Newsletter

of the British Violin Making Association

Editor: Anne Inglis

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MUSICAL INSTRUMENTS



A very fine Italian viola by Pietro Giovanni Mantegazza

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Editorial

I am delighted to be able to introduce myself as the new editor of your Newsletter. And when I say 'your', that is exactly what I mean, because I may be the person coordinating and organising the content — but the content comes from you the members. I am very aware that one of the great strengths of the BVMA is its democracy, and as an editor I should hope to be a beneficiary of that in receiving submissions from as many of you as possible wishing to air your views on this or that topic in these pages.

As is so often the case, taking over the mantle from a previous incumbent in the post is no easy task. How could Shem Mackey manage to be both an excellent editor *plus* an instrument maker? Given I am only an editor and certainly not a maker of any kind perhaps it is of concern to some of you that I am not a member of the association.

I can understand that worry but feel, happily, that it is without foundation. For many years I have written about violins, makers and associated matters. I used to edit The Strad (when I came to know a great many of you) and indeed still write for it today. So I may not be a maker, but perhaps you will consider me an honorary one; I do understand

the problems and concerns you have and am sympathetic to your needs. And should I not be fully conversant with a subject there are plenty of members of the BVMA I can call upon. Indeed, so far I have received nothing but encouragement from everyone, so thank you very much.

I write this as the preparation for the exhibition is reaching the red hot stage; the next issue of the Newsletter will contain reports of the splendid results. Meanwhile, I have been the recipient of much hard work from many quarters. Thanks particularly to Daniel Larson, who hasn't flinched from telling us the extraordinary story of gut, and to Peter Oxley, with his detailed restoration notes, for all their efforts. Shem Mackey is under the spotlight this issue in At the Bench, where he tells a fascinating tale of his roundabout route to a fiddle maker. For our 'school' feature we go to LGU and hear about the courses on offer and from two past and present pupils. Roger Hargrave writes the first of a Letter from Abroad columns. If you live outside the UK and would like to contribute to this slot do get in touch.

I am very much looking forward to my association with your association — and wait for your letters and comments and ideas.

Anne Inglis

Chairman's Statement

It is my great pleasure, writes Marc Soubeyran, on behalf of everybody in the BVMA, to welcome our new editor, Anne Inglis. A former editor of The Strad, and now for some years a freelance journalist for mainly music-related magazines, Anne has agreed to jump into the lion's den of the violin maker.

It was with great relief, at the maker's day in October and after some soul-searching and wondering who was going to succeed Shem, that discussions began to take place between Anne, Shem, John Dilworth, John Topham and myself. Those discussions were finalised at the AGM, when the offer by Anne was accepted.

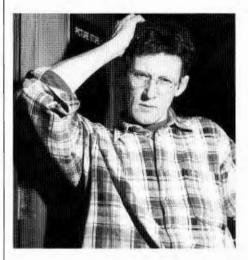
I am sure that the Newsletter will benefit from all the professional experience that Anne, following in the footsteps of Shem and John Topham, will be able to bring.

We would all like to wish Anne the best in her new job with us.



At the Bench

Shem Mackey, maker (and not least the indefatiguable ex-editor of the newsletter), walks from home to his workshop, situated in the heart of Bethnal Green in East London. Against the noise of sewing machines in this old factory building still largely given over to the rag trade, but rapidly becoming more fashionable with arriving photographers, designers, and yes, violin makers, he explains to Anne Inglis his decision to become a violin maker, a life he chose after various twists and turns.



For you Shem violin making wasn't something you turned to immediately after leaving school?

It wasn't a single, conscious decision, and I did a lot of things before violin making so it was a gradual process. Initially, it was probably the furthest thing from my mind, but I have always done woodwork, and this has been the basic link all the way through.

And where in Ireland do you come from?

In County Kilkenny. My parents were farmers, so there was no violin making in the family and just a little music — my grandmother played the accordion a wee bit, and I took up the flute and whistle and wee bit of accordion as well.

So you did woodwork at school?

No, I had always tinkered with woodwork back home, anything really from mending gates, trailers, that sort of thing, on the farm. For a year after school I worked on the farm buildings and in an agricultural store, then I got a job with Telecom, and trained as an engineer for four years. But I burnt my bridges there completely, as I left soon after qualifying. I really enjoyed the training as we did a lot of travelling all over Ireland, excellent for someone that age, but as soon as that finished I headed off to Germany. My first job was as an English teacher with Berlitz — and for a while all these business people in Cologne were coming out with very strong Irish accents. Then I worked as a painter in an oil refinery, painting the machinery — horrible work.

So, actually, you really couldn't find your pigeonhole?

No, not at all, but here I was travelling, having a lot of fun. It was simply making money to have a good time. It was the time of Aufwiedersehen Pet, and we were doing exactly the same thing

Did you wake one morning and think you wanted to do something slightly more serious in life?

Yes, that did happen. By this time I was 27 I decided I had to do something. It was a question of making a decision about one thing and sticking with it regardless of whether at times it didn't seem to be

working. When I was in Germany I spent some time as a woodworker in a big factory — we made these huge roof trusses — and when I arrived back in Ireland I turned to finer woodwork and cabinet making and did a lot of work for a Steiner community nearby. I went to work in a workshop in Switzerland which made lyres according to Rudolf Steiner principles, and after a brief period there the following year I applied to come to the London College of Furniture, as it was then [see Capital Choices, p.26], and spent four years there.

Why did you choose the course in London, because you obviously spoke a bit of German by this time and could have applied to Mittenwald?

It never crossed my mind. I wanted to come to a city, having grown up in the countryside. And I had visited the workshop at the LCF on my way back from Germany, because I had a contact there. But he happened to be in the early fretted workshop, set apart from the main building. It was a very independent atmosphere and mind-set, different from the workshops in the main building, and this appealed to me completely. So I eventually joined the early fretted workshop — I never did the violin making course at the LCF. But the first three instruments I made there were baroque violins, simply because this was what I wanted to do.

How did you get the tuition you needed if you were in the wrong part of the building?

With some difficulty. But at the beginning we had Roger Rose from West Dean College who came once a week and taught me all he knew about baroque violins.

Did you enter into the spirit of the fretted instruments?

Yes, I did. At college I think I made about a dozen instruments and these were probably split half and half between early fretted and violins, and there was some modern in there as well.

Who else was important to you there? Stephen Barber, who taught lutes. There was a lot of crossover in technique and woodworking, and I liked his attitude. And Norman Myall, who taught gamba making.

How formed were you when you left college?

The fact that this workshop was quite independent was itself very useful because you tended to have to find out information if you really wanted it, so you became quite independent. For example, we would take the initiative and go and measure instruments all over the place — museums, auction houses — so we developed an independence of our tutors quite early on. And anyone who has been there would probably say exactly the same thing.

That is a positive way of looking at it, though. Do you wish you had been helped a bit more?

Yes, I did have to find out a helluva lot once I had left, particularly in set-up and varnishing. You just didn't get to see enough instruments.

Did you get to see any instruments, apart from the ones you went off to look

No, not really. Stephen Barber brought some, as at the time he was drawing up one or two for Dietrich Kessler. Those little things helped quite a lot but there could have been much more of the same. But the constraints on institutions don't really make it possible.

After leaving what happened?

During the last two years at college I did get commissions and was working to





order, making about three instruments — a treble viol, a baroque violin, and a little pardessus — not including the course work. I left with one large order and started working on that, in the meantime applying to various shops for work. But it was during the recession, in 1989, so I just continued making and selling, which is what I have done ever since.

How did you market yourself, through word of mouth?

Yes, and foot-in-the-door technique. I turned up at rehearsals and after concerts with instruments, and asked people to try them out. Period instrument orchestras, largely, which is most of my work.

How much courage did it take to turn up with instruments?

A great deal, particularly at the beginning. It was so depressing sometimes when you got flatly refused, or people would treat you with disdain, almost. But the majority of people were very good and listened.

Did you make appointments?

Sometimes I would roll up after a concert, which I know is a pretty awful thing to do, just to turn up in the green room afterwards, but it seemed the only way sometimes. Other times I would make appointments.

So where did you turn up?

I would pinpoint a particular person who played an instrument that I had just finished, and turn up that night. I was aiming for the top — Cat Mackintosh, Micaela Comberti, Simon Standage — and I repeatedly returned to these people with subsequent instruments to get some sort of continuity in the feedback, and that was my learning. I never actually made for them, but sold quite a few through them in the end.

So after nine years of independence, what does your order book look like?

It's pretty good at the moment.

Too much time taken with the newsletter?

Yes, that's probably part of it... I have one really big order to make in the next few years — the whole string section for Bath Baroque, a small and relatively new orchestra. I finally got the go ahead last year after the orchestra were given a lottery grant. Altogether I am making 13 instruments — eight fiddles, two violas, two cellos, and bass. Plus I have other work, including a couple of gambas, another pardessus and a baryton. I tend to slip in modern ones in between and sell them on spec.

Why would people want your work — why, for example, were you chosen by Bath Baroque?

It is based on reputation, I think, and there is a consistency there. Going back to the time when I took instruments around, people began to say they could recognise the sound. When this sort of thing is picked up on I am always quite happy because it means you have the basics right. If someone is struggling with the set-up, he will not tune into the finer points of what you have made. I always try to get a very good set-up and as even across the four strings as possible. After that the sound quality is there to be perceived without all these problems in the way.

With this large order, are you using the same source of wood?

I probably will, as I bought a lot of timber some time ago from Switzerland, so all the fronts will be from the same tree. I will vary the wood for the violin and viola backs to get the differences of tone colour and the obvious aesthetic differences. For the cellos I have some poplar for the backs and ribs.

Will they be plain, decorated, or

marked in some way?

I have to talk to them about that, but, yes, I think there should be an identifying feature to indicate they are all for one orchestra. It could be a brand with a logo, or marking the labels, I don't know yet.

Do you still take your instruments round to orchestras on spec?

The modern ones, yes. And I can honestly never see a time when I won't have to do this. I have a contact in each group I visit. I use the Irish mafia (the Murphia) – there are quite a few Irish traditional musicians who are orchestral players, so it isn't that hard really.

Do you still play?

Yes, down the pub, but I haven't for ages because of the newsletter, and the need to get up for work the next day which can be difficult.

So who owns your instruments?

They are all over the place. Some of the more well known players could include Richard Boothby. He has a bass violin, built after the King Charles IX cello in the Shrine to Music Museum, South Dakota. It has been cut down to standard modern cello size so I had to bring it up to its original size again, and recreate the neck. There are no existing examples of bass violin necks from that period. But working with Richard and learning about his requirements, plus studying iconographical evidence from the National Gallery and various Dutch masters in Holland, I built up a picture of what the neck, fingerboard, bridge and tailpiece would have been like. The instrument works incredibly well.

Do you restore at all?

No, and very few repairs.

Would you wish to do this?

Not particularly but I can see the advantage of doing repairs in that it's quite lucrative ... and brings customers

into the workshop who may at some stage be interested in buying a new instrument. The downside is once you start doing repairs you have no time for making, and I don't want to get into that situation.

Do you get to see any old instruments? I go to the sales, and contact musicians with interesting instruments. I then take measurements, make casts, and note down as many details as possible. I have been making a bank of this information for years now. I take casts of carved heads for reproduction.

With the early instruments generally, there is far less standardisation than with modern instruments and is more open to your interpretation. If a musician has a particular idea then you can take that on board. And then there can be far more decoration. On quite a few of the English gambas you get these great floral motifs in the centre just like the Maggini instruments used to have, and quite a lot of crosshatching and colour, and some gilding can even be involved. Where you have rosettes — these can be intricate, some built using very, very thin layers of pear, each one individually cut and overlaid, sometimes with vellum underneath.

Have you developed different varnish recipes for your early work?

No, I use the same varnish, a reasonably softish varnish, a simple one based on pine resin and walnut oil. I use a golden ground, and overlay that with red varnish, so the final colour is a deep red which wears through quite nicely to the yellow underneath.

You have returned to your old college, now the London Guildhall University, to teach?

Yes, except I teach violin making rather than early fretted instruments. I have consciously tried to turn my work

towards the violin generally, early and modern, in the last two years, and the gambas are now probably the least of my work.

How many teach violin making?
Just me, and I am only part-time.
Are you worried about the future of so many students leaving college now?

It is a real problem. I try and resist it but in my own way. I don't actively say I am not going to take on students who haven't some degree of proficiency in woodwork but I do have a policy of persuading those who don't have so much experience to follow a lower course, the ND — but the problem is you receive funding only for the HND course, so everyone wants to come in at the higher level. The college will take anybody, really. Personally, I try to take people that I think will be really quite good.

Do you restrict the numbers?

I don't restrict the numbers but I have refused people, which is against college policy. It's the system — Newark will take anyone too, now. I don't know what the answer is. There are no alternatives to college. It may not be the ideal, for want of a better way it is all we have got. A lot of people turn out well in spite of it.

Does teaching keep your fiddle making skills up to the mark?

Yes. The first time I started I was bombarded with all sorts of questions, and it does make you think and analyse what you do rather than doing things automatically. You learn a lot too — people who come in quite green to violin making can sometimes come at it with such a fresh and very objective view.

And outside violin making?

Repairing old Volvos. I have three in total, all 120s, two estates and one saloon, and treat them as running cars. I also collect toys. The earliest is a 1928

Hornby railway, and they go right through to the 70s, so beautifully made and durable. I also grow lots of trees in the garden, currently about 50 which I plant in pots. The plan is to replant them one day on my parents' farm. And for a period of about three or four years in the late 70s, early 80s, I got into marathon walking — not the sport — and together with a group of friends took part in a 1500 mile walk to Rome and another across the USA from San Francisco to New York.

Any regrets about relinquishing the newsletter?

I really enjoyed doing it, and it was a steep learning curve, but No, I couldn't have done it any longer. It needed more time than I could give, and sadly I had to give up.

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The Inside Story of Gut Strings

Synthetic strings are forever trying to match the tonal ideal of the gut string. Here Daniel Larson explains how the making of gut strings has evolved, and describes the painstaking process of producing the perfect gut string.

For thousands of years, the choices of musical string materials were few. Usually they were limited to some indigenous material that was either suitable or adapted to the task. If you lived in the East the logical choice would have been silk where the fibres were processed, twisted and braided into musical purity. Horse hair was used in Scandinavia. In the more tropical regions plant fibres were twisted and spun into a cord for use as a musical string. The European West chose an equally unlikely material for use as strings: animal intestines.

No-one knows exactly when gut was first used for musical strings. Legend has it that Apollo was the first string maker. When he came across the tortoise and had the inspiration to make the first lyre he used the poor animal's own intestines for the strings. The first proof of the use of gut strings came in 1823 when some of the earliest extant musical instruments were discovered in the tombs of Thebes. These harps had gut strings which still made a tone after some two thousand years in storage.¹

So, gut has been the traditional material for strings in the West and still defines the standard of violin tone. The highest praise that can be lavished on one of the new, synthetic strings is that it sounds 'as warm as a gut string'. But what exactly is a gut string?

Gut strings are made from the small intestines of sheep. The process can be broken down into four basic steps:

- 1 Slaughter and recovery at the abattoir
- 2 Dressing and selection
- 3 String processing and twisting
- 4 Drying and polishing

Step 1: The Abattoir

It all begins at the abattoir. The intestine is also known as a casing and is referred to in the trade as a 'set'. The intestine must be pulled from the animal immediately after slaughter while the gut is still hot. This will ensure that the blood vessels that run into the casing will be broken off close to the gut wall. To allow the organs to cool will risk having these veins break off as much as 4 cm away from the casing wall; this creates 'whiskers' that lower the quality of the gut for musical string use. These whiskers are almost impossible to get rid of and will inhibit the quality of the string by introducing a contaminating agent in the muscular membrane. Whiskers also increase the likelihood of a false string because they change the otherwise regular linear mass of the gut.

So to ensure the best quality the gut must be removed immediately, separated from the fat, stripped of manure and put into cold running water. The presence of fat inhibits the bonding of the fibres during the drying process. Manure causes stains in the set which are difficult to get rid of. The cold water helps to preserve colour and strength of the casing. Once a group of five or so sets are stripped they are bunched and knotted in the centre.



This is known as handling the casing 'on the double', that is, at the centre. Such an arrangement makes it easier to handle the 27.5 m of length and eases the strain on the material. These bundles are put into large containers and await collection by the dresser.

Step 2: The Dresser

Traditionally the string makers were located very close to the slaughterhouses. Denis Diderot in his Encyclopédie of 1865 mentions this fact and gives an illustration and explanation of the process (fig. 1).2 No doubt this was important in the past when shipping and storage methods were limited. It was easier to bring the live animals into the city centre where they could be processed quickly with little spoilage. In earlier times the string maker would do most of the selection and dressing of the casings. Sometime, I believe in the early 1900s, some specialization took place and the task of selection was given over to the dresser.



Today, modern methods and technology allow supply and production to be separated by greater distances. Plastic and stainless steel containers mean that the material can be stored for long periods without change of colour or deterioration. Along with advances in preservation, highway and air shipping methods allow the abattoir, dresser, and string maker to be located anywhere on the globe.

When the casings arrive at the dresser from the abattoir they are soaked in cold water. This soaking may be for a few hours, overnight, or several days depending on the methods of the dresser. Soaking softens the submucosa membrane and prepares the set for crushing (fig. 2). After the cold soak some dressers will provide a hot soak for an hour or so before machining.

The next step is to remove all membranes except for the muscle fibres that will be used in making the strings. This is called stripping and crushing the

A Serosa B Muscularis

C Submucosa

D Muscularius Muscosae



casing. Traditionally stripping and crushing was done on wooden boards with a metal bladed scraper. This is hard work. The task is to strip off the outer serosa layer while at the same time crushing the inside mucosa membrane. When scraped with enough vigour the mucosa will liquify and be squeezed down and out of the casing tube. Fortunately, a machine has been developed to implement this task. It is known as the crusher/scraper (fig. 3). The sets are sent through the crusher/scraper doubled at the middle. They go through a set of three rollers. The first two sets crush the mucosa membrane and squeeze the gut tube to push the liquified membrane down

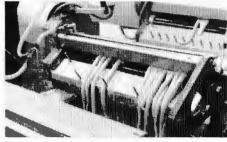


Fig. 3

through the casing. The third set of rollers is a specialized set called the dethreader/finisher which squeezes the last of the mucosa out of the tube and separates the outside serosa membrane from the muscle layers. Serosa is known in the trade as 'thread' because it resembles a long white thread. The casing leaves the scraper plant as a clean tube of muscle fibre 23 – 27.5 m long. It is now ready for sorting.

Sorting takes place on the sorting table. This is a stainless steel or rubber surface about waist high that has one or two water spigots set into it. First, the casing is checked for length. Then one end of the tube is filled with water to inflate a section of the tube between 20 and 30 cms long. This inflated section is used to gauge the calibre of the casing. The gauging system has four ranges that separate the casings by outside diameter, (table 1).

Gauge	Diameter	
Narrow	up to 18mm	
Medium	18 – 22 mm	
Wide	20 – 24 mm	
Extra Wide	23 mm +	

Table 1

The casing calibre is checked with a small rack that consists of six or seven slots of varying width (fig. 4). The first slot is 18 mm wide, the next is 20 mm, then 22 mm and 24 mm. The last two or three slots are not used for sheep but reserved for hog and beef casings. Workers will test the inflated tube in the various slots until the most comfortable calibre is established. Then the water in the filled section will be run down the length and the calibre checked again at several points. As the water is moved through the tube it is also checked for



Fig. 4

holes. Small pin holes are to be expected. These are where the blood vessels entered the tube. Slightly larger holes can be left in the length. Large holes mark spots where the casing is cut. At the same time the casing is being checked for colour and general condition. Quality can vary with breed and age of animal, elapsed time since slaughter, weather conditions and handling. Great judgement is required to take all of these factors into consideration and select the best use for a casing. These dressers are skilled workers and lay the foundation for the quality of the gut string.

Intestines are not the same diameter along the entire length. The upper section is wider in diameter for about 18.5 m than the lower section. This is referred to as





the first cut; it is the first part of the casing and the most valuable to the dresser. First cuts are usually 22 – 24 mm and are valuable for sausage casings. The lower section of the casing is known as the second cut and can measure from 7 -14 m. Second cuts are typically 18 - 20 mm. These are the best for strings. Not only are the first and second cuts different in size, but they also differ in structure. The function of the upper section is to constrict around and pulverize food in the digestive tract so the nutrients can be extracted; the muscle fibres are shorter and oriented more around the circumference of the tube. As the food is moved down the intestine the muscle fibres lengthen as their function is to push the used material down. These longer fibres assist in making stronger, more stable strings. It is fortunate that the smaller size makes the casing less valuable so the cost of the string material can be kept as low as possible.

Selected casings are grouped together in hanks (hanks consist of about 92 m of material). The hanks are stored in salt, processed especially for use on casings, in barrels in a semi-dry condition until the string maker is ready for them.

Step 3: The String Maker

The first task of the string maker is to rehydrate the hanks of gut and wash the salt out, usually done with an alkaline solution of some kind. The 14th-century Secretum philosophorum³ recommends the use of lye. In the 18th century De la Lande⁴ notes that the Italians used wine lees as an alkaline agent and the English, French, and Germans used potash. Today the custom is to use soda ash to create a base solution for the gut. The strength and temperature of the solution is critical.⁵ It is possible to reduce the gut to a

gelatinous mass if the solution gets too strong or too warm.

As mentioned earlier, the gut comes to the string maker as a long tube. Traditionally there have been some string makers who specialized in what is called 'whole gut' string making, that is, they made strings from the whole, round tube. To understand the implications of this I would like to consider the configuration of the intestine. It is tubular in shape, but it is not a straight tube. In the body the intestine curves back and forth so that a long length can be packed economically into a small space. One side of the intestine, the outside of the curve, is longer than the inside. So, when you stretch out a whole gut, the inside will become tight with the longer outside section dangling from it. This means that many of the muscle fibres are not distributing the tension of being pulled. To twist a number of these whole guts together is to have a string that does not distribute the tension evenly between the muscle fibres. To solve this problem the

Germans, according to De la Lande, developed device called splitting horn (fig. 5). This is also known as a soutil or subtle, taken from the Italian word which sottile means narrow or slender.6



Fig. 5

This tool will divide the gut length into two or more ribbons. The ribbons can then be stretched more straight and spread the tension of the string more evenly through

the muscle fibre structure. The splitting horn is a wonderful tool.7 The traditional sheep gut horn consists of a curved mandrel with a blade that crosses the plane at 90°. The gut tube is drawn over the end of the mandrel, and is split on both sides by the blade. The curve of the mandrel is more or less the same curve as the gut tube so the casing always remains in the same orientation to the blade. The yield is two ribbons of different widths. The widths can be controlled by moving the blade back and forth along the horn as the slot cut for it is long enough for this purpose. The gut is pulled over the horn and across the blade. When the arms are extended fully the ribbons are dropped and the hands moved forward to grab the blade for another pull. This action is repeated until the gut is fully split.

The two ribbons are referred to as 'rights', or 'smooth side', and 'lefts', or 'rough side'. Both ribbons have special uses in string making because of their individual qualities. The rights are cut from the outside of the casing where the fibres are a little more pure. When the ribbon is laid flat the edges are smooth and straight. The rights are used for the treble strings up to a diameter of 1 mm or so. However, I do use rights for the cello a-1 string which goes to a diameter of 1.28 mm but this is a special use. Lefts are made up of the inside of the casing. The villi and other blood vessels are located at this point on the gut. When the lefts are laid flat the edges are rough and irregular. Lefts are used for larger strings where strength is not so crucial but a build up of mass is necessary. I use them for the cello d-2 (1.50 mm), and larger diameters of strings.

After a batch of gut is split it is ready for cutting and processing. I usually run batches of three hanks at a time. There can be any number of batches in process at any one time, but I find the three hank batch a manageable amount. I have two lengths of twisting rack in the shop. One twists a string length of 2.1 m and the other a length of 1.4 m. This way I am twisting two or more violin strings or one or more cello strings at a time. Ribbons will be allocated to one rack or the other depending on length. Shorter lengths are discarded. I have decided that anything shorter is not worth the time.

The processing is basically a controlled fermentation of the gut. Enzymes in the gut are activated by the alkaline solution and heat. Careful monitoring of the solutions and frequent changing of the water cause the oils and fat to break down in the gut leaving a pure fibrous collagen structure. Solutions are changed four times a day and the gut will be scraped at least once a day. This aids the removal of extraneous matter that may be stubbornly adhering to the gut. I use a black plastic board as a base to scrape on. The wet gut becomes translucent over the black background and it becomes easy to see flaws and imperfections in the material. This process goes on for four days. If done correctly the gut comes out as long, beautiful white ribbons. If the solution is too warm or too strong the gut will break down and become useless.

The next step is to whiten the gut in some way. If the gut is brought straight from the processing solutions to the twisting bench the strings will come out some shade of yellow-brown. The particular shade will depend on the quality of the material, handling, minerals in the water etc. The tradition has developed to whiten and clarify the gut. There are two primary ways this is done. One is with sulphur fumes and the other is with a bleaching solution.

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In the fuming process the strings are first twisted on racks and the racks of strings are gathered in a small room that can be tightly sealed. The strings are still slightly damp and freshly twisted. When the room capacity is reached, a quantity of sulphur powder will be placed in the room and set on fire. The room will then be tightly sealed to prevent the infiltration of air. In the sealed room the sulphur will consume the oxygen and create new sulphur dioxide compounds in the air that will act on the gut strings. The effect is to whiten the gut. When the strings are taken out of the sulphur room they are sometimes retwisted and fumed again, depending on the techniques of the maker.

The other method of whitening is to put the gut in a bleaching solution. The usual agent is hydrogen peroxide. The peroxide is mixed into a water solution and the gut is immersed for a period of three or four hours. Care is taken to keep the gut down in the water as hydrogen bubbles form on the gut and cause it to float. I use two bleaching cycles since I prefer a gentle soaking over a longer period of time. The gut is allowed to rest overnight before it is twisted.

The twisting bench consists of a long table with a head-stock of spindles at one end and a bank of hooks at the other called the 'lazy end'. Exact configurations will vary greatly with each manufacturer but the principle remains the same. Gut ribbons are bundled together and twisted between a spindle at one end and a hook at the other.

The ultimate diameter of the dry string depends on the width of the gut ribbon and the number of ribbons that are twisted together. More ribbons creates more mass and therefore a thicker string. A chart of average string bundles is given in table 2.

String	Ribbons	Side
Violin e-1	3	Right
Violin a-2	8	Right
Violin d-3	15	Right
Viola a-1	8	Right
Viola d-2	15	Right
Cello a-1	24	Right
Cello d-2	15	Left
Bass G-1	21	Left
Bass D-2	38	Left
Bass A-3	64	Left

Table 2

The ribbons are counted out and tied to a string loop that is hooked onto the spindle. The string bundle is then combed through with the fingers to straighten the ribbons and distribute the tension evenly between them. Then the bundle is tied to another string loop at the other end on the lazy hook. The ribbons are not pulled tight, but rather sag in the middle. This is referred to as the 'swing'. Thicker strings require more swing than thinner strings to develop the necessary angle of twist. Ratios of swing to string length to diameter to twist angle are proprietary to each shop and greatly influence the quality of the finished string. Generally speaking, twisted fibres reach maximum strength at a twist angle of about 17°. The strength of the twisted structure will decrease somewhat as the angle increases, but the flexibility of the string will increase.8 This is the essence of the art of string making. The playing characteristics of the string depend on the kind of gut and how it was processed and twisted.

Once the gut has been twisted it must be dried and seasoned. The drying process must be very slow for the collagen in the gut fibres to bond together properly. Twisting should be done in a very damp environment. As the string is twisted, water is wrung out of the fibres. The balance of the moisture is absorbed in the air around the string. When the string loses this moisture it also loses diameter and begins to shrink down upon the center of the twisted structure. As the string shrinks in diameter it gains in length and the string becomes slack between the two hooks. It is therefore necessary to add more twist to the string to tighten it again. Usually the string is wetted and tightened in this manner numerous times a day over two or three days before it settles down and becomes stable. The string is then allowed to dry and season for two to four weeks before it can be polished.

String polishing has had various meanings through the history of string making. Traditionally this was done just after the string was dry and before it was taken off of the string rack.9 The usual method was to rub the strings back and forth with horse hair pads that were treated with oil and pumice powder to remove imperfections and smooth the string up a bit. This method did nothing to make the string true or the diameter regular. Consequently history rings with complaints about strings being false and irregular. Mozart and Spohr both commented that strings were smaller at one end than at the other and mentioned elaborate methods of dealing with this problem, which originates with the way strings are twisted.¹⁰ Since the gut is twisted from one end, the twist must build up at that end before it is transferred to the other end. This causes one end to twist more tightly at one end than the other, causing that end to be slightly thinner due to the extra twist. This problem persisted until someone, probably a mentor of the Pirazzi family in the mid 1800s, 11 came up with a way to make the string a regular diameter throughout the length.

At this point the concept of polishing becomes one of rectifying the cylinder of the string to make it round and uniform. This was first performed, I believe, with a mechanism known as a flat bed polisher.12 This polisher consists of a long table with hooked spindles at each end. The spindles are connected from end to end so that they turn at the same rate. Strings can be mounted on the hooks and rotated as on a lathe. With the strings spinning two boards lined with sandpaper were moved back and forth along the bed. By regulating the space between the boards the strings would be sanded to a regular cylinder.

While this machine was improvement it did not work perfectly and a lot of strings were still false. The concept of the centreless grinder was introduced to the string making world in the mid-20th century and revolutionised the trade. With the introduction of this machine the string maker could almost guarantee that each string would be perfect in 5ths. The mechanism consists of two abrasive wheels turning in opposite directions with a space between them (fig. 6). One wheel is set at an angle and acts as a drive wheel that pulls the string through at a regular rate. The other wheel is an abrasive stone that removes material from the string. By regulating the space between the wheels the diameter of the string can be controlled to perfection. The freshly twisted, unpolished string is usually reduced by 20% to form a regular cylinder. Removing too much of the

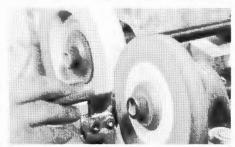


Fig. 6

string diameter will result in a compromise of the twisted structure. Strings are twisted in many different sizes so that a string can be polished to a specific diameter without exceeding a reasonable tolerance. Some string makers use a liquid lubricant on the string as it goes through the polisher which serves to flush away string dust and provides a finish. This fluid has a low flash point and can be a fire hazard so I prefer to polish the strings dry and finish them by rubbing with the traditional oil, pumice, and cloth.

I know that the use of gut strings will be greatly specialised in the future. Many modern materials have been developed that do more or less the same job with fewer problems. However, I feel that it is important that violin makers, repairers and players have some understanding of the art of gut string making. Synthetic strings will always be compared to gut. Gut is our benchmark; there is no sound more beautiful than the tone of a good gut string.

- 1. J. G. Wilkinson The Manners and Customs of the Ancient Egyptians, Vol. I, 1878.
- 2. This illustration and part translation of the text can be found in *Shapes of the Baroque: the historical development of bowed string instruments.* Presented by William L. Monical in 1989 under the auspices of The American Federation of Violin and Bow Makers. Library of Congress Catalog Card Number: 89-83602.

- 3. Werner Bachman, *The Origins of Bowing*, Oxford University Press, 1969, p.81.
- 4. De la Lande wrote about the string-making process in Italy in the late 18th century. A synopsis of his comments can be found in *The Violin: its history & construction* by Abele and Niederheitmann, translated from German by John Broadhouse. 1/1864; 2/1874. Published by William Reeves.
- 5. De la Lande partly attributed the high quality of Italian gut strings to the warm climate in which they were made. He specified that the best time was from Easter to October. Abele and Niederheitmann, p. 84.
- 6. Alberto Bachmann: An Encyclopedia of the Violin, Da Capo Press, New York, 1966.
- 7. When I started trying to make gut strings I had read about this device but had never seen one. I tried to make a 'splitting horn' with one miserable failure after another. One day I was discussing my problem with Glenn Bjorkman of the Victor Companies. He kindly sent me two old splitting horns that his company used for sheep gut. When I saw them I knew at once what I had been doing wrong and have forever been impressed with this simple, elegant and functional tool.
- 8. For a detailed study of the principles of twisting I would recommend David Himmelfarb: *The Technology of Cordage Fibres and Rope*, Textile Publishers, 1957.
- 9. Ed. Heron Allen: Violin Making as It was and Is, p. 212.
- 10. Ed. John Bishop: Spohr's Violin School; the original Violin School was published in 1831.
- 11. This is only speculation on my part. I have not had the opportunity to research the issue thoroughly. The contributions of the Pirazzi family to the history of string making have been considerable.
- 12. This machine has been described to me by Glenn Bjorkman of the Victor Companies.

I am grateful to Glenn Bjorkman of the Victor and Frank Smith of Smith Bros. Casings Ltd. for their patience through the years as I learned about the process of making gut strings.

Daniel Larson makes gut strings for his company Gamut Strings in Duluth, Minnesota.

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SOTHEBYS

The Mother of All Buttons

Bow maker Peter Oxley was asked to replace a lost, gold-mounted button for a gold and tortoiseshell violin bow by François Xavier Tourte from his golden period (1810-1825). Here he takes us through the stages of the reconstruction of the button for this marvellous bow which is otherwise original throughout.

François Tourte: 'the Stradivari of bow makers'. Why this unsurpassable epithet? Why has this man for generations been regarded as the greatest bow maker of all time, and what is it that has led us to the consensus that his finest work produced 'great' bows?

These are valid questions that, in various forms, have been asked over the years, not only by musicians but also by violin makers. In general, most bow makers and violin makers know little of each other's craft, particularly when it comes down to the minutiae that can separate one maker's work from another's; it is in this respect that I am going to try to throw some light on François Tourte's genius.

A common response to the question of what makes a great bow is to wax lyrical about the three main components of the bow: the elegance or magnificence of the head, the graduation and resilience of the stick, the artistry of the frog. But what of the button (or adjuster/tip-screw)? Ah, the humble button! Humble? Let us take a closer look at a formidable piece of engineering/metalwork/jewellery that makes up a button on a gold-mounted François Tourte bow.

Aural history has it that Tourte spent the first eight to ten years of his working life as a watch-maker; it is arguably in the work of the gold-mounted buttons that we can most clearly see the legacy of his first *métier*: the three-part buttons incorporate two octagonal gold rings with the middle section comprising eight mother-of-pearl

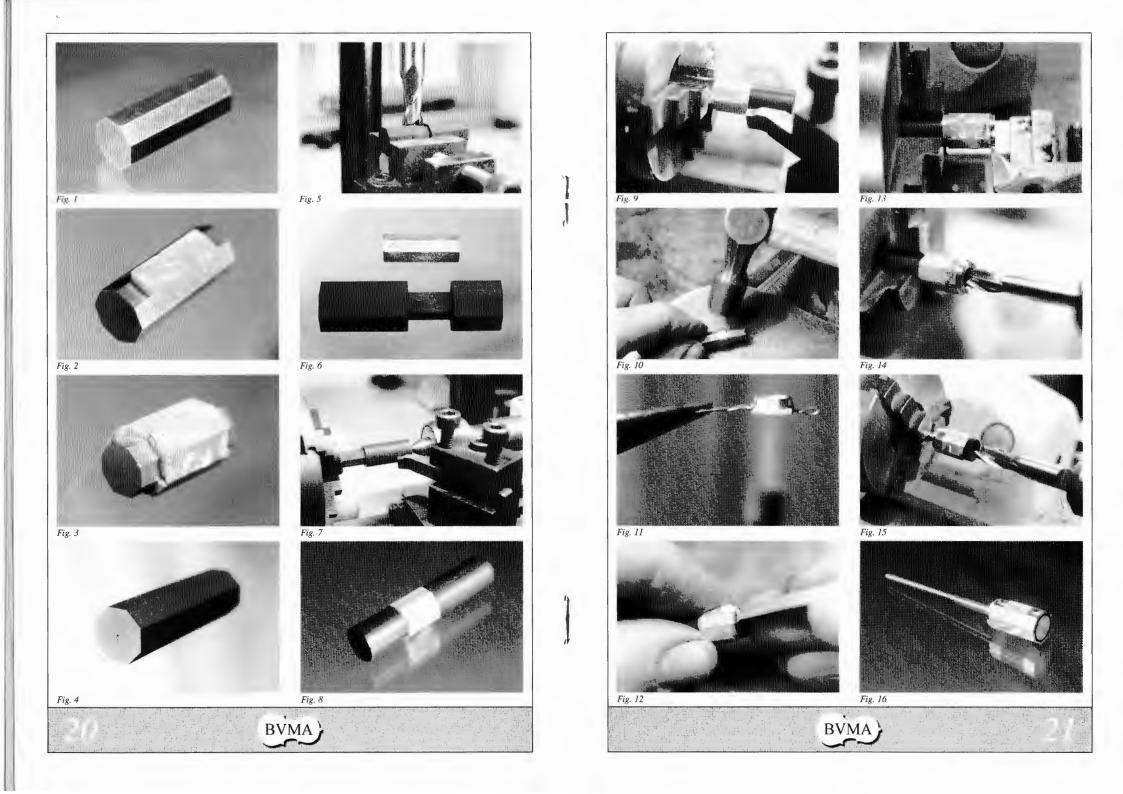
facets. To complicate further this ensemble, an additional piece of gold is soldered onto the front ring in which the moulding is cut and the pearl facets are locked under the gold rings. All this has to be mounted on a piece of ebony (seen only at the end between the gold and the pearl eye), keeping equidistant to the centre. Tourte is certainly thought to have designed this button and although many makers have subsequently used pearl facets (for instance, Sartory, Richaume, Fétique), with the exception of Hill – who copied many Tourte features – the pieces were simply glued between the gold rings.

While contemplating this article, I was tempted to paraphrase John Dilworth's title on Brescian makers (newsletter 10), and head this piece 'How did he do that?' I lay no claim whatsoever in being able to answer that particular question, but, having had the opportunity to inspect a few original pieces, I can now illustrate what it was that he did. The following description is just my own method of trying to arrive at the accuracy that François Tourte was able to achieve two centuries ago.

The first problem is the pearl itself: Tourte used *ormeaux* mother-of-pearl for the button as with all the other pearl parts of the bow. This is taken from a small shell (at the most, no bigger than an adult hand) and it is surprisingly difficult to find eight pieces that are thick enough for the job. At this stage, my pieces are appoximately 1.1 mm thick.

In order to arrive at a result where the





pearl facets line up 'perfectly' with the corners of the gold rings and with no gaps whatsoever, it is essential to file the pieces absolutely parallel with (theoretically) an angle between the underside of the pearl and the

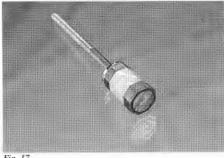


Fig. 17

bevelled side of 112.5°. Given that – as you will later see – the pearl is 'sunk' at a lower level in the ebony than the level that the gold rings are mounted on, the first problem is being able to see that the joints are tight throughout their thicknesses. My solution to this was to make a 'dummy' centre of the button, out of brass, on which I could mount my pearl pieces (Fig.l).

Fig.2. Here you can see the first facet filed and spot-glued to the jig. By using the lines of the brass octagon, I am able to ensure that the piece is parallel: the kingpin of the facets! The angles I have judged by eye.

Fig.3. The following seven pieces are similarly filed and glued to the jig. By sighting down the length of the assembly, I am able to check that the angles are joining properly. The pieces are then numbered in order to be able to replace them on the

ebony exactly the same way (it would be sheer chance if one of my angles were actually 112.5°). I have seen examples of Tourte buttons where the pearl has been worn, through sweat and friction, almost down to the ebony centre. The

joints, however, have remained tight.

While the pearl/brass assembly is soaking to free the facets, I begin the ebony body for the button (Fig.4). I make as perfect an octagon as I can and mark the centre at both ends. The thickness is arbitrary (a few mm. above the size of the final button) and the length, long enough for both ends to be gripped in a chuck whilst working on the pearl.

Fig.5. The ebony is then mounted in a milling machine and the ebony centre is milled down to the exact dimension of the brass jig (Fig.6). With this method, I can be certain that the flats for the pearl are equidistant to the centre.

Fig.7. I now mount the ebony in the lathe and turn both ends round, keeping the diameter slightly oversize, leaving me something to trim in order to fit the gold

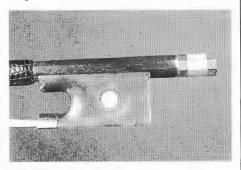






Fig. 8. The pearl facets can now be glued into their definitive positions. (Before gluing, I tied the pieces tightly in position with thin cotton, checking that all the joints were meeting tightly; had the central octagon been at all too large, gaps would have appeared between the facets.)

Fig.9. Back in the lathe, I now turn the ebony and pearl shoulders down to the required diameter. This is the measurement of the inner diameter of the rings, at the widest points (keeping in mind that the rings have an octagonal centre). Needless to say, great care has to be taken in turning the shoulders of the pearl, a material given to flaking and chipping at the slightest provocation.

The gold rings are then made. Having soldered the ring, it is first knocked into a circle on a round mandrel before the definitive shape is hammered on the octagonal mandrel (Fig.10).

Fig.11. The thick piece of gold in which I will later cut the moulding is then tied and soldered on to the front ring. This is now ready to fit to the assembly.

Fig.12. The front end of the ebony is then cut to length and with files, then a chisel, the shoulders are trimmed until the ring fits tightly in place.

Fig.13. Having left the ebony with excess length at the back end of the button, I am now able to replace the assembly in the lathe, confident that all is still central. The moulding is then cut just in front of the solder line.

Fig.14. A hole is then pierced through the front gold plate, providing the surface of the button which will adjoin the nipple of the stick. (This as opposed to almost all buttons where the hole for the nipple is cut into the ebony.) Keeping the assembly in position, the hole for the screw-shaft is drilled out and then tapped. Unlike almost all of the subsequent French bow makers

that hammered a square-ended shaft into the button, Tourte considered it logical to thread a round shaft into a round hole!

Once the shaft has been fitted. I am free finally to cut the back of the button to length. Now, with the shaft as my reference for the centre, I am able to repeat the earlier procedures in order to fit the back ring. Before removing the assembly from the lathe, I cut the recess for the pearl eye, ensuring concentricity with the ring (Fig.15).

Fig.16. With the back ring and the pearl eye fitted, I file the facets flush and fit two pins into each ring (the other two pins not visible in this picture are in the opposite facets). François Tourte, it can be surmised, drilled the holes for his pins at an earlier stage than this - certainly before the shaft was fitted: two pins are always central to the facet whereas the pins on the opposite facet are in rather random positions, sometimes on the corner or even occasionally just into the next flat. This would suggest that he marked two central spots on one facet, and then drilled right through the thickness of the button, hoping for the best that he would come out somewhere near the centre of the opposite

Fig.17. The pins are then filed flush and the facets filed and polished down to the final size. Having finished the button as new, all that remains is for it to be 'antiqued' to the appropriate wear of the stick and frog (Fig.18).

Speaking of minutiae, the pinning on a Tourte bow is in itself a testimony to this maker's exactitude: an inspection under magnification will show that his gold pins were filed by hand (as opposed to using wire), filed parallel - most subsequent makers tapered their pins - and made to fit the holes. Tourte enjoyed pinning. On his gold bows there are often 14 pins: five in

the face (or head-plate), two in the large heel, three in the small heel and four in the button. Unlike many of the famous bow makers that followed, in whose work we can see pins sticking up or pins that have fallen out, with François Tourte, almost two centuries on, it can still be a struggle to locate these tiny pieces of metal that in their accuracy, contribute to the overall picture which has earned him the epithet 'The Stradivari of Bowmakers'.

Peter Oxley was apprenticed to Garner Wilson 1977-82. He then studied jazz at the City of Leeds College of Music for three years before moving to Paris where he lived for ten years, pursuing a dual career as bow maker/jazz musician. As a bow maker, he has lectured at several international symposia, including Musicora (Paris), the Hindemith Festival (London) and the BVMA Dartington Violin Conference.



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Capital Choices

Terry Pamplin describes the courses available at London Guildhall University, and below two students from the past and present each give a personal view.

The origins of the department's courses in musical instrument technology start with the establishment of the Piano Trades School in the late 1890s and its adoption by the Northern Polytechnic London in about 1910. By the late 1920s violin making had been introduced. The Institute of Musical Instrument Technology was established in the department in 1938 and in 1939 the Danish maker Påul Jarnak lectured to the institute on the value of acoustic testing methods in the making of violins. Then, in the late 1950s, William Luff, who taught violin making at the Northern Polytechnic, brought his course to the newly created Technical College for the Furnishing Trades in the late 1950s. He was succeeded by his pupil Pat Naismith who continued his tradition with the London College of Furniture until its incorporation within the City of London Polytechnic in 1990. The department of musical instrument technology was incorporated within London Guildhall University in 1992.

During the 1970s the first full-time courses in early musical instrument making were introduced. The making of early bowed instruments included both viol and violin families and accompanied the reconstruction of historically-based lutes, harps, guitars, harpsichords and wind instruments. Over the years many established instrument makers have graduated from the course. Bowed instrument alumni include, for example, John Pringle, Timothy Batchelar, David Rattray, Malcolm Healey, Michael

Shakespeare, Gary Bridgewood and Tom Neitzert (to name but a few). Alumni currently teaching on the courses and training the next generation of makers include Norman Myall, Shem Mackey and Fergus Anderson. A number of distinguished bowed instrument makers have followed William Luff and Patricia Naismith into teaching in the department and include (in addition to some of the alumni mentioned above) Roger Rose, Ian Harwood, Julian Clark and Michael Goater.

Since incorporation within LGU, the department has been able to increase the range and quality of its provision to offer the most comprehensive range of further and higher education courses in musical instrument making and technology available anywhere. In addition to the making of early and modern bowed instruments the department includes: electronics for the music industry and the making of guitars (and other modern fretted instruments), piano making and maintenance, early keyboard and wind instruments. Each area also features the associated design research, technology, restoration and maintenance of each group.

University investment in the department of up to £2 million since incorporation has resulted in total refurbishment of many areas, including the provision of a new open plan integrated lutherie workshop (north-facing), on the top floor of the building. This workshop now allows access to all violin (family), early stringed instrument

and early keyboard instrument students. A separate workshop is devoted to the making of the guitars and all other modern fretted instruments. Even though the university is multi-site, all sections of musical instrument making are included in the Commercial Road building.

Also in this building is the new £1 million 'Independent Learning Resource Centre' which incorporates the most comprehensive specialist musical instrument technology library with full internet and world wide web capability, a computer centre and media/graphics resource facility. Musical Instrument Technology in the department maintains its own world wide web site with many direct links to other musical instrument sites and research facilities.

Musical Instrument Technology facilities and courses at LGU are the broadest of their type in Europe. The courses range from part-time evening classes, to BTEC National Diploma and Higher National Diploma to the Musical Instrument BSc(Hons) Technology degree. This ladder of opportunity from further to higher education can also lead to post-graduate studies in Musical Instrument Technology; students are currently studying for MPhil and PhD degrees. All undergraduate programmes are modular under the university's 'undergraduate programmes' framework. In general, this allows students to chose major and minor subjects from a range of available courses at a given level or stage. All courses in Musical Instrument Technology are structured to have 4 units/ modules per academic year for full-time students.

Our courses relate directly to the music industry and therefore have a vocational basis. The following seven specialist areas are offered:

Pianoforte design, construction, tuning and maintenance

Early keyboard instrument construction, restoration and tuning

Early stringed instrument, making and restoration

Modern fretted instrument making and restoration

Violin (orchestral strings) making and restoration

Woodwind making and repair

Electronics for the music industry

The BSc(Hons) Musical Instrument Technology is a three year full-time course. It is part of the university's 'modular programme', in which four units per term are studied, making a total of 24 units of which 16 count towards the final grade of the degree and eight are introductory and preparatory. All higher level courses offer a unit in Small Business Studies to support both those entering self-employment or employment. The BTEC courses offered by the department differ from the BSc(Hons) degree in that they allow students to enter one of the seven specialised areas listed above, as opposed to providing a focus for project work as in the degree programme. Both the BTEC Diploma and the Higher National Diploma are of two years duration. From the Diploma students may apply to continue their studies to the HND or to the BSc courses in Musical Instrument Technology (depending on their future intentions and subject to their academic potential).

Applicants to instrument making specialisms must have already made more than one appropriate instrument to an acceptable standard (for the Diploma





some woodwork experience is sufficient). Students completing the HND course will have specialised in a particular instrument family or group and will therefore be able to seek specialist employment or self-employment as a musical instrument maker/repairer /technician. Other options in teaching, advanced studies or music industry employment will be appropriate for students completing at this level.

Class sizes vary, depending on the demands of the area of tuition – larger groups for general academic subjects allowing small group tuition for practical instrument making classes. Recruitment into specialist instrument making subjects is related to demand and employment potential. This ensures that areas such as violin and early instrument making are of an appropriate size commensurate with their high skill content and employment potential.

Almost a third of our students in Musical Instrument Technology are enrolled in evening courses. Classes are available for violin making, piano tuning, woodwind making and maintenance and guitar making.

Demand for post graduate studies in Musical Instrument Technology has grown rapidly in the university and a Masters course is in preparation. A number of students are also following research projects leading to the award of MPhil/ PhD degrees and the publication of their dissertations. Staff of the department are also active musicians and researchers in the area of musical technology, instrument attending conferences internationally contributing in their organisation and in reading papers. Participation in professional associations is essential to the department's work and the professional development of our staff who also serve on various committees and councils, such as the Galpin Society and Institute of Musical Instrument Technology.

For over forty years students from overseas have been attending the courses in considerable numbers and provide an alumni network in many countries of the world. The particular interest being shown by students from France and Germany in violin and guitar making courses is understandable as it reflects the great lutherie tradition of those countries.

Contact with players, music making and access to instrument collections are of the utmost importance and are an essential advantage of our location in London. The great diversity of concerts, recording studios and musicians located and working in the capital provide a unique opportunity and stimulus for



Violins with a treble and division bass viol in the summer show





Jean-Pierre Dondelinger, winner of the annual competition in 96 and 97, being presented with the Tom Jenkins award by Michelle Jenkins, with Terry Pamplin right.

makers and students. A number of the staff and students are active musicians and are encouraged to participate in performances.

Over many years the Vaughan Williams Trust has provided support for our students with generous grant awards. A new and exciting stimulus has been provided to encourage our violin making students with the establishment of the Tom Jenkins Award. Established by Michele Jenkins in memory of the work of her late husband, the award is made annually to a bowed instrument making student of the LGU. To date successful entries have included a violin, a viola and a division viol; the winning instrument is performed at the annual summer show and the maker presented with a cheque for the award.

A large, spacious, north-facing workshop, individual benches and essential tools are provided for a small studio fee per unit of study. Stocks of materials are held by the department for teaching purposes but it is an essential part of the student's learning experience to specify, locate and purchase materials and to build up a set of tools before graduating. As a main national provider of furniture industry courses, the department has an exceptional wood and metal machining capability which includes both traditional and Computer Numerically Controlled (CNC) machines.

Visitors are encouraged to enjoy our summer show, 23 – 26 June. Workshops will be on show and finished instruments performed in concerts and recitals.

Robin Hamilton, a director of J.P. Guivier & Co. and former student at the London College of Furniture 1975 - 78, looks back at his course

I was attracted to the LCF as there were a wide variety of courses as well as the violin department, early fretted



instruments, guitar and so on. It seemed a well-rounded college. I didn't have much experience of woodwork, and my background, like quite a few of us, was musical. I took evening classes at the college in the previous year which were helpful. And I felt fortunate to be accepted. It could be argued that it was a strange way of choosing students, but it was a good atmosphere and I had a great time. The students were highly motivated.

I thought carefully about going into violin making. I was 21 and the fourth intake. When I got there it was quite demanding because of my limited woodworking skills. The college had evolved from an evening class and the teaching reflected that — it wasn't particularly open, and there was rather a lot of mystique. We were told that certain basic things were too advanced for us students. We were a little in awe of the making and most people spent a year on our first instrument using timber that was far too good. By the second year you had almost forgotten what you had learnt in the first instrument. I made about six or seven instruments in the three years and sold them all — quite a few in the end of college show.

The students really knew what they wanted. We were quite demanding. We asked for somebody to teach us repairing and Harold Hearne, ex-Hills, arrived. His approach was totally practical and he was keen to pass on everything he knew. He was enthusiastic and open — he brought in templates, and gave us a real insight into the world of the workshop.

I went to the LCF to become a competent violin maker and repairer on a course entitled musical instrument technology. There were quite a few compulsory subjects such as timber technology, violin lessons, history of

music, ethnomusicology, acoustics and musical engineering, and wood finishing. We learnt about machine tools but had to pass a certificate to be allowed to use even the bandsaws.

Some subjects were excellent but there was resistance to other subjects when they were taught with no relevance to violin making, and we would have preferred to be at the bench. We, however, were more fortunate than future intakes who had less and less time making at the bench as the academic side seemed to take over. I don't know quite what the aim of the course was but to me a course should centre in the workshop with other studies related.

Students helped each other, even with the basics. One student helped with sharpening tools if I taught him about his bowing arm. But the course did pay off. My contemporaries included Michael Shakespeare, Keith Graves and John Dyke.

I interview students from all the colleges here, from Newark, Mittenwald, LGU and Merton. Looking at notes from my colleagues the grounding isn't as good as at Newark. I don't regret the LCF but Newark taught more thoroughly. It doesn't mean I wouldn't take a student from the LGU as he or she may be even better in the long run. Motivation and attitude are essential, and whether or not people have a degree means nothing to me as this isn't reflected in his or her work.

The lack of openness with information changed with the arrival of Harold Hearne, and others have to go this way as well. I think students need more contact with the world outside. I remember varnish being handed out to students. What is in it? we asked. A bit of this and that. Nowadays I hope that wouldn't happen.

Paul Jefferies, a student currently at the LGU, reports on his experience there.

When I set about choosing a college and course on violin making, there were two main criteria: the course content, and the availability of government funding. This narrowed the choice down to two institutions of which I selected London Guildhall University.

There are three courses at the university for violin makers. The BTEC National Diploma (ND), aimed at those with no wood working experience; the BTEC Higher National Diploma (HND), for those with limited experience; and the BSc (hons) aimed at the confused. A student can start on the ND, finishing six years later with a first class honours. A higher academic standard, covering a broader range of topics, goes with the development from one course to the next. So the perceptive student, who wants to learn violin making, opts for the ND (or HND to get a grant) and does the minimum of academic work.

For a few of us, this is not the first time that we have studied at a university. We were fully aware of how the system works, and its shortcomings. Shem Mackey (our tutor) reiterated this point early on, by saying that we must know what we want to gain from the course.

On the whole, however, I must say that the course has more than fulfilled my expectations. The week is split into two days in the workshop with Shem (a pitifully short time for the 17 students on this specialism) and one day of lectures (which often eat into the practical classes). The rest of the time is available workshop time (thanks to a few of us students with the ability to manipulate and coerce the technicians!). Unjustly, there are other specialisms which receive four days of practical tuition for

less than half the number of students.

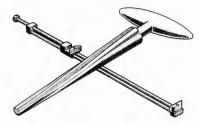
Because of the academic aspect of the courses (they all follow on to the degree course), we cover a wide range of subjects from tool making and computer studies, to materials science and acoustics. Some are obviously better taught then others, and made much more relevant, and it is this area where I feel the university fails. The responsibility lies with the students to talk to lecturers, and model the course to their needs as instrument makers. This can be a disheartening and frustrating process.

Additionally, I feel that repair and restoration should be taught alongside the making; however this is deemed a separate module and stuck into the final term. This has led to a couple of us sacrificing our building time with Shem to learn repair techniques earlier in the course.

London Guildhall University is an excellent place to study for the conscientious and self-motivated; one has to have the desire to learn because we are certainly not spoon-fed. This creates an almost Darwinian selection process with it very apparent who will succeed even in the first term. Unfortunately, it is a large institution and therefore full of bureaucracy and politics, and too many lecturers seem to be concerned with climbing the corporate ladder at the expense of the students. The course is full of good ideas, but the organisation of the subjects is poor, putting greater pressure on our tutor to accommodate the individual requirements of the students. Positively, the freedom that we have leads to highly innovative thinking and the ability to solve our own problems through research in a comprehensive library. With no tutorial pressure, this attendance itself speaks volumes about the perceived quality and relevance of the modules.







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Letter from Abroad

In the first of a new series of 'letters from abroad', Roger Hargrave reports on a violin maker's life in Germany

Last weekend my 15-year-old son went to his school dance in a suit I bought ten years ago. Of course, today I couldn't get into it for love nor money (I guess I've turned into a fat cat). It's funny how kids grow up overnight. It seems only yesterday that I was persuading my wife Claudia that Joseph was a name which sounded the same in both English and German and had nothing to do with violin making.

Eighteen years of living and working in Germany has also sneaked up on me overnight. I never intended it for a second. I guess those Germans living in England, some of whom have had so much to do with the forming of the BVMA, feel the same. So what keeps me here?

Matters in Common

Well, apart from a few idiosyncrasies, such as the English tendency to form a queue and the German tendency not to, ordinary people are much the same everywhere. Forget the BMW adverts. Germans are no cleaner nor more efficient than any other group of people and they even have a sense of humour. The folks living in my village in this flat part of northern Europe swear, go to bed with someone else's spouse, get drunk, and worry about the payments on the car, who their kids are playing with, and where the next fiddle sale is coming from.

Since East Germany swallowed up

West Germany, or vice versa, there are about 1,000 qualified and registered violin makers in the Bundesrepublic. That's a lot of competition, and things are not getting any easier. Schools throughout the world are now churning out violin makers like battery chickens, with about as much chance of a fulfilling career, and I'm worried. Perhaps this is none of my business, and perhaps it is protectionism on my part. After all, I've had my training. Perhaps anyone who wishes should be given the chance and, in any case, what alternatives are there?

Too many students

Nevertheless, I am seriously concerned about the welfare of the present surfeit of violin students. Will their years of training merely prelude a life of impoverishment? Given the cynical structure of some schools, it is a miracle that so many of them achieve the high standards which I constantly encounter. Sadly, I suspect that this is largely the result of their own efforts, a factor which makes the progression from broken promises to broken dreams all the more scandalous.

For several years I have been observing the development of the German economic scene with some trepidation. At the same time, through the wonders of satellite technology, my workshop radio churns out an almost stream of BBC Radio 4's version of life in the British Isles. So I do know something about what's been going on in the UK.

Unfortunately, my gut feeling is that Germany is about to go where Britain was taken dragging and screaming, and it scares the hell out of me. Orchestras are already merging and the long envied civil servant status of German orchestral players is being rapidly eroded. New



positions are not being created and old ones not replaced. The syndrome described by Norman Lebrecht in 'When the Music Stops' is getting a tight grip. Managers, maestros and the corporate murder of classical music is Lebrecht's theme and there can be no doubt that in Germany obscene sums are being paid to foreign conductors while not enough funds are available to pay full-time musicians.

Concert audiences are certainly decreasing. Last week I attended a concert for violin and piano with Kyung Wha-Chung, a stunning performance on a fine del Gesù, but the auditorium was only one third full. Sitting as I was in the cheaper seats, I noted the semi-filled rows of grey hair. I believe Americans call this the blue rinse brigade. Two days earlier I had turned 50, so I am practically one of them. Across town, in the city's huge exhibition hall, 2,000 people were listening to a schmaltzy mixture of Strauss and 60s and 70s medlevs by a blond heart-throb, with an electrified violin and his own orchestra. What does all this mean and where does this leave the traditional violin maker at the end of the food chain?

No safety nets

I suppose it could be said that we have had it good for a long time and that would be fair comment. Nevertheless, for those who choose the purist's path (violin making without the safety nets of dealing, restoration or rich relations), life is never really secure. Even in Germany's cornucopian 80s and 90s, I found it hard work and had my wife not been in full-time employment as a teacher, we would not have come through as well as we did. I suspect a lot of fiddle makers are grateful to their partners in this respect.

Even with full order books stretching way into the next century, we are never far from 'Existenz Angst'. An insurance policy, which can fully protect you against loss of earning through illness or injury, does not exist. (By the way, my neighbour gave me a hot air balloon ride for my 50th birthday, with insurance — maybe they though I would provide my own hot air.)

Reasons for staying

So why do I stay here and why do I insist on only making? It is certainly not the cheap wood or its close proximity. I am actually further away from most sources than makers in southern England, and I think wood dealers see me coming - one of the disadvantages of being a well-known maker is they think they can charge the earth. Since I get all my fixtures and fittings and most of my tools from Britain it can't be that either.

I guess I stay because of my customers. I like them and I think they like me. Most of them are genuine friends. Initially, the instruments bind us together and then it just happens. They are certainly not all Germans and in fact this really doesn't matter any more. The older I become and the more I travel (without dealing in old instruments) in this truly wonderful profession, the less nationality plays a role. I hope this doesn't sound too soppy. I am not usually the soppy type so maybe it is just old age. Don't let me put you off fiddle making.





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Report

Management Committee Meeting Royal Academy of Music 15 January

We welcomed Helen Chaloner from Dartington Hall to discuss details of the forthcoming conference there. We also welcomed Anne Inglis for the first time; she had agreed to take on the role of Newsletter editor.

Florian Leonhard, our treasurer, reported that we had £2,771.42 in our Nat West account and £6,268.90 in the Woolwich account. I reported that, including honorary members, we had finally passed the 300 membership threshold, and, at present, have 304 members, including two from Beijing.

Changing the AGM venue?

People thought the AGM had gone well—still too few people attending but that nevertheless business had been achieved (see AGM report, newsletter 10). To increase attendance and/or provide better representation, ideas were circulated about changing the venue either to Dartington, Newark or Manchester. Nothing was decided but if any of you have strong opinions on the matter, please write in and let us know.

The exhibition was discussed and nothing untoward put forward. Things were going to plan. The members on the exhibition committee were now beginning to feel the pressure on their time and workload and we appreciated the fantastic job they were doing.

We turned to discussing the Newsletter. Anne Inglis is very sympathetic to the

Newsletter as it is now and does not wish to disturb its format; she will endeavour to upgrade it a little, simply to make it more attractive (her past experience with The Strad will be invaluable, although she emphasises her understanding of the different and individual character of our Newsletter). She has several ideas for material already but needs plenty of input in order to create a mix of subjects which will appeal to all of us. If any of you have an idea for an article, you can bet your bottom dollar that others would be interested in it too and love to read about it in the Newsletter. Please have a go at sending something in.

Dartington preparations

For the past three years Helen Chaloner from the Dartington Hall Trust, head of the team which carries out most of the organising of the violin conferences in September, has come up to London about this time to discuss details of the forthcoming event. She was already aware of our choice of speakers and showed us a redesigned leaflet that was being sent out at the end of March. We will continue to keep in touch and look forward to what is becoming a wellknown event. She said that the violin conference has become one of the team's favourite events of the year, a testament to all our efforts.

Christoph Götting reported on the progress in the organisation of the Benslow Trust's Loan Scheme Exhibition day on 24 May at the RCM for upwards of 40, maybe 50 makers. A flyer about the event will soon be circulated asking you to participate, and I suspect as usual it will be first come, first served, so get your applications in as soon as possible.

John Topham

News and Diary

Dartington Violin Conference

This year the Dartington conference, 18-20 September, welcomes two Vuillaume experts, Sylvette Milliot and Bernard Millant, who are joining the conference in celebration of the bicentenary of J. B. Vuillaume's birth. Sylvette Milliot, specialist on Parisian makers and author of the two books *La famille Chanot-Chardon* and *Les Luthiers du XVIIIe siècle* (see book review, *newsletter 10*), will give a talk on Vuillaume and his time. Bernard Millant, violin maker and bow expert, has chosen for his subject Vuillaume and his bow makers.

Elsewhere in the conference Nick Baldock, string consultant and bass player, will speak on the evolution of modern stringing, drawing from his experience of strings for period instruments. Wilfred Saunders talks about his life and experience and ideas as a violin maker, incorporating and referring to many of Rowan Armour-Brown's ideas given in her Tiverton talk. Violinist Paul Robertson, leader of the Medici Quartet and visiting professor of Music and Psychiatry at Kingston University's Education Department, will be discussing the musician's relationship with his instrument.

The display and viewing of instruments takes place throughout the weekend and will introduce a new event on Saturday afternoon, Violin Makers' Question Time. Here participants need to send their questions in advance with their conference registration form (to be sent shortly — there is an automatic mailing to all BVMA members). On the day a panel of experts will address all the submitted questions.

The Saturday evening concert is to be given by the young Belcea Quartet, who will also play participants' instruments.

The conference fee for BVMA members is £115; non-members £125.

J. & A. Beare and Morris & Smith Merger

J. & A. Beare Ltd and Morris & Smith Ltd have announced they are merging their businesses through the setting-up of a new, jointly owned company. The merger of these two London companies brings together the long experience of the one and energy of the other. Both J. & A. Beare and Morris & Smith believe that existing clients of both companies will benefit from the best possible worldwide service and expertise.

The new company, J. & A. Beare Ltd, will trade under the joint names of John and Arthur Beare and Morris & Smith. Charles Beare is the Chairman of the board (also on the board are Peter Beare, Frances Gillham, David Morris, Simon Morris and Steven Smith) and certificates of authenticity continue to be issued under his direction. For the time being the new company operates from the premises at 7 Broadwick Street, London W1, and 33-34 Cornwall Road, London SE1.

Benslow Musical Instrument Loan Scheme

Christoph Götting writes: The latest is, I am sorry to say, that the lottery application by Benslow has been turned down. Five out of the eight criteria were met, but on the three predominantly financial matters Benslow failed to meet the requirements. There is no provision for an appeal but the lottery board suggested reapplying. This Benslow wants to do within 12 months. Hopes are realistically high for success.

The good news is that the Benslow Exhibition goes ahead as planned on 24 May, Royal College of Music, 10 a.m. - 5 p.m. Even without lottery funds, Benslow is able to buy between four and six instruments/bows from the 50 makers it is hoped will exhibit on the day. Since the event is also open to the public (a panel will make selections on behalf of the scheme in the morning and the public will be admitted from 1 p.m.), it is worth putting on a good show. Meetings are being held to finalise arrangements and invitations will be received by all BVMA members as soon as they are ready (please do not telephone or write before you receive the official entry form). Now make something special ...

Manchester Cello Festival

The judging of the semi-finals and presentation of awards for The Strad Cello and Bow Making Competition, part of the RNCM Manchester International Cello Festival, takes place on 2 May at the RNCM, 124 Oxford Road, Manchester. The next day on 3 May all the instruments and bows which reached the semi-finals are on view for close study. Coordinated by Charles Beare, the competition will this year have adjudicators René Morel, Bruce Carlson and Patrick Robin for the instruments,

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Bernard Millant, Tim Baker and Paul Martin Siefried (bows), and playing judges Lluis Claret and Alexander Baillie. In addition to the competition, the entrants are invited to display their work at stalls covering the concourse of the RNCM for the duration of the cello festival (29 April - 3 May).

J. B. Vuillaume Bicentenary Celebrations

- To celebrate the birth of J. B. Vuillaume (1798-1875) 200 years ago, the Musée de la Musique in Paris is mounting an exhibition of 40 instruments, including J. B. Vuillaume, Nicolas François Vuillaume, Sébastien Vuillaume, originals of instruments copied by J. B. Vuillaume and others. From 22 October 1998 until 10 January 1999, the exhibition will also include concerts and a symposium, 7-8 November. Musée de la Musique, 221 avenue Jean-Jaures, 75019 Paris, tel: 0033 144 84 46 71, fax: 00 33 144 84 46 01.
- Various events are taking place at Mirecourt to mark the J. B. Vuillaume anniversary, where there is an exhibition 8 May - 15 September entitled 'The Vuillaume of Mirecourt and the Mirecourt of Vuillaume.' A two-day conference on 9-10 May devotes one day to the history of violin making in Mirecourt, the second to Vuillaume himself, with participants including Sylvette Milliot, Claude Lebet, Eric Blot and Bernard Millant. On 30-31 May a special show will be presented in the historic centre of Mirecourt, prepared by pupils of the Lycée Vuillaume and violin making students. There are concerts on 2, 16 and 30 May, 6 June, 10 October, 20 and 21 November. Further details from Mirecourt Information, tel: 00 33 329 37 05 22.

Readers' Forum

Practice makes Perfect

Regarding the use of machines (Food for Thought by J.P. Dondelinger, newsletter 7, p.30), I would like to comment as follows. I feel much of the pleasure and satisfaction in making a violin, viola, cello or bow is seeing your piece of work taking shape. There is also pleasure in using good quality tools, some of which you have made yourself, others that are old and have been collected over the years and lovingly used by several previous generations of craftsmen. People who come to violin making, or any form of woodwork later in life, have little idea of the speed and dexterity of someone who has been using hand tools all his life. Someone who goes to the bandsaw every time he needs to cut a piece of wood never gets sufficient

BVMA Newsletter Back Issues

Back issues of all the newsletters are available for £1, including p. & p., from John Topham, 114 Mid Street, South Nutfield, Redhill, Surrey RH1 4JH.

practice to become thoroughly conversant with using a saw. Why do makers need to use machines 'in order to optimise their time in order to survive'? I have been making instruments for 48 years without machines, and, as far as I can tell, I am still surviving at the age of 70.

Mr Dondelinger asserts that J.B. Vuillaume was the last maker to come nearest to the sound quality of the 17th-century instruments. Not everyone would agree! Sound quality is most difficult to evaluate. Many prejudiced and preconceived psychological factors come into play. A well known international soloist with a fine Guarneri del Gesù, after using it for some years, found it had suddenly lost its tone — when it was discovered that the maker was John Lott.

When a maker works freehand, without templates, each instrument can have a look, sound, and personality of its own. Using too many of the modern high-tech machines you could finish up by making J.B. Colin, Carlo Storioni, Wolff Bros or François Barzonis. Good instruments of this class, but not of interest to serious players. The only essential machine I would suggest, if one is going to make Brescian violas with latticework purfling (newsletter 10, p.3), using the John Dilworth method, would be a good quality washine machine to enable his long-suffering wife to get his apron clean.

Wilfred Saunders Nottingham

Gum Mastic and Other Queries

I should be grateful if makers could reply to the following questions





- 1. At what temperature should gum mastic be added to cooking varnish? Is it the last ingredient to be added?
- 2. What is the consequence of adding gum mastic if the cooking varnish is at too high a temperature?
- 3. Does purchased gum mastic have to be prepared before it is added, and if so, how, or can it be added as bought?
- 4. What is the purpose of adding gum mastic?
- 5. Can Mexican Copal resin (the lemon yellow kind mentioned and described on p.324 in Heron Allen's Violin Making as It Was and Is) be obtained, and if so, where?

Brian Brealey Nottingham

Not Just Violins!

For the benefit of my viol-making colleagues and for all those interested in the viola da gamba and other early instruments, I would like to add to Philip J. Kass's review of Sylvette Milliot's

Histoire de la Lutherie Parisienne, second volume (newsletter 10, p.12).

While I agree with everything he says about this wonderful book, I would like to point out that it is just as valuable a publication for viol makers as for violin makers. For everyone who is interested in the French viola da gamba this book contains pages of material on history, makers, and instruments, all backed up with quality photographs. Indeed, it even embraces viola d'amores, pochettes, quintons, hurdy-gurdies, harps and bows.

By dealing with all these issues, this book reminds us that in the past many instrument makers were not nearly as specialised as they are today and were able and indeed did make instruments of different families to a very high standard.

Few books have been written in recent years comprising viola da gambas and even fewer in such a scholarly manner. Well worth having!

Renate Fink London E2

The copy deadline for the next issue of the Newsletter is 1 May.

The Newsletter is published by the British Violin Making Association. Correspondence and articles should be send to the Editor, Anne Inglis, 57 Denman Road, London SE15 5NS, tel/fax: 0171-708 5626. Contributors to the Newsletter are expressing their own opinions and not necessarily those of the BVMA.

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