine for himself whether that particular bow is for him or not. Such a choice must be made by the player himself; it is much more personal than the selection of the violin itself, or a pair of shoes. Our student, therefore, will be better off if he selects a relatively inexpensive but playable bow for the first two or three years of work, and in doing this, he should obtain the help of a sincerely interested (but not financially interested) teacher or musician who is capable of judging. I do not believe any beginner should spend more than twenty to thirty dollars for a bow, but after his third year, if he is playing well and performing all the bowings, he should not spend less than seventy-five dollars, and he should spend more if he can afford it and if the higher priced bow gives him a better tonal result. By the third year, if he has been properly taught, his bowing style will begin to assert itself enough that an intelligent selection of a finer bow can be made.

STEEL STRINGS AGAIN by Carmen White

On page 27 of the Dec.-Jan. issue, Mr. Charles Vystrcil of Brisbane, Australia, writes:

"... When I first came to Australia, I used gut strings ... but in this climate, I was taught a lesson. They never lasted too long, especially in orchestra playing. So I started to use steel strings. Firstly, they last at least one year without changing the fine quality of tone they possess. Secondly, they are as soft and easy to play as gut strings, and if you listen to two instruments strung with gut and steel strings you won't find any difference."

In reply to Mr. Vystrcil, I will relate an experience I had last fall. One of the greatest young violinists in our country had just given a fine performance of the Paganini Concerto with an orchestra where I was playing in the viola section. He used a magnificent Guarnarius del Jesu violin, but I noticed instantly that he was using gut strings. I asked him if he had not used the new metal strings and whether he liked them. He instantly replied: "No, I won't use them, I don't like the sound of them". I asked, "Why not?" He said, "They sound tinny, and they put too much tension on the violin--I would never use them." This, of course, represents the viewpoint of a fine performing artist, who cannot afford to take any chances when trying to build a reputation for himself. Many great reputations have been built and maintained through the years by fine gut and gut-wound strings. It may be that many such will be built on metal strings, but I have yet to see one such. On the other hand, we must admit that for orchestra work in hot, humid climates, these strings may have real merit. I question their durability because in my experience in the past three years, all the broken strings I have seen in our viola section have been metal strings, and I have seen several such. It should be stated, however, that our climate is not humid in this section of the state, but if I were playing in the Gulf Coastal area, my experience would probably be more like that of Mr. Vystricl as stated in his letter.

Without attempting to revive this question, we present the above to illustrate that both types of strings have their advocates, and probably, their rightful place.

"20th CENTURY TARISIO"
A RARE VIOLIN BOOK COLLECTOR

by Herbert K. Goodkind

The late Mr. Hyman Frankel was truly the modern counterpart of the famed Tarisio-Italian violin collector, dealer and trader; he too bartered for instruments, but in recent times when rare instruments were scarce and in knowing hands. His interests turned necessarily therefore to books, pamphlets, music, prints and ephemeral material on or relating to the violin; the visual record and written history of fine violins had to satisfy his deeply rooted first love -- the violin and its music.

This plebian gentleman with patrician tastes, who lived and died in relative obscurity, was an amateur musician and astute collector. He escaped from Russia in the early 1900's -- spent one year in England -- and landed in Boston at the tender age of 15. Soon thereafter he settled in New York, where he studied the violin with the late Ferdinand Carri. His vocation as a part time fur cutter, provided him with both the idle time and funds, which he used to build his fabulous library. The collection took over 50 years to assemble. Acquisitions were made through book stores, catalogues, and other means. The violins and bows were gathered from pawn shops and fiddle shops.

The depository for this amazing collection was a small, dark and empty bedroom in one of the older city apartment houses. It was stored in packages, cartons, boxes and trunks, from floor to ceiling, behind the padlocked entrance door. When it was removed for sorting, processing and cataloguing, three loads in a modern station wagon were required, leaving behind many large trunks and boxes. The various sections of the material were then shelved in alphabetical order for listing. Books and pamphlets published from 1659 through 1959 comprised about 1,000 items. The music library contained about 1,500 compositions for violin solo, violin and piano, chamber music, and methods for the study of viol, violin and cello; several rare and early editions were found. Likewise several of the prints and engravings were quite rare. Though the violins and bows were mostly of ordinary calibre, a few were of good quality and tone.

It was my privilege to have known Mr. Frankel for 25 years. I shared with him a contagious enthusiasm for violin lore. We always maintained mutual respect for the other's judgement, knowledge and "lucky" finds; perhaps also some of the envy recorded in Champfleury's story, "The Faience Violin". Several purchases and exchanges resulted, and on at least one occasion a gift was made. Perhaps this friendship and mutual interest prompted the decision by Mr. Frankel during his fatal illness, that the author should handle the disposition of the prized collection. This assignment has been both a chore and a pleasure, with many surprises; it was not until everything had been sorted and examined that the broad depth and rarity of this library was fully appreciated.

The scholarly selections made from domestic and foreign dealers catalogues were also recorded in the sheaf of receipted bills found--many at top prices. The duplication of books and music indicated that their collector might have had a lapse of memory for items already acquired, or perhaps had ever present a surging elation on reserve for immediate expression in the purchase of a new-found or duplicate rarity. His almost worshipful interest in Paganini is evidenced by the extensive assortment of books, prints and music present in the library, pertaining to Paganini.

There are few if any collections extant of this quality or magnitude, to be found in public, private or university libraries. It is hoped that a permanent home will be found for it; thus it may be preserved for future use, study and research. The author has for years hoped to find a sponsor for an American School of Violin Making, which is long since overdue in this country. The art of violin making might thus be preserved -- yes even improved -- and thus replace the dwindling supply of the old, and in many cases, tired masterpieces created many years ago. Should such an establishment be created, it would certainly be enhanced with the library herein described, as a nucleus for expansion.

Now to the romance of describing a few of the book rarities in the Frankel library. Each item is followed by the comment thereon of two recognized authorities -- Edward Heron-Allen, in his monumental "De Fidiculis Bibliographia", or J. E. Matthew, in his very enlightening work "The Literature of Music", both published in London 1890 to 1896.*

1. Bonani, Fillipo - Gabinetto Armonico - Roma 1722 - "A book of plates of instruments, with descriptions - many imaginary. The book is absolutely valuless". (J. E. Matthew)

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*Additional comments are recorded in the works of Ed. van der Straeten, - The History of the Violin - The Violincello and The Viols, - The Romance of the Fiddle. Also in the two works on music history by Sir John Hawkins and Charles Burney, published prior to 1800 in London.

Note: One could go on for pages describing this profound library. We will continue in our next issue.

Editor's Note: Mr. Goodkind has this wonderful collection advertised on another page of the Journal. Here is a brief history of Mr. Goodkind's life and hobbies.

.....

Herbert K. Goodkind

Born N. Y. C. 1905 - family of musicians - aunt Bertha Visanska piano soloist under baton of Anton Dvorak in America, and Leopold Auer at The Hague - uncle Daniel Visanska concertmeister under the baton of Anton Dvorak in America and studied with Joseph Joachim, in Berlin. Amateur chamber music string player - collector and student of violin literature, instruments and bows. New York real estate investor and dealer in special library collections. Sold 36,000 volumes Goodkind-Bookman Collection to University of Texas in 1958. Published "Cumulative Index 1915-1959 to The Musical Quarterly."

In his own private collection is a rare full size white porcelain violin, highly decorated in bright colors with hand paintings of children playing games; it is late 18th century, of French origin, and in rococo style and ornamentation. Also an exquisite hand made 1/32 violin and bow - the violin bearing the label of John Friederichs, and dated 1877, Stuttgart. Back and sides of birds eye maple - top of spruce; finely cut scroll. Length, 6 1/4 inches; upper bouts 2 7/8 inches; lower bouts 3 5/8 inches. The bow is a real masterpiece - might even be from the hand of F. Tourte - fine dark pernambuco octagon stick with gold button, eyelets and tip. Length 10 3/4 inches; both the violin and bow were acquired through the John Friederichs estate at Peekskill, N. Y. A few years ago, when Isaac Stern visited in New Hampshire, he played Yankee Doddle with this violin and bow - was fascinated with the workmanship - and marvelled at the tone!!!

THE INSTRUMENTS OF DR. DAN N. STEFFANOFF

In the Dec.-Jan. issue we promised further details of Dr. Steffenoff's quartet of instruments. Looking through the mailing list of our Journal one is struck by the number of doctors represented. Do they practice carving up wood before starting in on humans? Or is it because the delicate operations they are called on to perform give them the steady skillful hand so necessary for violin making? Dr. Steffanoff is a plastic surgeon, a profession demanding a very gentle hand indeed. Dan and his charming wife visited us a few years ago. It was a rare pleasure to meet such delightful people.

For further details of the instruments we cannot do better than quote from "The Morning Oregon" of last October.

"Hobbyist's Concert Set"

The unusual presentation of a chamber music concert played on instruments, made of native Oregon wood by a Portland physician and surgeon whose hobby is violin making will be at 3:30 p. m. Sunday at the Portland Art Museum.

Dr. Dan N. Steffanoff, plastic surgeon and member of the American College of Hypnosis, created the instruments from myrtle and maple woods. Of the nine stringed instruments resulting from his unusual hobby, four - two violins, a viola and a cello - will be played by the four leading players of the Portland Symphony orchestra in the concert.

The musicians are Hugh Ewart and Carl Ottobrino, violin; Richard Irwin, viola, and Roman Dukson, cello.

The exquisite Oregon creations will be displayed by their maker at the national convention of Plastic and Reconstructive Surgeons in New Orleans later this month.

Dr. Steffanoff, who studies the history of each area where the wood is obtained for his unusual hobby, is not a musician himself, although his wife plays.

* * * * * * * *

#6 Science for the Maker. Copyr. 1962 G. Smiley

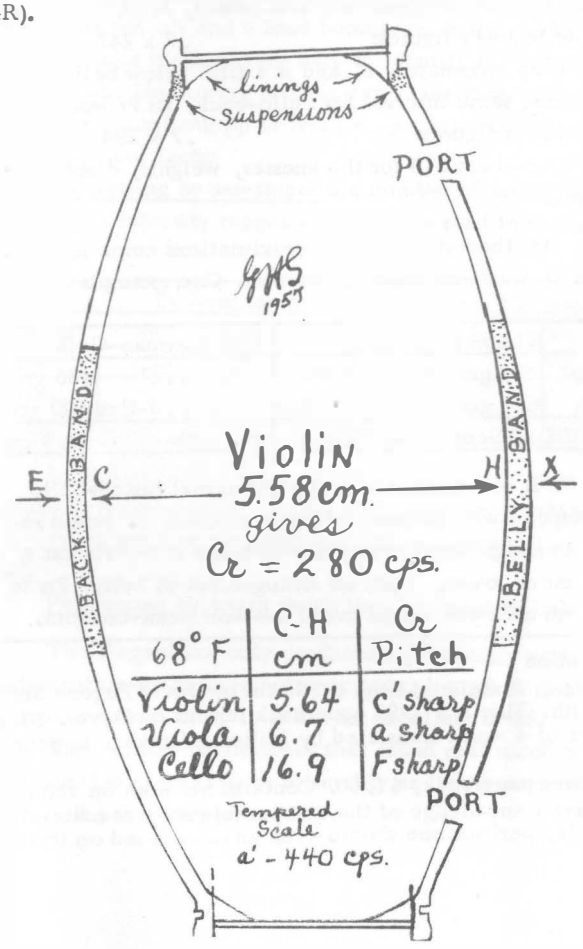
Characteristic Resonances of Violins and How to Change Them

Cr-PERMANENT Characteristic The Cavity-Resonance of an instrument is a permanent characteristic that is not altered by age or playing. Its frequency and the frequencies of the associated gamma-series (S 19 table, S25 graph) determine the basic voice-quality of a bowed instrument. Violin-Crs are c'# ± 2 semitones: Tests of numerous violins here show that Crs vary roughly between b and d'#. Inside measurement of the greatest distance between back and belly, just ahead of the bridge show that the lower-pitched instrument has a deep cavity and the higher-pitched instrument has a shallow cavity.

The contouring of the arches of many instruments can be very deceptive to the eye. One instrument that appeared to have a fat-profile actually had standard-height ribs. Back arch appeared very high Calipered external (E-X) measurement just ahead of the bridge showed it to be only 5.4 cm. Its Cr was d'#. To bring it to c'# would require higher ribs.

Grinding down the ribs of a Cr-b violin with cavity-height (C-H) of over 6 1/4 cm to achieve a cavity-height of 5.58 gave it a Cr = c'#.

A description of Cr-phenomena has been given on preceding pages (S13, 19-20, 22, 24-25, 27). The S-6 Chart gives a guide list of cavity-resonances of distinguished and expensive instruments (see S34R for a Landolfi). The drawing here shows maximum X-section at BP-line (S12L, 14R).



Temporary Cr-changes are not possible unless one replaces the air in the cavity with gas of a different gram-molecular-weight.

Prs-PERMANENT Characteristics No controlled experiments have ever been carried out to determine whether the influence of age or playing can alter plate-resonances appreciably.

I would speculate that there would be little significant change in Prs due solely to these influences--if the plates were made from adequately seasoned wood; that if the plates--and instruments--are always tested under standard conditions that Prs are PERMANENT characteristics. Reducing plate-thickness shifts Prs to the left (lowers pitches).

One should remember that the moisture-content of the wood is changed by the breath of the player and the humidity of the air, producing temporary variations--which could be controlled. The effect of summer humidity in elevating and expanding the plates of violins is well known.

Voice The PERMANENT vocal-characteristics of a particular violin are largely determined by the arrangement and location of its permanent characteristic resonances--its Crs and Prs. However, it should be obvious that if one takes a part such an instrument and thins the plates appreciably in the central area, not only will the plate-resonances be changed, but the cavity-height will be increased as an indirect result.

Temporary Br-Changes There are many ways in which the vocal-characteristics of a particular instrument can be modified temporarily by shifting Brs--amounting to temporary Pr-shifts.

The player shifts Brs to the left (S24) when he applied a weight (mute) to the bridge.

A tightly-wedged soundpost shifts Brs and may diminish the loudness of the instrument.

Weight, shape, height of bridge have an effect on Brs.

Changes in bassbar will alter Brs.

Type and thickness of strings cause Br-shifts. Etc.

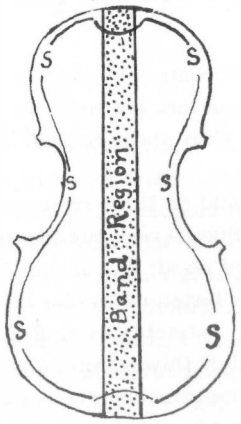
Controlled Tests It is interesting and instructive to test and graph the sound-output of an instrument, make a temporary-change and retest, finally reversing the change by restoring instrument to its initial test condition and graph. (S17-18).

Volunteers should undertake some controlled tests along this line and submit reports. It is not too difficult to design such experiments; although the work is tedious, reproducible results will afford valuable contributions to the art.

Only one type of alteration should be made at a time. Examples: soundpost-shift, bridge-height, bridge-weight, bridge-shape, bassbar-reductions, string-changes, etc.

Suspensions & Loudness

The BAND REGION. The Belly-band and back-band connect neck and tail blocks. This region supports string tension.



The SUSPENSION (s) lies just inside the mold-outline, but does not enter the band. There are three main types, if one excludes the irregular:

Uniform thin suspension has the same thickness from neck-block to tailblock. Today a leading German manufacturer of fine instruments is using such a belly-suspension. His back-suspension is the same as:

Fatter C-bout suspension (thin otherwise). This is the suspension Hutchins-Saunders use on belly.

Uniform thick suspension. These instruments are never loud enough on the lower 1 1/2 octaves. (Note: reducing a suspension also changes Prs.)

WOLF. Peak-conflicts in a Cello

If a cavity resonance and a belly resonance are separated by a few cps we have a peak-conflict where the instrument can wolf if played pianissimo.

A 1960 cello here with belly-Pr of 187 cps and a dbl-Cr of 192cps wolfed when bowed gently slightly above Pr. If this occurs on a scalestep one should try shifting Prs. Try with mutes of various weights before considering permanent changes. The wolf-cause needs more thorough study.

Additions and Corrections:

S10R Insert in space preceding Parts Source:
Part #2 is continued on S-24 and S-25.

S13 Change purfling (inlay) to ribs. Indicate purfling just inside mold-outline.

S14R Line 16. Add: see page S32-L.

S15L #6 change (to come) to (S34-R); #9 change (to come) to (S28-29);#10 change (to come) to (S21).

S22L Chart. Change dbl 𝄞/11 Airtone to to 𝄞/8 Airtone

S24L Line 9. Change dbl Cr to Gamma/8.

In round figures, approximate values for Gamma/1 are:

Gamma/1	Violin ≈ 3000cps		Viola ≈2500cps		Cello, ≈1000 cps	
"airtone"	𝄞/11	273cps	𝄞/11	227cps	𝄞/8	125cps
Cr=𝄞/11	𝄞/11	273cps	𝄞/11	227 cps	𝄞/11	91 cps

Theoretical versus Actual Sizes and Pitches of Plates

Plate-thickness of the cello-belly (includes bar) is 3 1/3 times that of the violin.

Diaphragm-area (S13) of a Strad cello is 5 times that of the violin. (Nicolaus Amatus 1635 viola is 1.5 times violin.)

Pr ∝ thickness / diaphragm area	Theoretical Trio 68°F GH.S.		
	Cello	Viola	Violin
Belly thickness	3⅓	1¼	1
Diaphragm Area	5	1.5	1
Pr	.7f	.84f	f
≈ f	172 cps	207 cps	247 cps
Belly Pitch	e	g#	b
≈ f	205 cps	246 cps	294 cps
Back Pitch	g	b	d
Theoretical gram Belly Weight	$3\frac{1}{3}\sqrt{5} = 7.45x$ ≈ 484	$1\frac{1}{4}\sqrt{1.5} = 1.53x$ ≈ 100	x = 65
Theoretical gram Back Weight	$\frac{4}{5}(7.45)y$ ≈ 620	$\frac{3}{4}(1.53)y$ ≈ 119	y = 104
Cavity Height in cm. Cr ($\frac{21}{11}$)	16.9 F#	6.7 a#	5.64 c'#
Lowest String	C	c	g

Using formula in upper lefthand corner, 3.33/5 = .7 and so low cello-Pr figures: .7 x 247 = 172 cps (e).
This is approximately e, and is a fifth below belly of violin.
Assuming same interval for cello-back, its Pr would be g and so it figures: .7 x 294 = 205 cps (g).
See Spec-sheet S 13 for thicknesses, weights, diaphragm area.

All theoretical-trio approximations come surprisingly close to what one finds in practice. One example:

GHS	Theoretical-cello		1960 German-Cello 68°F	
Belly	484 grams	e....b-flat	f#....c'	486 grams
Back	620 grams	g....d-flat	g....d-flat	600 grams
Cr & CH	16. 9cm	F#, f# (dbl)	F#+, f#+	16. 3 cm

If one desired to make the actual tested-cello correspond with theoretical-cello pitches, he would remove enough wood from belly to make it e+, almost a wholetone lower. Such an arrangement of belly- Prs to go with a Cr=F#+ would avoid the wolf peak-conflict.

(continued from March issue) Urtexts in Translation

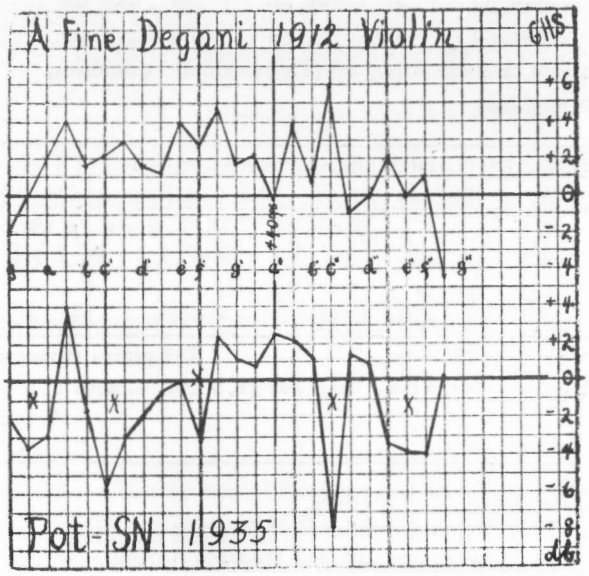
1606 "Le Operazione del Compasso Geometrico et Militare" by Galileo. Translated from the Latin by David Eugene Smith. Page 1866ff in "A Source Book in Mathematics" Vol. I, by Smith. This is a 1959 paperback reprint by Dover. $1.85

1610, 1613, 1615, 1623. "Discoveries and Opinions of Galileo". Parts of 4 works translated by Stillman Drake. In paperback by Doubleday. $1.25.

1638 "Two New Sciences by Galileo". Translated by H. Crew. A Dover paperback, $1.60. Contains his work on acoustics, etc. In all fairness, Mersenne's earlier work exhibits a far superior knowledge of the comparable subject material covered. Since all of Galileo's works are not presently available, perhaps one should keep an open mind on this point.

Comparison of Two Violins

Both instruments are strung up and in tune to a '440, 68°F. An electromagnetic-driver impresses a pure-tone (fundamental) on the bridge. A mike picks up the sound emitted from the violin and the reading is recorded in decibels. The fundamental-drive output-graphs of the two violina are shown. (Read S7)



The most obvious fact that the graphs show is that Pot-SN has soft c's and a loud boomer on b-flat. These characteristics make it very easy to identify the pot when it is played. No bowing technic can make those soft notes forte--they come out pp or less (ie. not responsive). Now for less obvious facts:

Progressing by semitones the number of intervals falling in three intensity ranges are shown as read from the graph:

	By Semitones			By Wholetones	
Intensity	db	db	db	db	db
Range	0-4	5-6	6 1/2-9	6	7-10
Degani	21	2	0	1	0
Pot-SN	17	3	3 (Bad)	1	5 (Worse)

In other words a chromatic-passage on the Degani has smoother, more uniform sound-output from the fundamentals.

Progressing by wholetones gives the Degani a greater lead.

Progressing by triads shows the Degani even better.

The Degani not only produces a pleasingly uniform fundamentals-graph by electronic tests, but when played shows real "aural class". It has an excellent BASS.

The Pot has "some tones that sound real nice" but its total-aural-picture fails as miserably as its visual-picture above. It has a very poor BASS.

The Responsive Instrument

Although the sound-output of the fundamental-driven violin produces what appears to be a complex graph, all the most important peaks seem to be dictated rather simply by:

I. ▲ MAIN-Prs. There are three (2-belly and 1-back); each can produce a long forward series 1f.....8f

II. △ BONUS-Prs. There are three (1-belly and 2-back); each can produce a short forward series 1f...4f

III. ⊙ CAVITY-PITCHES. Four different letter-pitches form interrupted reverse series, Gamma-set.

IV. In the most-responsive instruments these peaks are SPACED IN AN ORDERLY MANNER in which Peaks do not coincide. (Peak-coincidence causes fff-boomers.) No unnecessary gaps are left. (Gaps cause ppp-tones.)

GHS	▲ MAIN	△ BONUS
Violin Belly	b f′	d′#
Violin Cr	(C′#)	
Violin Back	d′	a♭, f′#
Cello Belly	e b♭	g#
Cello Cr	(f#)	
Cello Back	b	d′♭, b
Viola Belly	g# d′	b #
Viola Cr	(a#)	
Viola Back	b	f′, d′#

Memory-aid for letter-pitches:

1. Cr in violin and cello is a TRITONE above the lowest string.
2. Back-Pr is semitone above Cr.
3. Lo-Belly-Pr is a wholetone below Cr. (Hi-belly-Pr is a TRITONE above lo-belly-Pr.)
4. MAIN-belly-Prs are each three semitones from MAIN-back-Pr, which is in the middle:

b----3----d----3----f
lo- hi-
belly back belly

Only with properly made suspensions can one obtain
Maximum intensity of the low members of MAIN-forward-series.
The BONUS-forward-series.
The entire gamma-set.

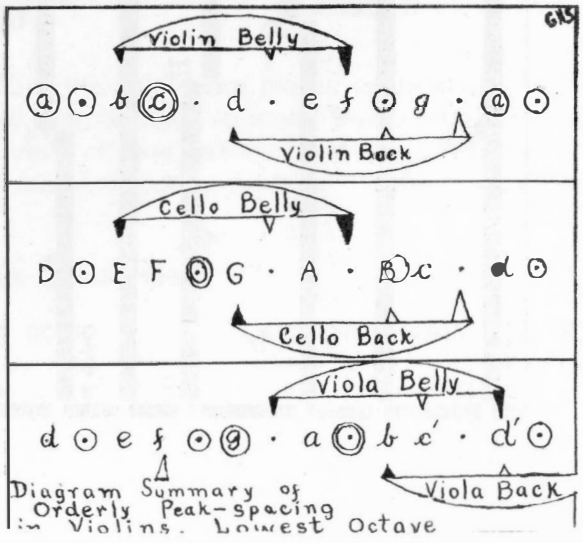
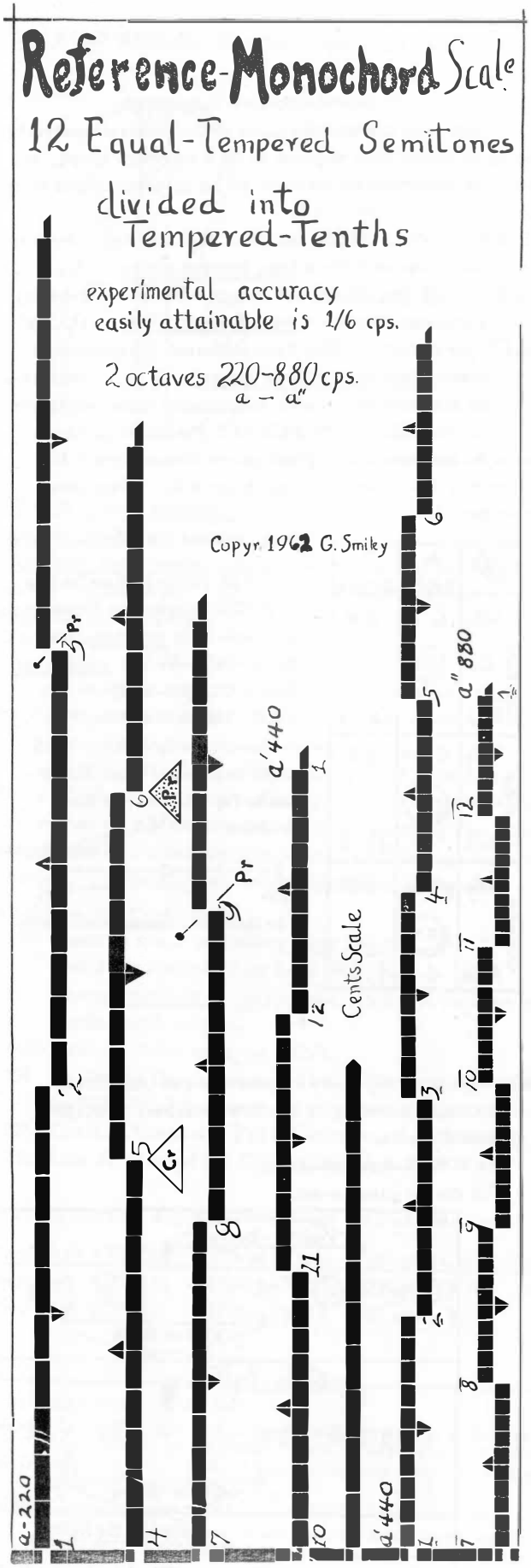


Diagram Summary of Orderly Peak-spacing in Violins. Lowest Octave



An RM/scale from which you can lay out your monochord in tempered tenths-semitones has been drawn. Marked resonances correspond to those on spec sheet (S13) and on upper spot-graph on S28. Directions promised on page 22L are:

If you desire to translate monochord-tenths into cps, use Rowland-Table on page S3. Use one or two (shown here) places after the decimal. Examples:

	cps.		cps.		cps.
a#. 8	= 244. 10	c'#	= 277. 18	f'	= 349. 23
b	= 246. 94	d'	= 293. 66	f'#	= 369. 99
c'	= 261. 63	d'#	= 311. 13	g'#	= 415. 30

Promised on page S15L, #6 (Th=maximum thickness, s=suspension):

WORKSHEET (Condensed) Revision & Correction of Violin-GW

Belly wt.	Pitches	Th/s	Back wt.	Pitches	CH & Cr
90. 5		3. 6/3. 2	98. 5	d', g'#	6 1/4cm=b
78. 5	e', a'#				
71. 5	c', f'#				
70. 5	b d'# f'	3. 1/2			5. 58 =c#

BP-line is 18. 9 cm. 393 grams strung up
Stop is 19. 4 cm. Stop was 19. 9 cm. Length of plate 35. 5cm.
G. H. S.

SUPPLEMENTARY READING

Oct. 1960 Benade, Arthur H. Scientific American magazine 50¢ 415 Madison Avenue, New York, N.Y. "The Physics of Woodwinds. pp. 144-154, 222, 42.

Jan. 1960 Benade, A.H. "Horns Strings & Harmony", Doubleday & Co., Inc., Garden City, N.Y. Paperback 95¢. pp. 166-74 for Bouasse's privileged frequencies (S20L).

Nov. 1960 #15 on page S25R. 50¢ for back issues. See adv.

Oct. 1957 Doschek, Antony. In 2 parts in Audio* magazine.

Sept. 1957 50¢ each. "The Violin and its Hi-Fi Anologies". Portrait of B.F. Phillips (S6 table). Photos & data on a 1615 Giovan Paolo Maggini.

June 1957 #11 on page S25R. 50¢ for back issues. See adv.

* Address of Audio is Radio Magazines, Inc., P.O. Box 629, Mineola, N. Y., U.S.A.

CORRECTIONS (November-December issue)

S19r. Change New York to New Work.

S24r. Line 25. Change will is to is.

S25r. Line 3. Change propate to propane.

G. Smiley, Organology Res., Sunnyslope, Ottumwa, Iowa, U. S. A.