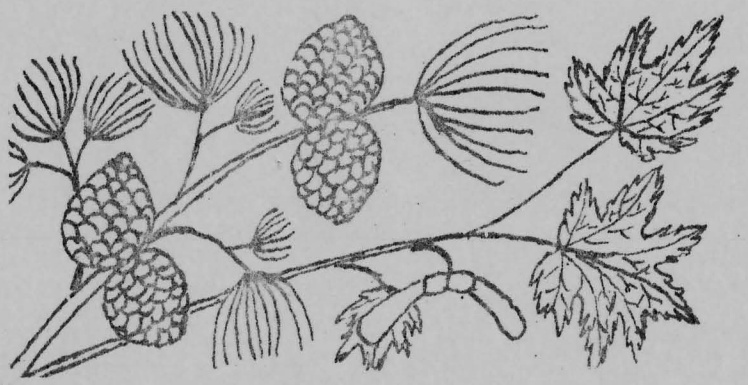
FEBRUARY 1961

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

The Violin Makers Journal

A Non-Profit Periodical . Published Monthly

By The Violin Makers Association Of B.C.

Vol.4...No.4 February,1961

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EDITORIAL PAGE OF *The Violin Makers Journal*

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THE VIOLIN MAKERS ASSOCIATION OF BRITISH COLUMBIA

The Journal has been loud in its praises of many violin makers both in the U.S.A. and other countries - to the extent, perhaps of neglecting our own local makers.

March 21st, 1961 will ma the fourth anniversay of the Violin Makers Association of British Columbia, for it was in March 1957 that a small group of ardent makers gathered at the home of Rev. Ge Wright and launched the present movement. It is only fitting, then, that as the anniversary draws close, we look back over the achievements of the past and looking back we are not at all ashamed of our record.

Monthly meetings held in our club room, have had a marked influence on the improvement of our instruments. At these meetings details of violin construction and exchange of ideas have had much to do with the superior instruments now being turned out by the members. For we believe many of our violins and violas could compete favourably with any made elsewhere. This was proven only last year when Peder Svindsay our master craftsman won the silver medal for his viola, in Italy and the home of violin makers.

Lately the association has turned its attention to the quality of maple and spruce grown in this province and is investigating the possibility of laying in stocks of wood for seasoning. The terrain of British Columbia is almost completely mountainous. We have mountain scenery here that will rival anything in the Swiss Alps. Mountains covered to the timber line with the most magnificent trees in the world - Sitka Spruce 15 ft in diameter! The association believes that we have as good and better violin wood here than any grown in Europe. Some of our best violins were made completely of B.C. wood.

It is no wonder then, that we should feel a very lively sense of pride in our association and its achievements. If we can make progress equally during the next four years we may possibly be on our way to becoming the second "Cremona". The "Cremona" of the West!

- 0 -

Music is the first, the simplest, the most effective of

all instruments of moral instruction.

.....Ruskin

- 0 -

LOCAL NEWS

Hello Everybody:

We hear that Mr. George Freiss, who recently completed a viola da gamba, has graciously presented this instrument to the School of Music, at the University of British Columbia. The presentation was made at a recent Friday evening concert held at the University.

Dr. Hans Karl Piltz received it on behalf of the University. Dr. Piltz had been playing the viola during the concert, and he explained to the audience, to whom many were seeing a da-gamba for the first time, how extremely valuable the da-gamba will be in the future study of ancient musical instruments. The school also possesses a harpsichord.

At the January meeting of the Association, it was decided to grant a scholarship to Helen Hagness. It being felt that she justly deserves any help we can grant her, the best wishes of the association are for her future success in the violin world.

Will all local members please note that next month is the annual general meeting, please come in force, and let's have 100% turn out. It is your duty to appoint your officers for the ensuing year.

- 0 -

BRUCE YANTIS QUOTATIONS

Mr. Bruce Yantis of Chicago, Illinois, has made quite a tidy collection of quotations by famous men. These are all in relation to the violin or music in general. The quotations are divided into groups under suitable headings. The following is a sample. We will present a group of two each month.

CONCERNING VIOLIN COPIES:

The only good copies are those which make us see the absurdity of bad originals.
...La Rochefoucould

Few things are harder to put up with than the annoyance of a good example.
...Twain

I have been told that copies of famous violins are better than they sound.
..."Me"

CONCERNING DISSONANCE:

Of all noise I think music the least disagreeable...Ben Johnson

Noise proves nothing...Twain

REPLY TO MR. E.H. SANGSTER

by W.G. Hall
Listowel,Ont.

Replying to Mr. Sangster, in the November issue of the Journal on varnish filler. My purpose in writing was not to discourage others from expressing their views on methods of using either fillers, or varnish, and I wish to thank Mr. Sangster for his good intention in writing to keep me "straight". It is only through an exchange of ideas, and experiences, in violin making can the art survive with any degree of stability.

The old Double Bass I referred to in my comments, as having a beautiful under coat of yellow, may have been linseed oil polished. I did not make tests, but assumed it to be a gum concotion, as in my experience over a number of years in using the oil treatment I have been disapointed. The reason being,
six months time, exposed in a small loft. On sanding the plates, the paper would become gummed up with oil partides, from the wood particles. This experience I am glad to say does in no way detract from the method advocated by Mr. Sangster, as he lives in a climate favourable to quick-drying process, which allows the oil to become oxidized through the action of the oxygen in the air. The oil itself does not dry, but becomes a part of the wood through this process Thus this becomes a thin film that acts as a preservative against dampness, and also as a basis for the varnish, which has an oil base. What Mr. Sangster has not stressed in his articles in both "The Strad" and our own Journal, is this most important factor of climate, the fact that his climate is dry and hot, much the same as was in the Cremona of Strad's time, when there was no air pollution as we know to-day, explains the enthusiasm he shows for his method, as he is evidently most sincere others adopt it, and that there is no mercenery motive, indicates his interest in the ancient art.

Frankly I have been both puzzled, and at times disgusted with the claims for various types of varnish offered for sale, as genuine formulas used by the old Italians. Also with the innumerable recipes I've tried from the pages of books on violin making. However, I am aware of the art of oil-polishing, and have seen many fine examples on gun stocks, as well as on counters and tables, found in old Inns and Pubs in parts of England, where the finish had resisted the action of liquor, and beer stains of generations of cutomers; but I can't see where the soaking of violin plates with hot oil adds anything to their tone. In my experience the effect was to muffle the tone, which I presume, is caused by the oil forming small microscopic crystals in the pores of the plates, thus interfering with normal vibration. So if Mr. Sangster re-reads my comments he shall find my chief objection is to the use of hot oil on the inside of the plates, which I consider of more importance than the matter he takes up. There is too much confusion of ideas already in varnish matters without adding to them by quoting makers without any scientific background.

Mr. Miller, I think, expresses it aptly when he says, quote: "Such claims are supported only by vague and flimsy data."

In conclusion, the fine quality of the article by Don White on linseed oil puts the whole matter in a nutshell, and explains my lack of success - which is climate - so it would be interesting, as well as fact finding if other readers would give their views in this fascinating and elusive subject.

- C -

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

- O -

RANDOM THOUGHTS WHILE SANDING PLATES

by Norman Miller

THIN-TOPPED VIOLINS:

The statement in the February 1960 issue, quoting Honeyman as stating that a violin should have a thin centre with thick edges, startled me, as I have several of honeyman's books, and through them I had always imagined that Honeyman was a strong advocate for a fiddle with a thick centre.

Indeed, on reading through the books again, I found nothing but condemnation by this writer on thin-centred fiddles. To quote:

"The Violin and How to Choose One."

(page 36) "Joseph Guarnerius .. had the rare wisdom to leave his violins very thick in wood, and in that, he showed more judgement than Stradavarius. Stradavarius, I may observe in passing, frequently erred in his thicknesses, and generally on the wrong side that is, he left the wood too thin. If the plates be well tapered towards the edges, they may be left 3/16th" in the centre, or more, and they will give a large and firm tone."

(page 67) "The proper thickness for some plates is a vexed question, and can never be fixed, so long as the best violin wood varies so much in density and sonority. Some pine may be left 3/16" thick or even more in the centre, tapering down to 1/8" or less at the purfling. A very common thickness for the breast is 1/8" (full) in the centre, tapering to a little over 1/16" at the sides; but I consider that too thin for a new violin.

Concert pitch is now much higher than it was when the great Italian makers worked, and the plates of both breast and back should be left much thicker all over than they were left by these masters. Whatever opinion be adopted about the thickness of the plates, the wood must be left thick under the bridge. A violin that is thin under the bridge is the most
violin is an old one, frequently sound so sweet that the player is enraptured; but like many other things which are got easily it will not carry, and in a large hall is almost lost at the other end of the room."

(page 76) "Tapering the Plates: Violin makers are often surprised to find that after making a violin of large model and of excellent wood, and leaving the plates thick, the instrument gives a very small tone. The reason is, not enough taper on the plates, or that the taper has not been carried right up to the ribs. Plates which are thick at the sides have not the freedom to quiver or vibrate--they are, indeed loaded at the very part where they should be free."

These words are hardly the words of one that advocates a thin-centred plate!! Along the same lines, I beg to quote from other authorities. These authorities were men of sound judgement, capable of forming correct opinions of the state of violins, new and old. Their experiences with thin-topped fiddles were expressed thus:-

From Wm. Henley's Dictionary, I quote:

"Fischer, Z. announced in 1786 a new method by which he claimed instruments could be made equal to those of Strad and Stainer. This process was only the often tried and futile oven-heating of the wood with its subsequent mixture of injurious chemicals. Result, what tone that was there would gradually evaporate into something weak and hollow,

and if it had any brilliancy in its young days its brightness was dimmed before its 20th year.

ARNOLD E. 1880 - Unfortunately in an experiment to get mellowness of tone, overdid the thinness of the plates -- always an unsatisfactory policy, eventually resulting in a thin tired tone after the instrument has had a few years vigorous playing, instead of the virile tone which normally made instruments give.

CRAMOND C. 1800 - Merecnary motives caused him to overthin the wood to obtain temporary sweetness of tone, and at the present day have to be strengthened with fresh wood, a process not calculated to enhance the value.

In the same dictionary, commendation is given to those who use wood in a proper fashion; leaving plenty of wood and not changing the normal method of thicknessing.

BLANCHARD P. - Used plenty of wood, and did not indulge in any faking to prematurely mature the tone. Astounding sonority of tone, equal throughout the four strings.

DARBY G. - Instruments plentifully wooded with the finest material. Adopted none of those abominable processes of chemically treating or heating the wood, and thus close up the portals of the future with a bang!

ELMERGREEN O. - Old spruce wood, very thick at the centre; 1/5th to 1/2" and graduated to 1/8" at the margins. Tonal quality, round and full. Sonority combined with persuasive timbre which leaves newness behind.

The thickness of Elmergreen would approach the extreme, but what a wonderful tonal result!

Quoting from another dictionary; relative to Guarnerius Del Gesu.

"His instruments have steadily increased in price, no doubt owing to the strong wood he used; it depreciated the tone at first, but with time vibrates more freely, the quality of tone becoming stronger and more refined."

If we are to build fiddles that will have lasting quality, and the true sonority of tone based on wood, and not a spurious sound that may perhaps immediately deceive into supposing that quality is there, a quality that according to the reports of the authorities above is short lived, and is actually a falseness of sound, which apparently occurs when thin centred and thin-topped breasts in general are used, we must use wood for the very purpose that it is chosen as the most desirable material from which to construct fiddles, and that is to embody the tone with the sweetness and sonority that wood, not the lack of it, can give. This then can only happen when wood is left in a fiddle, and not reduced to a mere shell that amplifies all the unwanted and unnecessary sounds created by a bow across the strings, and adds so very little of wood to the tone, simply because there is no wood there. This condition is more so in a fiddle that is thin under the bridge, where the tone is propagated. We are all concious of the fact the tone starts at the string, and is conducted per the bridge to the top of the instrument. We assume that the top acts as an amplifier to the original sound. If the bridge is too thin many unwanted harshnesses are conducted to the top. The bridge acts as a filter and by necessity has to be of a thickness and quality of wood that it will carry the sound and yet remove squeaks and partials that are detrimental to tonal quality. Here is the first instance of wood doing its part in a fiddle. If the bridge is too thin, too many of the unwanted noises are transmitted. A thin top does nothing to remove these unwanted noises, but rather agravates them by its lack of substance, substance that while removing and dampening the harshnesses, lends of itself quality that gives a tone roundness, not shrill noise, that in all too late

endeavour to remove, the advocate of the thin centre attempts to alleviate by leaving the edges thick. This in effect diminishes the area of vibration and rather vainly therefore attempts to remove the badness that has been passed on to the rest of the body by the failure of the thin-centre to filter it out. Take the squeaks out at the beginning and let the music travel through the wood, wood of which there is enough to enhance the tone. Remember, we are not trying simply to amplify the sound produced by a bow on a string. That string sound is really not very nice. It must have the added beauty of wood before it has violin tone.

Mr. Clifford Hoing stated
only just sufficient wood in a new instrument to approximate the same tonal result as an old one, there is no reserve of substance, and, therefore the instrument does not stand up to its task for very long."

There has been some evidence presented in this article that a thin topped fiddle does not stand up to its task for very long. Some degree of correction may be attained by the use of overly thick edges in an attempt to add body to the tone; the bridge, you will find will need to be stronger and thicker than an ordinary bridge with the usual amount of wood; the bass bar also will have to have more wood in it in a thin topped fiddle, in short we have to put more wood in other places to correct the mistake of taking it away from the point of propagation, under the bridge.

It could appear that many of us are not prepared to make a fiddle that needs quite a few years to attain maturity. We want our productions to be prima donnas before they can even sing. We want them to be good NOW, as any of the finest.

In one breath we all admit that it requires years of good playing to really mature any fiddle. Yet it would seem that many of us, perhaps without even realizing it or admitting it, are vainly endeavouring to make an instrument, that in the course of a few days, is equal to the maturity of an old master. A thin-topped fiddle into thinking that the answer is there. Putting it bluntly, few of us have the understanding or knowledge to judge a new fiddle and to hear the latent beauty that is hidden. A thin centred fiddle does not have this hidden quality, but brassily declares that it is mature from the very day of its birth. A freak, surely. Perhaps only a few have the ability to hear this existing harshness and spurious quality that exists in a thin topped deceiver. We, then are to be pitied and not blamed.

I read somewhere, these words;

"We all have that instinct which longs for truth, for perfection, and to the craftsman it is given above all other to express that longing in concrete form. In a world in which even inanimate things play a part in the general mix-up between true and false, right and wrong, he can witness by his honesty and good judgement to what is truth in craftsmanship.

He can make his own world real, and by so doing he will possess the one thing that anywhere and everywhere can oppose sham...the soul of an honest man."

To oppose sham in violin making should be the resolution of every violin maker. We are living in a world of substitutes and false values. A phoney world. A skilled craft, such as violin making should help a man to keep his mental honesty and to have no use for shams of any kind. Let us make true works of art, not hollow mockery from which any true beauty and honesty has fled.

- O -

A Harp is a Piano - seen in the nude....

- O -

VIOLIN MAKING IN HOLLAND

by H. van der Smagt
Badhoevedorp, Holland

As you know violin-building is to seek your way in a primeval forest of problems. I have tried to seek a path in the dark of that wilderness of problems, as much as possible on scientific lines. Holland, indeed, has always been famed for its arts and crafts and there have been renowned violin makers (Jacobs, a.o.). Nowadays also we have violin-builders (Max Moller, a.o.) renowned all over the world (first prizes, exhibition at The Hague, some years ago, Int. Quartet-competition too). Here we say "builders", not makers. A violin-builder is somehow an architect, a maker is more or less a contractor, a copiest of existing instruments. I understand, you are a very busy man, (and so am I), moreover 64 years young.....still going strong, of course (and so am I), were it not for a most horrible rheumatism these last 30 years; a month ago I have completed my 77th year.

And now, if you like, about violin-making.

There are no schools for violin-making here in Holland. So, if we are not in the craft from our youth, as son or pupil of a master, we are thrown on the only remaining sources: the books, English, French, German. I have read them from Bagatella to Alton, the Maillants, and Mockel. For varnish from Mailand to Frey and Michelman.

Alton is good, practical, plain and clear. Maillant too, but much more extensive. Generally they are all of the same brand; the teach you how to copy an existing instrument; they are suitable for the tyro. But they don't reach to the problems, the ignore them totally. I am sure there are, and perhaps many, books, unknown by me, which deal with the problems and difficulties that crop up as soon as one tries to build not to copy, a violin.

What I have found and discovered these last ten years of research, I have found it by intuition, experiment, thinking and logical reasoning. But what about the discoveries of other students?

I now stand sorely in need of a more complete survey of all that has been written about the problems of real violin-building, that is to say the really valuable books I have not read till now. In the August and September issues of the Journal already I came across the names of two authors (Dr. Castle and another) till now ignored by me. And undoubtedly there is other valuable information in writings, I am new to.

It is of course not to be supposed that these books should be in any way complete or infaillable, but they may contain an aspect of a question, possibly not quite correct, not the one correct solution, but they may, touching a problem, eventually stimulate our own reflection.

In the Journal I see the correspondents and I think there are "jolly good fellows" among them. They don't keep close their experiences and discoveries. No more than I. I don't like to make a secret of the art, but the professionals here keep the matter close.

A padding in one of our (Dutch) newspapers: "The ungarian Newspaper "Esti Hirlap" writes: A pensioned-off school teacher from Budapest pretends to have got to the bottom of the 250 year old secret of the violin-builder Stradivari. According to the teacher, the unique qualities of tone of the Stradivari violin are the result of a carefully constructed mathematical system. The ungarian patent-office has furnished the money for the construction of a neo-Stradivari. It has to be finsished near the end of this year. The money has been voted after the affirmation of the teachers conclusions by two first-rate mathematicians.

It is certainly not the first time for such a discovery, be it the construction of the instrument or the secret of the varnish, it periodically turns up in the press, and we are accustomed to take it with a grain of salt.

Well-a-day, I have no relations behind the iron curtain (besides the teacher undoubtedly has to keep his discovery a secret) but perhaps somebody has?.... Joking apart, there is always full reason to learn what the discoverer supposes to have found. You never can tell, and his idea might have germs of truth in it, that possibly might give rise to a train of thought in our own mind.

It is a plain "unvarnished" truth, that the unique qualities of the Stradivari violin (and of every other violin), are the result of careful constructed mathematical systems. We don't need an ungarian school teacher to regail us with truisms. Yet we are in urgent need, to dive into the secrets of that "system".

It means the study of the principles of violin-building of the old masters, the fundamental laws of their constructions (instead of copying their instruments).

These "principles", these "fundamental laws" are what we want to understand. Upon these we have to ponder what we can do with them as foundations for the building of a violin for the needs and requirements of our time. The old Italian masters have created the violins and built them, so that their instruments would satisfy the requirements of their time, which were totally different to the needs of our time, as Mr. Norman Miller observed rightly in the July-August issue.

For the requirements of our time we havecreated nothing. We have contented ourselves with copying, extending and reinforcing their instruments and it is a mere wonder than they have endured and sustained these operations; they have not been created for the greater and much more difficult task the bow-instruments have to fulfill nowadays.

In the November-issue Mr. Floyd Holly asks: "Are we humble enough?" In other words of himself; "Have we the courage to be humble?" If no, then we should dabble in violin-making. If yes, we shall not cease studying, we shall welcome every question, every problem, every idea, every tentative theory (that's why I regret not having a chance to take cognizance of the ungarian school teacher's discovery, be it what it May!

We shall always inquire after "the reason Why?" (as Mr. Norman Miller asks "Why Sun?" I hope to answer him before long).

And above all, and everything, we shall have the courage to allow the violin to remain...a violin. And therefore among other things, refuse metal strings... I hear my opponents, clad in steel, gathering against me. Everyone his due:

Here first is that soloist, who "being in his second movement", was startled by the snapping of his E-string. "What to do? Put on a new string? All the while the orchestra continues, and the conductors face, already growing crimson" "But, nowadays, "hail to the steel string safety first, metal strings." "Well, I reply, "do you possess but one instrument, what soloist has but one violin?" "Then, if you have two violins with you, let your second instrument be played by the first concert-master, he sits next to you. If something happens to the violin you are playing, your second instrument can immediately be handed to you, and the interruption is a matter of seconds only."

Another soloist! "But the quality of tone of the metal strings; the greatest soloists confirm". "I know; in every issue of any well-known magazine, dozens of advertisements of just so many trademarks of the "best" metal strings of all. And, indeed, not without the elogiums of great, greater and greatest soloists." Now, when you have ears, you can hear for yourself and judge.

"Think and dwell upon the fact (Mr. Floyd Holly writes) that all the emotions known to man can be excited by the out-pouring of this little box, which so nearly approaches the glory of the human voice."

I am convince, that the main cause of this likeliness is that the violin is built up exclusively of mere organic materials, "living matter" wood, gut, (even the bow with its horse-hair, even the varnish). And it may be that nylon,(or something like that) strings have a future.

"But the silver G?" my opponent asks. It is anyhow a gutstring and it is the exception, that confirms the Rule, forced by the Reality, which no endures that any separate creation should be an absolutely perfect whole, while only the Universe is and was and will be the only one. (That is, for instance, why no perpetuum mobile is possible).

But the gutstrings, have they not their inconveniences? Of course they have, but nowadays nearly unlimited technical possibillities may increase their qualities. We have to urge the necessity.

The future of our bow-instruments is likely to be less rosy than many a man presumes. There are too many dangers threatening them. They have the spirit of the age against them: Quantity instead of quality. Other musical instruments also have already fallen a victim to that monster. Remember the tragedy of the flute. It was originally a war-instrument, sharp and loud, the bore was cylindrical. After times it was bored conically and its music became melodious, noble and sweet, but less loud. Then, in modern times, came the ever growing orchestras and the flute-tone was considered not sufficiently loud. Then came Mr. Bohm, who was not at a loss for a soveriegn remedy; he again bored the flute cylindrical, the loudness was attained, but the quality of the tone was spoiled; quantity instead of quality. The industry took hold of the affair and fabricated the metal flute, "for orchestra-work,..You know, for scrubbing you do not use a fine brush", [illegible]. For the violin I fear its fate is pointing to that very way. There was drama in Stradivari's time. He found himself confronted with the problem; how to increase the tone volume, without loosing the beauty of tone. He solved the problem, and yet, the half dozen violins he sent to England, came back, unsalable: the English preferred Amati-tone.

For the violin too has to fight a long and desperate struggle against the continuously growing orchestras (often of more than a hundred instruments and their Thunderstorms of sound (modern music)). And now there is the modern industry, eagerly attempting to fill the technical acquirements of our time; metal strings and the PLASTIC VIOLIN.

Dear Dr. Moessinger, why dislike science, being yourself a scientist and violin maker? Applied science? Science gives indispensable knowledge and "weighed in its balances we too often are found wanting (to quote Scripture) There can never be too much science. But as for fear, for the coming of the plastic violin, your esteemed article was a warning.

I can't help remembering Chaucers'Canterbury Tales (The Reeves Tale) where unperceived danger was so near "That it had been too late for to crye"... For the plastic violin exists. It has been fabricated here in Holland some ten or twelve years ago, by "The Plastic Company of Amsterdam". It has been put to the test in a circle of invited persons. It was censored for not yet having the true tone of the genuine violin, but it is already esteemed suitable for entertainment (music). It has 2 bass bars, one on each plate, to reinforce the tone. Your warning, dear Dr., comes too late: "It is too late for to crye"..

- 0 -

Why did they call it "The Fiddlers Hotel"?

Because it was a violin (Vile Inn)...

- 0 -

SOME ANSWERS TO MANY CRITICS AND QUESTIONS

by Kristian Skou

First I have to thank Mr. Koscak for the word "fulcrum" (instead of "seesaw" point" in my description of the sound post as the balancing point). I think "fulcrum" is just the word I should have used. Being a foreigner I am not always succeeding in choosing the right words, but I thank the readers for their good will to understand what I mean.

Mr. Leo Larsson asks me two questions about the Thomas Balestrieri violin (described in the July-August issue), thinking I would be the first to welcome any constructive questioning - of course I am. And the questions I can answer very easily.

First Question: "Is this particular violin labeled Balestrieri a genuine Italian instrument by this maker?"

Answer: Yes, the violin is a genuine Balestrieri. This is not only my opinion, but several first rate experts who have seen the violin agree that it is genuine.

Second Question: "How does Mr. Skou arrive at the positive identification of the wood as Norwegian Spruce?"

Answer: A little misunderstanding seems to have caused the question. I wrote that the top was of Spruce, Picea abies, and the Editor added: Norway Spruce, that is Picea abies is commonly called Norway Spruce (or Common Spruce), but that does not mean that Norway Spruce is Spruce (only) from Norway - just as Sitka Spruce is not Spruce only from Sitka. As you know Sitka Spruce is growing wide over your country - and now also in Europe. In the same way Picea abies (with subspecies and varieties) is growing wide over Europe - also in the Alps.

And how I could identify the wood as Picea abies. The fully transparent varnish allowed me to see the structure of the wood under the microscope, and it is not difficult to identify this species of Spruce.

Presumable the Balestrieri top of Picea abies originates from the Alps - exactly from where I cannot say. At any rate it does not originate from Norway. The Piecea Abies growing in Norway is only exceptionally usable for violin building. Commonly it is too hard and too heavy, due to the climate. The ideal climate for violin spruce is a short, rainy spring, and a long, dry summer, but the summer in most of Norway - as well as in Denmark - is too rainy. In this respect the climatic conditions in Sweden are somewhat better, even if not the Swedish Picea abies is exactly ideal for violin making.

Mr. Rust asks me about the glue "Araldit". Is Araldit soluble in water? No, when hardened Araldit is insoluble in nearly all, and it is heatproof. For such parts of the violin we may expect to take apart again sooner or later it cannot be used, and I I only recommended it for the middle joint of top and back, as it is very strong, and can be given just the hardness we desire, not to impair the tone, that is: the same hardness as the wood to be glued together. Araldit is delivered in two separate tubes containing respectively an adhesive, and a hardener, which we have to mix, and by changing the mutual quantities we can make the glue soft or hard as we like - soft enough to glue rubber, and hard enough to glue iron or steel. A broken iron bar glued together with Araldit is said to be as strong as before it was broken - I shall not guarantee, but strong it is. Further it has the advantage not to shrink by hardening, and when hardened thoroughly (it takes several days - whereas a moderate hardening by norma temperature takes about 12 hours), it does not alter its properties such as is the case with a water soluble glue whose elastic properties are changing with the moisture contents of the air. For that reason it is also usuable for some repair work such as veneering, as we cannot tune a veneered plate finally until its elastic properties are stable. Araldit is produced

by the Swiss concern C I B A AG, Basel. We can purchase it also hear in Denmark, but if it is available on your side of the water I cannot say. I should think, however, you have glues of similar properties in your country. If not, and if Mr. Rust should like to try just this glue, I shall send him a pair of tubes. Mr. Rust only has to drop me a few words about it.

And now Mr. Sanborn's "Comments on Kristian Skou's Article". Mr. Sanborn writes " In my opinion it would have been better and more pleasant to have these points cleared up in private or in a Nordic (Skandinavian) forum. Where we would have had no difficulties with the languarge."

Well, if we had the intention to keep our results as secrets for ourselves a private discussion would be a splendid idea, but this is not my intention. The alternative was: A Nordic forum - presumable "Slojd och Ton". As Mr. Sanborn knows, it is not the custom in "Slojd och Ton" to discuss articles written in this journal - whatsoever the cause might be, and even if we had made an exception to this custom, I have no desire to reserve the results for our Skandinavian little world. Regarding the difficulties with the language, "we" instead of "I" seems to have run Mr. Sanborn in the pen. My difficulties are not greater than I think they are to overcome, and Mr. Sanborn may not expect that I should engage myself to write only in a Skandinavian language in order that he may be able to understand what I am writing.

But Mr. Sanborn does not seem to have realized that the system I have found in some of the best of the old violins, and from which I am building my violins, is quite different from the system Mr. Sanborn has described in his articles in "Slojd och Ton". Mr. Sanborn says I have criticized his, as yet, uncompleted series of articles. He might as well have said that the result of my research is a criticism of his articles - and should the words "as yet, uncompleted" mean that I have to wait with publishing my system, until Mr. Sanborn has finished the publication of his system? My article about the Balestrieri violin was by no means thought as an answer to or a criticism of his articles. If criticism had been my intention - and I must admit that there is much in his articles in which I do not agree with him - I would have written my criticism directly to Mr. Sanborn. It is not my custom to stab anyone in the back.

But Mr. Sanborn has worked out the method to find the micro-tone, which I described, and which I use (I hope with Mr. Sanborn's blessing - for as he says himself: this method cannot be patented), a method I find of genius in all its simplicity - quite superior to that of Karl Fuhr with the small glass tubes. And I thought I would mention his name with honour for this. It is a custom - and a good custom should I think - in technical and scientific literature to name persons who have contributed to the matter one is treating. But to mention Mr. Sanborn's method without mentioning for what purpose he used the method would make no sense, the more so because the reading of his articles caused me to direct my research on this line. My reference to Mr. Sanborn, his ideas, and in some way his results was absolutely friendly meant - sorry, he has taken it the other way. But as he has published his article - and especially the last paragraph, to which I shall return - I am forced to answer somewhat harder than is my custom.

But let me point out the difference between our systems. Mr. Sanborn assumes that the micro-tones have to be of the same pitch (or an octave above or below) all over the violin body, and he is trying to build around the "Air tone".

Well, for a freely vibrating plate (or not exactly a plate, but a body whose shape may be derived from a plate such as a gong or a church bell) intended to give the clearest possible tone of its own, the greatest possible carrying power, and the longest "after ring", the same micro-tone all over is physically quite correct, and the best makers of church bells and gongs have known it and worked out their products after this system.

Presumable also some of the old Italian violin makers, e.g. members of the Amati family, have known this system, and transferred it to their violin plates - and with good (if not always ideal) result. Francesco Ruggieri (1645 - 1700), mentioned by Mr. Sanborn was just a pupil of Nicolo Amati, and he worked from the principles of his master. Therefore it cannot surprise that the violin top from this master as stated by Mr. Sanborn was built from this principle. But the makers until about 1700 have scarcely known the physical reason why their instruments sounded so well. I should think that Stradivari in somewhat advanced age, and a little later on Guarneri (del Gesu) as the first realized the physical facts about the micro-tones in a violin, which enabled them to master the violin construction in quite another degree than anyone before them. I shall explain.

The plates in a finished violin are no longer freely vibrating plates. Not only the fastening of their edges to the ribs, but still more the placing of the sound post causes them to vibrate in quite another way than in free state. The action of the bridge and the sound post I have described in a previous article, and I shall not repeat this - only that the vibration energy is transferred from the top to the back, and vice versa, and also to the ribs mainly through the air volume in the form of pressure waves formed by the vibrating plates. (And besides the bridge also the neck is active in transferring the string vibrations to the violin body). As now the same micro-tone at two different small areas of the plates (for that sake also of the ribs) is expressive to the same resistance (and reaction) to the same oscillatory action - also sound wave action in the air volume - it is imaginable that if two corresponding areas of top and back (that is: mainly vertically corresponding areas) have the same micro-tone, full resonance (and nearly instantaneous resonance) can be obtained for oscillations in this areas, and for that reason; because the corresponding areas of top and back have the same micro-tone - and not because the micro-tones are the same all over the violin (a sort of horizontal accordance in the plates - if that should be the case in some old violins of the Amati-type) the best of the old violins sound so well. But of course, it is obvious that if a violin has the same micro-tones all over, also the demand for the same micro-tones in corresponding areas is fulfilled.

But why then try to build otherwise than by giving the plates the same micro-tones all over? Well, why did Stradivari, Guarneri, and some others, E.G. Balestrieri deviate from this system when realizing the facts about the micro-tones in relation to the violin? Presumable because the "all over-principle" is a limiting factor for the development of tone qualities - and tone quantity. I admit that the tone character of Amati-type violins can be lovely - some may say lovelier than anything else - but it cannot be denied that their tone quantity, and very often their evenness in tone in many cases is quite insufficient, and we cannot say that Amati violins are much sought for by solo violinists.

If we are not giving the violin plates a very acute arching in the middle (I shall not treat Mr. Sanborn's method to find the archings of the plates, as this method has only validity for freely vibrating plates) we cannot perform the "all over-principle" without giving the centre of the top (also the centre of the back, of course - but that is quite anoth r thing) a good deal more wood than along the edge. (When talking about the edge in this connection we are not thinking of the outer edge, but of the area just within the edge - in Swedish: "halkal"). But this thickness distribution in the top is not always the best. Often we can get a tone of more power and greater evenness by less wood in the centre, and more wood at the edges than the "all over-principle" is calling for, only that we have to give corresponding areas in top and back the same micro-tones, and that will say that the micro-tones will increase somewhat in pitch from the centre towards the edge - just what is to be found in the Balestrieri violin described.

In the Balestrieri violin the ribs were not tuned to the same micro-tones as in the plate areas near the ribs, but I agree with Mr. Sanborn that a tuning also of the ribs will give a plus to the tone production, and as also the sound post, and the bridge, represent a vibrating mass, also they are to be tuned.

Especially two zones in a violin cannot bear to be tuned down to the "all over principle": the areas near the lower roundings of the "f" holes, and the areas in top and back just behind the front block. If Mr. Snaborn admits that these areas have to be held a little thicker (I cannot find anything about it in his articles. About the section around the "f" holes he says quite another thing, but as he has forbidden to translate what he has written in his articles, I cannot quote) I shall admit that beautifully sounding violins can be built from his system, but - well I shall not repeat.

I hope to have cleared up the difference in our systems as to the micro-tones. And the the "Air tone". I am not building around the "Air Tone" - nor was Balestrieri. The micro-tone in the central areas of the plates (sæ the diagram!) was a little above g' (g' equals 391.9 cps). The "Air Tone" was (with the sound post placed a low d' (d' equals 293.6 cps) and the "body tone" was a high c' sharp (c' equals 261.6 cps).

But let us try to clear up the confusion about the "Air Tone" and the "body tone". In three different notes the air volume is involved. The first note is the frequency of the enclosed air with the"f" holes open, and the plates and ribs not allowed to vibrate. This is the true air tone which I called a fictive idea, because we have never heard it (I at least not), and we cannot hear it unless we are incapsulating the violin body in a thick layer of lead - or rubber as Peder Svindsay proposes. But of course, we can do this experiment, and determine the pitch of that note by blowing into the "f" holes, and then the true air tone for this violin is no more fictive idea. (We can also - still with Peder Svindsay - cover the "f" holes and blow through a hole in the end of the violin, but that will give a different note, and we have to take the violin as it is). The true air tone is the highest tone of its own for the enclosed air, and its pitch cannot be altered by decreased or increased pressure of the sound post.

The second note is the so called air tone which we can hear when blowing into the "f" hole without any muting of the violin body at all. This note is the pitch of the enclosed air somewhat lowered thereby that the vibrating air is dragging the surrounding material (plates and ribs) into the vibrations. The retarding effect of the plates will be diminished by placing the sound post, and further on it can be altered by giving the sound post more or less pressure, but the pitch of the true air tone can never be reached by giving the sound post ever so much pressure. When muting the back partly, and also the strings, the chin rest, and th bridge as proposed by Mr. Sanborn, we can also raise the pitch a little, but the pitch he gets in that way is neither the true air tone, nor the so called air tone, but an accidental pitch between these.

The third note is the body tone, and this note is the frequency to which the whole system - the violin as a whole - give resonance. This resonance we can feel when touching the back slightly by the hand, and singing against the top. Of course, instead of singing (and by singing we have to remember that the pitch of a man's voice is situated an octave below what we commonly think is the case) we can also use another instrument. If we want to realize the exact pitch we have to use an instrument whose notes are not limited to semitone intervals, but for an approximate pitch a piano is very good. For a violin without sound post the body tone is about b (246.9 cps) or c' (261.6 cps), that is a little below the so called air tone (without sound post), and with the sound post placed it is about c' sharp or d' (293.6 cps). Also for a pitch an octave below the violin body gives resonance, and in some degree for the double octave below, whereas the octave above gives no resonance.

As seen the placing of the sound post raises the pitch of the body tone - and in higher degree than it raises the pitch of the so called air tone, that is: by suitable pressure of the sound post the two notes can be brought in unisone. But to bring these two notes in unisone with the true air tone is a physical impossibility, and when Mr. Sanborns says: "when building a violin the ideal thing is to adjust the surrounding body to the same frequency as the enclosed air" (this frequency is the true air tone) I suppose

he is thinking at the so called air tone - otherwise the same frequency cannot be obtained. But why should we bring these two notes in unisone (and in unisoné with the micro-tone - or rather the micro tone an octave or two above)? With too many frequencies in unisone we have the risk that just this note will be dominating in the played violin. And the air has no micro tones (in ordinary sense). Its part is mainly to serve as a transferring material because the micro-tones of the plates are brought in unisone with a note, in which the action of the air volume is a part - and only a part? I cannot see any physical reason why. That it sounds beautifully when we are tapping at the bridge (the violin strung up) with all these notes in unisoné is no proof - Whatever else should we expect? But it is not the tone of the violin when tapped, but the tone of the violin when played that accounts.

For a full size violin the notes mentioned (except the true air tone) can be brought in unisone, but what about a little violin ($\frac{3}{4}$ size or thereabout) with the body tone and the so called air tone (sound post placed) about e' (329.6 cps) or f' (349.2 cps)? If we should tune the micro tones to e^2 (659.2 cps), the plates would be much too thick, and should we tune them to e' (329.6 cps), they would be much too thin. In spite of that (but without the notes in unisone) I have tuned such a violin to the micro-tone system, and proportional to its size the violin sounded as well as a full size violin.

Mr. Sanborn is handling violins I should have built from his system (I have never built a single violin from his system). He is handling errors which I should have done (in violins still I have not built), and he says that the difficulties should possibly be blamed on myself. I will leave to Mr. Sanborn to find out on whom these imaginary violins are to be blamed. What I wrote was: "Of course, we can construct a violin in that way, and it has been done." That does not mean that I have built such a violin. Why should I do erros which I from more than 30 years' experience know would spoil the violin? But the violins have been built - by a maker who in honest endeavour tried to follow Mr. Sanobrn's instruction. The violins I have seen and tried, and they were as I described - lovely (almost Amati-like) in tone, but with lacking intensity on the E-string.

Mr. Sanborn does not like my violins. He has never seen, nor heard any of my violins, but for all that, he does not like them - sorry! He writes: "Tone-judges claim that the violins Mr. Skou has made until recently are not the very highest quality of tone, and this tone changes from time to time." I do not know any "tone-judge", and no "tone-judge" has ever tried or heard my violins, as far as I know. I am forced to believe that these "tone-judges" are of the same free imagination as the faulty violins I should have built from Mr. Sanborn, nor his imaginary "tone-judges" have to play on my violins, but the violinists, who know my violins. and they are of a somewhat different opinion.

But Mr. Sanborn knows that such a statement is difficult for me to oppose without giving the impression that I am boasting of my violins. It is a sort of journalism which is not valued - at least not in Denmark. One may disagree with a person, and one may express it if one has something objective to say, but one cannot groundlessly discredit this other person's production, that is if one is trying to be fair.

Well, now I have reprimanded Mr. Sanborn, and he may fe l offended if he likes that feeling, but he may also give it up, and join the good teamwork we are trying to perform here in the journal. And if we should be very large (and why not!) we can interpret this last paragraph of his as his endeavour - a little strange, of course - to make even more interest about the instrument we all are loving so much. If so, we may all be content. And here - my hand to reconciliation!

Peder Svindsay in his fine article has proposed to replace the word "micro-tone" by the word "spot-tone". I have no objection. But in that case it has to be done before the word "micro-tone" has taken root. I will leave that to my friends on your side of the water, that is: in the first insance to the Editor.

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THIRTY YEARS AGO, I WISH THAT SOMEONE HAD TOLD ME THAT

by Carmen White

1. Good violins have been made with all sorts of arching, but that a maker who wants to make beautiful instruments should go and study the finest old Italian violins he has access to. This especially applies to arching, purfling, "f" holes, and scrolls.

The most common mistake among our beginners today is that they always cut a deep groove around the fiddle inside the purfling, and then, begin their arching -- which is usually too flat. Such a fiddle looks offensive, so much so that a fine violinist or connoissieur would not give it a second look or a hearing. Of course you can find old fiddles with this groove--don't forget, inartistic people worked in 1740 just the same as they do in 1961--but study the old Italian violins and do not join the ranks of the artistic. If you have no access to an old Italian violin, study any old French or old German violin you can get--and follow your arching guides and patterns to the letter.

2. Fine tonal quality just does not come from untreated woods and heavy gum-in-oil varnishes. If it happens, it is an accident--let me repeat, it is an accident! By this statement, we mean, of course, that fifty makers might copy the measurements, and do exactly as Stradivarius did and all fifty of them might come out with poor instruments! And if fine tonal quality is found accidentally in a raw untreated wood fiddle varnished with heavy gum-in-oil varnishes, such a condition is not permanent! With a few years of playing, the whole situation goes all to pieces! I have seen it happen many times. Why didn't somebody tell me this thirty years ago!? It would have saved so much trouble!

3. Most books on violin making were written by persons who never actually made any fiddles! It is a case of "those who tell do not know and those who know do not tell." This is especially true of the English writers, who have written many "authoritative" works on violin making. One of them, whose book is considered the "Bible" among violin makers actually made only about two or three fiddles in the shop of a French maker, Georges Chanot, whose violins are considered today as common French Commercial fiddles—if you doubt it, just compare the prices with those of the Gaglianos, or J.B. Guadagnini! This book has mislead many violin makers, including the writer--why didn't somebody tell me thirty years ago that the writer knew very little about the craft and less about the artistic reproduction of old Italian tone and varnish? So, I am telling you now--read your Heron-Allen book, but do not try to make your fiddle like he says, and especially your varnish!

4. Most new violins are sold to students through teachers. If a teacher recommends a fiddle, the student and his parents will buy it without question, especially if they have confidence in the teacher. Teachers are poorly paid people and need money--(I am one and I know)--so they usually make an "arrangement" with a firm or with a maker and sell those violins to all their students, regardless of the actual merit of the violins. Only last week, I listened to a promising 18 year old violinist playing the Spanish Symphony in a manner to make a great artist sit up and take note--but, he had a poor fiddle--a fiddle made by an unknown American maker--with raw wood and heavy-gum-in-oil varnish (yellow, of course, as they are usually)--sold to him by his teacher, in whom he has unbounded confidence--and what was the result? He played well, but one of the judges, a fine concert violinist and conductor, said to me, "Well, of course, he played well, extremely well, but we could not consider him as a possible soloist with the orchestra, as he would not be heard--the orchestra would simply swallow him up--he needs a fiddle". I had already reached that conclusion, but no one could tell this 18 year old the "facts of life" about his playing, as he has confidence in his teacher, and his teacher has a commercial arrangement with a violin maker (using the term in its broader sense!), so the result is that this poor boy is working his heart out to learn to play the violin and eventually he will get discouraged and quit--I here and now predict that he will end

up as a salesman, probably of insurance or building materials--and another great talent will be lost! For he is a great talent! But how can one tell him the truth without offending him and his teacher? We can't. Why did't I know all this thirty years ago?

5. Mr. Norman Miller and others to the contrary, fine violins have been made with all sorts of graduations, and the secret of fine tone is not in the calipers, or in some system of mathematics or thicknesses! Weight and general resonance and pitch make more reliable guides to tonal beauty than any so-called "system" of graduations or thickness patterns. Only last year, I calipered a fine old Italian violin made by Camillus Camilli, a nobel and great instrument. The center of the top measured 3 millimeters, the center of the back measured just over 3 millimeters! In other words, the back and the top were practically the same in thickness! I played the Bach Chaconne on it, and was not disappointed in its tone--it is today next to the concert-master in the Boston Pops Orchestra--so it is "up there" if any of you fiddle makers doubt its value! How to explain it? Easy--he had a piece of dense, heavy back wood and a lovely light top--so he left the back thin, as indicated to him, and the top thick enough as indicated by the wood itself. Guides? Weight, probably--a piece of wood at hand weighing exactly the same as that of a back of a violin of known value--and a similar piece for a top of known value--just balance them, that is all. How else can we explain it? Let's hear from Dr. Saunders and his friends--from the mathematicians--from Mr. Norman Miller--anyone who can throw better light on this situation should be heard from! I will lead the way in listening--but I wish I had known all this thirty years ago.

6. Varnish has no effect on tone? (Pause here for laughter). Of course, the classic answer is that all the varnish has been worn off on some of the old Italian violins and they have retained their fine tone. True. But can we really say that a varnish which does not spoil the tone of a violin has no effect on tone? Let us put in capital letters "THE VARNISH OF THE OLD ITALIANS DID NOT HURT THE TONE OF THEIR VIOLINS." Can we say the same of our heavy gum-in-oil varnishes--no matter how refined and pure that may be? I say we cannot--and I wish I had known this thirty years ago. Our quest is for a varnish which will not spoil the tone of a new fiddle--and one which will look brilliant, alive, and beautiful through the years--transparent and full of color--and one which can be readily colored with all the violin colors (not yellow and yellow brown, as most of our modern varnishes are)--one whose red does not make us want a pair of sun-shades over our eyes! Have we found it? I do not know--but Michelman has given us a fine basis to work with--I have never seen anything in my thirty years experience any better, and I do not think I have ever seen anything as good--I am ready to abandon it today if anyone shows me something better, but to date, I have not seen anything to equal it.

7. If we make a fine new violin and carry it to an artist, he will probably not recognize its qualities--not because he does not know, but because he has been fooled with new fiddles so many times that he doubts the permanence of anything new he sees. I wish I had known of this existing prejudice against new instruments, particularly the prejudice in favour of Italian instruments, (even new ones) as compared with those of other nations.

8. Old and expensive woods are not necessarily better than newer and plainer woods. Some of the old Italian masterpieces are really made from plain woods--particularly the backs of some Gaglianos and even Stradivaris.

9. Most "violin varnish" is ordinary varnish: No spirit varnish should ever be considered. If you wish to use a commercial violin varnish, no matter how well it is made, use it, but varnish thin and scanty and avoid the heavy weight of the heavy fossil gum-in-oil varnishes which either vind up your masterpieces as in a vise or else, if soft, surround it with a tone-killing substance similar to leather!

10. Never stain the wood with any water or alcohol stain before varnishing. In fact, no stain as such should ever be used in finishing a new violin. Of course, you can get a most attractive finish by using stain. But to convince yourself that it is wrong,

just place your masterpiece alongside a fine old Italian violin and study the two--you will be heartily ashamed of your stained fiddle--and you will throw away your bottle of stain for good! A good filler goes through the wood and give a soft yellow ground color never obtainable with any stain that I have seen. Why didn't I know this thirty years ago? It would have saved so much trouble and so many disappointing varnish jobs for me!

11. Stay away from "new ideas" about bass-bars, posts, bridges, neck angles, "f" holes and the like. We cannot do better than to try to recreate the old Italian Masterpieces. They represent a goal, an ideal, a "consummation devoutly to be wished"--they beckon us all and call on us to show our best skill and talent, our highest artistic realization in the craft--avoid any negation of these ideals (such as, for example, the so-called "Tertis Model" viola). Do not be mislead by the apparent contradictions among all of us who claim to be violin makers. We are often wrong! All of us. Some of us say "use linseed oil as a filler"--others equally famous say "never use linseed oil as a filler"--do not let this bewilder you too much--use your own artistic judgement, your own ears to determine what is good and what is not, along with the opinions of experts who know and who are not financially interested in the outcomes! Such is the true art in violin making.

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WHY EXPOSE VIOLIN WOOD TO RAYS OF LIGHT

by H. van der Smagt

You know the Dutch saying "Seek sun", for "Summer is short in this country, last year it fell on a Sunday". So I can not answer the question "Why Sun"? directly. If Mr. Norman Miller is willing to put up with a somewhat modified form of the question "Why expose violin wood to rays of light?" here is the answer.

The scientific investigations of Dr. Saunders in American and Dr. Meinel and other in Europe are, after the war, put into practice in Vienna (Austria). Austria is a poor little country but a well known piano manufacturer , and the High School for Technical Sciences have interested themselves in the matter and the results with violins are brilliant. Many of the great and even the greatest performers (Jehudi Menuhin) play a modern Viennese violin.

In a lecture, delivered at The Hague (Holland). Engineer Willibald Lutschinger from Vienna told us: "By exposure of the wood to rays of light of a certain wave-length (temperature 35 degrees Celcius), homogeneousness, stiffness and hence increment of the modulus of elasticity are obtained." Of course this wave-length is kept a secret, and my own enquiries have not succeeded.

This I presume, is a problem, worthy to be submitted to the scientific ingenuity of Dr. Saunders. If he can but discover that wave-length and how the formula can be applied in a simple violin makers workshop. The Viennese violin-builders may thank Science for their great and decisive successes.

The wood is tested before modelling and afterwards the finished instrument is again tested. This by means of the oscillograph. Thus the violin-makers are beforehand acquainted with the qualities of their wood. Afterwards they have the opportunity to correct the finished instruments.

It is Science, that has created this possibility. With a third (and last) quotation, Dr. M. will magnanamously forgive, Science has been, is and will be, "Their Guide, their lod, and their master". (Dante).

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MY EXPERIENCES IN VIOLIN BUILDING

by Frank W.Heinonen
Toronto,Ontario

In Mr. Kristian Skou's contribution, he mentions "Mockel makes the inside first which is a mistake". I was just wondering if he meant he puts the rib section together first. But, then he says "he forms the outside first marking the curves by use of the drill." I find that he not only marks the curves, but, they are drilled to certain depths. Each curve, which forms the arching after they are gouged and planned to depth, which in my way of thinking is very accurate that cannot be very easily attained by the naked eye; however you have to use your eye for in between the curves which is natural.

I made a violin on these principles and I must say for equality, volume, beautiful tone and playing quality I am quite pleased with it and it surpasses the Heron-Allens that I have made in the past ten years. In Mockels book I used the diagrams of Antonio Stradivari 1709 known as the Neruda. I used the millimetre scale to get the distances of the elliptical curves. There are also diagrams for the arching of the same violin the Neruda 1709 on the next page of the book. But I didn't think it necessary to use them. To me the system seems to balance the whole structure of the violin and synchronizes th e plates one with the other, and having the thickest in the region of the sound post.

Being a player myself all my other violins sound sick compared to this one. I think a person has to be a player to appreciate a violin. Kreisler's "Caperice Vienoise", sounds quite good on it, but I wouldn't say quite as good as Michale Rabins rendition on a record I heard. It was beautiful.

This violin, I gave the Michelman linseed oil treatment and varnished it with the red alizarine. I hope to have better luck with compiling the varnish as I couldn't get the 20% paste alizarine that Michelman prescribes but the color is fast and has not faded in the least. I had to work from a powder and it wasn't too transparent. In a previous effort I used the red madder root. But the color was not as good and Mr. Michelman mentions that in future the alizarine will be used exclusively in place of madder for the red varnish.

Going back to the Mockels book he mentions that the old Italian masterworks are too weak for the high pitch of today. Although he says too much wood in the top of a violin, the ring will not be plentiful enough and the oscillations will be smaller instead of larger by a normal built instrument. The circle tester is not enough to determine the firmness of the wood. The old wisdom in violin building "soft wood must be thicker and harder wood made thinner"- nothing is more right today.

The old masters set the thickness from the feeling of the wood. They found from this and that way the approximate approach to the right amount of wood. After measuring a string work, it was found the back thickness measured 5mm. to as far as 2$\frac{1}{5}$mm. under certain points. The top only in exceptions 3 to 3$\frac{1}{2}$mm thick. The thickness must not go over 3mm.

Customarily low arched instruments are made thicker in the top. The thickness of the back is governed by the (Eigentone) the normal tone of the plate. It is the reliable and tolerable proving stone. Over a thin spot over the right or left upper part of the back hold it between the thumb and the index finger of the left hand, and with the knuckle of the right hand tap against the middle so you can hear a distinct tone, and with the help of the piano, or better a tuning fork or still better another violin. If this tone is under F, then the back is too thin, also it should show 4mm. If it goes over G it is cutomarily too thick; also is not more than 4mm. The natural tone (Eigentone) influenced the quality of the instrument. If it is too high by the notes G and G# the

ring will be very clear and bright. If too deep by the note E the quality will be dull. Over 4mm thick by the natural tone over G working off wood will make a duller tone but you must not go under 4mm in the middle a thin back will always have a weaker carrying power. Good sounding instruments have the "natural tone" F and F♯.

The top must always be evenly graduated and have flexibility and there hangs the full tone complacence and right breathing of the tone. The natural tone of the plate is of little importance when the firmness of the wood and when the natural tone of the wood doesn't go paralel with the back. Thickness over 3mm in the middle and on the F hole must not be necessary. Avoid the possibility of too much lining on the tpp.

If the top is too flexible use a longer bass bar, giving more firmness. If too thick a top, work the bass bar smaller. First, long standing experience and moderately equal results will be attained.

I rely on Heron Allen's book quite a bit for measurements and there is really a lot of good points in it. Although I haven't been following the Heron-Allen back strictly. As this article came out in a Finnish picture magazine and I have been following the inside shaping of the back mentioned in it on all previous instruments. Of course, the Heron-Allen top is a little heavier thickness than what the others seem to specify. But as he figures it takes 50 years for the woods in a fiddle to get acquainted with each other and the sap all dried out he could be right. In fact, Heron-Allen says that if you keep a few fiddles, or rather make a supply of fiddles and keep them for 50 years they would be in good playing condition to sell for higher prices.

The micro-tone tuning system may be all right although some one mentions in an earlier edition of the Journal that "How is it going to work out as after varnishing the pitch will be raised." Mockel, gives a tap tone rise of one tone after varnishing. There is something in the Mockel book in the part relating to the accoustics of the violin where you use some kind of an electric magnetic apparatus which goes on the bridge and near the bridge for testing the tones. And there are diagrams of shading of white and black on different parts of the violin and, which indicate a different tone, as a whole scale is shown and different shading for each note. I had to procure a larger German-English dictionary as the research gets more complicated as we go along. I don't know where you can procure these instruments for testing the tones and whether they would simplify the matter in the making of violins or not. Then, there is another point I thought of, when a certain note is played and it vibrates a certain part, when you are playing a certain note, some other person would have to feel around where the vibration centres. I don't know if there is any advantage gained by this knowledge, however, I expect to study it out eventaully when I get more proficient in the language.

I noticed Pasqualini's name is mentioned on these accoustic articles, and I think he may be the same man who was in charge of the viola competitions in Rome.

What, I really intended to write about was to ask if you could get me a piece of B.C. Sitka Spruce, as I started a new violin and I'm not to satisfied with the top wood.

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He walked her to the front door. She whispered with a sigh, "I'll be home tomorrow night."

He answered, "So will I!"

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LETTER FROM MR. BAINTER

Bellingham, Wash

It was fine seeing you and Mr. Hawes even though time was so short. After you left Mrs. Banks played the Amati and "Strad". She like the Amati the best but I thought the "Strad" was grand. She asked a question concerning cellos. Why do so many cellos wolf on note F? Is it true of violins that all sound or respond more to one particular note, on the Strad of Clydes I failed to notice the little pegs, Heron-Allen says were awl holes used to hold the top or back to the blocks while the clamps were being adjusted. They were plainly evident in the Amati.

In the talk about linseed oil, very little seems to be said about Walnut oil. I have a book (old) by Baird. "The Painter Varnisher and Guilder." That makes quite a point of the fact that linseed has the tendency to kill the color in sunlight. Whereas walnut oil aids and preserves the color. I asked Michelman this question and he pointed out that he had overcome this fault in his formulas so I suppose this is a small point. That walnut oil was preferred by some of the old master painters is suggested in Mrs. Dalours book on Artist Materials (sun-thickened). Chemically the two oils are quite similar I believe.

I'm not so sure I would agree with Justin Gilbert entirely, still, his theories are fascinating. My question is can I hear pitch this accurately and by the way does anyone know for sure whether the tone pitching of plates is a reliable guage or not?

I notice that in putting in the foundation coat he does say to avoid getting the plate hot enough to make the wood brown. Does anyone really know what effect heat has on wood? I was surprised to read in Michelman's book that the temperature on the drying boxes comes up to 150 degrees which is pretty warm.

On the Science & Machanics Magazine June 1959 they advise for the dehydration and preservation of wood relics recovered from sea water. Soak them in pure Alcohol baths 3 in all, each bath one week long. Then soak them a week in an exylene bath. Finally put them in another exylene bath and add paraffin chips until you have a full saturated solution. Let the wood soak for about 2 weeks. Remove it from the solution and let the exylene evaporate. Perhaps a similar method could be adapted for a violin.

Thinking of propolis. I notice one recipe requiring propolis and linseed oil for a waterproof varnish for solid bowls. Mr. Fisher, violin repairman, told me the French used propolis in varnish but it has a tendency to turn dark. In the artists books varnishes using rosin turn dark and have a tendency to chip. Still using Michelmans varnish the result is different. What do you think?

I like the idea of tempera (eggs) although I haven't had a chance to try it. This Mr. Fisher I mentioned used it on a violin of his.

I hope you haven't minded the rambling on of an amateur. I look forward to seeing you and others again. Best Personal regards to you and the club and a salute for a real good job.

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"What can I do for you?" asked the income tax inspector.

"Nothing," said the harassed-looking taxpayer. "I just wanted to meet the people I'm working for!"

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REVIEW OF RECENT ISSUES OF THE "JOURNAL"

by Wendell Pratt

I received the October issue of the Journal a few days after I wrote saying it had not come yet. Congratulations on the completing of another year.

I often wonder why there is so much in the Journal on trying to find amber and making varnish from it. My mother had a string of amber beads, some of them as big as your little finger but I have never thought of making them into varnish. I can purchase amber varnish in either light or dark shades from an artist supply shop right here in Concord. It is made for varnishing paintings by Winsor and Newton of England and is about half the price that most violin varnish is quoted for. I know that Norman Miller gets amber varnish from Harris in England and seems to be well pleased with it. I think these old varnish compaies can make a far superior product to what an amateur experimenter can make.

I feel the same way regarding propolis. Laubi has it for sale all dissolved so why try to find it and then experiment on dissolving it and run the danger of toxic solvents and impure products. I think the making of a violin itself is hard enough without trying to make the filler, varnishes and the tools besides. One fellow here in New Hampshire that I have corresponded with and talked to has made his own varnish but has gone back to commercial brands. He used coffee for a brown stain because he thought it being an organic stain it would not harm the wood as some other substance might.

I think the Journal should recommend the adoption of the metric system in those countries that do not as yet have it. The U.S. has tried to adopt it ever since 1795 but haven't got it thru congress yet. I don't know what is being done in Canada but it requires informing the people of the disadvantages of our English system of weights and measures. Here in the U.S. we beleive that we are actually losing trade with countries that are on the Metric system such as the Latin Americas because of our system. I noticed that Weertman like many scientists used the metric system in his book and often times in letters in the Journal both systems are used. Those that advocate the change say it will require about a generation to make the transition so those that have never learned it will be retired and for the children to learn the new and for many of the old utensils etc. to be worn out. They say that after the English system has finally been dropped that there will be a savings of 25% of the time in arithmetic in schools because of the reduced emphasis on fractions.

I have been very interested in following the discussion on bass-bars in the Journal and I wish that the writters would give a little more information at times. F.R. Davidson says he balances the bar right on the bridge line but doesn't say where he balances the top alone before adding the bar. I would think that he balanced the top alone on the bridge line too. In like reasoning I should think that Stuekerjuergen who balanced the bar in front of the bridge would balance the top without bar in front of the bridge. Again he does not say. I think that for those who read the Journal and try to pick out the good points to use in their own making that they must reason if this method is in keeping with their other construction methods.

For those that use a filler that is actually absorbed by the plate, I think they must take into consideration the added weight of the filler and therefore cut the plate thinner. Justin Gilbert states his filler will add 3.7 grams to the weight of a top. If my calculations are correct and I did them in the metric system, it was so much easier, this extra weight would be equivalent to the added thickness of 1/64th inch or about 0.2mm to a spruce top. I beleive that common sense is one of the best things a violin maker can have.

continued on Page 23

VARNISH MAKES THE TONE

by Leo Lynch

Mr. Wm. Martin's articles are outstanding and I'll say he certainly is in the know in regard to the old Italian violins and he makes a statement that I thoroughly agree with when he says, "That the wood in the Italian violins do not produce the tone, the filler and varnish produce that tone. When you hear a woody tone that is a cheap or poor tone. The wood merely vibrates the filler and varnish." Page 8, May 1960 issue of Violin Makers Journal. Also in September issue Mr. Martin states the facts that substantiate my ideas to a certain extent; the exception being that the oil I use conforms to these specifications and when dry are soluable in saliva, terpentine, alchol, and even warm soft water To a certain extent soakes through the plates and gives it a soft sweet tone. It also dampens the tone and mutes it a little so I had to find ways and means of increasing brilliance and power in the plates.

For this I h d to go to Chas E. Herbrig, St. Paul, who is now deceased. He showed me how to put a thousand dollar tone in a hundred dollar violin with a ten dollar tone and its done with plenty of good wood and a good graduation but last and not least an elastic varnish or a very supple varnish with a certain amount of the hard gums in it. I had to go to Stephan Kujawa for the varnish. He also substanciated Mr. Herbrigs theories and teachings and taught me more practical violin making than all the other makers that I've worked with and that is how to get tone.

I'll further state that if your varnish doesn't have tone you are sunk as far as how good a violin is concerned. Maybe you'll have to reprint some of S. Kujawa's instructions on varnish making, they can't be beat anywhere, but if you can buy his varnish and know or learn how to apply it you'll have tone. But the filler is, so, oh, so important, and also how to apply it is of utmost importance. I've spent years learning this and Dr. Malace Belt, (now deceased) taught me this part as I have some of his violins made on the Gilbert System and they compare in tone with any five thousand dollar violins and better.

I'll futher state that Joseph Guarnerius del Jesu did nothing more than put the maximum amount of sweetness in his plates and the maximum amount of Brilliance in those same plates and a good thick back for a large area under the post and to lower the tone of the back. Put a sweetener in it and top he put brilliance in it, this can be done if you know how to handle your oils and gums and correctly apply a good varnish and a good filler. You also need the sun to dry as the sun will dry more filler inten days than a drying room will dry in two years.

Now kick this around awhile, maybe its all wrong but it gets valuable and priceless tone and you can put it in any violin if it has a good wood and graduation.

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REVIEW OF RECENT ISSUES cont from page 22:

I thought Norman Millers method of determing the length and depth of the bass bar a good one and will be interested in hearing comments on it. He tried to explain this to me in a letter a year or so ago but at the time I didn't have his thoughts so well clarified.

I sometimes envy you fellows that turn out a violin every few months when it seems to take me years to do it but I also console myself by the thought that the more Journals I read the better my efforts will be in the future.

- O -

THOUGHTS AFTER READING "THE JOURNAL"

by William Kirkwood
Forfar, Scotland

I hold a lot of convergent views as regards the violin, perhaps we are all in the same boat, but it is only by airing our different views that we will get anywhere. The violin in my view, in addition to being a work of art (and many would place it wholly in that sphere) is also a very deep scientific problem, so deep that even in the industrial sphere vibrations seem to be very little understood. Text books on sound tell us little or nothing as regards the violin scientifically, books on the violin even less. Perhaps you know what William Ewart Gladestone said about the violin (he apparently was a violinist, at least he could play the violin). Something like this "That it possibly would take more strength of mind to find out the secrets of the violin than to build a Forth bridge.

What is the reason for all this undiscovered mystery. For certainly the most direct and clear path to discover the so called violin secrets lies in its scientific actions. I don't think I will be wrong in saying there are two very marked reasons for this. One is the continual copying since the days of the Old Masters, with a strong belief flung in of perfection or near perfection. The other reason is the seemingly small financial gain to be got from such a deep study to discover these violin secrets, but there is no other direct road, and seems must be got by the love of discovery alone.

I am not saying that by intuition, traditional and conventional methods of thought much cannot be achieved; a great lot can be achieved, much nearer to a real discovery of the Scientific Principles involved than one would think, as in a great measure what applies to the one also applies to the other although there is a great Gulf between the knowledge of the one and the knowledge of the other. Very marked in this respect is the way intuitional thought leads; you get violins in all arched shapes and forms, even throughout their lives by the old masters. Differences of opinion on violins which would seem to indicate a wide gulf, a gulf too wide if the violins were reasonably and carefully made.

I have a book by John Broadhouse entitled "The Violin", in it is illustrated a tree and inscribed on its branches upwards is the names of the Italian Violin Makers from before Gaspara-da-Salo to sometime after Stradivarius. These must be about 200 names on this tree; how is it that amongst this vast number Stradivari and Guarnerius are the only two of special note.

To me violin literature is very conflicting one way and another and seems to lost in a maise. Also its varnish problem, and varnishing of which I am not very good at, although you would not see a brush mark on any of my violins, and that without any polishing whatsoever, I think a hard varnish does not transmit the full tone to the air owing to the rapidity of its molecules in its waves, whereas with a soft varnish it comes nearer in nature to the consistency of the air molecules and produces a more full tone with a slower travel of the molecules in its waves, that is the waves or vibrations passing through the varnish. In this connection I am very pleased indeed to have your notes on Tempera, and how to make it, I think it will prove good.

I see Mr. Reginal Price uses Winsor and Newton's varnish, my three last violins I varnished with Winsor and Newtons Amber Varnish.

There are some points in the violin of which I am sure there is a wrong conception taken of them. The bridge pivots from or on its centre, not from a somewhat stationery post. The post vibrates the back with the right foot of the bridge stabilized by the left

foot above the bar, the back being the main source of action for the higher strings. Similar the bar vibrates the breast with the left foot of the bridge, stabilized by the right foot above the post. The breast being the main source of action for the lower strings.

It is generally believed that the contained air in a violin is actuated by compression and dilation through the sound holes. There is compression and dilation all right but it is a latent pressure and dilation, inherent and inborn in the air molecules themselves. This latent wave when forced through the sound holes spreads and cannot re-enter, and is compensated by a very negligible amount of ordinary air pressure so to speak, but cannot be spoken of as other than latent inherent and inborn.

The bar in connection with the lesser area of the front of the breast and the greater area of the back of the breast, seems to me to be not generally understood. Something similar to the stabilizing of the actions of the bridge. The bar is stabilized to a certain extent by its front part being on the stiffer and lesser area of the front, thereby assisting it to a greater extent to vibrate the greater area of the back of the breast.

Then there is the travel of the waves or vibrations across the breast from the bar. In the immediate area around the bar there is a spring tension put on the breast. Between this part and the edges there is a sort of no mans land, on this part no great effective vibration tension can be put, but by the reinforcement it transmits to the firmer area around the edges, these edge areas respond because they have a firmer elastic movement, although they possess no spring tension but are firm and respond to the induced tension, at least in parts (Similar to a piece of spring steel griped in a vice and made to vibrate) which may take large parts of the central area vibrating with them. It is these separate vibrating parts extending inwards from the edges which are the so called free vibrations, but they certainly seem anything but free. It is for this reason that Guarnerius violins have the strongest tone, being thick around the edges and less thick on the breast around the centre of the bar, just enough thickness of the breast around the bar to stabilize its action.

I am sure the bridge is also somewhat misunderstood. If the ordinary type bridge is strong in the bottom wings, and weak in the top wings you certainly won't get a full tone from the violin, as the weak top wings will to a great extent vibrate on their own, without transmission to the bottom wings. These bridges with three large incisions cut in them, do not give a fine enough yield to suit the molecular action in the bridge, and thereby is somewhat erratic in its action, also I think a bridge should not be made throughout with both of its sides parallel to one another. It would give a better balance if cut thickest in the lower centre, and slightly tapered to the ends or sides and top and would also not kink along its centre.

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Force never changed anybody's mind, but education and understanding have won a lot of victories, even though they take longer.

....Charles E. Wilson

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An ounce of fact means more than a ton of argument.

....Martin Vanbee

AUDIO OSCILLATORS VERSUS PIANOS

by George X.M. Collier
Anoka, Minn.

Now, and since it has not been covered in the Journal, I want to talk on the pros and cons of audio oscillators versus pianos as tone generators for checking the audio characteristics of violins and such, both as a whole and in their various parts. I'm a tyro violin maker, but have spent around 40 years in electronics and believe myself something of an authority.

Let's first look at audio oscillators. These instruments usually give continuous coverage 20 to 20,000 cycles, either in a single dial rotation or in a series of decades with a multiplier switch. In the latter and more common arrangement, the dial is usually granduated 20 to 200 divisions. This graduation with the multiplier switch in the X1 position covers 20-200 cycles. With the switch in the X10 position the dial covers 200-2000 cycles, and with it in the x100 position the dial covers 2000 to 20,000 cycles. Calibrated accuracy is usually around 1% in laboratory grade instruments. At this accuracy 200 cycles will be accurate to 0.2 cycle, 200 cycles will come out accurate to 2.0 cycles and 20,000 cycles will show up plus or minus 200 cycle. Further, due to one's inability to return the dial to the same place every time, accuracy of the generated frequency may fall to 5% or more. Therefore, even with a good oscillator costing around $300.00, one's ability to reset between dial divisions to less than about 3% is extremely doubtful. For most work, 3% is adequate and I believe it sufficient for violin testing. Oscillators with better resetability and accuracy are on the market, but they cost around 1000 dollars and most of us don't own them.

The big advantage in an audio oscillator lies in frequency coverage without the gaps inherent in a piano or organ.

More people own pianos than oscillators, but pianos even though they may be in tune with themselves, are not always brought to the standard A440 pitch. When they are, they seldom hold it for long. Further, the A440 forks used by piano tuners are not always accurate. Therefore, the frequencies generated by the run-of-mine piano are apt to be less accurate than those produced by an oscillator, plus the disadvantage of the hiatus between tones. Organs are frequently thrown slightly off pitch to give them proper voice. In spite of the above, I consider a freshly tuned piano, brought to an exact A440 pitch somewhat more accurate than an oscillator.

Now comes the joker, how do we come up with an exact A440 pitch. Well, if one has a reasonable high freqency radio receiver, its easy. Just tune in WWV, operated by the U.S. Bureau of Standards on 5-10-15 and 20 megacycles and listen to it accurate to about .000,000,001% A440 is broadcast during alternate 5 minute periods of every hour, 24 hours per day and 365 days per year. The periods not broadcasting A440, broadcast 600 cycles, accurate to the same tolerances, which frequencies are utilized by power companies in setting their generating equipment. All 4 radio frequencies broadcast simultaneously, but one of them will usually be better than the others, which one depending on the time of day and year, and the distance between the receiver and WWV near Beltsville, Maryland. WWV's coverage is world wide and one of the 4 frequencies is almost always usable. The next joker is getting the piano tuner to abandon his precious fork and use WWV. Sit on him hard enough and he will. My piano tuner had never used WWV before he came to me for the first time, now he is in love with it.

Now, if one is blessed with both an audio oscillator and a piano, he's in, provided he has tromped on his piano tuner hard enough to make him use WWVm as the audio oscillator may be checked against the piano and dial corrected accordingly. It then becomes a more accurate continuously variable device.

AN INVESTIGATION INTO THE GRADUATIONS OF STRADIVARIUS & GUARNERIUS VIOLINS

by Don White

Part 12:

This month space in the Journal is at a premium, so we will be obliged to cut this instalment short. We will simply present Dr. F.A. Saunders who will clear up some of the facts concerning the "Air Tone" in violins. Next month we hope to enlarge on a remark made by Mr. Skou regarding the micro-tone theory. He states: Quote:- "The vibrations in the belly are mainly transferred to the back (and vice versa) through the air volume". This is a startling statement! And we hope to quote Dr. Frederick Castle again as he held this same belief.

Here then is Dr. F.A. Saunders talking on the Air Tone in violins.

NOTES ON THE AIR TONE IN VIOLINS

by Dr. F.A. Saunders

The December number of this Journal is supposed to have roasted me brown, so that I won't have another word to say about Air Tones; but the attack by my critics never touched me, and here I go again.

The criticisms were aimed at me because I was supposed to have said that there was no vibration in the inner air of a violin except at the air tone; but that was not what I said, or what I believe. The inside of a violin cannot be silent; on this I agree with the Editor and with K. Skou perfectly. What I keep on saying is that a lot of sound gets out of the f-holes at the pitch of the airtone, but very little escapes at any other pitch because the inner vibration is very much reduced.

I would like to try to explain the process of sympathetic vibration which makes this odd state of affairs possible. Consider an experiment which most of us are familiar with. Start with a swing with a child in it. It is an "instrument" with some odd ways about it, like a violin. What is the necessary conditon for producing a big swing by a series of gentle pushes on the child? We agree that the pushes must be timed to agree with the natural rate that the swing has. If that rate is, perhaps, 20 to the minute and we insist on giving it 22 pushes per minute, what happens? We first push in harmony with the natural swing, but presently are against it, so that our pushes tend to stop the motion; then, later, we agree again, and so on. The net result is that the motion is not steady, but is irregular, and on the whole feeble. If our rate of pushing is correctly chosen, the energy of the swing increases with each push, and the child has a good time. This is a case of "sympathetic vibration" which the physics student calls "resonance".

In a violin we can excite air vibration inside the "box" by putting the prong of a tuning fork in front of an "f" hole, and when the prongs vibrate it sends hundreds of little pushes per second into the hole, each of which is reflected back in a very short time. If the fork has the same pitch as the airtone the reflected pulses agree with the incoming ones and we have sympathetic vibration. The sound is greatly enlarge, as the swing was above. Now what about silence inside the box? The vibration in there is like that of the swing when the pushes agreed, and the sound is very loud. But if the fork has a different pitch, no sympathetic vibration is built up and the vibration inside is like the swing which is being pushed at the wrong times. The motion starts and then dies down, and is irregular, but never loud. hy can't we force a swing to go at a

different rate? Silly question, isn't it? Why can't we argue with a clock pendulum and make it change its rate? Why can't we make a violin G string change its pitch without changing its length or tension? These things are tuned to a pitch and refuse to change. The box of a violin is tuned likewise to one pitch.

Our Editor mentions an interesting experiment done by Harry Adkins, in which he plucked various notes on a double-bass and blew out matches at each pitch when he put them in front of an "f" hole. (The air is not "blown out", but dances in and out to give that impression.) Here the excitation is not regular, but explosive, and the formationof sympathetic vibration is impossible unless the vibration is uniform. If he bows the bass instead of plucking it he will find the matches blown out only at the airtone often near B flat).

If no sympathetic vibration is formed then the explosive sound passes right through the "f" holes at all pitches, if it is formed the pitch must be right, and we get the airtone. If the pitch is wrong we get a misfit in which the vibration of one part of the sound wave inside the violin destroys the other, just as one contrary push on the swing would destoy part of its motion.

A critic might say that the violin differs from an organ pipe or a blown bottle, because the "walls" of the enclosed air are the source of the sound. That fact makes the vibration much louder but does not alter its nature. The air inside the box remains stubborn and refuses to vibrate loudly unless the note played has the pitch of the air tone.

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INTRODUCING THE EDITOR OF THE STRING SECTION

by Don White

We are very happy to introduce to our readers the future Editor of "The String Section" - Mr. Carmen White.

We feel assured that under his careful "leadership" the string section will perform in perfect harmony with all other departments of the Journal.

Mr. Carmen White resides at San Angelo, Texas, his address being 1022 Caddo Street, and, by the way, Carmen and Don White are not relatives but only very close friends.

A High School teacher by profession Carmen's first love is the violin, second love, violin playing, his hobby, violin and viola making.

Mr. White is an accomplished artist playing either violin or viola in Symphony Orchestras. He holds the M.A. degree. His violin and viola making has been highly successful. Lastfall he won highest honours at the Arizona Violin Making Contest.

Carmen White is, of course, well known to readers of the Journal through his valuable contributing articles, but the above will we hope give a fuller picture of the man himself.

Mr. White was given this assignment at rather short notice, too short for him to get fully organized for this month. Your regular Editor (Don White) has therefore inserted a couple of articles to complete the section.

Articles and correspondence associated with The String Section should be sent direct to Mr. Carmen White, at the address given above. We hope that our readers will be liberal with these articles and discussions.

Carmen starts out with an argument in favour of Gut Strings. Surely some of you can find plenty to say in support of steel strings. You should be able to start quite a discussion on this one subject.

With these words let me retire! Readers, let me present your conductor, Mr. Carmen White:-

THE STRING SECTION
by Carmen White

This section is one of Don White's ideas and we think it is a good one. Don wishes the column to interest readers who are not violin makers, but who play, teach, study, and love violins and violin music--or string music, to be more specific. He has been kind enough to ask me to edit this section of the Journal, and while my experience as an editor has been very limited, I shall be glad to do my best for Don, for the Journal and for our reader. Naturally, we want interesting articles on the care and adjustment of violins, hints from professionals to help teachers and students obtain more from their violins and bows, and informational articles which would interest lovers of violins and violin lore.

Since our column is called The String Section, let's talk about strings as an introduction. At present, there seems to be a strong tendency to switch to the new all metal strings for all our stringed instruments. There is some question about this switching to metal strings. Some claim that these new metal strings are superior in every respect to gut-centered strings which have been used for years by the greatest artists for concert and orchestra work and for string quartet playing. It is claimed that the new metal strings are easier to tune, easier to play on, and that the tonal results are actually superior to the older strings.

While I am not an authority, my experience has been that the established gut-centered strings are superior to any metal strings I have tried. Recently, I heard a cello student who had a nice German cello strung with metal strings. He played it in our quartet with distressing results; the tone was small, raspy, thin, and aenemic. It was suggested to him that he try regular strings (gut-centered strings, with plain A gut). Immediately, we were conscious of maked increase in the volume of tone and of the tonal quality--the cello actually seemed more resonant! No other change was made, and the student would never again use a metal string! Again, in a recent contest, a fine student played a good German cello with all-metal strings and tuners. In the studio, it sounded fine. But a few minutes later when he came to play in a large hall, we were astonished to hear that the lower tones of his cello were practically non-existent--they simply could not be heard at all! The upper strings sounded very well. Most of us thought the cellist was handicapping himself with his metal strings.

This string business is quite deceptive anyway. The greatest artists have not changed to metal strings, and to me, this is the answer to all claims that they are superior. A nationally know violin dealer told me a few years ago that he personally knew of one fine Stradivarius violin in New York which was ruined by the ill-advised use of metal strings. He did not explain what he meant by "ruined", but that was the word he used. I personally knew of a new violin which was ruined by the use of metal strings. The proud owner bought the violin and paid a substantial price for it after we had compared it with many violins in a hall--we all thought it a superior new instrument in every respect. Immediately, he purchases a tailpiece with 4 built-in tuners and an expensive set of Dr. so and so's patented metal strings, which he promptly installed on the new violin. I thought that the violin's tone was immediately altered, and not for the better! However, your ear can get used to anything, and the violinist (a pupil of a prominent European teacher) imagined that the volume of tone was much more with these patented metal strings--so he kept them on his new violin. Five years later, he brought the violin in for repairs, saying, "I just don't know what is the matter with this violin; somehow, it just didn't hold up." The increased tension of these metal strings had pulled the neck forward and downward, had flattened the top curves our of proportion, and pushed the bridge down into the top much more than would have been the case with good strings. And the tone was pinched and thin all over, and the E string sounded sharp and dry. He soon got rid of the violin. I always have been convinced that had he used good strings, he never would have had any troubles with the violin.

Metal strings do have some disadvantages that are evident: (1) they wear out bow-hair faster, which is quite an item now that bow hair is so expensive. (2) they make every violin sound alike - loud and raspy. That is the individual timbre quality of the fiddle is lost with these strings. If you listen to 20 soprano voices, perhaps one will stand out--it has something beautiful about it that immediately stamps it as a superior voice! Some violins are like that. But that "something" is immediately lost if metal strings are installed on the fiddle. (3) metal strings are not responsive enough, particularly in spicatto passages--they are inclined to whistle. (4) double stops and chords lack roundness and mellowness with metal strings. (5) they will not stand much pressure without changing in intonation--this is particularly true of open strings, and finally (6) there is a certain "stiffness" which is evident above the third position on the lower strings of the violin--and if the violin is a thin one, the tendency to wolf tones is much greater with metal strings.

Personally, I would never offer a violin to a good player if the instrument had metal strings on it. I think the tonal quality and character of the violin is lost and that continued use of them can damage a sensitive and fine instrument. Of course, if I had a thick new fiddle with no tone anyway, and wanted to use it in a damp climate, for orchestra work where accuracy and fine tone are of little importance, perhaps I would use them--but I doubt it! I can truthfully say that I have never in my life heard a violin solo of any kind, big or little, played by anyone in a classic or touching manner on metal strings! And I have heard many solos played badly on them! To me, that is the answer to all the arguments back and forth about the use of metal strings on our violins and stringed instruments. Is there a better answer?

REVIEW YOUR STANDARDS

by Clifford A. Hoing

Editors Note:- I have inserted this article in the "String Section" so that non-makers may realize the "pressure" put upon makers to build better instruments.

Mr. Hoing is a maker whose standards are exceedingly high. He is always urging better and more carefully made instruments. He reminds us of Mr. Peder Svindsay who says " The best violin is yet to be made!" (D.W.)

When I write suggesting that makers would do well to raise their standards, this is not intended as a destructive type of criticism. It should be obvious to any who give thought to the subject, that in such an artistic craft as violin or viola making, only a very small number of such craftsmen in any era will be regarded as being of the absolute top rank--men who are capable of producing the very highest quality results where both work and tone are considered, as I think they should be.

Before we go any further, let me say a word to those who think that only tone is of importance. Even Stradivari would not be so universally recognized if he had been content to leave his instruments roughly finished or had been incapable of really fine work. In fact, we mostly hear that tone is the only consideration from those who cannot produce fine work. They seem to forget that a craftsman who is capable of accurate work is most likely to produce the best tonal results because of his capabilities in putting his ideas into operation. That is of course if he has the right ideas.

Now to those who are complacent enough to go on making instruments that do not approach the standard required by professional players and even boasting of the methods used to produce such instruments, I think this is surely a waste of time and good materials.

At the time of the International Exhibition at The Hague in 1949 some interesting statistics were compiled. I have only the data relating to the instruments made by professional makers but the figures are very interesting. Out of a total of 241 instruments submitted for competition 108 were refused as not being up to exhibtion standard! Italy submitted 4 violins and 1 viola. Of these 3 violins were refused. America submitted 23 violins, 2 violas - 16 violins refused. England submitted 9 violins, 2 violas - 5 violins refused. Only one American maker won diplomas. Only one Italian won a diploma. Two English makers won diplomas.

I think that these figures prove that a large number of makers are not producing high quality instruments. For in this competition tone and work were taken into consideration.

Don't be mislead by statements attributing outstanding powers to any one particular nationality. Fine craftsmanship or tone is not limited to instruments made in any one country. It is dependant on the capabilities of individuals, in whatever country they happen to live.

Italy may have produced fine instruments in the seventeenth and eighteenth centuries but the Italians are in my opinion certainly not superior today, although propaganda would have us think so.

There are several points worthy of consideration by readers who are interested in improving the standard of their work. One of the most important differences between good and bad woodwork is in the methods used to acquire the finished result. The finest violin makers, sculptors and wood carvers rely mainly on the skillful use of tools and use very little glasspaper. This was true in the seventeenth century and is still true today.

Glasspaper is not a craftsmans tool. When I read of a maker "sanding down the thicknesses" of an instrument, I take a very poor view of his capabilities. Stradivari never had glasspaper, and although he may have had fish-skin and other abrasives available he would make use of a scraper or similar tool for reducing thicknesses and in the main for finishing the outside of his instruments.

We can read that the insides of the old instruments were not glasspapered but were finished by tools only. The skillful use of a scraper is much more accurate than would be possible with glasspaper. Sandpaper was of course used before glasspaper was invented but the true craftsman was not interested in this method of spoiling the crispness and accuracy of his work by its use.

I think that two good reasons for the low average standard of work is the inclination of many makers towards the "speeding up" of any work by using much glasspaper and machine tools wherever possible. Leave the machines for rough carpentry and try to use your hands and head more. That is the way to better results!

One thing that detracts greatly from the appearance of many violins is the colour of the varnish. On seeing instruments looking like oranges and lemons, one may be forgiven for thinking that the maker had never seen a fine instrument. I was astonished to read in a recent issue of the Journal that a certain maker thought that most Strads must originally have been very light in colour because he had seldom seen a dark one. By this I think he was infering that the varnish on a Strad became darker with age.

I can assure readers that according to Messrs Hills of London, Strads varnish fades if exposed to the light. When the Messie Stradivari was given to the Ashmolean Museum at Oxford (25 miles from here) strict instructions were given that the instrument

was not to be put on view until the top of the case was covered. This was to prevent the varnish from fading. The room was lit by a skylight.

It follows that any maker who uses varnish that gets darker by exposure to light is not using the varnish used by Strad. Or at least his colours are not the same.

I feel no shame for trying to duplicate the colour and appearance of old master instruments but make sure that every one is well labeled and stamped with the name of its maker. The fact that experts have mistaken my instruments for genuine old masters does not detract from their tonal merit either!

It is helpful if you can learn to accept and profit by criticism of your work. For instance, if an expert who has handled hundreds of fine old Italian violins happens to tell you that your varnish looks like French polish, do not question his knowledge. Whatever you may think of your pet concoction of varnish it may be possible that others besides the expert may think little of your efforts.

Use the hint to try and improve your varnish. It may be that players do not appreciate the "spit and polish" that you are so proud of. Most good varnish looks more interesting if left with a natural patina. Your colour may be wrong! A combination of the "oranges and lemons" colours before mentioned is fatal if also given the "spit and polish" treatment.

Even if an instrument is successful in a local show against amateurs, it may fail miserably in a professional competition. If top players who lack of interest in your instruments, do not adopt the attitude of one who thinks he is "casting his pearls before swine". Most players know what they want, so, do something about it! Try and make your violins so good that players will want them! You cannot do that by spurning all criticism.

Does anyone think it is wrong to make instruments that satisfy the player in both tone and appearance? That is just what I try to do. There is no excuse for using methods that produce articles that no one wishes to use!

Take every opportunity of seeing really fine instruments, for unless you are able to do this you will not know what to strive for. It is no use trying to give your instruments a distinctive character if you do not know what is good and what is bad. It may be possible that what you think are artistic touches may in fact be regarded by the expert as excentricities that spoil the work.

Do not rest content with the standard of your work and tonal results until it will pass the examination of someone who really understands instruments and is also acceptable for the use of top players.

Invite criticism and use it to try and improve your results. Regard it as a stimulant for further efforts.

Complacency and self satisfaction are not helpful in progress towards improvement. If you are satisfied with your work and results, it is very unlikely that others will share the same view.

Fine results are only achieved through continuous efforts towards perfection.

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A bad beginning makes a bad ending.....Euripides

(From collection of Quotations by B. Yantis)

A MEMORABLE VACATION

by R.R. Haake

A recent vacation trip took me to points in Minnesota and Michigan, as well as Chicago where I stopped to visit the music trade.

At Brainerd, Minn. where I visited my 86 year old Mother and a sister, I found that the Minneapolis Symphony Orchestra had given a concert there but a few days before I arrived. I was very sorry to have missed that. I was told that the new conductor has put a new spirit into the players and they are really doing their stuff.

In Grand Rapids, Michigan, I visited my friend Karl Bernt who had been the concert master of violin section for many years. He plays a fine Francesco Ruggieri which is of small size. It is a very fine violin, and although small it has a powerful tone, and he says it is necessary for him to be careful in playing so that he will not drown out the other players.

In Chicago, Mischa Elman was at the Carl Fisher store when I was there. He was to be the soloist for the Chicago Symphony at Orchestra Hall. Of course I stopped at "Lyon & Healy's", where I was at one time employed. But with the passing of J.Freeman, John Dubbs, and Herman Kroeplin, the place didn't seem to be the same. When I was there they had the famous Hawley collection, so I had the privilege of handling many of the famous old violins. Mr. Dubbs used to tell me about his many trips to Europe buying violins. He was a great man and had had many interesting experiences in the violin business. Fritz Kreisler was a particular friend of his.

And now I must tell you of something that made my stop in Chicago really worthwhile. I found a small violin shop operated by a Mr. Cokinis. He claimed that he has the largest private collection of rare old italian violins in the U.S.A. And I soon found that he was stating the truth. He owns eight genuine Strads, representing his different working periods, including the long Strad. They were all very fine tonally. Then he produced three Joseph Guarnerius (Delfeau) which were of the best. The tone of these was a little stronger than the Strads. However several of the Strads had a certain sweetness that I never could find in any other violins. He also has three Andreas Guarnerius, six Amati, a fine Maggini, a Gobetti, a Montagnano, three Guadagnini, two Gaspar da Salo, a Montagnano, and a few of the Gagliano family.

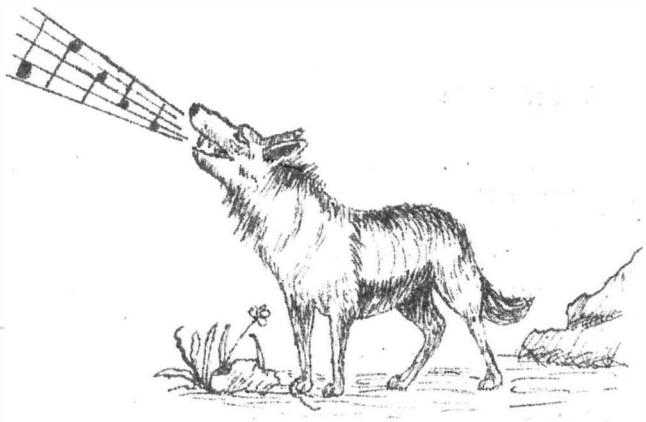
I should say that he had three Guadagnini, as I bought one of them, made by J.B. Guadagnini at Turin 1774. It is a wonderful instrument. I never have seen one made of finer material, or having better workmanship. I gave two old violins which I had with me as part payment.

Now I will try my hand at making a copy of this fine violin which I now own. I hope that there will be a slight resemblance. Mr. Cokinis has had these violins for many years and now wishes to sell them, and I will try to put him in contact with those who would be interested in buying. This is a real opportunity for anyone wanting such a violin.

And now I have a last observation to mention. When he took an old Amati from the vault we could see a fresh crack in the top which showed the wood white and fresh and no sign of anything which would have darkened the wood.

I discussed the gradu tions of the Jos. Guarnerius tops, and was informed by Mr. Cokinis that he had never seen one which had been made thinner in the center than at the edges. He has lived with these fine violins most of his life and knows his business. I left this shop with a renuewed interest in fine violins. My next trip may be to California and Texas. I want to see Mr. Sangster in Dallas if possible.

WOLF NOTES
by The Editor



THE MAIL BAG:

At last I am beginning to catch up on answering accumulated mail. If you have not received a reply to your letter, don't worry, I will soon get around to it. Every day new subscriptions are being received at an alarming rate. This makes for extra detail work which falls mainly upon the Editors shoulders. Some relief must be given or said shoulders might become permanently bent. If present plans develop, relief will be obtained as follows:

A NEW FACE FOR THE JOURNAL:

Starting with the March issue, The Journal, will be completely re-organized. All printing will be done professionally. The work will be done by "Off-Set" press, with real "Printers" type. We will be able to reproduce a completely illustrated magazine. A new illustrated cover of a more subdued tone will, we believe, provide a very attractive Journal.

Owing to a great deal of re-organization work involved it is possible that the March issue will not appear till about April 1st. We hope our Readers will approve.

SITKA SPRUCE:

Sitka Spruce is mentioned in our Editorial this month. Here is what one of our new readers says about it.

Dear Mr. White:

I received your letter today. Have made several Cello's and used Sitka Spruce. I find it equal if not superior to the European growth. Maple is also equal (our American Maple.)

In conversing with fellow instrument craftsmen, they are agreed that Sitka Spruce is better.

We have plenty of it here, so now is the time to have it cut and air dried. I like the wider grain, but it must be without defects. I find the wider grain allows one to leave more wood, and the tone borders similar to the Italian tone if carefully made. I have one Cello that I recently finished, and it had a beautiful tone, resonance and carrying power, and the tone is full and produced with ease.

H.J. Sammer,
Appleton, Wis.

SUNNING VIOLINS:

Mr. J.E. Bushnell of Nelsonville, New York is another advocate of the Sun drying of violins but his method is somewhat dif erent. Ed Says:-

"Don't forget to string themup to pitch - it seems very important from my experience. Further it takes several weeks for the improvement to be affected - say 3 to 4 weeks. I have not determined any given end-point. Just keep on till no further improvement in tone is noticed."

NEWS FROM SOUTHERN RHODESIA:

We have several readers around South Africa. Mr. W.H. Meerbourg lives at Salisbury, Southern Rhodesia.

This last summer he spent a pleasant holiday in Europe. A quote from his letter is of interest.

"I visited a famous violin-makers school in Central Europe and had a lengthy discussion on various aspects of violin making with the director. He states (as we all know, and as Mr. Skou in the May issue mentions also) "The thickness of the centre area controls to a very large extent the quality of tone, and making the bouts thin just inside the linings makes the instrument responsive and easy to play." As every maker has his own idea about tone we will perhaps never agree about this question of thickness of centre. In the violin making school, great importance is attached to the measufe of flexibility of the plates; both lengthwise and across the bouts, this is mainly arrived at by "feel", which is alright for a professional maker, but I doubt if an amateur can develop this "feel " sufficiently to be of any use. It is however easy enough to construct an apparatus to measue diflections and thereby stiffnessess, but a large number of tests would have to be carried our before a conclusion could be reached.

At the school the instruments are sparingly heated with one application of oxydized linseed oil and then left in the sun for six months to a year, after which they are "spirit" varnished. I cannot give you the exact recipe of the varnish but it contains propolis and synthetic resin; the results were very, very good! both in appearance and tone.

NEW ADVERTISERS:

GIUSEPPE MODAUDO - This month we introduce Giuseppe Modaudo, and Italian maker of high repute. A lso a collector of fine old violins. At present he is reducing his collection and offers some wonderful instruments at greatly reduced prices. Your chance to get a splendid "old Italian".

Mr. Modaudo manufactures what he believes to be the genuine Italian Varnish. Makers would do well to give it a trial. He also specializes in "Old" wood which he obtains from very old furniture. Exceedingly good wood and easy to work with. Your editor is making a violin from this wood at the present time.

"LYCON" STRINGS - The "Lycon"string Company are located in Denmark, ad we have yet to hear of the Danish people turning out poor stuff.

Many top artists are finding "Lycon" Strings give them superior service than any " Gut" string. This is indicated by the tremendous sales the "Lycon" people are enjoying. They have reliable representatives in every country and from these firms you can obtain your requirements.

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