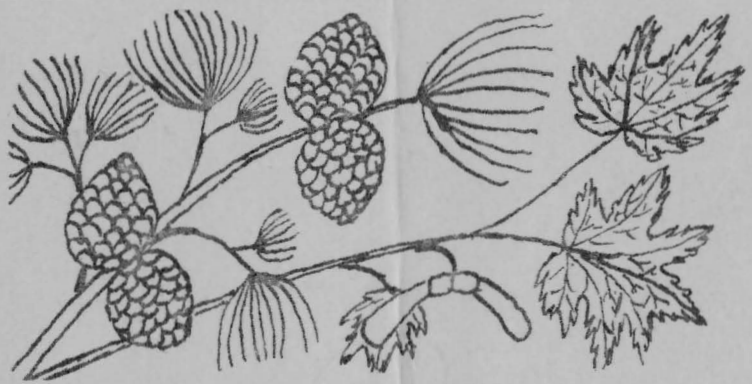
June - 1959

The Violin Makers' Journal

THE OFFICIAL MONTHLY PUBLICATION OF
THE VIOLIN MAKERS ASSOCIATION OF BRITISH COLUMBIA



Devoted to the development and encouragement of the art of violin making in Canada.

THE VIOLIN MAKERS JOURNAL

PUBLISHED MONTHLY BY THE VIOLIN MAKERS ASSOSIATION OF B.C.

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Meetings held the second Saturday of each month at 4360 Main St.

EDITOR: DON WHITE

VOL..2...No.8.....June, 1959

DEATH OF A CAT (Reprinted by request)

We are all familiar with the expression "Curiosity killed the Cat". History does not relate just what object this inquisitive feline was investigating, but the impression given is that we should refrain from any form of curiosity. We would like to contradict this suggestion with the claim that curiosity is a very valuable attribute.

The inst inct of self preservation simply keeps us alive, while the sex-urge (instinct of reproduction) assures the continuance of the race, very important qualities, but without this third inst inct-curiosity-the human race would never have evolved from the savage caveman.

Curiosity is an attribute possessed by the inquiring mind. An irrisistable force which enveloped the minds of men like Newton, Edison and Pastuer. These men lived with a terrific thirst for knowledge - a desire to explore the mysteries of the universe - the inst inct of curiosity - extremely prominant and overwhelming.

This was also the force that filled the mind of Stradivari, it caused him to break away from the models of Gasparo da Salo and of Maggini and to strike off on a new path of his own. Once having established a model that seemed promising he spent his whole life experimenting on variations of his first efforts. If he were alive today he would still be experimenting and making changes, he would be in the front rank of the scientific investigators. How could he be otherwise, possessed as he was with that inquiring mind?

Yet today we find many craftsmen who openly worship the genius of Stradivari and following his models to the letter even putting in imitation pegs in the top of the purfling. These are makers who have very little of the instinct of curiosity, they are tradionalists and tradition can be a very dangerous thing if we are attempting to produce the best. What we fail to comprehend is that just as the actions of the past become the traditions of today so will our achievements become the traditions of the future. Are we creating traditions that will be worthy of being called such? Who will worship us?

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Office Sign: "Keep your nose to the grindstone, your shoulder to the wheel, your eye on the ball--now try to work that way."

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LOCAL NEWS

by HAROLD BRIGGS

Hello Everybody:

We had no special speakers or visiting guest artists at our May meeting but it still proved to be very interesting. A motion made at a previous meeting by Mr. Svindsay, that we amend our constitution to permit violin players to become members, was lifted from the table for consideration, and after a very lively discussion it was defeated by a very close margin. The question of appointing a publicity man to try and bring the activities of our association to the notice of the public received a lot of discussion and Mr. Peder Svindsay was appointed to the post by acclamation.

Mr. Clarence Cooper, of Victoria was in attendance at our meeting for the first time. Mr. Cooper was an exhibitor at our hobby show last year and has followed the doings of our club with great interest and we were very pleased to welcome him as a new member. We hope he will be able to attend a great many of our meetings. He gave us a short outline of his theories on the various mathematical measurements of a violin and their relation to musical intervals.

Other visitors were Mr. MacDonald of Langley and Rev. W. Luckton of Port Kells. These two are both enthusiastic violin makers, and Mr. Lucton tells me he has made over five hundred tops and backs. Another vi
developing an interest in violin making under the direction of Mr. Wright. We will be looking forward to having this young man become a full fledged member at some later date, and in the mean time we will be glad to have him attend as a visitor as often as he can come.

After our business meeting was adjourned we enjoyed a session of fine violin solos by several of our members and various violins were tried out. Many thanks to each of the artistists who entertained us.

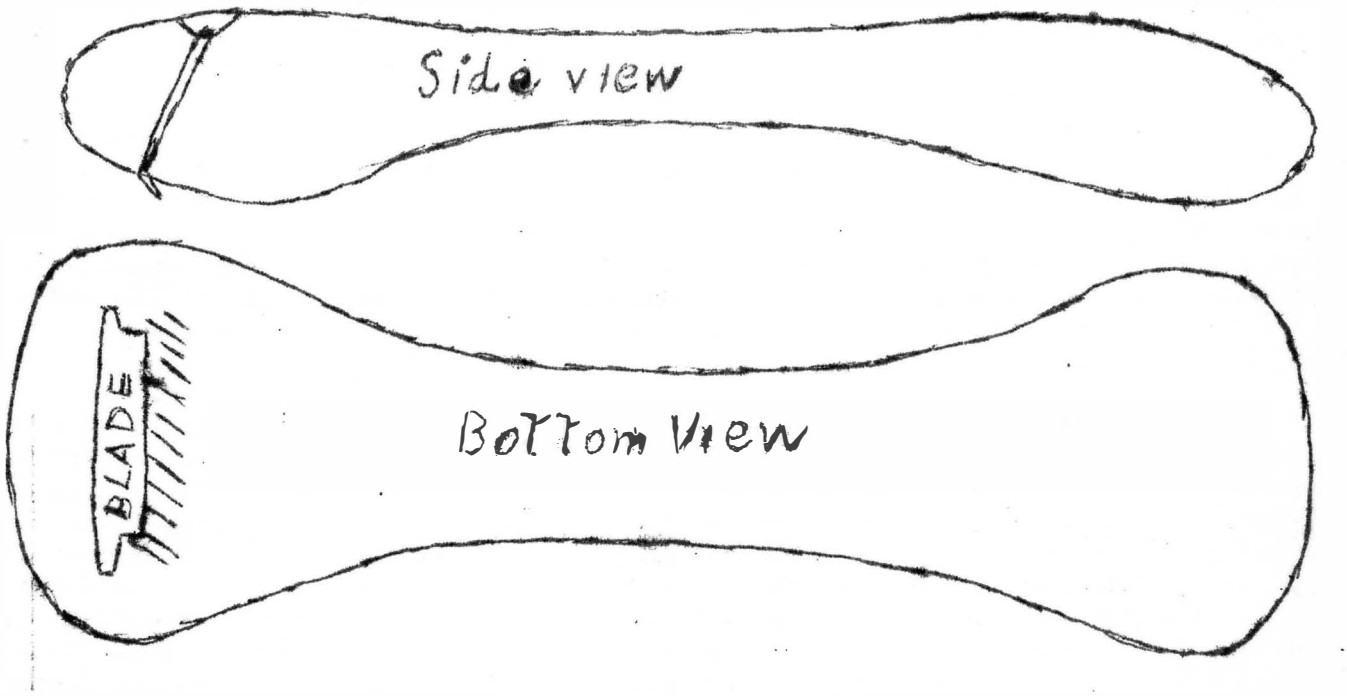
Rev. Wright came up with a new tool that looks as if it might be useful in violin making. Lets call it a cross between a safety razor and a spoke shave. I am showing here a side and bottom view--full actu al size. It is made of hard wood with a spoke shave blade inserted. It has also an insert of end grain wood, where I have drawn the angle lines, to take most of the wear. There is of course a slot going right thru to let the shavings thru, as on a plane. The blade is adjustable by tapping it in or out the same as in a wooden spoke shave.

Rev. Wright also made a suggestion that we establish a sort of trading post and this idea received unanimous approval. The general idea is for each member to bring surplus wood, tools, etc. even fiddles to each meeting for sale or trade to all comers. I once heard of a certain individual who was said to be such a good trader that he could go to market with a horse fly and come home with a horse. Come and see how close you can measure up to this. I think there are still horse flys to be found to start off with. No restrictions were mentioned so we should be able to trade any-

thing from horses to Xmas ties and jack knives - Say! how about wives? Don said for a start he would be willing to trade a fiddle for a nice bow. If we only had some girls among our members, I bet they would be willing to do the same.

Now I didn't mean to insinuate that you should trade off your wife - not even on a 2 for 1 basis. I just meant that the ladies might like to do some trading also - such things as recipes or used hats. Say Ladies - how about Husbands?

I find this is getting so complicated I think I better quit right now.



REV. WRIGHT'S NEW TOOL

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Chips from the Chisel:

While in Victoria last January, I called on Mr. Cooper, our most recent new member and he showed me a very useful looking machine he had invented for trimming violin ribs to proper thickness. It consisted of a cutter somewhat similar to a reamer except that it did not taper. There was a straight shank at each end which passed thru suitable bearings and was to be revolved at high speed by means of an electric drill. A screw adjusted block underneath held the rib material at the right distance from the cutter. The cutters themselves were available at a reasonable p price from some of the war surplus stores.

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OUR TEXAS JOKE.....

Then there was the Texan who developed an inferiority complex.
He thought he was no better than anybody else.

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A CONTRIBUTOR FROM DENMARK DISCUSSES VARNISH

By Kristian Skou

In "The Strad", March, 1959, Mr. E.H. Sangster refers to my articles on violin varnish ("Iron as a colouring agent in violin varnish"). First I may say that I have likewise read with great interest Mr. Sangster's information about his method of making varnish, published in "The Strad" as well as in "The Violin Makers' Journal".

In his work "Specchio universale delle arte e delle
Fioravanti states a number of varnish recipes that scarcely are meant especially for violins, even if a few of them may be used for that purpose. He also mentions various applicaple colouring matters such as sandal, dragon's blood and madder.

When I have not hitherto produced colouring of the varnish by heating it, this is due to my fe
of the resins which accounts for the colouring, might involve a change of the resins endowing them with quite other - and not desirable - qualities as for instance greater brittleness than originally. But perhaps my fear is groundless. Mr. Sangster's reputation as a violin maker should be a guarantee that the varnish is of fine quality, and in that case I certainly appreciate Mr. Sangster's initiative - and will promise to try his method.

As regards the question whether this varnish
be identical with the varnish used by the old masters for their violins, we ca
ignore the existing analyses of old Italian violin varnishes, carried out by Joseph michelmann and mentioned in several articles, e.g. "Lost Art of Strad Varnish" in "The Scientific Monthly", November 1955 - and those by Karl Letters ("Farbe and Lack", July, 1952). Mr. Sangster assumes that the contents of iron in the old varnishes came from the iron pots in which they were cooked. If these iron pots were attacked by rust - and that is of course imaginable - I will not quite exclude the possibility. And If iron was the only metal detected, I would even feel inclined to agree with Mr. Sangster. But the fact is that besides the metalloid silicon all the analyses show the metals (and sometimes the dye-stuff madder), and the cooking of varnish in an iron pot cannot account for such a representation. Now I must be careful not to reject the method entirely for this reason. It is possible that the old masters instead of an iron pot used a pot of burnt clay, which just contains the different substances proved by the analyses. I doubt however that silicon and metals could in this way be added to the varnish in so large quantities as shown, but before having produced varnish in the same way and getting it analyzed I shall take care not to assert anything definite about this question.

The iron oil varnish (the subject of my articles) has got its colour from complex iron resinates. However, I have found that it is scarcely (as supposed in my first articles) the potential difference between the rust shell and the metallic iron that causes the iron-ions which later on combine with the resins. These seem to result from local potential differences on the surface of iron particles which is greatly enlarged owing to rust process. Besides having caused the enlarged surface of iron particles, the rust shell seems to contribute to the process by its bound water contents which, together with the released iron-ions, serve as intermediate link for the later development of complex iron resinates. For if you in another way, by etching produce an enlarged surface of iron particles and - without rust - put bound water contents in contact with the corroded surface, the same process will take place in the varni

The chemical process seems rather complicated, but the method is so simple in practice that I suppose that the old masters may have applied it - without asserting,

of course, that they have done so. During the time past I have got some practical experience with regard to this varnish, both from my own and other violin makers' use of it. As far as beauty, tonal qualities and wearing quality are concerned, it is quite satisfactory. Should I criticize one single point, I would say that it is a little more accessible to solvent fluids than desirable. For instance the perspiration of certain persons seem to have a corroding effect on the varnish. However, the principle should not be blamed for this. In my second article I proposed a preliminary composition of resins and oils, and it seems that I ought to alter this composition somewhat, thereby making the varnish less delicate..

Mr. Sangster - as several others - believes in treating the plates of the violin with a "filler", and in a way I agree with him. There are many indications that the old masters have given the wood some kind of treatment, but I am not sure that it has been linseed oil. The word "filler" must not be take literally, as it is not the intention to fill the pores of the wood with any foreign substance (this has neither been done by the old masters), but to consolidate the cell-walls, thereby increasing the modulus of elasticity of the wood without adding to the specific gravity of the wood. The specific gravity may even be reduced in consequence of the smaller contents of water - the wood being less hygroscopic by the treatment. With the increased modulus of elasticity and corresponding greater transmission capacity of the vibrations (audible by a higher tone pitch) there is a possibility of corresponding reduction of the thickness of the plates, which is a decided advantage, as the longitudinal vibrations, and the latter component is the more outstanding, the thicker the plates are. (This is the form of vibrations that may be experienced when a string starts "whistling" for an untrained stroke. The string "whistles" the easier, the thicker and stiffer it is.)

Another beneficial
The microfibrills (long molecule chains), of which the cells of the wood are built, are mutually kept together by hydrogen linkages, that is to say linkages of 2nd degree, which are not nearly so strong as real chemical linkages and therefore rather easily can be broken by outer influences such as ultrasould (frequencies lying above the audible area, and which also - especially by longitudinal oscillatory circuits - can be produced in the violin). As it must be the chief aim for the outer varnish (apart from the preservating and aesthetical purpose) viscosity of the varnish - the reason why an unvarnished violin is losing the tone rather quickly unlike a varnished one is to be sought in this circumstance - so the "filler" may also preserve the structure of the wood and thereby the tone of the violin.

Why then should I be sceptic regarding the use of linseed oil as a "filler"? Apparently it possesses all desirable
Because linseed oil is a capricious material. After being oxidized and hardened and for the rest fulfilling all desirable demands it may undergo a change after a term of years - perhaps 5 years, perhaps 20 years or more - growing sticky as jelly and seemingly being in a fair way to become a liquid again. As far as I know the cause has never been subjected to thorough investigations. It is found that the process occurs - presumably a process of de-oxidation - but exactly what has caused the process is scarcely known.

I have just had for repair a violin whose tone had lost is brilliance. The violin was 20 years old. When opening it I found the inside of the plates ticky, and when tapping at the plates they sounded like pastebouard: a dull note practically without overtones. As far as I could find out the plates were treated with a "filler" consisting of linseed oil added oxidized oil of turpentine and perhaps another soft resin. The process of deoxidation was started, and the tonal decay was the poor result. I removed the "filler" by ethylene trichloride ($CH\,Cl : C\,Cl_2$), and after the plates were dried out not only the tone pitche was higher, but also the representation of the

overtones was in order. The violin regained its tonal brilliance.

Then what substance may I recommend I do not exactly know. I am on the look-out for one particular material, but until I have tried it out very closely I dare not recommend it. My only intention with these lines is to warn against an uncritical use of linseed o
it may also go wrong.

Kristian Skou, Denmark

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Twice armed is he whose
cause is just.....

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SLOID ACK TONE

We have received two issues of the magazine "Sloid ack tone" the official publication put out by the Swe dish Violin Makers Association. This is a very neatly printed effort with many illustrations. The Swedish organization boasts some 500 members who send greetings to their Canadian friends. We hope to exchange much information with Scandanavian Makers.

Our norwegian member Mr. Peder Svindsay, 3914 Main Street, Vanco is translating some of the articles appearing in "Sloid ack tone". The following is one he thought of special interest, another article on "The Faking of Violins and Lables" appears in another part of this issue.

CELEBRATIONS AT MITTENWALD

Probably the largest violin factories in the world exist at Mittenwald, South Germany. This community also holds a proud reputation for first class instruments. To foster these traditions the Mittenwald School of Violin Making was established 100 years ago. This fall they are celebrating the Centennial of the founding of this Violin School which is probably the only one of its kind in the world. A new school building has just been completed and will be opened during the celebration. Instruments made by past and present pupils will be exhibited and other attractions are planned fitting to such an occasion.

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Quartet: Four people each of who thinks the other

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CONNOISSEUR

Among the most prized exhibits at the University of Saskatchewan's Golden Jubilee this summer will be a quartet of stringed instruments made by the family that taught Stradivari - the brothers Amati. The University of Saskatchewan bought the two violins, viola and Cello for $20,000.00, but not from the usual wealthy European collector. They were owned by Steven Kolbinson, a 70 year old Kindersley, Saskatchewan wheat farmer.
1908 after his family immigrated from Iceland, has since spent much of his time chasing the rare Amatis.

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Report from a country newspaper on a local romance:
"... and the couple were married last Thursday, thus ending a friendship which began in their school days."

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REPLY TO SANGSTER'S ARTICLE.

By Joseph Michelman

Your Journal is rendering the violin-making profession a distinct and valuable service by your open discussion of the violin varnish problem. Accordingly, please permit me to discuss E.H. Sangster's article in your April issue, in which he mentions various varnish recipes. The outstanding error in his conclusions is that he has ignored the proven fact that the old Italian varnish has been found to contain tell-tale elements as revealed by modern spectrographic and micro-chemical tests. Any varnish formulation purporting to be a recreation of the lost art must account for these elements. Sangster's recipe does not fulfill this obvious requirement.

Sangster distorts facts in his statement: "I do not believe that the old Italian violin makers knew anything about potassium carbonate, calcium chloride or aluminum chloride, and cared less". The Old Italians used these materials but did not know their identity. For example, wood ashes were used in the earliest periods of history, but the primitive users were unaware that they were using potassium carbonate--that the active alkali in it was potassium carbonate.....I suggested the materials to which Sangster takes exception, in a paper entitled "Modernized Violin Varnishes" which appeared in "Violins and Violinists", January-February issue, page 28, 1958. The word "modernized" in the title should have been self-explanatory. I merely tried to simplify the preparation of the varnishes for the benefit of present day violin makers by using materials that are available to us in modern times.

The commonplace and available materials used were described in my paper "Lost Art of Strad Varnish", published in "The Scientific Montly", Vol.81, page 221, November, 1955, to which I refer Sangster.

Mr. Sangster should become better acquainted with the scientific basis for the varnish formulations that I proposed as he did with the preliminary treatment of the wood. In 1949 in an article in "Violins and Violinists (January issue, page 38) Sangster advocated that the wood of violins be soaked three or four days in rain water ...four or five times...with intermittent drying. But in 1958 in an article in "The Strad", January issue page 330, he apparently totally discarded his "water treatment" in favor of the raw linseed oil treatment, which I had presented in detail in my book published in 1946, twelve years earlier. Sangster has not to my knowledge given any reason for his conversion from the water to the oil treatment. Nevertheless, his endorsement of the linseed oil treatment is appreciated.

Joseph Michelman, 5050 Oberlin Boulevard
Cincinnati 37, Ohio.

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A little boy, taken to the ballet for the first time, watched curiously as the dancers cavorted about on their toes.

"Mummy," he whispered loudly, "why don't they just get taller girls?"

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One reason why it's tough for women to succeed is that they have no wives to advise them.

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THE VANCOUVER INTERNATIONAL FESTIVAL

The brochure which accompanies this issue of the Journal will, we believe, prove of particular interest not only to our local members but also to many outside subscribers. Many who live at distant points are commencing to plan for their annual vacation. Why not visit Vancouver attend our now world renown Musical Festival and at the same time visit with our local members.

As an indication of the size and importance of our Festival I can do no better than quote Don Henahan, prominant Chicago music critic, he says: "Chicago's own musical planners could take pointers from the Vancouver Festival ------ Like Salsbury, Edinburgh, Bayreuth and other successful festivals, Vancouver is developing a recognizable personality ------ If tourists and trade fairs seek out such an enlightened nation, we can hardly blame them". A glance at the programme will show that string playing has been given a significant prominance. For those "short of what it takes" there are several free concerts at the University.

The Vancouver International Festival offers everyone an opportunity to hear the worlds best artists. Let us support it!

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And did you hear about the editor who dropped four stories, into a wastebasket?.

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"GROUP OF THOUGHTS" from Larry Owen

Mr. Jacklins comments in your Journal were most amusing in parts. My wife and I got several big chuckles out of his clever handling of several ideas which are of interest to me. First his joke about describing the indescribable has some measure of truth, at least the indescribable is admittedly extremely difficut to describe, but lets recognize that sound is a physical phenomenom, and as such can be described. For example: 1. Loud tones
Brilliant tones contain increased amplitude of higher vibrations (one can readily ask how increased and how high). 3. Shrill would be stronger emphasis of still higher frequencies. 4. Mellow would be a reduction of high. 5. Contralto would be an emphasis on lower vibrations. 6. "Tubby or hollow" tone would be still greater emphasis upon lower frequencies. Admittedly this is pretty vague, yet it has a definite comprehensible direction. Standards could be set on acoustical equimpment, or with a battery of selected violins representing outstanding examples of some definite type. Don't ask me to try to explain what "nasal" or "sweet" tone is-yet I believe I could consistently pick such types.

As for the Markneukirchen "Strads", the one which I feel is an unquestionable example of a poor tonal instrument happens to be none other than the famous "LaPucelle" which I played at Wurlitzers in N.Y. I believe the instrument is as nearly beyond reproach as to authenticity as an example one can name. My opinion was confirmed by Mr. Harry Duffy and Mr. Robert Kauf (of the Juilliard Quartet). Incidently I have heard several reports that the "Messiah" is far from good sounding. An early example in fine condition and with Hill papers was in our home several months ago; it was rather small in tone. Let me insist that I will never express an opinion on tone that I can not fairly consistently confirm in "blindfold" testing. I am as subject to predjudice as the next person!

Lets not belittle the big toned violin by simply saying "it makes more noise". Is anyone who has interest in music and the violin impressed by mere noise? If an instrument speaks with a poor quality voice, the louder it shouts, the more its inferior quality shows. One would be less likely to pick the loud bad violin that the

quiet poor violin! I would suggest that not all Strads are good tonally; and that includes some of the most famous; i.e. La Pucelle. I played the "Muntz" now owned by a Doctor in San Mateo about a month ago. It sounded fine to me, however I feel the need of some measure of comparison to be sure my judgements are valid for me.

To date I have received one reply only to my letters (besides yours). That was from Mr. Carmen White of San Angelo, Texas. He wrote at some length, and very interestingly. His letter did not appear to suggest an answer, so perhaps I can say thanks through your Journal.

So far my experiments with violins have given negative knowledge only. It appears certain that no single item of violin making is the answer to a fine violin. Specifically I can assure that a violin can be poor and be of I. light weight or 2. have Strad graduations or 3. have a "Saunders grove" or 4. Have Dr. Saunders plate tunings. The poor materials in my German imports have defied my improvements. Admittedly all has not been the best that I have done to them, but everything has failed sufficiently to convince me there are no simple and single answers. Mr. Sangster insisted in a recent letter that my poor results were due to sloppy workmanship or something similar. Recently I have learned how to more effectively fit a bass bar and more evenly graduate, yet it seems quite impossible that with the considerable variations in density, strength, resilience; and all of the possible combinations of relationships between top and back, that a single set of graduations could produce a consistant result. I have complete respect for Mr. Sangsters practical tonal results, but I would like to see him or anyone make a fine sounding violin with some of the heavy "dead" spruce and hard, high pitch maple I have had in the white violins sent me! Surely with fine workmanship and first class adjustment these boxes could be made to sound better (there best), but I can't believe that would be much!

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"We are too Prone to Find Fault;

Let us Look for some of the Perfections"

- Schiller

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LOGICAL THOUGHT AND REASONING by Dr.M.E.Gordon, Stoke, England

Reading through the back numbers of your splendid Journal I was interested to read the discusions concerning "toning" the plates, and on "varnish". It seems very apparent that many people, including some who should know better, seem to think that the making of a violin is a mystery and reeks of magic. They also seem to think or have persuaded themselves that the Masters were either magicians or ignorant fools, incapable of reasoning, or were possessed of secrets which have been lost forever. Nothing is further from the truth. The Masters were not magicians, but competent craftsmen who took pride in their work; they were not ignorant fools, but capable of logical thought and able to apply to their craft ideas evolved not only by trial and error but by logical thought and reasoning; their "secrets" were obvious to all who can also reason, bearing in mind the conditions of their era.

Firstly, the Masters used good wood, whether plain or figured, well seasoned and ideally suitable for the construction of musical instruments. Secondly, they were well trained in their craft and most of them served a long apprenticeship in their youth, so that they were good, patient and skilled workmen, who were conscious that only the best instruments were saleable and thus endeavored to produce only the best. Thirdly when the violins were finished in the white, they were "prepared" for varnishing. That is, not only was the wood treated, but even before treatment the instrument was toned, ready for use. Fourthly the varnish was the simplist and easiest and cheapest available, not all the Italian makers were "as rich as Stradivari".

Now, when one considers the third condition, one must try to realize the factors which were present in Italy some 200 - 250 years ago. Travel was not easy, so that imported materials were very expensive and such luxuries as ambers, copals, rare oils, etc. were beyond the purse of the ordinary luthier, so that he was compelled to use material found locally, and even then the cheapest was the material of choice. A visit to Italy, particularly to Cremona and certainly to the Stradivari room in the Civic Museum there, will give us facts on which to base our assumptions. For Strad, like Bergonzi and Ruggeri, etc, used the familiar tools of the trade - planes, chisels, gauges, templates, moulds, and CALIPERS. There are no less than five calipers, similar to modern calipers, to be seen in the various cases in that museum. For what purpose would calipers be used other than to check the thickness of the plates? But the calipers on exhibition are not graduated in fractions in millimetres, but are comparatively crude and account only to the accuracy of a rule placed on the caliper. Therefore, Strad carved his plates, to a rough accuracy in graduated thickness at first. Now, Italy is noted for its brilliant sunshine, and most of the old houses are built for shade and coolness. This is achieved by placing only one window, usually small, in each room. I have no doubt that, when Strad had carved his plates to a rough accuracy, he then checked his graduated thicknesses by holding the plates up to the brilliant sunlight of the window and saw any uneveness by means of the transmitted light around the edges. These could then be scraped or planed away. In the same way, we know from repairers who have been privileged to open Master violins, that most plates are resonantwhen tapped or bowed and that there is usually the front plate is either pitched to Middle C, octave middle C or G above middle C. That means that the back was either D, octave D or A. But we also know from repairers who have taken the trouble to measure the thickness of the plates, that the graduations are not always regular, that the centre thicknesses vary from violin to violin and that contours could even be grossly irregular (Joseph Guarnarius was a great offender in this respect). Therefore it seems logical that, having worked the plates to a reasonable eveness, they were toned, fairly accurately, either by tapping or bowing until the Standard difference of pitch was obtained. It also seems logical and, in fact, obvious that when the violin was assembled, and purfled, owing to alterations in the plates due to the purfling and the trough so caused, that the Masters should retone the plates. And rather than strip the glued plates (thereby risking injury and damage), it would appear so much easier and reasonable to assume that the maker would tone the plates, in the assembly of the instrument in the white. This can quite easily be done by stringing and fitting it out, using a dummy finger board, and then playing on the strings. If the instrument played easily with good tone, that was that, but if, say, the G faded or had no power, then the back was scraped in such a way as to rectify the fault. Similarly with each string, until the whole was a balanced powerful and clear toned instrument. The only secret was in deciding where to scrape without impairing the quality of the rest of the instrument. This conclusion is the only logical one which can be deduced from the irregular contours and thicknesses of some of the master violins. (I know of one Guarnarius which has two areas of 6.5 mm in the back plate, one in the centre and the other about 4 inches below.)

Having thus completed the violin in the white, and possibly used it several times in Church, to try it out etc, it was then prepared ready for varnishing, and here again the strong Italian sun is a material factor. There seems no doubt, from the inside appearance and condition of violins, some over 200 years old, that the wood was treated with a preservative. What more obvious preservative than linseed oil, which was used abundantly all over Italy and Europe for centuries. It would seem to be logical that the white violin was soaked and soaked in linseed oil until it was impregnated. But while it was soaked, it was also exposed to the sun, thereby "drying-out" and also oxidixing the oil in the fibres of the wood. This process was repeated until the wood would absorb no more because the oxidized oil had filled the whole surface and was now acting as a filler. But this is a process which does not take place quickly, and in fact may take several months or even summers before the surface of the wood develops that smooth, satin-silky finish which was the object of this treatment, and

which is so necessary for good varnishing.

In the same manner, the varnish used, up to about 1750 was the cheapest, most easily made and procurred possible. What could be cheaper and more easily obtained than linseed oil, turpentine and pine resin (other resins could be obtained in certain parts of Europe)? One cannot imagine the ordinary workmen of 1700 fathoming out complicated formulas for the making of varnish, neither did he know of certain chemicals which are "Stated" to be found in old Italian varnish. It is a fact that such elements as Cobalt, Silica, Iron, Manganese etc. are detectable in old varnish, but only by Spectroscopic methods; there is insufficient of these elements to be detected even by qualitative chemical analysis even if all the varnish of the whole violin is tested. The traces of these elements must therefore be regarded as accidental impurities arising from contamination from the raw ingredients and from the vessels used in making the varnish. It seems obvious that the easiest method of making the simplest varnish is by dissolving the resin (or resins) in linseed oil and using turpentine both as an additional solvent and as a thinner. And although such a varnish would not dry out properly in England, it does dry out, fairly quickly, in the hot Italian sun. The drying out process depends on oxidation of the oils and resins by exposure, and not by a catalyst. Yet if once applied, the varnish is kept for a time in the shade, it will then not dry out even when exposed to the hot Italian sun. It is therfore apparent that varnishing could take place only during the hot summer months, (while the winter months could be used for actual carving) and therefore several violins would be varnished together. This would account for instuments, made in the same period, having the same coloured varnish.

But this brings up to the question of colour. It is obvious that this complex question could also have a simple solution, and in my opinion, Mr. E.H. Sangster has partially solved the problem. The colour depends on the fact that Italian turpentine is strongle Dextro-rotary (30) to refracted light, and also to the contaminated impurities in the varnish itself. Thus a varnish made by boiling in an old iron pot, will give a brown colour owing to contamination with iron. But prolonged boiling will also give a red colour owing to rotation of reflected light from the wood. A combination of both would give a reddish brown or a Red-yellow colour. It is very noticeable that the so called true Cremonese varnish is a red-yellow mixture, yet the red does not combine with the yellow. How can that combination be obtained? Only if the reflected light from the bare wood is split by the transparent varnish into component colours. The bare wood, owing to its pre-varnishing treatment with oil and sunshine becomes a golden yellow brown. Dextro-rotation of this colour gives red or yellow depending on the angle of viewing. Thus when the normal wood appears yellow, the"flames"will appear red, and visa versa when the wood is rotated only a few degrees. This play of interchangeable colours is a characteristic of the old Italian varnish and can be seen, not only on old violins, but also on old funiture, etc. from the same period and locality.

It is interesting to learn that the pre varnishing preparation of the wood is carried out today, in Italy, by some of the present day craftsmen. In particular, there is a luthier in Florence today, whose instruments have a finish and varnish which so resembles that of the old masters, that it has to be seen to be believed. (Incidently his tone is pure Italian also, and he informed me that his "preparation" may take him as long as ten years!!!).

I trust that this overlong dissertation may help to clarify the position and possibly eradicate some mistaken and misdirected thinking. On the other hand it might give food for thought, and if it does so, then it will have served some purpose.

Kindest regards and wishing your association all success.

Dr. M.E. Gordon, Stoke, England

.....

THE FAKING OF FIDDLES

Reprinted from "Sloid Ack Tone"
Translated by Peder Svindsay

The 10th December 1958 sentence was passed on violin maker and dealer in old violins Mr. H. Werro (Past president of the Violin Dealers Association). The case was divided in 10 parts.

PART 1 - Found not guilty in faking following instruments: 4 Andreas Guarneri, 3 Antonius Stradivari, 1 Bergonzi, 2 Giovanvi Grancino, 1 Balistriere, 1 Fernandus Gagliano, 1 Fakabus Stainer, 1 Francesko Gabetti, 1 Silver mounted and one gold mounted Tourte bow.

Sentenced to pay damages or part of court cost.

PART 2 - Found guilty of faking 1 Francesco Presseuda, 1 Thomaso Balestriere, and exchange of a Cappa violin.

PART 3 - Found guilty of faking folluwing 12 violins. 2 Andreas Guarnerius, 2 Tomasso Balistriere, 1 Giovanni Grancino, 1 Francesco Ruggeri, 1 Carlo Bergonzi, 2 Guadaznini, 1 Ferdinautus Gagliano, 1 Francesco Gobetti, 1 Antonius Graganani.

PART 4 - Found guilty in the case against redaktor E. Bachinsky.

PART 5 - Sentenced to one year in jail (conditional) with a 4 year trial period, and 5000 Francs in fines.

PART 6 - Told to buy back a Bergonzi violin for 80,000 Franc, plus 5% interest from time of sale, plus 2,000 franc for the trial. And told to pay back 12,000 franc for a faked Giovanni Grancino, plus 1,500 franc for cost of trial.

PART 7 - Told to pay 3,600 franc to attorney etc.

PART 8 - Told to pay $\frac{3}{4}$ of court case.

PART 9 - Freed from paying witnessess.

PART 10 - The labels from the following instruments removed and kept: 2 Andreas Guarnerius, 1 Giovanni Grancino, 1 J. Guadagnini, 1 Francesko Presseuda, 1 F. Ruggeri. The following declared genuine: 2 Tomasso Balestrieri 1763 and 1774, 1 Carlo Bergonzi 1732, 1 Francesco Gobetti 1714, 1 Antonio Gragnani 1773, 1 Giovanni Grancino 1709, 1 F.B. Guadagnini 1760, 2 Andreas Guarnerius 1668-90. The violins kept to be returned under certain conditions.

The trial lasted 5 weeks.

The writer of article is of the opinion that: While the punishment is just, it is not fair that it should fall on one man alone, since the dealers in U.S.A., England and Germany (to name a few) called in as witnesses by the accused, have been doing the same thing right along.

.....

Have you ever had it so good?

And had it taken away so cockeyed fast?.....

.....

"A NEW THEORY" by Wm. Kirkwood, Forfar, Scotland

I was more than delighted this morning to receive your Violin Makers' Journal, and have just read it through with great interest.

I have studied the Violin scientifically for years now, have made 4 violins in addition to sound post setters for the violin, viola, cello and double bass, and also some little time ago brought out a new type bridge for the violin and viola.

Before putting the setters on the market I sent samples of them to William E. Hill and Sons, 140 New Bond Street, London; and also to the Strad Journal people, and received a very high opinion of them from both.

I also sent one of my new violin bridges to Mr. N. Nicholas, Editor of the Violin Makers Association here of which I am a member. On one violin on which he tried it which he said was very soft voiced, it added brilliance to it, on another which had slightly wolfish notes it made more clear and even. Have also received many excellent testemonials on it.

I have made my own approach to the violin and with my 4 violins I never copied anyone.

Perhaps somewhat contrary to the established beliefs about the principles of the violin. May we not state the following definitions and be substantially right.

All action in a violin is brought about by the expanding molecules, and must be in the form of waves, not strictly a lifting action of the plates as in visible vibrations, but a purely molecular action.

Weight in violin plates, again strictly speaking, should not be viewed in that aspect, but its resulting resistance to the molecules.

The molecules have a lateral expanding action, even to both sides of the plates at the same time against an opposite wave, caused by their respective shocks from the bridge.

Even in a thin plate of wood without any shocks being applied to it, the molecules are more expanded than in a large man of wood, against the lesser pressure of the air moleclues, of which they are always in contact.

The force of the initial waves in a violin, which must respond to those given by the strings, are bound to set up other molecular waves in the tin plates, which may take very irregular forms, in these parts, and are symphonies to the initial waves.

Again strictly speaking it is not so much the tightening up of the bar and breastplate etc. by the pressure of the strings, as the tightening up of the molecules (and by putting more spring on them) that matters.

The sound-holes on either side of the bridge gives the necessary flexible part for the deeper centre of the bar, and enables the bar to extend its right form of pressurefurther along towards the ends, but at the same time will take the first benefit of the flex, before transmitting it to the ends, the soundholes also giving a convenient spread for the outcoming waves.

The strings of a violin do not vibrate from side to side, they go around like a skipping rope, anti-clockwise for an up bow, and clockwise for a down bow, but they have a certain throw from side to side, and may not touch the bow hair (or very little). When returning in a circle against the hair.

These are my conclusions after a long study of the molecular actions within a violin, but I am also fully aware how one can be wrong in studying this intricate subject pertaining to molecules etc. and any help would be welcome.

I have two of my violins with different shaped bar, these two are certainly better toned violins than the other two, (and I feel I must tell you about these bars) one is my last made violin, the other is my No.2 which I reduced on the outside all over and fitted this new bar, after I made my fourth.

Both bars are 9" long, approximately $\frac{3}{4}$" deep in the centre below the bridge although the one on my No.2 violin is slightly deeper all over. From the centre part on both they taper down in depth to approximately 7/16" midway to each end, then gradually get deeper till they reach 5/8" approximately near the extreme ends, where they are then brought down to a point. The one on No.2 violin is fully 7/32" at the base, the one on No.2 is fairly well covered with small 1/16" holes bored through it across.

You may think the weight on these bars at the extreme end too heavy, but I feel quite confident the weight is not the main factor here, it is the resistance, and I think the resistance is needed here on a violin, and seems to be proved that on these two violins. We have to remember here, there is no such thing as lift on the bar here, is all molecular action, and needs some resistance; with a bar cut away at the ends there is nothing to impart the force to the body of the instrument, the force must be all thrown on the body itself.

Now I do not want anyone to take what I have just said, for granted but these are my conclusions meantime it is all a very difficult subject.

Wm. Kirkwood, Forfar, Scotland

.....

We didn't all come over on the same ship, but we're all in the same boat.....

.....

STOP PRESS - NOTICE

A book of utmost importance is at present being printed, namely, The Universal Dictionary of Violin and Bow Makers, by the late William Henley and now bing brought up to date by Cyril Woodcock.

This is the first work of this nature to be written in English and includes all possible names of past and present makers. Printed in 12 parts, issued montly. Price is $3.00 per part, and parts 1 & 2 are now available.

The purpose of this notice is to advise all makers who would like their names included to immediately write Mr. Cyril Woodcock, 93 Crawford Street, Baker Street, London W.I., England. Better write air mail.

Give date and place of birth, number of instruments made, model followed, varnish used etc. About 50 words or a few more.

If you know particulars of deceased makers send them also.

More about this monumental work next month.

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THE VIOLIN MAKERS JOURNAL

A periodical published monthly on a non-profit basis.

Subscription rate $3.00 per year. Remittance payable at par Vancouver. Address Don White, Editor 4631 West 14th Avenue Vancouver 8, B. C. Correspondence Invited.

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WOOLF NOTES

by The Editor

During the past month I received so many articles and so much correspondence as to make the task of editing this and the next issue nothing short of Hurculian. New subscribers from oversea s are taking a keen interest in our Journal. Several have sent pages of valuable and instructive material much of which will have to be kept over till next month. It might be well at this time to inform writers that should their material not appear immediately it is not because it is uninteresting but more likely that it will fit in to the next issue better. I have tried to work out one themeor subject at a time.

Remeber we started the tap-tone theme with Dr. Saunders valuable contribution. No sooner did this appear than I was deluged with material on Justin Gilbert who used a system of tuning the plates. This developed into the subject of pre-varnishing treatment of plates. We have Sangster, Michelman and Carmen White and McNeese, each giving more or less different methods for fillers and varnish. This disucussion is working up to quite a fight for supremacy. We hope each of these gentlemen will take this battle in good spirit. Each maker evolves a technique which seems best.

ORDERED CONFUSION:

Readers have during the last few issues been presented with so many different theories and practises as, perhaps, to render the picture rather confusing, especially to the beginner. As Editor it has been difficult to decide whether certain views should be presented or not, but who am I to say that many of the ideas are not good? To be fair the Journal must be a sort of forum to afford a medium for exchange of ideas, no matter what we may think of them, the reason being that no one can categorically lay down any lines or limits for the construction of a good instrument.

It would seem to me that each individual must evolve a technique of his own, for instance, one maker may have success with certain graduations and another obtain the tone he is seeking from a completely different set of thicknesses. This would also apply to methods of varnish. After all there is definately individual taste in tone.

TWO LETTERS

As I must be brief this month I will close by presenting two letters which I found very instructive:-

Dear Mr. White:

I find some of the views expressed in the Journal very amusing. One was a reference by Carmen White regarding French, English, German and American fiddles. "Look at an old plank or telephone pole and you see the same wood." Well in this country we treat telephone poles with tar or creasote.....but as far as I know, nobody ever treats their fiddles with that stuff. AND, most makers would not favour

using the same wood as used for telephone poles either!!! That gem was in the January 1959 Journal.

In the same issue Mr. L. Owen admits that when testing the "Carrying power" of violins (which is to my mind a very real item of difference between good and bad fiddles) he was assisted by "a group of six observers of mixed experience". That is probably why he "came up with such mixed evaluations". After all, if the fiddles are to be played in an auditorium, (not in an "open field") surely it is best to test fiddles under the circumstances in which they are intended to be used. Maybe science cannot explain why a good fiddle "carries" better than a poor one but it is an undisputed fact in musical circles that this is so. Even if Mr. Owen does not think it is an "important factor". Maybe if he experimented with GOOD fiddles, he would find answer to his query about fiddles that "play in" and those that "play out". It is not much use experimenting with common "German factory fiddles" if you want to find how a really good fiddle behaves.

I would suggest that even if some violin makers and experimenters do not understand certain factors, the lack of understaning should not be taken as proof of the non-existance of the factors.

C.A. Hoing, High Wycombe, Bucks., England.

.....

Dear Mr. White:

The Journal has had many interesting articles. I have a few words to say about Justin Gilbert. I bought a violin from him in 1934. This was his number "P 84", and was a Strad model,, made in 1932. It had an oil varnish, which was still sticky, a very soft varnish and not very clear. The workmanship was very good. It was very light in weight and the tone was of very good quality but no power. I sold this violin to a lady in Troy, Mont. who is a good player and teacher. I visited her this last Sunday and she still had the violin, and I re-examined it, and asked her opinion of it. She said she liked it for playing at home, but the tone was too weak for orchestra or other public playing.

Mr. Carmen White has some interesting ideas. But when anyone says a new violin needs no playing in, and has all the tone qualities when made I must disagree. I played new violins made by George Blair of Spokane, Wash. and by Carl Becker who is in charge of violin shop of Wm. Lewis & Sons. Also many others. I also have handled or played on many old violins by Strad., Amati, the different Guarneri, many of the Gagliano family, as well as Lupot, Pique, Vuillaume, etc. Anyone who has played on and knows these fine old violins can tell a lot of difference. The fine old Italian violins have something you can not find in any new violins.

I have had violins that had a defect in tone caused by improper adjustment of bridge and sound post. And it took a year of playing to clear up the tone.

I acquired a violin made by H.T. Heberlein Jr. 1909. An exact copy of the "Messiah Strad". This is a fine fiddle, in mint condition. When I got it the tone was good, but not strong enough. Now after 2 years of being up to pitch and being played on it has shown much improvement, and there is much more resonance. It is now very satisfactory. All new violins need a lot of good playing in all postions to develop the tone.

A friend of mine owns a violin made by Doc. Porter. I consider it a very good fiddle. Looks much like an old Italian. I am sorry that he has passed away.

Wishing you and the Association the greatest success possible.

R.R. Hoake, Whitefish, Montana

.....

SUPPLIMENT TO THE JOURNAL

We have had the good fortune to obtain permission to publish, in serial form, a small book by a very distinguished maker, in the person of Mr. Roleof Weertman, Beaver, Pennsylvania.

This book attacks the problem through the eyes of an engineer. Much of the material is of a technical nature but all his theories and methods can be readily understood by the "layman ".

The first two suppliments will necessarily be of an introductory character so it might be well for me to give a short preview of "things to come".

Mr. Weertman suggests that the old Master Violins were scientifically built, regarding stress of top and back. This stress must be equal, the sound post being adjusted so that equal pressure comes on each plate. The plates must be thinned so that there is equal resistance to both. They will then respond equally to the same frequency. This is done by taking samples of the wood to be used and subjecting them to bending tests. He can then, by a formula, find out the exact ratio of difference.

There is a great deal more which I, as yet, have not had time to digest. It is the only book which I have read that removes all guesswork and places the problems on a scientific basis.

This suppliment will always appear at the end of The Journal. Readers can then easily remove these few pages and bind them in an attractive cover which we hope in a few months time to provide. It will take about twelve issues to "run off" this improtant book.

We thank Roelof Weertman for this special privilege and wish him success in his further investigation.

Don White,
Editor.

V I O L I N B U I L D I N G

A Mathematical-Accoustical and Engineering aproach into the art of

Fiddle Building

Dedicated
to
Christina Van Vlaardingen-Weertman
My Wife

Many thanks to
Nathan L. Gordon
For the use of his Andreas Guarneri viola
Anno 1695 which made this booklet possible.

By
Roelof Weertman

Beaver, Pa. May 1, 1958

A FEW WORDS ABOUT THIS BOOK AND ITS AUTHOR

Four short months ago, Roelof Weertman was to me only a name in my note book; one whom I knew to be a first class violin maker, a contact to be made, when time allowed.

Now that contact has been achieved, but not on my own initiative. Roelof Weertman was introduced to me by my good friend, F.R. Davidson of Leipsic, Ohio, Mayor of that city and himself a violin maker, of no mean merit. The exchange of letters with Roelof soon indicated to me that he was a man not only of friendly disposition but possessed of burning desire, that being to unravel the mysteries of the old Italian violin masters. He tell s me that when he is on the scent of a solution to some particular accoustical or mathematical problem connected with his violin investigations he becomes so tense and excited that for hours afterwards he is in a state of exhaustion.

This then is the man who writes this book. Qualifications. Civil and Mechanical Engineer, specializing in ship hull building. Love of the violin developed into a desire to build one and problems confronting him soon led him into the field of Engineering in an attempt to solve them. Has he succeeded? That is for the reader and the future to decide! Sufficient is to say that Roelof Weertman violins and cellos are being played by Soloists and Symphony players in New York and other large cities. Robert Sayne is now practising on a Weertman Cello, and Sydney Cohen will play on a Weertman violin (an Amati model) this fall.

Roelof Weertman has graciously allowed The Violin Makers Journal to publish his valuable work. On taking upon myself the task of editing such a valuable contribution to the violin world. I do so with all humility feeling that it is an honor which I had never expected to enjoy. May it be to the reader as helpful as it has, in this short time, proved to me.

Don White
4631 West 14th Avenue
Vancouver 8, B.C.
June 1, 1959

INTRODUCTION

No doubt it is the insatiable desire of every violin builder to make a violin, viola, cello or bass, that is just about as excellent and beautiful as a real Stradivari, Amati, Guarneri, Bergonzi etc.

Those restorers, repairers, builders who have the rare good fortune of having access to an original "Old Master" and who have great skill and artistry as well have produced many a fine copy or reproduction.

While able to copy and reproduce a master, this does not necessarily imply, that they absolutely know, what makes an instrument good, any more than a good cook needs to know anything about the theory of applied chemistry.

One may be sure however than in either case certain laws of nature have been followed and have been applied to best advantage.

If we were to know then which field of physics, acoustics, mathematics and mechanics we could utilize to investigate the different properties of a violin and thus have a better understanding of the art of fiddle building; we should have no trouble at all, constructing a far better than average instrument.

However in order to fully investigate the properties of a Strad, we should 1. Take accurate measurements and make drawings, showing plans, elevations, cross sections and longitudinal sections. 2. Take the Strad completely apart. 3. Weigh each part, note the thicknesses of top and bottom or back on the drawings and find the balance point of top and back. 4. Thru means of the wood thicknesses and plan drawings and sectional drawings determine the specific gravity of the spruce top and maple wood back and determine the acoustic pitch of top and back. 5. Re-assemble the instrument. 6. Determine strings' tension and pressure of the bridge on the top. 7. For the copy find spruce and maple as nearly as possible of the same structure and appearance as of the Stradivari.

The preceding method is the ideal one. The next best approach is to build neck and sides first and weigh them carefully and from any reliable source of information obtain the weight of a fine instrument. Then by subtracting above weights from one another determine the combined weight of top and back.

Several books show approximate thicknesses of wood in fiddles and so, even in a round about way, much information can be gained that is more than adequate to start with.

The Date, tables, explanations in this booklet should be of some help also. Coupled with a native artistry, an eye and feel for wood, should enable any builder to more clearly understand the principals of the art of fiddle building and thus fashion a good instrument.

The violin and viola drawings are drect copies of original instruments and the weights listed are also those of the real Joseph and Andreas Guarnerii.

Roelof Weertman
Beaver, Pa. 1958

I

Before Launching into my approach along acoustic and Mathematical lines I wish to explain that in the first place my curiosity was aroused by the fact that the very feeble tone of the strings alone, when bowed, was amplified so strongly.

Then also, the history of the violin shows a slow growth of approximately 150 years to a state of perfection and then a rather rapid decline of fine tonal quality. It seemed understandable that, how to acquire all knowledge to make a perfect sounding instrument should take years and years. But why then the "decline"? I presumed that the only adequate reason for this was, that certain methods and precautions employed were time consuming. Pupils of pupils of Strad, and others were highly capable craftsmen, but possible traded too much upon skill and intuition and thus made shortcuts in their work. The violins were still excellent, but subsequent generations of builders did not even know "how and why" and the "real" "know how" became lost.

Since for each "result" there is a "cause", it must be clear that the excellence of the Stradivarii and the Guarnerii is due to close adherence to acoustic and other laws of physics and mechanics in order to get the most out of the parts of the violin; very much like an automobile manufacturer does not put truck springs under a passenger car or vice-versa.

Coming back to Strad's pupils: who probably knew "how", but probably might more or less have "estimated" or "assumed" certain thicknesses, archings etc., very much like an experienced engineer, confronted with certain problems such as buildings bridges, machinery; often makes preliminary estimates for materials needed, and then follows up with calculations in order to check the correctness of his estimates or shrewd guesses. Most of the time he finds that his estimates were very close or even "right on the button". Thus he may be tempted to do away with the laborious and tedious checking process and utterly rely on his judgement. While not good engineering he does get "away" with it. His young associates and those with no scholastic training working around him can then only guess at his process, thinking and left to their own devices, never will equal the "old boy".

Could then the same have happened in the middle 1750's? An increased demand for quick delivery instruments, for we lived in the days of many writings for chamber music, may have induced the good builders to eliminate the real time consuming process of testing often, while making a fiddle. Such as balanced weighing, checking archings and graduations etc. Who knows?

I can, of course not all be sure that Stradivari used any of, or the same methods as, will outline, however he may have, or something along similar lines. Being an exceedingly careful workman, one may be sure that he did not overlook a single approach that could aid in making his instruments so perfect. Of course this applies equally well to the Amatis, Bergonzies etc..

For readers who may be curious why, when investigating the properties of the violin, I seem to combine several branches of engineering etc. and fiddle building, I may give a short outline of my background. Early in my career I was a ship hull designer, which gave me a sense for flowing and well balanced fiddle archings and balance, civil and mechanical engineering taught me properties of materials, as well as the natural frequency response of loaded structures. The study of music and fiddle building evoked an interest in the laws of acoustics. Thus the combined smatterings of knowledge helped unravel some of the mysteries of the violin.