Newsletter

of the British Violin Making Association

Editor: Shem Mackey

Contents

ISSUE 5 BVMA AUTUMN 96

Editorial

Issue 5 of the newsletter and as the range of contents expands so too does the catchment area. From a very narrow base at it's inception to the present position the newsletter has begun to attract correspondence from all over the world. I have no doubt that, as the most frequently produced organ for violin and bow makers in the world, it will continue to grow in stature providing a unique service for us all.

Assistant Editor

From now on Paul Collins will be acting as Assistant Editor in conjunction with handling the advertising. Please continue to send the articles etc.to me at the address (which incidentally has changed, please take note !) given on the back page. Paul is still compiling the suppliers list and is hoping to have it published by the end of the year. If there are still some of you out there with listings to send, then please do so as soon as possible. The address to send them to is:

Paul Collins, The Cottage, Millhill Farmhouse, East Hanningfield Rd. Sandon, Chelmsford, Essex CM2 7TF.

Deadline

The date for copy for the winter issue of the newsletter is November 15.

Letter from the Chairman

With the BVMA barely two years old, and I think we can all be proud of our achievements so far (Newsletter, Dartington, Exhibition 98 and the soon to be published list of suppliers), it might be tempting to become a little complacent. To allay any fears in this respect and to quosh any rumours of cliqueishness within our ranks I would like to reiterate a few fundamental points.

The members of the management committee are merely acting for and on behalf of the members. You, the membership, are the BVMA. It is vital for the life of the association to get feedback and contribution from the members.

All committee meetings are open meetings, any member wishing to attend need only ring through to find out when the next meeting will be held. The minutes of each meeting are available on request from the secretary and are summarised in the Committee Report published in the newsletter

Please remember that you are only a letter or phone call away from any committee member or indeed from expressing yourself through the newsletter. Criticism, when constructive, is not only positive but welcome but keep in mind that it is impossible for any association to fulfil all the members wishes all of the time.
I am looking forward to receiving calls and letters about the running of the BVMA as well as, and most importantly, on the subject of violin making!

Marc Soubeyran.

Glue Manufacture

Animal, especially beef, by-products are particularly topical at the moment. In this article Dennis Plowright explains the methods employed in the production of animal glues.

Glue has been around for a long time and the earliest evidence of it's use dates from 3000 BC. It was not made on a commercial basis however until 1700 AD thus the earliest violins were stuck together using locally made glue perhaps made by the violin maker himself. The rate of glue production rose to a peak just before the second world war but has now declined due to inroads made by other adhesives.

Chemical properties

Glue and gelatin are chemically similar and differ only in physical properties. Both come from collagen found in the skin, tendons, cartilage, connective tissue and bones of vertebrates and invertebrates. Neither gelatin nor glue are naturally occurring substances but are the production of heat and water on collagen. Glue is a degraded form of gelatin having lowered physical properties, it may be made from skin or bones, that made from the former is more highly regarded.

Manufacture

The process divides conveniently into two parts; firstly the preparation of the stock to enable the glue to be extracted in the form of a weak aqueous solution, and secondly the transformation of this solution into a product suitable for sale. For the first part the methods adopted vary as between skin or bones but from the weak liquor stage onwards the processes are the same.

a. Hide Glue

Most of the raw material comes from tannery waste pieces such as ears, faces and trimmings of bovine animals. Some glue is made from fleshings taken from the inside of the skins before tanning. Rabbit skin makes a good but rather dark glue.

The raw material is first washed to remove dirt or salt and then cut into pieces small enough to be handled in water by unchokable pumps by which means they are transported into large vats and allowed to steep in milk of lime for several weeks; this has the effect of changing the fat content into calcium soaps and effecting partial hydrolysis of the collagen at ambient temperatures. Liming may take from 4 to 12 weeks and speedier processes have been adopted but these have not superseded liming. Fleshings are not limed, they are far too fatty; they are washed and acidified before extraction of the glue at an acid pH. The fat is separated from the liquor by mechanical means..

After liming the skins are washed in large mechanical washers (log-washers or hollander washers) to remove the lime and then treated with acid (hydrochloric or sulphuric generally) for 6 to 8 hours in the same vessels followed by 8 to 12 hours "in/out" washing until the pH. of the stock is neutral.

The prepared material is then pumped to extraction vessels. These have a false bottom of perforated plates on which the material rests and a steam coil is fitted underneath. Fresh water is added and the mass heated to 70 deg. C., rising fat is skimmed off. At the end of 3 to 4 hours the glue concentration is measured by a

hydrometer and the concentration will be about 4% to 6%. This liquor is run off, fresh water added and a second extraction made at a higher temperature. This liquor is run off and extraction's continued at gradually rising temperatures for as many 'runs' as are needed to extract all of the glue. The best glue comes from the first run since all exposure to high temperatures adversely affects the collagen: this explains why the violin maker should only make up the amount of glue needed at a low temperature. So to sum up, at this stage we have a quantity of weak glue liquor in separate 'runs' varying in concentration from about 6% to 2%. In practice there may be 6 extractions, No. 1 may be of gelatin quality, 2 and 3 of lower quality, 4 technical gelatin and 5&6 glue.

b. Bone Glue Manufacture.

The bones are first degreased. The old benzene process is now obsolete and degreasing of the crushed stock is carried out by the high speed agitation of the stock in warm water: after degreasing the fat content of the bone should be less than 2%. The crushed and degreased bones are loaded into a battery of pressure cookers. In the case of hide glue each cooking vessel operates as an individual unit and the liquors are not mixed, but this is not so with bone glue where a battery of cookers may consist of from 4 to 8 vessels. The liquors are passed through each vessel successively in counter current extraction i.e. fresh water added to the vessel with the least glue content. Each extraction consists of a period of steaming under pressure (about 15/20 psig) followed by extraction with either fresh water or weak glue from a previous autoclave. The liquor therefore picks up glue and rises in concentration at each stage until the final concentration might be from 8% to 12% glue. This method is much quicker as compared to that for hide glue but because the bones are exposed to such high temperatures severe

degradation of the collagen takes place and the resultant product is degraded in physical properties as compared to good hide glue.

c. Hide Glue and Bone Glue - the final stages.

The weak liquor be it from hide or bone may first be clarified either by centrifuge or filtration or both, and then as much water is removed as possible by boiling. If this were to take place at atmospheric pressure the quality of the glue would be impaired by the high temperature of 100 deg. C. Therefore the process is carried out in a vacuum evaporator, generally of the multiple effect variety, where boiling takes place at around 65 deg.C. Furthermore the residence time is short owing to the speed with which the rising (or falling) film of liquor passes through the hundreds of tubes which make up each effect. The liquor issuing is known as "strong liquor" and may have a concentration of from 25% to 35% for hide liquors and up to 50% for bone liquors.

The strong liquor has now to be dried: dry glue is not totally water free but contains normally about 12% water. Gone are the days when the liquor was poured into moulds, allowed to set and the jelly then cut into cakes which were hand spread on to drying nets for tunnel drying. This form of drying took from 3 to 5 days and it was very labour intensive: in practice it was very difficult to keep the moulds sterile-jelly glue is the ideal breeding ground for bacteria and infected glue will not jell. From about 1925 many firms worked out their own processes for accelerated drying, some with good results others less successfully. No form of drying has been developed which enables strong liquor to be dried without the intermediate stage of jelling (spray drying is possible for low viscosity liquors but the product has a low bulk density and case hardening makes it difficult to dissolve).

In a form of drying developed by the author the concentrated liquor was chilled rapidly into a band 3/16" thick by 36" wide and this continuous band of jelly fed into a cubing machine producing cubes of 3/16" side; these cubes were then conveyed pneumatically to circular drying trays having mechanical raking to prevent the drying cubes from coalescing. The drying cycle was timed, temperature and humidity controlled and drying took place in from 4 to 5 hours. Later develop-ments resulted in conveyor drying, jelly cubes being fed in at one end and dried product being taken from the exit end of the drying conveyor.

No matter in what form the dried glue is sold be it pearls, powder, noodles, sheet or cubes, all (as glue) are physically the same.

The dried cakes used to be sold whole (often with a hole in one corner to simulate a very early form of drying "Scotch" glue when the jelly sheets were hung from hooks in a drying loft), but it is now customary to grind the product in a swing beater hammer mill to produce a coarse powder for ease of dissolving. Pearl glue is produced by a drying process first developed by Scheidemandel about 1925 and now modified to dispense with benzene pearling.

Testing of glue

All gelatin and glue is subject to physical tests: these are many for gelatin since it is an edible product but for glue there are two main tests, namely for jelly strength and viscosity. The testing is fully covered in a BS 647-1959 and is of little interest to the violin maker.

Uses of glue in Violin Making

The main use of glue is for sticking parts together. Many makers think that high grade glues are best i.e. those with the best jelly strength and viscosity but this is a fallacy. High grade glues have the highest melting points and in consequence begin to jell quicker than low grade glues: glue which has begun to jell cannot be squeezed from the joint owing to the rapidly increasing viscosity, thus a film of glue remains in the joint. On drying this film shrinks and the strength of the joint is reduced. The joint must be a perfect fit, imperfections cannot be filled with glue. The best joints are those which have between them a continuous invisibly thin film of glue. Some makers score the wood to let the glue "get a better hold" but this is wrong. Glue should be used at about 65 deg.C. and should flow from the brush is a continuous stream and not in drops.

Glue should be made up daily. In dry form it keeps well but in jelly form it easily breaks down into moulds. Glue solutions must not be boiled or cooked since any prolonged heating causes degradation of the collagen. When making up glue solutions do not use a cast iron pot for this will discolour the best glue, I had mine cast for me in aluminium and this is satisfactory.

As a sizing glue is very useful since it fills the pores of wood evenly and gives a fine surface. It is best to add a little alum to the solution for this makes the glue film more resistant to moisture.

Alternative Woods for Violin Bows

U.G.K. Wegst and M.F. Ashby
Cambridge University Engineering Department
Trumpington Street, Cambridge CB2 1PZ, U.K.
Tel: + 44 - (0)1223 - 33 27 60, Fax: + 44 - (0)1223 - 33 26 62
E-mail: ugkw1@eng.cam.ac.uk

Abstract:

Pernambuco, the wood most revered for high-quality violin bows, is considered practically extinct. In this article, we analyse the mechanical performance of the violin bow and demonstrate how the Cambridge Materials Selector (CMS) wood-database may be used to evaluate and select alternative woods for this application.

1. Materials Selection Charts and Material Indices

Material selection charts and material indices provide an objective method of comparing the performance of different materials for a given application (Ashby 1989, 1992). A material index is a grouping of material properties which characterises performance. The familiar specific stiffness, E/ρ, is one such index; so too is the specific strength, σ_f/ρ (here E is Young's modulus, σ_f the failure strength and ρ the density).

Figure 1 (over page) illustrates, schematically, the idea of a material property chart. It shows one material property, in this case Young's modulus, E, plotted against another, the density ρ. The scales are logarithmic to accommodate the vast range of materials available to us, from low density polymeric foams and materials such as cork which have very low moduli, to dense metals with high moduli, such as steel and tungsten, or ceramics such as silicon carbide. The chart illustrates that materials of a given class cluster together; each envelope on the figure encloses all members of the material class it represents.

In the case study presented here, we use material charts at a higher resolution, produced using the Cambridge Materials Selector software (CMS 1995). In those, each individual material is represented by a bubble. The size of the bubble indicates the range of the property. The width of this range depends on the composition of the material, its purity, texture and structure.

In the case of engineering materials, these features are influenced and controlled by the manufacturing process. In the case of natural materials such as woods, it is the growth conditions which determine the structure and properties. The modulus-density chart is just one example of a material property chart.

Other charts relate other mechanical, thermal and electrical properties. In this article, we concentrate on mechanical performance and therefore on mechanical property charts.

So far the material property charts have proved to be a clear way of plotting and comparing data. They become even more useful in conjunction with material indices, which provide a powerful tool for the selection of materials for given applications.

One index has been mentioned already: the performance of materials as light, stiff ties (tensile members) is measured by the index E/ρ — the larger the value of E/ρ, the lighter is the tie for the same stiffness.

The form of the index depends on the mode of loading: axial loading, bending and twisting lead to different indices. As an example, the performance of a light, stiff beam (a component loaded in bending) is measured not by E/ρ, but by the index $E^{1/2}/\rho$, that for flat plates in bending is $E^{1/3}/\rho$. The logarithmic scales allow all three to be plotted on the same figure; each appears as a set of straight, parallel lines. One member of each is shown on figure 1 labelled 'stiffness guide lines'; the required set can be constructed from these.

There are many material indices, each measuring some aspect of efficiency in a given mode of loading. The way in which these indices are derived is illustrated in the following case study.

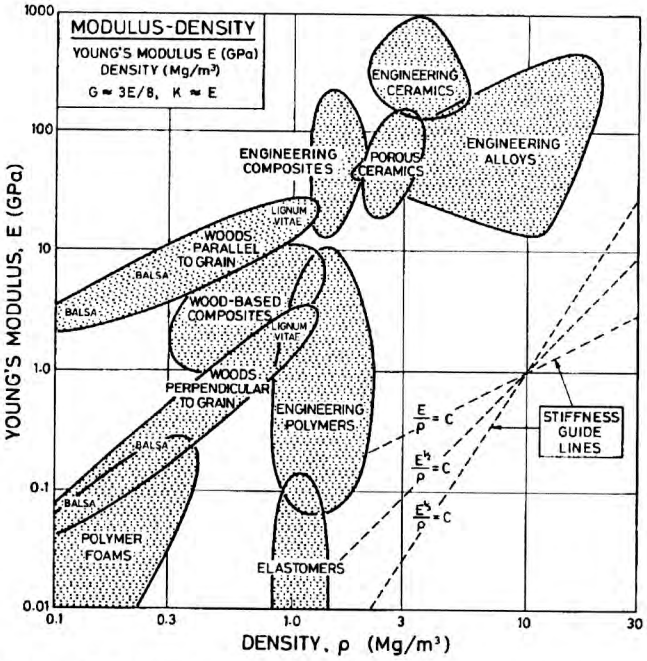


Figure 1: An example of a material property chart for engineering materials showing Young's modulus plotted against density. Guidelines show the slopes of three material indices. Their use is explained in the text.

2. Materials for Violin Bows

The violin bow as we know it today is thought to have been developed by François Tourte in the second half of the 18th century. He improved the bow, changing the shape from one that resembled an archery bow to that with the opposite curvature, the convex shape. This convex curvature, termed the camber, is achieved by bending a straight grained piece of wood to the required curvature over heat. The camber influences the force on the hairs and the stiffness of the bow. François Tourte seems also to have been the first to recognise the qualities of what is still considered the best bow-wood: Pernambuco. Nowadays, this tropical wood is practically extinct; it is interesting to explore if an alternative could be found. This is what we attempt in this case study.

2.1 The Model

The quality of a violin is judged not only by the quality of its sound, but also by the tension, typically 55 - 75 N. On tightening the bow, the hair exerts a moment, M, on the tip of the bow, which bends it to a larger radius of curvature. Generally, the bow is tilted in playing, which produces an additional bending moment transverse to the stick-hair plane. An axisymmetric cross-section is therefore advantageous. Commonly, bow-sticks have either a circular or an octagonal cross-section, although fluted octagons are also known. The cross-sectional shape has, otherwise,

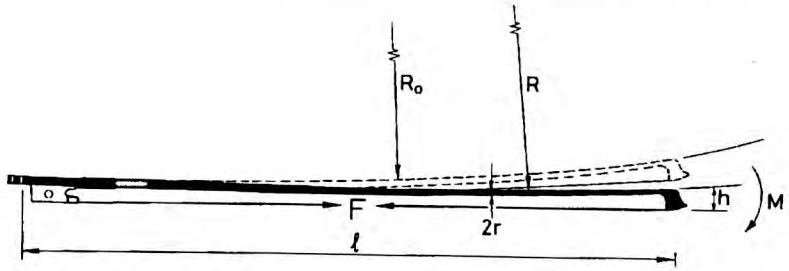


Figure 2: The violin bow acts as a leaf spring. Tightening the bow leads to a bow-hair-tension of typically F = 55 - 75 N. This hair-tension exerts a moment, M = F.h, on the tip of the bow, where h is the length of the bow-tip. This moment, M, bends the bow from an initial radius of curvature, R_o, to a final radius of curvature, R. For the model we assume that the bow has a round cross-section of constant radius, r

ease with which a good sound quality can be achieved by an experienced player. A good bow is essential to this: not only should it produce the best possible sound on an instrument, but it should make it easy for the player to do so. Factors which influence the playability are partly structural, such as the point of balance, and partly dependent on the material, such as its mass, its stiffness and its mechanical damping. The latter group are considered to be of prime importance and are investigated here.

One function of the violin bow is to act as a leaf spring keeping the bow-hair under only a minor effect on the performance of the bow; it can, however, be used to adjust its overall weight. For the model presented below, we assume the bow to have a constant circular cross-section with radius, r (in reality the bow tapers from the frog, where it is held, to the tip).

The stiffness of the bow is determined by its second moment of area, I, and the flexural modulus parallel to the grain, E_B, of the wood of which it is made. Stiffness is important for three reasons: first, if a bow is too flexible, the desired hair-tension is reached only when the bow is almost

straight; second, the spring stiffness of the stick-hair system is lower, leading to reduced control of bow dynamics (important for techniques in which the bow leaves the string, such as spiccato); and third, a low lateral stiffness leads to reduced bow control in this direction. From this we conclude that there is a desirable wood-modulus range, specified by the hair-tension, the deflection this may cause in the bow and the geometrical bow dimensions.

From simple beam-theory, we find the modulus, E_B, of a beam with a second moment of area, I, if it is to be bent from an initial radius, R_o, to a final larger radius, R, by a bending moment, M

$$E_B = \frac{M}{I}\left(\frac{1}{1/R_0 - 1/R}\right) = \frac{4Fh}{\pi r^4}\left(\frac{1}{1/R_0 - 1/R}\right). \quad (1)$$

Taking typical values for the force applied to the bow tip by the hair tension, F = 55 N, the length of the tip, h = 20 mm, the radius of the bow-stick, r = 4.0 to 4.5 mm, an initial radius of curvature, R_o = 3m and a final radius of curvature, R = 30 m, we find that the modulus of the bow stick must be in the range of

$$11 < E_B < 18 \text{ GPa}. \quad (2)$$

Earlier we said that the bow mass is important for the playability. But why? It is considered advantageous if the lowest bow forces, typically around 0.1 N, can be achieved by the self weight of the bow and a small additional load applied by the player. Modern bows designed after Tourte typically have a mass of 60 - 62 g, about two-thirds of which, 40 - 42 g, are contributed by the wood of the stick, the rest by the frog and the hair. In the selection we therefore search for a material of density, ρ, given by

$$\rho = \frac{m_w}{Al} = \frac{m_w}{\pi r^2 l}. \quad (3)$$

With the mass of the wood in the bow, m_w = 40 to 42 g, the radius of the bow-stick, r = 4.0 to 4.5 mm and the length of the bow, which is limited by the length of the arm of the violinist, l = 725 mm, we find that the density of the bow wood must be high, in the range

$$0.87 < \rho < 1.15 \text{ Mg/m}^3. \quad (4)$$

Some bowmakers use a Lucchi meter to measure the longitudinal sound velocity

$$v = \left(\frac{E}{\rho}\right)^{1/2} \text{ containing the} \quad (7)$$

materials index $M = \frac{E_B}{\rho}$

to select high quality bow-wood. A high speed of sound is preferred. From a mechanical point of view, this criterion assures a high ratio of flexural modulus to density. It is furthermore a straightforward method to measure Young's modulus, E, which is about 10% higher than the flexural modulus, E_B, used in our model above (the density of the wood can easily be measured to a satisfactory level of accuracy). Using the values for the flexural modulus, E_B, and the density, ρ, calculated above, woods with a longitudinal sound velocity in the range 3250 m/s to 4800 m/s are desirable. Small variations in the bow stick radius may be necessary to compensate for a low density or a low modulus of the wood.

The third important property in the selection of the best wood for violin bows is the shear strength parallel to the grain. The tensile force due to the tension in the hairs acts on a small area. The cross-sectional area at the tip of the bow is typically A_t = 45 mm^2. Under playing conditions the shear stress at the tip due to the tensile force, F, in the hair is at least

$$\tau = \frac{F}{At} = \frac{75\text{N}}{45\text{mm}^2} = 1.7 \text{ MPa} \quad (5)$$

Allowing for a safety factor of ten to ensure that the bow tip does not shear off when it is overloaded (or dropped), we search for woods with a shear strength

$$\tau > 17 \text{ MPa} \quad (6)$$

The final consideration is that of damping. A low-loss bow will provide a faster response to rapid changes in bowing direction and in bowing techniques, in which the bow leaves the string. Thus we aim to minimise the internal damping in the bow stick, described by the loss coefficient, η.

2.2 The Selection

The selection requires two stages. Figure 3 shows the first, a chart of flexural modulus, E_B, plotted against density, ρ, using the CMS wood-database. A box selection specifies materials with $0.87 < \rho < 1.15$ Mg/m^3 and $11 < E < 18$ GPa. Contours of constant sound velocity, v, are described by the materials index M, represented by dashed lines of slope 1. The second selection stage is depicted in figure 4, a chart of shear strength, τ, plotted against the loss coefficient, η. A box selection specifies materials with a shear strength $\tau > 17$ MPa and a minimum loss coefficient. Woods which satisfy all selection criteria are displayed and labelled.

2.3 Postscript

Pernambuco (Guilandia echinata, syn. Caesalipinia echinata) is still the preferred wood for violin bows. Massaranduba (Manilkara bidentata) sometimes also termed Brazilwood, is considered the second best choice. Snakewood (Brosimum spp.) is preferred for historical instruments — it has a very high density and therefore needs to be shaped into thinner beams. Cheap bows are made out of beech and the composite Glass-fibre reinforced polymers (neither material features in our selection).

The selection charts suggest that there are a number of woods which, on purely mechanical grounds, could make as good violin bows as Pernambuco, particularly if, as in the case of Pernambuco, the highest possible quality of those woods was to be chosen. However, other properties, such as how well the wood can be bent over heat, how well it retains its curvature, how easily it is worked and how regular its growth is, need to be considered. The wood used for a violin bow has to be straight and fine-grained, free from knots, splits and other defects. And — very important — the appearance of the wood has to be acceptable

Table 1: The design requirements for violin bows.

FUNCTION	Violin bow = Leaf spring
OBJECTIVES	(a) Maximise shear strength (b) Minimise internal damping in bow stick
CONSTRAINTS	(a) Length specified (b) Limits for cross-sectional area specified (c) Mass specified (d) Bending Stiffness specified

to the musical community. New materials for musical instruments generally are not only chosen for mechanico-acoustical considerations but also for optical ones; a wood which has the 'wrong' look or colour may be rejected purely for this reason. In any case, trials are needed for a thorough evaluation of promising alternatives.

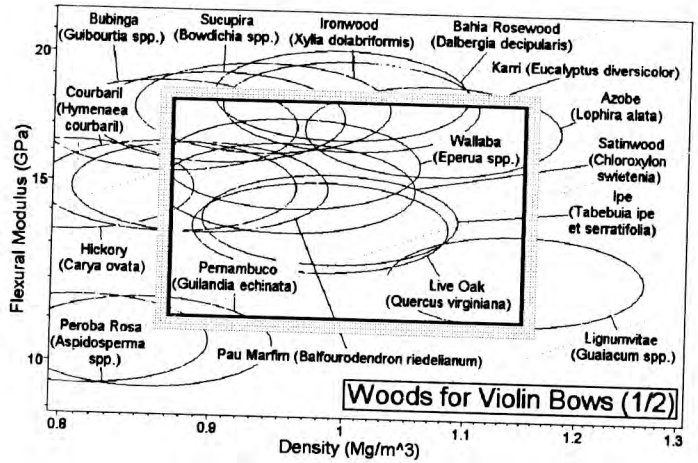


Figure 3: A chart showing flexural modulus, E_B, plotted against density, ρ, using a database of wood properties. A box selection specifies materials with $0.87 < \rho < 1.15$ Mg/m^3 and $11 < E_B < 18$ GPa. The merit index M, describing contours of constant sound velocity, v, is plotted as dashed lines of slope 1.

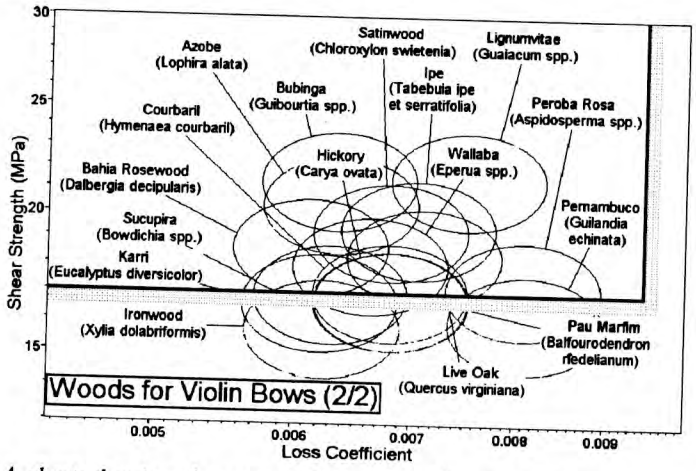


Figure 4: A chart showing shear strength, τ, plotted against loss coefficient, η, using a database of wood properties. A box selection specifies materials with a shear strength $\tau > 17$ MPa and a minimum loss coefficient.

In a study of alternative woods for bows by Holz (1993), a violin, a viola and a cello bow were made both from Ipe and Satiné. Ipe made a high quality bow. It has almost the same colour as Pernambuco, works well, but is more difficult to bend to the desired shape. Satine is bent as easily as Pernambuco, but has a more sluggish response, a relatively low modulus to density ratio and a reddish colour. Holz recommends it for medium quality bows only. He reports further that Satinwood (Chloroxylon swietenia) is considered too light in colour that Sucupira (Bowdichia spp.) has too coarse a grain and that Bahia Rosewood (Dalbergia decipularis) is not very well liked as a bow-wood due to its red-to-pink colour and striped appearance and too high a modulus-to-density ratio.

Table 2: Woods for violin bows

TRADE NAME	LATIN NAME	COMMENT
Pernambuco	Guilandia echinata	The traditional wood
Alternative woods which have been evaluated already		
Bahia Rosewood	Dalbergia decipularis	Red to pink colour and striped appearance.
Ipe	Tabebuia ipe et serratifolia	Same colour as P., but more difficult to bend.
Satinwood	Chloroxylon swietenia	Considered too light in colour.
Sucupira	Bowdichia spp.	Has too coarse a grain.
Azobe	Lophira alata	
Bubinga	Guiburtia spp.	
Courbaril	Hymenaea courbaril	
Hickory	Carya ovata	**Alternative woods — trials are needed for a more detailed evaluation**
Ironwood	Xylia dolabriformis	
Karri	Eucalyptus diversicolor	
Lignumvitae	Guaiacum spp.	
Live Oak	Quercus virginiana	
Peroba Rosa	Aspidosperma spp.	
Pau Marfim	Balfourodendron riedelianum	

3. Conclusions

The violin bow performs a mechanical function. In designing and choosing a material to make a bow, two classes of selection criteria emerge. The first is driven by the wish to maximise or minimise some aspect of performance (in this case the shear strength and the loss coefficient respectively). The second is set by the necessity to tune the response of the bow to some geometrically prescribed parameters or simply the 'feel' of the equipment (limits on flexural modulus and density). In this article we have shown how materials selection charts, material indices and material limits can be used to identify candidate-materials which optimally satisfy both classes of criteria. It is part of a general framework for materials selection to meet engineering design goals.

The model for the violin bow presented here is neither complete nor exhaustive and we are keen to hear your comments and constructive criticism. Perhaps you are a bow-maker or a violinist who has tested or used one or the other wood species named above or one which does not (yet) feature in our database? Or perhaps you would like to improve our violin-bow model, or have measured the mechanical properties of woods used for musical instruments? Any suggestions you have will be highly appreciated. We hope that this article will stimulate the discussion on alternative woods for violin bows and we are looking forward to hearing from you.

References

Ashby, M.F. (1989) On the engineering properties of materials. *Acta Metall.* 37: 1273-1293.

Ashby, M.F. (1992) *Materials selection in mechanical design.* Oxford: Pergamon Press.

Abbott, John. A. and Doyle, Eric (1990) Violin bow dynamics --- An initial Response to John Bolander's plea, *Catgut Acoust. Soc. Journal*, 1 (5): 30 -31.

Abbott, John. A. and Abbott,Willliam M. (1990) The legacies of John Bolander, *Catgut Acoust. Soc. Journal*, 1 (5): 1-4.

CMS software (1995) Granta Design Limited, 20 Trumpington Street, Cambridge, U.K.

Holz, D. (1993) *Möglichkeiten der Substitution von tropischen Hölzern im Musk-instrumentenbau.* Abschluß-bericht zum Forschungsvorhaben Nr. 169 D im Rahmen der Arbeits-gemeinschaft industrieller Forschungsvereinigungen (AiF). Institut für Musikinstrumentenbau, Zwota, Germany.

Kimball, Maxwell (1969) On Making a Violin Bow, *The Catgut Acoustical Society Newsletter*, No 11, May 1: 22-26.

Pitteroff, Roland (1995) *Contact mechanics of the bowed string*, PhD Thesis, Cambridge University Engineering Department.

Reder, Otto (1970) The Search for the Perfect Bow, *The Catgut Acoustical Society Newsletter*, No 13, May 1: 21-23.

Richter, H.G. (1988) *Holz als Rohstoff für den Musik-instrumentenbau.* Celle: Moeck

Sound Wood Newsletter (1994-6), Issues No. 1 - 3, Fauna & Flora International, Great Eastern House, Tenison Road, Cambridge, UK.

BOW LAPPING.

***Roy Collins** takes us through the application of the various types of bow lapping and the do's and dont's entailed.*

When applying a lapping to a bow 2 things have to be borne in mind: firstly it may sound obvious to say that the lapping is provided to protect the stick but in any bow maintenance the integrity of the stick is paramount. There is no point in putting a lapping on a stick if the stick is damaged in the process. The damage is most likely to occur when the old lapping is removed.

The second thing to remember is that the new lapping should be appropriate for the grade of bow. It is out of place to put a silver lapping on a nickel mounted bow or silver lapping on a gold mounted bow.

Leather Lapping

The simplest form of lapping is a straight lapping of leather: it is usually about 75mm long and the leather should be 1mm thick. The leather is cut to size allowing 4-5 mm overlap along the longitudinal edge: This can be gauged by wrapping the leather around the stick and measuring the overlap. The leather is chamfered at the 2 ends on the underside to a width of 3 mm and on the longitudinal side to a width of 4-5mm. A suitable glue to use for sticking the lapping to the stick is Unibond. However the consistency is rather thick and the manufacturer recommends thinning in the proportion 4 parts Unibond to 1 part water. Apply the glue to stick where the lapping is to be placed. The leather is then fitted to the stick; the seam is positioned along the frog side of the stick and the lapping is rolled on in a clockwise direction looking at the end of the stick. This will ensure that the players thumb tends to push the lapping on rather than against the joint. It may be necessary to apply a little water to the ends of the leather to mould them to the stick.

Wire Lapping.

Wire lapping can be in silver or gold depending on the grade of bow. It is normal to use a wire of 0.25mm diameter. There are 2 ways of securing the wire to the stick: one way is to lap the wire over its end securing the bow with at least 10 turns: the other way is to apply a small bead of solder to the end of the lapping to hold it. It is essential to do this operation quickly to avoid heat damage to the stick. Use Tin/ Antimony solder as it doesn't tarnish.

The length of lapping recommend for a violin bow is 70mm, a viola bow is 75mm, and a cello bow is 80mm and the lapping should be stopped 3mm from the frog in its fully relaxed position. The leather portion of the lapping should be applied to the stick over the wire lapping just touching the frog in its relaxed position as for a leather lapping detailed above. The recommended width for the leather is 25mm for a violin, 27mm for a viola and 30mm for a cello.

Imitation Whalebone Lapping

Imitation Whalebone lapping consists of a short band of black plastic lapping followed by alternating black and blond lapping followed by a band of black lapping covered with leather. I find that the best lapping to use is available from Gunter Dick who describes it as "Fine English Imitation Whalebone". They supply it singly or on a 120 metre spool.

Mark the bow stick with a pencil to show the relaxed position of the frog and the other end the lapping which is normally 75mm form the frog. Take 30cm of blond lapping and 90cm of black lapping. Grip the bow stick in your vice with the leather covered jaws so that the mortice is facing upwards and the end of the stick is free of the jaws with the portion to be lapped. Looking at Figure 1 take the blond lapping and fix the end to the vice jaws using masking tape or Selotape with the long end (A) laying the bow stick toward the frog. Take the black lapping (D) and lay about 20mm along the stick parallel to the blond lapping. Wind the loose end of the black lapping around the stick tightly over itself and the blond lapping so that the loose end is facing the vice. Continue this for 6 turns and then take up the blond lapping (B) with the black lapping (C) and wind the 2 lappings round the stick ensuring that they run alternately and smoothly without any gaps between them. Looking at Figure 2 continue this until the lappings are within 20mm of the frog mark and then hold the blond lapping (A) parallel to the stick and continue the black lapping along the stick over the blond lapping for 6 turns. Cut off the blond lapping and continue the black lapping to within 4mm of the frog mark. The lapping (B) is finished off by easing the last 4 turns and pushing the end of the lapping under these last turns and pulling tight ensuring that the lapping is not twisted. The black lapping is cut off and the blond lapping is trimmed level with the far end of the lapping. The normal leather lapping is placed at the end of the lapping as explained above.

Knives Used In Bowmaking

The knives used in bowmaking is a matter of choice and is a question of finding a knife which will take a keen edge and keep it when subjected to the rigours of a hard wood such as Pernambuco. I find that the Japanese knives made from laminated steel work best for me. It should be remembered that as the blades are laminated it is not possible to change them from right to left handed use and is necessary to check whether they are left or right handed when purchased.

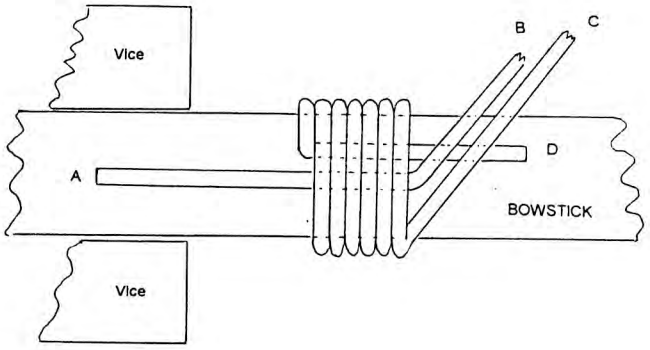


Figure 1

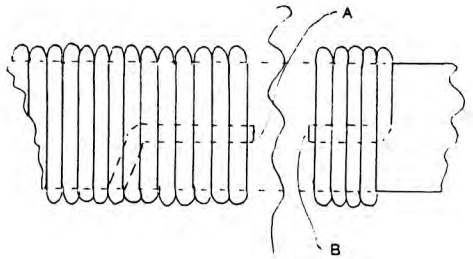


Figure 2

David Bromberg and the American Violin.

*Formerly of J.P. Guivier & Sons., **Michael Hill** took up a new position in the United States earlier this year. He has promised a view of America from atop the workbench, written in his own inimitable style.*

Introduction

This is the first of a 'Big Butt Productions' trail. It may be the last so I hope you find it of some interest. After being in America for about five months now, I thought I would try to let Europeans know what is happening this side of the Atlantic. Very soon after my arrival I noticed a violin on the other side of the workshop. I picked it up expecting it to be French or Italian. It was neither. On inspecting the label I discovered it was made by George Gemunder - a German who trained in France and went to work in New York. Then, one of the first people I was to meet out here was David Bromberg.

David Bromberg probably has the best knowledge of American violins anywhere in the world, so I thought I would profile him in this first of a series, giving you an insight into the man himself and American violins through his eyes.

But before we get down to the finer details I would just like to share a few of my personal experiences of American culture. Football (English of course) coverage is minimal with endless adverts at crucial points in a match; alcohol is not sold in the state of Connecticut on Sundays or after 8pm on weekdays; and there are a surprising number of places for your dog to get a haircut.

That all said - let us continue.

David Bromberg

Most people who know the name David Bromberg associate him with eclectic performances as a bandleader during many years on the folk music circuit. Having tried to play violin folk tunes on his guitar he decided instead to learn how to play the

violin. Buying a fiddle for $75 he then took it to be fine tuned and cleaned up. He was told it would cost him $200 to fix but that after the fixing he would be the owner of a $750 violin. Needless to say this intrigued Bromberg who soon began to buy more. His interest began to turn from playing to the beauty of the instruments themselves which in turn prompted him to give up his celebrity status as a guitarist to study violin making. Since that time, Bromberg has gone on to achieve respectability, the kind that violin makers enjoy.

Bromberg enthuses, "Violins fascinate me - American violins are not my only interest, I also love fine Italian, fine French, fine German (instruments). I love them all. It gives me great pleasure to look at violins". As a travelling musician he found American violins were the most affordable to collect and he was drawn to the finer examples - however, he noticed that his enthusiasm was rarely shared. Bromberg goes on to say - "In the violin shop when I'd ask for violins by American makers they'd tell me there were no good ones. You know there was a guy near here who made one that isn't half bad. I have one!..... and then they'd sell me something. I'd get the same story in every city I went to and I bought quite a lot of fiddles."

Bromberg contends that as Americans became more sophisticated and began to travel abroad, they in turn began to despise the gawky look of the home-grown products as opposed to Europe's Vuillaume's and Hill's shops. Maybe too, because of the vastness of the country the quality of American instruments include the extremes of the worst and some of the best instruments. Bromberg explains "The real reason why American violins have not been recognised as having any quality is that there have rarely been more than two good American violins in the same room at

the same time. I can tell luthiers about this until my face turns blue and they never believe it until they see the collection and after they see it, every single person I've shown it to has said 'I had no idea' ."

American Style

Bromberg admits that trying to describe the style of American instruments as a group is not easy. They are frequently mistaken for European violins, especially Italian "There are some that look French, there are some that look German but the school closest to the American school is the Italian school. The Germans and the French, even the great ones, mostly worked from a limited number of models. They would copy a golden period Strad. or an Amati and everyone from a certain town would produce something similar. Of course there were exceptions but most French fiddles are made on only 10 or 12 models, the same with Germans. American makers all made their own". American violins are not always recognised for what they are and this has opened the door for some genuine and some not so genuine misrepresentations. "There are several violin wholesale dealers, some not from the United States, who travel across the United States buying American violins and they will remove the labels or leave them with no label or put in false ones and put them in the London auctions where they're sold as Italian, which of course are the most valuable instruments. If you have a good American violin from 1880 and it's represented as a good Italian violin of the same quality, you're talking at least a $10,000 difference!.....unless somebody preserves these violins with their original labels, some man's work will be lost forever."

Because of Brombergs painstaking study of American violins over the years, he is more able than most to identify whether or not an unlabelled violin is American or not. He maintains that general characteristics become common to makers in certain geographical locations. The distribution of maker's instruments around America barely ever happened.

Bromberg decided to study violin making to help him improve his judgement. In 1980 he enrolled in what was then the Kenneth Warren and son school of violin making (now the Chicago school of violin making) where he studied under Tschu Ho Lee. To understand what musicians looked for in violins, Bromberg also did a stint as a salesperson for a year.

Before the established schools of today there were the vibrant Boston and Chicago schools, composed mostly of luthiers trained in the United States, thus dispelling the myth that all good violin makers were immigrants (though some fine immigrant makers did indeed settle in New York, Philadelphia, Los Angeles and San Francisco). The Chicago school was greatly influenced by John Hornsteiner, who taught makers such as Carl G. Becker (d.1975) whose son, Carl F. Becker, is still making in Chicago today. Hornsteiner also taught Frank Sindelar (1883-1952) and Carl Poulsen (b.1879). The Boston school included the White brothers, Ira (1829-1895) and Asa (b. 1826). Asa went on to teach Calvin Baker and Orrin Weeman. There are many other prolific U.S. makers like O.H. Bryant and Goss. All these makers had a huge output of instruments. Asa numbered his instruments, so we know he made more than 400, whilst Becker had made 414 violins, 17 violas and 63 Cello's by 1948!

Violin Collection

Bromberg's current collection of 130 violins is unequalled anywhere in the

country. He has concentrated in keeping only the best examples of every good maker he can find through dealers and auction sales. His collection is pre-1950 as he reasons that modern American makers are well known and appreciated, their best examples being too expensive for him to collect. The extent to which his collection is influencing international opinion of older American violins remains to be seen. In monetary terms Bromberg noticed a big jump in prices after the Smithsonian exhibited his collection (then 40 instruments) in 1987. Philip Kass of William Moennig and son, shares Brombergs love of these instruments but is pessimistic when asked whether people are learning to value them fairly- "I don't see as many American instruments as I would like to because we have no market for them. We'd like to consider them, but we have to be realistic. It's a terrible shame."

Bromberg exhibited 36 of his violins at the Musicora Trade Convention in Paris (April 1993) surprising a lot of Europeans. Parisian maker Andre Levi expressed his astonishment when commenting "I had no idea that there were such fine (older) violins in America." Bromberg best expresses his passion by saying "....Explaining this collection to somebody who hasn't seen it is like explaining sex to a virgin. If you ain't never, *you ain't never!* You just have to see it to believe it." If that doesn't get you all rushing out to visit your nearest American dealer- nothing will !!

THE END.

BB PRODUCTIONS ©

Retouching.

***Christoph Gotting** worked for many years with J. & A. Beare ltd. He now makes exclusively, but in this the <u>second part</u> of his article on crack repair and retouching he shares the experience of his years as a restorer.*

Continued from issue 4.

First, a line of filling varnish needs to be applied to prevent any colour penetrating too deep into the wood and at the same time to level the surface. The varnish that works best for this job is in my opinion Frank Passa's filler varnish that seems to be identical with the American *DEFT* varnish. As far as I know this highly odorous semi-gloss wood varnish is not obtainable in Britain, perhaps it is time that somebody imported it. In order to get it to perform to its optimum as a filler (for which it is not designed) one must let a small amount of it thicken in a little uncovered bottle. To prevent a droplet forming on the end of the brush I find the following useful. Make a few millimetres wide wooden spatula with which the varnish is stirred before use. When taking it out of the bottle let some drops fall back into it before wiping one side on the edge of it. The top side is still covered with varnish. This spatula can now be held very near the crack and a very little amount of varnish can be picked up with a small brush and subsequently applied onto the crack. Having the varnish close to where it is needed has the advantage of one being able to apply a virtually continuous line that doesn't dry off in between applications. This makes it much easier to scrape afterwards.

Scraping once the varnish has dried must be done with the greatest care in order not to damage the original surface either side. The scraper should be very slightly curved and very sharp. To prevent ripples it can be used diagonally to the line of the crack with a later change of angle. Before retouching can commence the surface must be as flat and smooth as possible. If any sandpaper is going to be used it must be a very fine (1200 grit) wet and dry paper that is used with a little bit of water. It is important to work as precisely as possible so that only the filled area is being touched. Filler varnish can also be used to build up a damaged or sunk area, sometimes several layers that are let to dry separately may be necessary. Always level with a scraper and use sandpaper only to smooth out the finest scraper marks.

Pigments

There are different techniques of retouching. If pigments are used they can either be applied with alcohol, in which case a thin layer of clear varnish is used to cover every pigment application. (I use bleached shellac with a drop of elemi for this) On the other hand pigments can be premixed with a little varnish and then applied. Some people use dyed varnishes for their work. In either case it is important to establish with certainty that only colourfast materials are being used. Quite often an extremely thin layer of retouching will be sufficient but there are of course varnishes that are of a rather thicker consistency that are quite dark. Here it may be necessary to scrape a certain amount of filler varnish out of the crack in order to accommodate the retouching layer. Once a colour match has been achieved it is most important to match the surface of the retouched area with that of its original surround.

It is <u>not</u> acceptable to match the surrounding area with the retouching (as can unfortunately be seen so many times). It is essential therefore to have a close look at the original. If it is

slightly matt in appearance a little matt varnish (commercially available from Jenkins) can be added. Alternatively a small amount of finely ground silica does the trick. Unless a very large area has to be covered use small brushes for retouching. It may need a bit of practice but it is often possible to match the surrounding area very closely just with the tip of a fine brush. Always wipe off any excess of varnish on a rag or paper before touching the work. Either very delicate small strokes or even dabbing the tip onto the surface can create the desired effect. In any case the best possible match should be achieved this way. One will then often get away with just a little amour paste rubbed over the area. Amour paste is a very fine polishing paste that is oil based. It comes from Austria or Switzerland but I am uncertain whether it is still available. (Any news about it would be welcome).

Alternatively I am sure that some car paint polishing compounds would serve equally well.

French Polishing

In conclusion then I want to emphasise the point Charles Beare made in Dartington. It is bad practice to French polish over a whole original area just to "match ones retouching", especially on an antique instrument that might have a matt unpolished look. I once came across a scroll that had its whole pegbox and first and second scroll-windings over varnished in order to blend in the retouching of eight bushings! Matt or pitted surfaces of some old instruments have a charm and individuality that few modern varnishes can equal, please don't ever destroy this appearance by French polishing or by taking away patina that took hundreds of years to accumulate.

(W.S. Jenkins & Co. Tel. 0181 808 2336)

The Right Hank

Matching the size of hank to the stiffness of the bow, a simple method explained by ***Trevor Liversidge.***

I would like to share a practical system that I use for measuring the correct size hank for a bow. This system is useful to those rehairers who believe that the amount of hair in a bow should relate to its stiffness. (I could theorise on this for pages, but would only do so if requested, in practice it means getting the optimum performance from bows very consistently.)

The principle of the system is to measure the stiffness of the bow, which takes less than one minute, and then measure out the appropriate hank using a calibrated hair gauge. You will need to calibrate your own gauge using hanks from bows you know were haired about right.

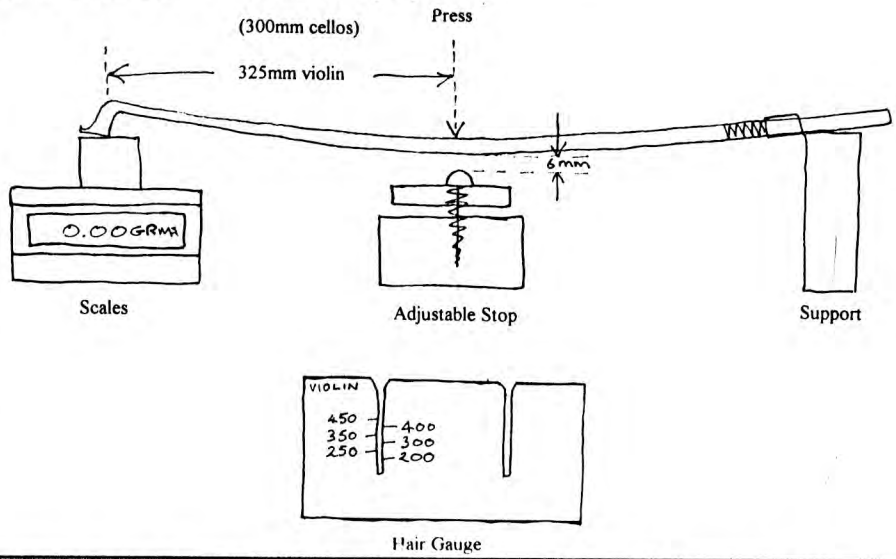
To measure the stiffness of the bow requires the head to be supported on some scales, and the butt where the frog meets the thumb grip to be supported on a block. The middle of the bow is pressed down a fixed amount (6mm is adequate) and the increase in weight read on the scales. This will be the relative stiffness. (In practice, self zeroing electronic scales with a small pan movement and a range of 0-2 kg make things very simple. My own scales cost around $60 Aust. have 0.75 mm per kg pan movement and a ± 1grm accuracy but ± 10 grms would do). Typically I find violin bows range from 200 grms to 350 grms, violas 300 grms to 425 grms, cellos 400 grms to 600 grms. I have also found that the relationship between stiffness of bow to the required amount of hair appears to be directly proportional, for instance a 300 grm bow would require 50% more hair than a 200 grm bow.

The hair gauge can be made from a piece of hardwood 3-4 mm thick and approx. 30mm x 60mm. A 1mm slot is cut in about 20mm and can be lightly sanded for ease of getting the hair in and out. On my gauge 200 grms is 5mm and 350 grms at 9mm for violin and viola, and I use a separate and slightly wider slot for cello and 400 grms is at 7.5 mm and 600 grms at 11mm. (See diagram).

One way to check that a bow has the correct amount of hair in it is to check that there is 4mm of frog movement from the just slack position to the tightened position where the gap between hair and stick has been increased by 10mm. If there is only 3mm of frog movement one would suspect too much hair by 30% and at 5mm not enough by 20%.

I hope this system may be useful to rehairers trying to achieve more consistent results. Players certainly appreciate getting optimum performance from their bow.

I would be happy to hear comments about the system, for instance head and frog depth may make a difference as may different grades of hair.



National Lottery Funds Application.

*BVMA Committee member **Alan Ward** writes with a request for help in formulating a lottery appeal.*

It seems possible that our Association could be eligible for money from the national lottery. These funds, if awarded, would be used primarily to buy equipment for the use of the BVMA to help in the organisation and running of the association - at present all paperwork and newsletters are produced on privately owned computers, and with voluntary effort too!! We obviously should not have to expect individual members to provide their own equipment for the continual use of association affairs.

I am therefore asking the membership to help with the formulation of ideas, and for this we need to set up a sub-committee to manage the lottery fund application in detail.

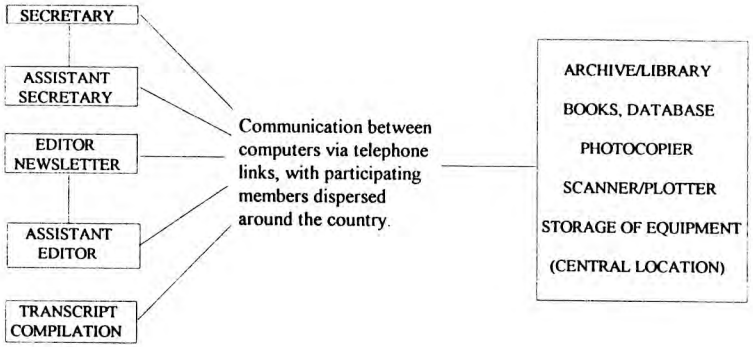
Some ideas to date are that in addition to the newsletter and secretarial work already set up there could be..... Assistant editor and assistant secretary.

An archive/library for use by members i.e. loan of books, photocopied material, drawings, instrument details, photo-records etc.

Transcripts of lectures need preparing for publishing. So in all a number of linked computers, printers, scanners, a plotter?, photocopier, slide projector, some audio equipment? Would be useful if the funds are offered.

If you have any ideas on how you would like the Association to function please write to me at this address and if you would like to help me with the details of the lottery application, let me know that too.

Alan Ward, 27 Plomer Hill, Downley, High Wycombe, Bucks. HP13 5JG.



Committee Report

John Topham (Secretary)

The management committee met on 16th July. Florian reported that both our accounts held a sum of £4447.83. I reported that 140 members out of a possible 200 had renewed their membership. In the past 3 months a further 21 people joined. This made a total of 172 members including the Honorary members. Since the meeting a further 10-15 people have renewed.

Marc proceeded to tell us about how the Benslow Trust is interested in setting up a scheme to buy up 60 new violins over a period of 3 years. They were going to apply to the Lottery Fund to help them with the cost. They invited Marc as chairman to meet them to consider how the BVMA could help in the organisation of such a scheme. It was suggested that we might be able to help sort out with a criteria for the selection of the instruments. The committee put forward various ideas but it felt that a wider consultation should take place before the matter proceeded much further. To that end we invite anyone who is interested in suggesting how the matter should be

considered to get in touch with either Marc or myself. This would even go for any of you who would be interested in submitting an instrument. Few details have been worked out at present so any suggestions would be useful.

Some weeks before, publishers of an elaborate book of Hungarian makers offered discounts to those who ordered them before the book was published in about 6 months time. After many telephone conversations, it was decided that the Association should buy the book as a beginning of a limited library for the benefit of all members. However there was some concern that this might not be the appropriate course to take. Problems of access and storage were aired. It was felt that before we considered buying many more books we should allocate a place which would be easiest for most people to get to. This goes for the idea, we had, to create an archive centre and enhanced facilities to produce the newsletter. Suggestions will be gratefully accepted! Such matters will also be considered at the AGM in November.

Concerning the cancelled barbecue, it was felt that the more informal approach was likely to be more of a success. Christoph is offering the venue for next year, so a simple party where you bring your own refreshments and meet people without actually having to dance!!! is likely to go ahead.

At the end of the meeting Florian reported that a few people suggested to him that committee were becoming a little 'cliquey'. Concern was voiced that the meetings were not well publicised in the past and that few people knew much of their proceedings. It was felt that we should emphasise the openness of all the meetings. All you need to do at present is simply ring up Marc or myself and ask when the next meeting is due.

The exhibition committee met on the 2nd July. The committee were gratified to know that the venue and the date had been set, and that there is likely to be no problems in acquiring all the instruments to exhibit. Attention is now centred on acquiring funds to pay for the necessary items and services that are needed for an exhibition.

Since the last meeting, Jed Murphy declined to continue membership of the committee. To fill his place and the one left by Alan Ward's leaving, John Milnes and Andrew Fairfax were asked to join the committee. John had been keen at the outset and has offered many ideas. Andrew works for J. & A. Beare and has an extensive knowledge of English Makers, past and present. After my request for help in the last issue, David Thomas has also stepped forward to help out! As a prelude to sorting out what is needed to be done in the way of sponsorship, David, John Milnes and John Dilworth have attended a seminar organised by the Association for Business Sponsorship of the Arts (ABSA) on the 29th August. It was felt that since none of us know much about sponsorship, 3 of us should attend. They will report back to another meeting at the beginning of September.

On a final note, don't forget send in your list of 10 living makers that you think best represent British violin making today to be included in the exhibition. I have had only 3 replies so far!

Dartington Update

Helen Chaloner of the Dartington Hall Trust told Marc that bookings were up compared to the same time last year. If the rate continues the conference will be well attended and a great time will be had be all! Paul Colins and Christoph Götting are organising a raffle to be drawn on the last day of the conference. There have already been some very good prizes offered. Tools from Brian Hart, Wood from David Carroll of Touchstone Tonewoods, bowhair from Michael Sowden and a lot more. The price of the tickets is yet to be set, however, at any reasonable price they will be a bargain considering the high quality prizes!

The lectures will be held in the College of Arts Hall, a few minutes away from the Dartington Hall quadrangle. The barn where the lectures were held last year is being refurbished with the help of Lottery money. It will be ready for next year's conference if we get that far!

Looking forward to seeing you there and good making.

Rowan Armour-Brown: Violin maker

Born: *Lichfield 24.3.48*
Trained: *Scuola Internazionale di Lutiera 1972-1975*
Married: *Paul Bowers 12.6.92*
Died: *Collingham 18.7.96*

Rowan studied violin making at the International school of violin making Cremona under the tuition of G.B. Morassi and restoration with G. Solomon. She was an outstanding craftsman and became one of the finest and most influential makers of her generation. Rowan was idealistic in her making, never wanting to compromise her position as a modern craftsman. Being a truly creative maker, she constantly questioned and challenged, but never to reproduce, only to express her own vision..... a rare stance in our times.

Rowan was generally unhappy with reproductions and pastiches of old instruments which she felt often lacked integrity, but she admired excellent copies made intelligently with perception. Most of her career Rowan copied, albeit loosely, the models of A. Stradivari, but only to gain an understanding of form and function. She was very aware of the pitfalls in making inharmonious "own" models, but nevertheless was prepared to experiment with line and form in an attempt to develop her own ideas. She felt that new instruments should not be thought of as poor substitutes for inferior antique instruments, and that modern makers need only be intimidated by the best work of previous generations.

Rowan made 115 violins, violas and celli between 1972 and 1996, combining this with repairing and trading. She was generous with her knowledge and expertise, willing to help both amateur and professional alike at Loughborough and Cambridge summer schools, at her evening class at Leamington Spa, and as tutor at the Newark School of Violinmaking.

As a teacher Rowan was always supportive, encouraging and patient. Being secure in her own work enabled her to not only recognise but also to acknowledge her student achievements. In addition she was a role model for many female students, being one of the few professional female violin makers.

Latterly, Rowan was disturbed and disappointed by the necessity to self-advertise and promote. She was unable and unwilling to exaggerate her abilities, feeling that her work should speak for itself since her character and personality was always modest and self-effacing.

Rowan was a totally committed and dedicated maker for over 20 years, and she was loved and respected by all who knew her professionally. She was also a very special person: to have shared her life has been a privilege, a wonderful gift.

Paul Bowers.
Newark, August 1996

(On behalf of the membership of the BVMA, the management committee would like to offer sincere condolences to Paul Bowers and to the family and friends of Rowan Armour-Brown.)

Q & A

Dear Editor

Would it be possible for a B.V.M.A. member to submit an article to the newsletter to explain how imitation whalebone lapping is carried out, and also to recommend the best available, and where available?

I would also be very interested in advice on the best type of bow makers knife, whether manufactured or made up of utilised components.

Brian P. Brealey, Aspley Nottingham.
(See page 15 for reply..Ed.)

LETTERS

Violins for Africa

I read with interest the articles in the Strad magazine and the BVMA newsletter, both with the above title and it suddenly became clear to me that the efforts of a dedicated individual have gone unnoticed.

Rosemary Nalden formed a registered charity some years ago under the name of BUSKAID with the primary goal of supplying youngsters in the "Townships" of South Africa, such as Soweto and Langa, with violins, violas, celli and bows, as well as attempting to provide them with tuition. She has achieved both with great success at considerable personal expense.

I was approached by Rosemary during the summer of 1994, because of my links with South Africa, and was asked to repair several instruments at cost and perhaps donate instruments. I have done this whenever I could, and continue to do so.

It has been my experience that many 'contributed' instruments need a small amount of 'looking at' before being perfectly playable, no disrespect to the contributors, but I'm sure we can all understand the circumstances. So, perhaps those of you BVMA members that are willing to contribute to this very worthy cause, (these kids are really something to behold), but don't have any 'spare' instruments , could, like myself, offer your time for repairing or servicing instruments to either BUSKAID or Eleanor Hope (address in previous newsletter).

It seems logical to me that more can be achieved when all concerned are working together, so to that end, with Rosemary's permission, I have supplied her address below.

Rosemary Nalden
BUSKAID, 27 Willow Road
London NW3 1TL
Tel & Fax (0171) 431 7899.

F.M. (Jimi) Glenister, dip. N.S.V.M.
Felixstowe, Suffolk

History- An inspiration.

I do try to keep an open mind about all the different attitudes to violin making. People should make what they enjoy making, not what they feel they ought to. Some can make a living that way, some have to keep it a hobby, but most have to compromise. The only thing that really bugs me is people saying you mustn't do this or you must do that. John Moore's letter in the last magazine stops well short of that censorious line, but I must say there are a lot of points that I feel a strong need to argue. I hope he doesn't mind, its not personal. "Intimidated by Stradivari" is an old chestnut. I don't see how anyone with the faintest dregs of sensitivity to the violin can look at a Strad and not feel intimidated by it.

To look at perfection has that effect on me. I have never sat down to supper with Claudia Schiffer, but I imagine I would have the same response (or very nearly). I admit readily to having a "constricted talent"- I'm not an artist but an artisan, but when I make a copy of a Strad or a Guarneri, I promise you, the feeling I have is precisely that I am serving an apprenticeship with them. By wearing the varnish I see exactly how my varnish behaves and reacts. If I can't get the same wear patterns, then I know I'm on the wrong road. By copying different archings and graduations as exactly as I can, I get to know the tonal effect they will have. It is a bit glib to say that Strad was not intimidated by Amati or Maggini. How can you know? Remember he was in his forties before he made anything that was even slightly different from an Amati, and in his seventies he started taking ideas freely from Maggini. After more than twenty years in the craft, I am nearing the age when Strad started to develop his own style, but I can tell you I haven't had half as good a training as Strad did, with all due respect to Newark and former employers, and not half his skills. (Actually, by that calculation, I'll probably be dead before I reach my "Golden Period"). If you don't know history, you cannot learn lessons from it. How many fully fledged natural genius' have been able to make transformations without a deep knowledge of what went before? I tell you, precisely none. Even the most avant-garde artists spent an unnatural amount of their youth in a withdrawn and preoccupied state prowling the galleries and swotting for inspiration.

As to apprenticeships; well.....poo. An apprenticeship system worked for years in this country, and Italy, to the detriment of the craft. All that happened is that generations of makers popped out carbon copies of the instruments that their masters made. In England in the eighteenth century you got wagon loads of virtually indistinguishable Stainer copies with very little merit, and in the early twentieth century, a few scattered makers who made slow progress. In Italy in the pre-war period you had a situation where the master handed on his techniques, and even his labels and brands to pupil so precisely that it is almost impossible to identify one maker from another. What room for artistic freedom there ?

What has blown the whole thing sky high is the advent of the schools. Newark (the alma mater), Mittenwald and Cremona attract and share students from all over the world, with an amazing variety of backgrounds and previous experience in different fields, and a questioning and intelligent outlook (usually). There is now an unprecedented sharing of information amongst makers and experts which is a direct and invaluable result of this network of schools. It is not true to say that each generation returns to the same starting point, in fact (no offence, Mr. Moore) it's blooming rubbish. As Carlo said, we are dwarves sitting on giant's shoulders. We all gain by what has gone before. In the schools information and expertise has accumulated, and it's a pretty scary experience for an old boy like me to visit now, and find that third year students are cranking out work that would have put me to shame. Where I was slopping on Shellac, students are applying sophisticated oil varnishes. If one of this lot doesn't crack the secret of Strad, I'll ....um...be wrong. At least they're in a far better position to try. In the old apprenticeship systems, all that you learnt was what your master taught you, and all that he could teach was what his master had taught him. It was a very closed system.

I'm happy to do what I'm doing, feel quietly optimistic doing it, and look forward to the challenge of each new instrument. If I wanted to try something radical, I'd have a go at designing an electric violin, which is certainly an important new idea, with new possibilities for the creative mind. Me, I'm just passionately in love with old violins. I hope nobody minds too much.....it's nothing personal, but it's certainly subjective. Who knows; perhaps we are already in a new "Golden Era".

John Dilworth, Twickenham, London

THE BACK PAGE

In with a chance and more

In issue 4 of the newsletter Kai-Thomas Roth wrote on the 1996 Manchester Cello' Festival, mentioning two events of special interest to makers: Firstly a workshop on modern instruments in which Charles Beare and Roger Hargrave talked about major and minor points of fitting up that a competition would be interested in, points worth knowing both for such an event and because they represent good professional practice; secondly a workshop on tonal adjustment by Rene Morel. How about sharing the valuable points covered in these sessions with the membership in the pages of the Newsletter ? Kai, Anyone ?

Tony Elmsley
Basel, Switzerland

Henry Handley: Worcester Violin Maker.

Exhibition at the Museum of Local Life in Worcester.

Worcester City Museums recently acquired a violin made by Henry Handley who lived and worked within a few yards of where the Museum of Local Life now stands. The exhibition includes this instrument with details of Handleys life and work, along with other examples of English instruments to illustrate the evolution of English violin making.

Examples of the work of Robert Cuthbert (1676), Simpson of London (c. 1785), and Handley's contemporaries including William Atkinson of Tottenham and Thomas Earl Hesketh of Manchester together with a fine inlaid cello of Smith (Sheffield, 1789) will be on display.

The Museum of Local Life is situated at Tudor House, Friar St., Worcester, WR1 2NA.
Opening times are as follows: Mon - Sat 10.30am - 5.00pm.
Closed Thursdays and Sundays.

Further details from Helen Sykes on Tel. (01905) 722349.

This Newsletter is printed and published by the British Violin Making Association. Correspondence and articles to go to the Editor, Shem Mackey, 15 Weaver House, Pedley Street, London E1 5ES. Tel No. 0171 375 0273
Contributors to this Newsletter express their own opinion and are not necessarily those of the BVMA.
Advertising Manager, Paul Collins, The Cottage, Millhill Farmhouse, East Hannigfield Road, Sandon, Chelmsford, Essex CM2 7TF