**FOMRHI Quarterly**

**BULLETIN 18**  
**BOOK NEWS**  
**LIST OF MEMBERS SUPPLEMENT**

## COMMUNICATIONS

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HELP FOR FoMRHI: No sooner had the last issue gone out than Enzo Puzzoviov rang Djilda and offered to deal with the mailing. As a result, and with any luck, you'll get this one a bit nearer to the date on the Members' List Supplement. Since it'll be the first he's done, do please let him or me know if your copy has come by the wrong postal method or of anything else wrong. And do please join me and Djilda in thanking him for taking the job over.

LOST MEMBERS: Both found and listed in the Supplement herewith - thank you.

OBITUARY: Trevor Dibben of Wareham, Dorset has died. I wrote to Mrs. Dibben, expressing our sympathy and saying that if she wanted any help in any way to let us know. She hasn't answered, so I imagine she's OK, but if any of you knew Trevor she might be glad of help in disposing of tools and materials in due course. Otherwise we'll leave it till she asks for help.

OUT-OF-PRINT ISSUES: Theo Miller has told me that he has lost access to his cheap xerox facility, so any members on the American continent who want xeroxes should write to Geoff Kime and not to him. The cost is 2p a sheet (1p per numbered page) plus postage.

Bill Elliott was over here recently, and I gave him Theo's set of master copies, leaving it to him to sort out who should do the job in Australia.

FINANCIAL REPORT: (This should have been in the last issue, but so many of you paid late that I could not spare the books long enough to get them audited). The books have been passed as reasonably accurate - there is an odd £4 or so we can't account for, but a) as it was back in February last year, and b) it makes us £4 better off than we thought we should be, it didn't seem worth demanding that the bank checked all the payments in to them. We made a surplus last year of £286.56, slightly less than the year before (£345.58), and with so small a margin and each copy of FoMRHIQ costing 5p or more above what it cost last year, we were obviously right to put the subscription up this year. I just hope we won't have to next year. I'm pretty sure we're OK in fact, and the accumulated surplus of £625 is a very useful amount to fall back on; at the moment, it's enough to cover the cost of printing (but not posting) a complete issue.

FURTHER TO: Comm.241: John Hanchet says that he had the good luck to be able to take part of a crumhorn to the laboratory for examination while it was away from the museum for restoration. The Timber Research and Development Association identified the wood as Acer species (Maple), and Peter Mactaggart produced the same result with his microscope quite independently of TRADA. The instrument was by Jörg Wier. Until recently I was following the Elder wood theory and must now state bluntly that that one is dead (nice as it was). The pith of Maple is much smaller than Elder and therefore more suitable for pith bored crumhorn making. It is possible to enlarge bore to the required size instead of relying on nature (see my last comm on crumhorns). JM adds that he is sorry to hear it, though glad of a positive identification, because he liked the sound of John's elder crumhorn when he blew it at the Horticultural Hall. Still, what we want are crumhorns that are right, not crumhorns that jm happens to like the sound of!

Bull.20, p.2: I've had a long letter from Rod Cameron about his bore-measuring machine, including the specifications. Unfortunately these are a rather blurred photo-copy and I don't think will reproduce, so I'll try to summarise them. In addition, we've had a friend of his.
Jim Scott, staying with us for the last few days (see the note to Guest-Friends on the first page of bull.19) with one of Rod's machines, and while he was here he measured my Milhouse 2-key oboe (see offers below), so I've seen it in action again. The first point is that Toon's worry about air-pressure when measuring a joint with a closed end is groundless; the probe, which consists of one rigid and one flexible arm, does not compress the air at all. The amount of spring in the flexible arm is very slight, incidentally; quite enough to follow the bore but nothing like enough to scratch it. The contact with the bore is made by a pair of boxwood hemispheres, so again there is no risk of scratching.

The device consists of an electronic pen chart recorder (110v or 240v and 60Hz or 50Hz) with interchangeable probes for measuring from 4mm to 120mm diameter over any length. With it are all the gadgets necessary, including blocks to hold the instrument steady, except micrometers for calibrating the probes (see below), since it is assumed that anybody who wants one will already have these, and a padded carrying case. It costs £2,500 plus postage etc; it weighs 9 kg (21 lb). The Germanisches National Museum in Nurnberg has bought one, and is now revising all its wind instrument plans as a result; various others are interested. Rod suggests that if the cost is too high for any of our museums, perhaps they could share one. I'm not sure how practicable this is, but Tony Baines at the Bate and Elizabeth Wells at the RCM will see this, and perhaps they will think about it.

Rod warns that nobody knows better than he that electronic devices "can lie without blushing if proper calibration and operating procedures are not strictly adhered to. I strongly recommend .... at least two separate sets of data are obtained for any instrument....rushed museum visits are not always the place to keep a cool scientific head". Measuring an instrument takes no time at all — about thirty seconds. What takes the time is setting up and calibrating, and it took about an hour and a half to measure my oboe. However, it would only have taken about five or ten minutes longer to measure ten oboes. The snag on a conical instrument like an oboe is that one needs the smallest probe for the top joint, and this was just too small to measure the end of the second joint, which meant calibrating the next probe up. The bell, of course, needed the biggest probe and it was wide enough that it had to be done on a different setting (I'll come back to that in a moment), and at that, being late at night, Jim got it wrong and it went off the edge of the paper before it got to the end; as he was running short of paper, we left it at that, so there's an inch missing from the bell. Measuring a batch of oboes would have taken very little longer because one would have measured all the top joints with the smallest probe, then all the second joints and so on. A flute is much easier because one size of probe would do the whole instrument, and of course it is the speed and accuracy which are so useful. Rod sent me his trace of the Berlin Hotteterre flute with, marked on the plot, the figures from the Museum archive and from von Huene. Von Huene's seem to be on one axis and the museum ones on two, like Rod's. There are 9 museum measurements on the head and 49 on the body and foot, and 11 and 46 (I think) von Huene measurements (and I think I was wrong; his are also on two axes). Those of you who measure bores will know how long this would have taken von Huene and the museum, as against half an hour with the machine, which includes the calibration time. This is why I'm writing at such length about it.

The point about the settings is that the length, of course, is one to one. The probe is attached to the paper, and as the probe is drawn through the instrument, the paper is drawn past the pen. The diameter can be set to
whatever enlargement one wishes and the paper (10 inch width) allows. A common one is 1:1 on the instrument equals one inch on the paper, but this didn’t work on the bell of the oboe, which Jim set to 1:2 to half an inch and ran off the paper at that. It is setting the probe, millimetre by millimetre (checked on the micrometer) so that it works accurately on the paper that takes the time — this is the calibration referred to above. Once everything is set, the slightest variation in the bore shows up on the chart, and since one can do as many axes as one has coloured pens to distinguish the traces, one winds up with a very exact picture of the bore.

Bull.19, pp.13-15. Crafts Council: A note has arrived saying that they have allocated five awards and still have £7,500 for this scheme for the current financial year. Anyone interested get in touch with them at the address in the last Bulletin. There is an exhibition of the work of eight conservation workshops at their gallery in Waterloo Place, London SW1 (the very bottom of Regent Street off Pall Mall) from 17th September to 1st November, including at least one musical instrument conservator (they don’t say who).

DEALING WITH DEFAULTING CUSTOMERS: Christopher Monk writes:

Money is not one of the prime concerns of FOMRHI but it does impinge on all our lives, and unpaid debts can be puzzling and hurtful to those on the unreceiving end. In over 20 years experience of running a workshop I can still count on my fingers the number of people who have pulled a fast one, so I count myself lucky. However a recent discovery might help others.

A firm called Musica Antiqua in San Francisco established a very friendly connection a while ago, and if they were slow to settle we regarded them as friends and trusted them to meet bills eventually. This happened in 1976 but with a difference that while evincing no complaints they just went off the air. Six polite reminders and requests were ignored as was a rather more definite letter. I imagine they just reckoned there wasn’t much we could do about it at this distance, except not be so trusting in the future.

However a little while ago a friend pointed out that we had all overlooked the U.S. Post Office. It is apparently in law an offence of fraud against the U.S. Post Office itself to order goods through the post and then not pay for them. If there are good grounds for suspecting a fraud a team of investigators is available to visit the person or firm concerned and ask them to explain. If the explanation and/or money owed is not forthcoming the Post Office has the power to take immediate action such as withholding all postal services indefinitely. For a mail order firm like Musica Antiqua this is total disaster and they have to surrender. This was the information I was given and it worked. I wrote to The Chief Postal Inspector, U.S. Postal Service, 475 L’Enfant Plaza West, S.W., Washington D.C. 20260 with a brief explanation giving dates of orders, dates and numbers of our invoices, dates of all the ignored reminders, and offering to send xeroxes of the lot if required. Three weeks later a cheque from Musica Antiqua arrived and as it hasn’t bounced we regard the matter as settled. Of course their debt was incurred when the dollar stood at 1.65 to £1 and we’ve lost through four years of inflation, so the laugh’s on us as well. However the machinery is there and obviously efficient at dealing with the unscrupulous, so I hope it may help others to know it exists.

OFFERS: While describing Rod Cameron’s machine above, I said that Jim Scott had used it on my Milhouse 2-key oboe. This is the instrument that Eric Halfpenny published x-rays of in Galpin Journal 2. Xerox copies
copies of the trace of the two body joints (back and front of one piece of paper) are available from me at 50p, including postage. Anybody who wants a trace of most of the bell can have it also for a further 15p; it is the widest part that's missing, including the internal step.

Peter Tourin writes:

VIOLA DA GAMBA BUILDERS, MUSICOLOGISTS AND PERFORMERS

I have compiled a comprehensive catalogue of viols in all of the major collections of Europe and the United States. It lists viols by collection, maker, country, date, size, basic dimensions, and special attributes. I'm willing to share, at cost, the complete results of this viol research project. The project was completed with the assistance of a grant by the National Endowment on the Arts. The list is computerized and can be sorted on any basis desired. The whole list consists of about 40 pages and includes information on about 900 viols. The basic catalogue is now available for £20. Additional sorts, as specified above, can be provided for $10 each sort. I am also continually expanding the catalogue with information and data on private viol collections. I urge you to send me any information or suggestions which you think might augment my catalogue. For copies of listings send your request and your check to:

PETER TOURIN
THE TOURIN MUSICA
P.O. BOX 575
WATERBURY, VERMONT
U.S.A. 05676

Marcel Glover says that he can beat copper and brass by hand; he hasn't many stakes so might have to ask for contribution towards the cost of tooling. His father also beats and has access to the stakes at his school.

QUERIES: Laurie Wright asks what the general opinion on the dating of brays on harps is. I've told him that I think the Lincoln Angel Choir harps are brayed (plate 22 in my Med.& Ren.) and that Eph thought this was much too early for brays. Laurie says he has a number of 14th century depictions. Can anyone produce anything definite earlier than the 14th century? I'd like to know, too, as I think I'm right and Eph is wrong!

Charles Crabtree (address in this issue) is a craft and music teacher in a school for physically handicapped children. He has made a number of instruments for them, as well as for himself, and designed instruments that the children can make. He wants suggested measurements for a small gothic harp (I've told him that this is tied in with pitch and string gauge and suggested that he ask Tim Hobrough for advice) and measurements and an idea of how the keyboard worked on Arnault de Zwolle's dulce melos. With Arnault's preferred type, with slanting bridges (plate 46 in Med & Ren.), does the keyboard fit under or over the soundboard and how are the hammer mechanisms installed? I've sent him some guesses, but I'm no keyboard maker, nor any authority on keyboards; can somebody better help him, please?

John Huber is working on the transition of the violin from the baroque to the modern form for a doctoral dissertation. He asks if anyone knows of early dated examples of violins constructed to more or less modern specifications. This is an interesting question. We all know that the violin
changed around the end of the 18th century, but does anyone know exactly when it happened or who first did it? Or for that matter who first built a violin in the modern form? John would be very grateful for any information and even for guesses, and I suspect we shall all look forward to the publication of his dissertation.

Be also asks about viols. Did French viols, in particular, have modern necks, and if so, when were they changed? This, of course, raises the fascinating question of did the change happen to viols first, and then to violins; if so, many of us will have some rewriting to do.

Marcel Glover says that he built a virginal, which he tuned to Werckmeister III; his customer tuned it to something else and the whole instrument sounded quite different from what it had before and from what it did after he had put it back to Werckmeister III. I can't believe that the very slight differences in string tension could make "it sound like a different instrument" - am I wrong in this, or am I right in thinking that sympathetic resonances are the answer? If the latter is correct, then temperament is not just a matter of getting the intervals and tunings right, but also getting the right resonances. And if so, it follows that one should not use Werckmeister III for a virginal, since those resonances would not have been known at the period that the virginal was in use!

EXHIBITIONS: Friedrich von Huene has sent out a circular saying that the first Boston Early Music Festival and Exhibition are to be held May 27 to 31, 1981. Standard size exhibition space will be available for a cost under $200, and they will include instrument builders, music publishers, dealers in all relevant materials and things, etc. Anyone interested should write for further details to: Jon Aaron, 99 High Street, Suite 2393, Boston, MA 02110. I have asked them to keep me in touch for future bulletins.

The Oberstadtdirektor of Stadt Herne has sent a notice of the Festival of old music in Herne from 4th to 7th December 1980. They have held annual exhibitions of musical instruments since 1976 and this year are concentrating on viols and other early string instruments. Anyone interested in exhibiting should get in touch with: Frau Jungs, Rathaus, D-4690 Herne 1, Friedrich-Ebert-Platz 2 as soon as possible. There are no fees charged for exhibiting, but the city of Herne cannot subsidise expenses; they will try to help find accommodation at modest prices if you ask them to. All their concerts will be broadcast, and they expect to attract good audiences who are likely, also, to come to the exhibition.

COURSES: Harvey Hope writes:

BAROQUE GUITAR COURSE

Two one-day courses on the repertoire and performance of Baroque guitar music will be held by Harvey Hope this year, in S.E.London, on November the 9th and 16th. While the courses are primarily for players of either the Baroque or Classical guitar, makers and restorers should find much to interest them, particularly in the collection of original 17th. and 18th. century guitars which Mr. Hope will have on display to illustrate the constructional and tonal differences between French, Italian, and German made instruments. For full details of the courses and directions on how to get there (20 minutes from Central London), write enclosing a stamped addressed envelope to; The Course Secretary, Guitar Study Centre, 64, Ashmore Grove, Welling, Kent.
The Istituto Musicale Comunale "Stanislao Corderò li Pamparato" has sent me a massive great list of courses, but for the summer of this year for which it's a bit late. There's a lot of early music with tutors including Mark Lindley, Grant O'Brien (harpichord building), Sigfrido Leschiutta (clavichord building), and playing of most instruments. It seems to be a regular function, so if you fancy a summer musical holiday in Italy for next year (Pamparato is due south of Turin and west of Genoa and Savona, judging from the very rough map), write to the Segretaria of the institute as above, Castello comunale 12067 Pamparato (Cuneo) Italy, and ask them to put you on the mailing list.

The Conservatoire Populaire de Musique of Geneva is running a course on the music of Alexander Agricola (1446-1506) and relevant instruments from 29th October to and November 1980. The address is: Centre de Musique ancienne, 8 rue Ch-Bonnet, CH-1206 Genève, Switzerland.

OTHER SOCIETIES: The Guild of American Luthiers, whose exhibition I referred to on p.9 of the last bulletin, welcomes new members ($15 for 1981). Like us they issue a quarterly, with Data Sheets which are like our more practical Comms, judging from what they say about them, except that they are full-size A4 or so, rather than our small size; they keep all their back issues in print. Most of those on instruments are outside our field (guitars, dulcimers, etc.), but quite a number are on tool making and various techniques. If you're interested, write to them at: 8222 South Park Avenue, Tacoma, Washington 98408, USA. Since they've just had a disastrous fire, they would probably appreciate a stamped envelope (in USA) and an International Reply Coupon (2 or 3 for airmail) from elsewhere; rebuilding costs are hitting them hard.

The Town Waytes Society of Vancouver are publishing a small magazine called The Rackett, as a journal of early music news and information. The spring 1980 issue includes a short, anonymous but quite interesting article on shawms. Anyone interested in receiving The Rackett should send $4 to them at no.207-218 W.12th Ave, Vancouver, B.C. Canada V6K 2N4; they don't say how many issues you get.

CONCLUSION: This is a fairly short bulletin, and it looks as though it will be a fairly thin Quarterly. However, we're like any other sausage machine - you can't get out more than you put in. If you want to read more, you have to write more.

Deadline for next issue will be October 1st.

Jeremy Montagu

ANOTHER OFFER: I meant to say, but forgot, that I have reprinted in FoMRHH format the Catalogue of the Exhibition I mounted for Sheffield University in 1967. This lists about 400 of my instruments, plus some 50 of other peoples (mainly but not only those which belonged to the Sheffield City Museum, including a number of important bassoons from the John Parr Collection), with introductory text for each type of instrument included. The coverage is world wide, not just European. The catalogue is 54 pages long, no illustrations I'm afraid (though photographs of every instrument are available), a nd is available to anybody who wants a copy for £1.90 by surface mail to anywhere or £2 by airmail (cheques made out to Jeremy Montagu, not to FoMRHH, please). The Catalogue was designed as a mini-handbook to instruments of the world, which is why I've kept it in print as it's useful for my students.

FURTHER TO: Book News in the last issue. Brian Jordan kindly obtained for me the volumes of the Brussels Catalogue that I hadn't got. They are very well printed on better paper than the original and, miracle of miracles, the plates are better than in the original. If Brussels can do that on photo-reprint, why can't everyone else?
OTHER SOCIETIES: Just as I was finishing this off, a letter came from The Guild of Master Craftsmen Ltd, saying that they were anxious to increase the number of its members, etc. I'll send them one of our Lists of Members and those of you who are in it (they won't get the Supplement) and are in the UK may hear from them. They seem to be a serious organisation and one of repute. They have various categories of membership; a Full Member pays £45 a year, which includes 'free' life insurance; a member who is over a certain age pays only £40 and doesn't get insured; an Associate Member, one who has been working for less than 5 years, pays £35, and all have to pay a £10 registration fee. They offer various facilities (arbitration in disputes and so on) and a fair amount of free publicity, including a Directory of Members which is circulated much more widely than ours. Members also get a free quarterly, much glossier than ours (it looks like something one might see in a high class doctor's or dentist's waiting room, though at £1.50 a copy to the general public, I don't know how many doctors or dentists would buy it). The articles in the copy they sent me are almost all self-advertisement ("this is what I do and don't I do it beautifully" sort of thing), and this appears from the blurb to be the intent of it. It doesn't look as though such articles have to be particularly up to date; there's one on the London College of Furniture which is illustrated with a photo of a harpsichord (Italian, with inner & outer) by "John Rawson third year full time student" and a photo of "Student craftsman Maiah Weisman third year full time" making his copy of the Paris vihuela! So if you want that sort of free publicity and to belong to a "respectable" crafts organisation, and can stump up that sort of money, it could be well worth considering. If you don't hear from them over the next couple of months and want to know about them, the address is 10 Dover Street, London W1X 3PH and the Secretary is Alan Phillips.

BULLETIN SUPPLEMENT
FoMRHI Conference on Pitch and Transposition - Eph Segerman

Weekend of 13 and 14 of September. The dates in the original announcement were in error by one, as was obvious since it was described as a weekend conference. If any reader hesitated about planning to attend because of the uncertainty, he probably wouldn't be happy about coming to the conference anyway, since we will be attempting to reach meaningful conclusions from very imprecise information sources.

Contributors other than those listed in the last FoMRHIQ announcement include Lewis Jones and Dominic Gwynn.

Happily, the total number of people who are coming that I know of is but a dozen, so it will be an intimate affair with no cost in a private home in London. Unfortunately the place I was hoping to use has just fallen through as we go to press. Any invitations? When the place is settled, all participants I know of will be notified. Prospective additional participants should contact me to find out if there is room for them.
BouwersKontakt. Bouwbrief no.17 has, as usual, several interesting notes and articles in it. A 13 page note on a method for long cylindrical boring by Ben Boelens. Two comments (2pp between them) on Toon Moonen's recorder article in the previous issue. Four comments (5 pp) on Toon's viola da gamba article in the previous issue, one of them a rejoinder by Toon. A further long (16pp) article on viol construction by Toon Moonen with a lot of information on the acoustics and the mechanical stresses and pressures of viols; also a contour map of a belly and a barring diagram. If you can read Dutch, or are willing to work it out with a dictionary, and need help on viol construction, I suspect that these two articles would be a considerable assistance.

Divisions. Vol.1 no.4 contains little of interest to us. There is an elementary and not very informative (with a grossly inaccurate drawing of the Huns Veit instrument) article on the Tromba Tirarsi before and after Bach, and a fairly brief note with very little information about the instruments by Michael Zadro on Quantz and Flute Tone in Prussia saying, roughly, that Quantz liked a louder and harder sound than most of his contemporaries. The excerpt from a period instruction book is Dr. John Blow's Rules for Playing of a Thorough Bass. There are some illustrations that would have gone with the Corrette Method for the Vielle if they'd arrived in time, none of them informative nor contemporary with Corrette. A transcription of Quantz's Adagio by Paul Kemner in which Paul has incorporated dynamic markings from the instructions in Quantz's notes on the piece is bedevilled with misprints, despite which the editor has included a fulsome puff for the firm that typeset the music.

Check-List of Brass Instruments. Arnold Myers has kindly sent me a copy of his list of the brass instruments in the Galpin Society Permanent Collection at the Reid School of Music in Edinburgh. Much of this is loan material, a good deal of it lent by Mr. Myers. There are some 90 instruments listed covering all types of brass from serpents to helicons and cornett (Christopher Monk, not an old one) to cornet. If like me you need to know where things are and what are where, write to Arnold Myers, 21 Campbell Park Crescent, Edinburgh EH13 0HT with 50p for the list plus 15p for surface postage or 40p for airmail. He also has copies available of the Catalogue of the 1968 21st Anniversary Exhibition for 75p plus 25p for surface postage. The 25p for postage is what he told me, but unless he has some special arrangement with the post office, he's going to be 50p out of pocket at that figure - it weighs 600 grams which costs 75p, so you might be generous and send him £1.50 in all for it. Airmail postage would £3-£4 and really not worth it; patience is cheaper.
On the Distinction between the Hurdy-Gurdy and the Vielle à Roue

There was a rather curious Comm. (no.275) in the last issue, criticizing an anonymous author's remarks on the hurdy-gurdy, published elsewhere, and purporting to correct them. Unfortunately, all the 'corrections' were based on one variety of the instrument, localised in a small part of Europe, but which happened, due to the vagaries of a debased and dissolute court and aristocracy, to become known outside its own immediate area. It seems to be insufficiently recognised that the term hurdy-gurdy describes an instrument which may be either a box zither or a necked lute (to use technical organological terminology) with one or more strings which are sounded by a rotating wheel; one or more of the strings are usually stopped by sliding tangents set in a tangent box fixed to the body or neck of the instrument, but other methods are also known (eg the rotating tangent/bridges of the organistrum and the unknown method of the symphony), as is the use of the player's fingers on a fingerboard (for the latter cf. Praetorius plate XXII:1, the horizontal instrument lying diagonally from the left hand corner to the centre of the plate - the engraver left off the figures. The diagonally vertical instrument on the right of the bottom of the plate, the SchlüsselFiddle and ancestor of the nyckelharpa, is not a hurdy-gurdy because it is bowed, although it too has strings stopped with tangents). There are usually, but not invariably, one or more drone strings one of which may, by using a trembling bridge or an inserted wedge, produce a special tone colour. It is probable that the name is onomatopoeic, deriving from a rhythmic impulse of the wheel: hurr-gurr, etc.

This, then, is the hurdy-gurdy, and its ancestry is well known, from the medieval organistrum and symphony down to the present day. What the author of Comm.275 seems not to realise, a point which I touched on briefly in my review of her recent book (Comm.276 in the same issue), is that there are many different types of hurdy-gurdy, more in fact than there are countries in Europe, for even within each country there is a variety of types to be found. Nor does she seem to realise (something to which I alluded in the same review) that one really cannot judge all hurdy-gurdies by one single type. There are, usually admittedly of that particular type, many beautifully made hurdy-gurdies, often of precious woods and bejewelled with semi-precious stones (or glass), in our museums; this was, of course, the result of a common folk instrument being copied by court luthiers for the aristocracy already referred to. There are many others which look as though they have been carved out with an axe or made by nailing bits of orange box together. It cannot be too strongly emphasised that all these are hurdy-gurdies and all are valid and useful instruments; in fact, as we all know from experience with other instruments, the crude-looking ones are often musically and usefully the best. We know from long experience that highly decorated instruments are usually for the Kunstkabinett, while the plain ones are for use.

Over Europe as a whole (see very brief bibliography below), the apparently crude instruments are in the overwhelming majority. The Bauernlyren, the Lira korbowa, the Drehleier, the Kolovrátok, the Lučec, the Radleier, the Tekerőlant, the Forgőlant, the Szentlélekmuzsika, the Iera, the Lira, the Sanfona, (one could go on for ever - all these names come from just six areas) are all folk instruments, made and played by folk musicians, often well made but often looking quite rough. Only in one area of Europe has the court tradition percolated back down to the folk musician (just as the Playford court versions of folk dances have become the staple fare of the 'folk' dancer of the present day in England). This is in central France, where the makers and players of the Auvergne and Berry, many of whom are folkloristic rather than folk, are using the
same sorts of vielle à roue which so titillated the French court while they played at being milk-maids. Anybody who judges all hurdy-gurdies by comparison with the vielle à roue is only to be compared with those who judge all rebeccas, liras, gadulkas, gusli, etc by comparison with an Italian violin; the concept of organological study is obviously wholly foreign to them.

The same applies also to the music of the instrument. The vielle à roue is usually fully chromatic, but this does not make it any better in any absolute terms than many of the other types of hurdy-gurdy which are diatonic. All instruments are designed to play the music of their cultural orbit. The music provided by Corette (see Comm.277, again in the same issue) is no more folk music than Playford's or than Praetorius's Terpsichore; it is vielle à roue music, certainly, but that does not mean that all hurdy-gurdies should be able to play it, any more than a cobbâ, a lauta or an 'ud should be able to play Dowland's lute music, nor does this inability make a folk instrument any the less a hurdy-gurdy any more than their inability to play Dowland makes any of those folk lutes less a lute.

We must get away from this attitude that because a late and highly developed instrument is made in a certain pattern and of certain materials, all instruments of that type must be made in that way and of those materials. We have achieved this with the harpsichord; it is lunacy to start doing it with other instruments, just when we thought that we were getting the message through. Not all early instruments were art-music instruments; not all early music was court music. And we have also got to take a straight look at our customers, both audience and players.

When I started in this field with Musica Reservata twenty years ago, early music was pretty esoteric; there were very few of us playing, and not many more listening. Gradually the interest spread, initially to the musical intelligentsia (see my article forthcoming in How Music Works), but since those days it has spread much further. We now have people playing 'early' instruments in folk groups, rock groups, film sessions (and not just in historical films either), TV advertising jingles and so on. The instruments we make have got to be suited to each of these markets. The player who wants to dress up and perform at Versailles in La Princesse de Navarre (it was a wonderful experience to play that in the original theatre, restored to all its glory) wants a vielle à roue as beautifully made as possible; the player in a Flemish, Polish, Russian, Hungarian, German, Portuguese, etc folk group wants a folk instrument - a vielle à roue is no more use to him than a Stradivarius violin, less in fact. What does Susann think folk makers are using for materials? What woods does one find used for genuine folk instruments made by the folk of much of the world? Plywood, of course. As I said at the beginning of this Comm., it's a great mistake to judge all instruments by one type and to criticise folk instruments because they are not debased art-music instruments.

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This should not be taken as an exclusive list, either of authors or of nations.

PoMRHI Comm. a Jeremy Montagu

A Query on Plywood

Arising from the penultimate sentence of the previous Comm., has anyone looked at the acoustical qualities of plywood? Not as a substitute in 'authentic' instruments but as a material for soundboards in its own right. As we know, sound waves travel faster in one direction of the grain of ordinary plain wood than in the other. It seems to me that, provided the layers of glue do not act as inhibitors in the transmission of vibration (and my ears suggest that they don't when listening to a number of perfectly genuine folk instruments from many areas in my own collection), with plywood one would get vibrations both along and across the soundboard, one layer carrying them one way and the next in the other direction, and so on through the ply according to the number and direction of laminations.

Obviously nobody is thinking of using plywood for a Ruckers soundboard (I hope), but there may well be something to be said for it in preference to spruce for instruments which are not copies of anything. And it may be worth remembering that some quite early keyboard makers did use laminated soundboards (the posh name for plywood) and claimed extra virtues for these.
Dear Jeremy,

I feel I must write to you concerning Comm 275 by Susannah Palmer. This is yet another attack on the instruments I make and the way I make them. I enclose a photocopy of the rather rude letter she sent to Practical Woodworking and also a copy of the letter printed in that magazine, with their and my answers. Surely she shouldn't need these questions answered more than once, even to gain publicity for her book! To clarify some of the comments I would like to make a few further points (which were answered in the above magazine). I certainly do not mean to malign the Hurdy gurdy, and I do not think it derogatory to call an instrument a "street instrument" if there is factual evidence and I have never called it a "beggars instrument", merely that the type under discussion in the magazine was a simple style, similar to those used as street instruments, rather than the intricate 18th century French type (perhaps more often displayed than played). Just because she feels that the instrument came to a peak in 18-19th century France does this mean that no other type is worth playing or making? I had hoped that this type of thinking was a thing of the past. Again and again in her sweeping statements she ignores centuries of development in the whole of Europe, concentrating on the 18th-19th century French types, where her self-appointed expert knowledge seems strongest (it is certainly weak in other areas). To say that a trompette is a "vital feature" and a hurdy gurdy without one fit "only to play the fool" is certainly more derogatory to the countries and players where the tradition is for hurdy gurdies without trompettes. Her remarks maligning my "skills" seem purely based on the fact that I produce lower priced instruments as well as the later French types. I make no pretension that this is a historic copy, merely representational, but it is as much a hurdy gurdy of its type as the excellent French type that Samuel Palmer makes. If I should feel ashamed that I produce a hurdy gurdy for a quarter of the cost, I am not; and the number of people who have played these and the pleasure and interest produced speaks for itself. After all, not everyone can spend into four figures for their instruments.

As to ply-wood, I have already pointed out to Mrs Palmer that the only part of the hurdy gurdy made of laminate is the wheel, and there is nothing unusual about that. I do use ply more extensively in other instruments, especially the English Hammered Dulcimer I produce, partly through the stability and cost factors, partly that it gives a very acceptable sound, and partly that there is a folk tradition both home and abroad for using laminated materials. The sound is obviously acceptable, judging from the number we have sold over the years, to beginners and professionals alike, and at a fraction of the cost of a "solid" instrument. I like to feel that my "budget range" of instruments have helped a lot of people and young persons to start an interest in folk and early music, rather than the few, already converted, that may be able to afford expensive instruments. I feel a lot more work needs to be done with regards to "budget" instruments in general, and ply in particular, and the part they can play in the movement as a whole.

I think it a shame that the author of a so-called definitive book cannot be surer of her facts about other types of hurdy gurdy than her speciality of the French type, especially before she takes others to task.

[Jeremy wishes to add that he had not seen this letter before he wrote his own comments on the same Comm. and on plywood.]
Further to Comm. 276. We, the authors of the above book, have decided to take the unusual step of replying to a reviewer's criticisms as we feel that far too many of Mr. Montagu's comments were unjustifiably harsh.

Fair and reasonably phrased criticism is always welcome, but may I remind the reviewer of Mr. Geoff Mather's comments about "rough comments" in FOMRHI (Bull. 18, p3). Perhaps one could add that they can lead to a lack of faith in people who claim to be academic leaders.

Firstly, it should be said that the book was written, not only for musicologists and hurdy-gurdy specialists, but also for the general public in order to promote interest in the instrument. The errors pointed out by the reviewer are relatively unimportant and, to use his own favourite expression, "obvious" or "fairly obvious" (even to the authors). A few of the criticisms are fair: e.g. regarding Schubert's Der Leiermann, the Strohfiddle (a common error) and the Belvoir Psalter's positive (not portative) organ; there might well be a few spelling errors or minor errors in dates or titles of books in the bibliography, but it is a poor critic who "nit picks" - to use a slang phrase! Small errors do not cast doubt on the credibility of the whole work. The reviewer should know that it is much more difficult to write a detailed book about one particular instrument than it is to write about many instruments in a superficial way. In this book (the first in the English language on the subject) a wealth of previously unpublished historical and technical information is incorporated; it seems likely that the reviewer does not know enough about the subject to appreciate this fact.

The name 'vielle' is sometimes said to have been used for the hurdy-gurdy only since the fourteenth century. This is a matter of opinion and is debateable (see e.g. Bachmann, Terrasson, Bricqueville, Gérard, the jacket of Michelle Fromenteau's record as well as an article by staff of the hurdy-gurdy museum in Montluçon in L'Escargot-Folk, vol. 51, Feb 1978). In some mss. the word occurs with illustrations, e.g. regarding Gerart de Nevers (pg. 66). Vielle, viele, viol, viela, viala, viala, fidula, fidula and many related names were, throughout medieval times, used inconsistently more in the nature of generic names to denote many stringed instruments, particularly bowed ones. The author of the Hurdy-Gurdy repeatedly pointed out that the word vielle presented problems (e.g. pgs 38, 55) and the name was therefore not unreservedly accepted as being the hurdy-gurdy.

The carvings at Chartres cathedral are mentioned by the author as "said to be of hurdy-gurdies" and they are therefore not "taken to be hurdy-gurdies without reservations" as the reviewer said; in fact, specific doubt is expressed about the identification of the instrument held by the ass (pg 50). It was included in the book and illustrated, not because of the name vielle, but because there is a very old tradition that the instrument is a hurdy-gurdy, as is pointed out.
Pepy's arched viali is likewise not at all "closely identified" by the author with the hurdy-gurdy. Here again it was specifically discussed in detail to avoid confusion in the minds of some readers.

Regarding other types of mechanical instruments - it is enough to give a few examples and it is irrelevant that the famous Truchado instrument still exists.

Comparisons between the tromba marina and its movable bridge and the hurdy-gurdy and its trompette bridge could perhaps have been included in the book, but this omission does not provide "clear evidence that the author had never encountered the tromba marina", as said by the reviewer; it merely provides clear evidence that the author was writing a book about the hurdy-gurdy and not the tromba marina. (Does the comment reveal some evidence for an unacademic attitude on the part of the reviewer?). It is a far more serious omission on the reviewer's part that in his book (1977, on 4) he did not point out that the hurdy-gurdy had probably acquired the trompette by the late Renaissance period; on the other hand, in his chapter on the medieval period he made vague presumptions about a "rhythmic drone" for which, of course, there is no real evidence at that time.

The description of the Hockliffe panel is as given in the Victoria and Albert Museum's official description.

The carvings and paintings at Peterborough cathedral, Beverley Minster, Great Malvern and Manchester have often been mentioned in literature on music (eg Galpin pg 227; Mary Remnant Musical Instruments from the West, pg 74). Mr. Montagu's comment that they are "accepted uncritically" in the book is meaningless. Some of the finer details may indeed have become changed as a result of restoration (eg the head of the h.g. player at Beverley), but the reader of the book is warned about the pitfalls of artistic licence and restoration work (eg pgs 22,50). Most churches in England and Europe have been restored at some time or another (eg Warwick) but this does not invalidate the interest or authenticity of the art.

There are numerous warnings in the book about the "problems with iconographic material" (eg right at the beginning pg 22) and the author cannot in the least be said to show ignorance of these problems or to "lean too heavily" on this evidence. As for being "rash" in counting strings and pegs in early art works, how else can one try to interpret these illustrations of musical instruments? Why does Mr. Montagu himself in his books and articles repeatedly discuss the same details noticeable in ancient art work (eg 1977 pgs 14,15,23,27 and in captions to pls10,11,5 etc., on almost every page for the medieval period)?

Drawings, as for the Manchester angel and the Album Azar Astronomia Latine had to be used rather than photographs due to publisher's restrictions. The drawings from British Museum mss. had to be done free-hand due to the fragile nature of the source material, but they give adequately reliable impressions of the originals. The original from the Album is very pointedly commented on in the book (pg 71) as being a good example of the peculiar and unreliable results which artistic licence can produce. Incidentally Mr. Montagu "counts strings" in his caption to this illustration in his book.

It does not matter whether the drawings in Virdung's Musica Getutsch were drawn by himself or whether the woodcutts were done by someone else (this was usual, in any case). The reviewer in his book also repeatedly uses the phrase "Virdung illustrates", "Virdung shows" or "Virdung's illustrations" (1977) not only for the hurdy-gurdy but also for other instruments.
Reference in the book is made to only two volumes of the Cantigas de Santa Maria (which originally consisted of two main collections) because only these are relevant to the book; this does not indicate that the author did not know about the rest. Why does the reviewer criticise another author for mentioning only two volumes when in his own book (1977 p 22) he says quite specifically: "one of the most important sources is a pair of manuscripts" without reference to any other volumes; further on he also says: "the better known of the two..." When did Mr. Montagu find out about the other volumes?

The same explanation applies to the mention of only two parts of the Talbot manuscript. Would it not have been more helpful to the readers if the reviewer here had pointed out that Palmer's discussion included valuable previously unpublished information about the Talbot ms. regarding the hurdy-gurdy?

As regards the description of the hurdy-gurdy in Ch. 1 (pgs 17-22) and in Part II it is clearly stated that this particular description is of typical forms most commonly made and used since the 18th and 19th century, i.e., the guitar-shaped and lute-shaped hurdy-gurdies. It would have been totally irrelevant to have mentioned Mr. Montagu's communication (96) here on the symphony and even the discussions in his books were regarded as too general to be useful. In any case, all theories about the symphony are open to dispute as we just do not know what they looked like inside (one can only count keys and pegs!). The Dearden's instrument and the one made by Plumbtre (pgs 132, 182) demonstrates this.

It is not "difficult to put into words how there are both whole-tones and semi-tones among the lower keys of the hurdy-gurdy" (reviewer's comment); the explanation is "obvious". It is admitted that the author's phraseology in describing the keyboard in Part I is awkward and not strictly according to musical terminology when she said that in a chromatic hurdy-gurdy "the white keys are for the semi-tones and black for the whole-tones"; this was said in an effort to prevent confusion with the keyboard of the piano. It would, of course, have been more accurate to refer to naturals, sharps and flats, as was done in Part 2 of the book (pg 220). However, many well-known musicians and hurdy-gurdy makers express themselves as the author did, e.g. Jean-François Dutertre and Jean-Noël Grandchamp in the special hurdy-gurdy issue of L'Escargot folk mentioned above (pgs 23, 28).

As regards the possible tuning of the organistrum's strings, Mr. Montagu is quite correct in pointing out the obvious mistake that G is not five semi-tones higher than C (should be seven). However, he should have realised that the real mistake on the author's part was that she had meant to say it the other way round: "G with a C five semi-tones higher and a C one octave higher". It was correctly written in the original handwritten manuscript but had been wrongly typed in the final text; this is a very easily made mistake.

The author's interpretation of the word "magada" (or amagada) as being the tangents of the hurdy-gurdy was only tentatively put, not only in connection with Gerbert's drawing but also in the case of the Library of Congress ms. and B.M. Arundel 339 (pgs 32-3), a point overlooked by the reviewer. Various authors have various interpretations for this word but few (if any) would agree with Mr. Montagu that it is the name of the hurdy-gurdy illustrated.
A reference to Grove's Dictionary (pg 502) makes it "fairly obvious" that it is Mr. Montagu who has got hold of the wrong end of the stick; they also translate magada as 'bridge' and 'movable bridge' and makes a very clear distinction with magadis, which Mr. Montagu equates and confuses with the first. Magadis they describe as an ancient Greek instrument which, according to its description, was most definitely not a hurdy-gurdy or any of its older forms. The Classic Greek Dictionary (George Ricker Berry, 1962) also makes the same distinction but describes the magadis as a harp with twenty strings. Professor Brocker derives magada from Maga's-ados which she translates as 'steg' (small bridge) and she discussed the word in great detail in connection with Gerbert's drawing and the two quoted mss. She also takes the word to refer to the tangents as far as the hurdy-gurdy is concerned. On the old organistrums the tangents are sometimes referred to as revolving bridges (see Galpin pg 80; Bachman pg 108 and ch. 1 The Hurdy-Gurdy). As the term was possibly originally derived from the movable bridges on the monochord, it can only refer to the tangents and nothing else on the hurdy-gurdy. This interpretation makes sense in the context of the wording of the two mss, whereas none of Mr. Montagu's interpretations would. His idea that magada means "playing or singing in octaves" once again seems to be the result of equating magada with magadis as Groves gives "magadizing as derived from magadis" as having that meaning. Most scholars of early literature and history know only too well that the translations of church-fathers were quite often unreliable, partly due to national and religious prejudices.

The bibliography of the book had to be selective for reasons of space, even though many other books and articles were consulted. The V. & A's 1968 catalogue references for their hurdy-gurdies were given as these are fully descriptive and therefore potentially more useful to future research workers rather than the undetailed accession records. As for other museums, it is pointed out in Appx. 2 that the lack of full details of collections was not due to any omissions on the part of the author.

The book has 120 good and interesting illustrations, many of them previously unpublished. The foreword is by Francis Baines who has much to say in praise of the book (personal communication and review in preparation); he also finds Samuel's Part 2 very useful (see also a complimentary review Times Lit., 2 May).

Further to Comm. 270. The hurdy-gurdy by Quig in Dublin is indeed interesting and a bit of a puzzle as regards the keyboard and the numerous holes on the soundboard. The museum believes it to be eighteenth century and there is nothing to suggest otherwise (see pl. 72 The Hurdy-Gurdy).

Henri Thouvenel (not Thouvened Henry) worked in Mirecourt between c1850-60s and was a pupil of Colson; his instruments are typical of the nineteenth century slightly more clumsy but often quite ornate types produced in this part of France.

Susann Palmer.
Jeremy Montagu replies:

And there was I thinking that faced with the rather embarrassing task of reviewing what is in fact a pretty bad book by two fellow-members of FoMRHI published by my own publisher, I was letting them down quite lightly and writing a fairly mild review (perhaps they should read some of my other reviews in earlier issues). Let us look for a moment at the problems inherent in reviewing books that do, as this one does, include a good deal of new material and which mean that one has to come to some conclusions as to the reliability of this material. So far as I can see, one has three ways of judging it:

a) one may know more than the author about the subject, in which case it is easy to come to a conclusion;

b) the author may, as I have tried to do in all my books, make it quite clear to the reader which statements are provable fact and which are hypothesis, and, if the publisher permits, may cite detailed references. Most publishers today are against the very detailed references that one used to find, especially in books for the general reader, and many are against footnotes. I usually wangle it in by writing 'as so-and-so says' and so on. I haven't time to reread this book, but my memory is that few hypotheses are presented as such, and very few references or other means of cross-checking are given.

c) one can form some sort of judgement about the material which is new to one by the accuracy of the material which one knows already. In this case, I hinted rather than saying outright, because Susann and Samuel are fellow members, that the level of accuracy on known material was pretty low. This was why I said that what are, in fact, some gross howlers are fairly obvious and often not very important. Let us now turn to Susann's comments.

Para. 5: Musicologists and hurdy-gurdy specialists can look after themselves. It is precisely because this book, like mine, is written for the general public and for the non-specialist and the specialist-to-be that one writes reviews of this sort, and that authors should avoid saying that Schubert songs for voice and piano were written for orchestra or that xylophones are keyed fiddles (and if that is a "common error", God help us all).

Para. 4: It is not a question of when the word vielle was used but that, after saying at the beginning of the book that vielle could mean a number of instruments, blandly assuming that it always meant a roue. The point is that Susann has taken a number of references to vielle, which the context or the illustration (e.g. Chartres) make pretty clear mean another instrument, or even fiddling in general, as being references to the v.a r. As I said in my last paragraph, the book is worth reading provided everything is checked, and therefore I will leave this matter for the reader to check, rather than wasting time and space here, but I can assure anyone who doesn't want to read it that some of them are pretty obvious.

Para. 5: This is the most obvious, of course, a carving of a donkey with a harp held vertically against its chest captioned "Carving of 'the ass who plays a hurdy-gurdy', Chartres cathedral (author)". The fact that guide books refer to it as 'l'âne qui vielle' cannot be taken as an invitation to caption it in this way, and the fact that there is an old tradition that it is playing a hurdy-gurdy is not an excuse for such a caption. Guide books are often wrong and so are old traditions; it is our business to correct them.

Para. 4: Museums are often wrong too, and the fact that the "Victoria and Albert Museum's official description" is patently wrong is no excuse for repeating it. In my experience, a museum is usually grateful when one corrects their labels - I know that I was when I worked in one.
P.2, para.3: (sorry to jump back and forth, but the previous one followed naturally from the one before. I'm trying not to waste too much space by commenting on every paragraph). It just seemed odd not to note that one found the same bridge on the tromba marina, used for the same purpose and called also by a trumpet name. I regret that I did not point out many other details in my book — it was commissioned to a specified length. I can't believe that there is any doubt about the use of rhythmic drones on any mediaeval instrument capable of producing a drone.

P.2, para.5: I don't care who has referred to these carvings and paintings in the past; some of them you only have to look at, and others there is a good deal of documentary evidence for. It is not the 'head of the player' that I'm complaining about at Beverley (since we are not physiognomists, Gwen and I ignored such details in our article in Early Music) but the instrument. North Aisle 17, which Susann illustrates, was carved by the Bakers less than a century ago and is a reasonable, but not perfect copy, of Nave 16 (not shown in our article because they could not afford to repeat illustrations which had appeared a year earlier; anyway, Simson's photos of the nave were better than mine. The caption in EM 5:2 is wrong of course — it's not an organistrum). The real point is that a glance at NA 17 shows that the stone is new, with sharp edges and quite obviously modern and equally obviously different from a mediaeval carving. This is why I wrote about "uncritical acceptance" of iconography. Peterborough is equally obviously not a mediaeval painting; if one has seen two or three early 13th century (or late 12th - it doesn't make any difference) paintings, Peterborough is so different that nobody in their senses could take it to be original. Gwen has got me some more information than I had when I wrote the review: The roof was repainted 1740-50 (ref: Archaeologia vol.9). It was painted again in 1835 (a bill for £30 for painting the ceiling survives) after a complete retimbering of the roof and rehanging of the ceiling in 1830; there was some further restoration in 1926 (ref: Archaeologia vol.87). There is, incidentally, also an organistrum but with only one player and equally dubious on the same ceiling. Susann can disagree if she likes, but for me the fact that the instrument was carved post-1880 or painted in 1835 does "invalidate the interest or authenticity of the art".

P.2 para.6: Of course one does count strings and pegs etc, but one also points out the discrepancies between them and one does not assume that that was the number the instrument had.

P.2 para.7: The drawing of the h-g from Sloane 3983 is not "adequately reliable" as I pointed out. Of course it had to be done "free-hand" — surely nobody would try to trace an illuminated Ms? But it could be done accurately. Manchester was taken from the official report in the last century.

P.2 para.8: Agreed it doesn't much matter who did Virdung's illustrations; he chose them and was presumably happy with them. What matters, and Susann does not refer to this, is that there is no more reason to assume that the h-g is accurate than any of the other instruments, many of which we know were not.

P.3 para.1: The point of the reference to the Cantigas (I discovered too late for Med & Ren that it should be A) is not so much the number of mss (these two are the ones with the pictures) but the use of the word 'volumes' which suggests vol.1 and vol.2; they are independent mss.

P.3 para.2: In fact Susann omits some information from Talbot that Donington gives, and she cites this in her bibliography under Baines, whereas it was Donington and not Baines who read and edited this section.
P.3 para 6: I'm afraid I didn't check Bachmann, Bröcker, Grove, etc on magadis. I looked at Aristotle, Aristoxenos, Athenaeus and so on, and the use of magadizein for octaving was common, and was therefore applied to an instrument that did this. However, let us look again at Gerbert's drawing of the organistrum, which has a list of note letters beside the tangents and, up the end of the instrument, the word magada (I think we are agreed on the interpretation of the slightly odd letters) with mag on the right hand (viewer's hand) of the lower bout and ada on the left, with two II II shaped marks in between which one assumes are a bridge and a wheel. How could anyone assume that magada down the wheel end of the instrument 'can only refer to the tangents' which are down the other end?

We must agree to disagree by what is meant by a museum catalogue number.

In conclusion, perhaps I may, for the benefit of any readers who are still with me after all this, say something about my own reaction to reviews. Reviewers who criticise my grammar annoy me (they may be right, but nevertheless...). Reviewers who argue with my opinions entertain me (I keep meaning to hark back to Eph's reviews of Med & Ren and start an argument - we had one for a couple of evenings in Manchester and both felt full of beans on our own sides after it). Reviewers who correct my facts I am eternally grateful to. When Tony Baines picked me up on facts in Med & Ren (and so did several others) I wrote and thanked them, and if I ever have the time I intend to publish a corrective Comm. here covering all the errors that have been pointed out to me and that I've found for myself. When someone tells me that a carving or painting is a fake I'm grateful to them - I don't spit in their eye. Luckily I was already suspicious of Beverley, which is why I didn't use any of the carvings (which I rather regret - some of them are superb), and equally luckily I didn't use the Van Eyck Ghent altar piece which Ed Ripin exposed as a repaint job. None of us know everything and most of us are only too grateful when our mistakes and slips are pointed out. We do not, if we are responsible scholars, try to defend the indefensible by using museum descriptions as an alibi. We try to persuade our publishers to correct the text for future editions (usually a vain hope nowadays as resetting costs so much) and anyway take care not to repeat the mistake in the next book.

Perhaps I should conclude the conclusion by saying that another Comm of mine in this issue on h-g's was written before Djilda sent me this comment of Susann's for me to reply to.
FELLOWSHIP of MAKERS and RESTORERS of HISTORICAL INSTRUMENTS

1980 LIST OF MEMBERS - 1st Supplement, as at 7th July 1980

* in the left-hand margin denotes a change of address from the main List.

* Susan Andersen - see Theo Miller

Peter E. Armitage, 52 Downs Road, Epsom, Surrey KT18 5JN, UK; tel: Epsom 22560 (violin fam and other strings).

Clifford Bohmer, 29 Wellesley Ave, Natick, MA 01760, USA; tel: (617) 653-2757 (clavicord; M).

Steven Brown, 225 Stanford Ave, Schenectady, NY 12304, USA; tel: (518) 370-2164 (strings; R).

* Pål Bue, AMK, østre Strandgate 17 A, 4600 Kristiansand, Norway.

Donald Casson, 9 Rule St, N. Fremantle, W.A. 6159, Australia; tel: (09) 355-5053 (ww, esp. acoustics; R,C,P,L).

Michael Cole, Corlwyn, Nantmor, Caernarfon, Gwynedd, LL55 4YL, UK; tel: Beddgelert 331 (lute; M,P).

* Jean Claude Compagnon, 10 bis Rue Dobrée, 44100 Nantes, France.

Kevin Cordukes, 8 The Avenue, Clifton, Bristol BS8 3HE, UK; tel: Bristol 315577 (bassoon; M).

Charles H. Crabtree, 53 Myrtle Ave, Bingley, W.Yorks. BD16 1EW, UK; tel: Bingley 60950 (guitar, lute, irish harp, psaltery; M).

Buan F. Curtis, 8 Ashburnham Road, Eastbourne, E. Sussex BN21 2HU, UK; tel: Eastbourne 30473.

Robert Dougan, 19 Hunter Road, Crosshouse, Kilmarnock, Ayrshire, UK; tel: Kilmarnock 20110 (ww & folk strings; M,R).

Eastman School of Music - see Sibley Music Library

Emil Edmon, 4371 Francis Road, Cazenovia, NY 13035, USA (string instrs; M; Ital. translation).

Warwick Edwards, 15 Falkland Street, Glasgow G12 9PY, UK; tel: 041-334 9229.

Julian Emery, 2 Whitbourne Farm Cottages, Corshay, nr Warmington, Wilts, BA12 7QJ, UK; tel: Chapmanslade 596 (vln, vla, vcl, M; plate-tuning).

Colin J. Everett, 47 Pentiman Avenue, Ottawa, Ontario, Canada K1S 0T5; tel: 235-5710 (lute, racket, viol; M,P).

Gianfranco Facchini, Piazza XX Settembre 5, 48100 Ravenna, Italy; tel: 0545/32698 (flute, recorder; M,C,P).

Sender Fontwit, Mill Creek, Big Sur, CA 93920 (harpischord; M).


Peter Gracie, 43 Eastgate Av, East Killara, NSW 2071, Australia; tel: (02) 498 7078 (psalteries, M; recorders etc, P).

R. Hall, Head of Design & Craft, St. Christopher's C. of E. H.S., Queens Road, West Accrington, Lancashire, UK; (psaltery, dulcimer, lute; M).

Ronald E. Hawley, 1117 Tower Dr., Vista, CA 92083, USA; tel: (714) 724-3738 (ww, M; stand for instrs, M).

Jeff J. Hildreth, 11657 Bigwood Rd, Auburn, CA 95603, USA (violin, bows, nyckelharpa; M,R).

Charles Indekeu, Frederik-Lantsstraat 44, 3000 Leuven, Belgium (violin, lute, guitar; M).

Philip Lord, Aquamarijn 78, 1703 AK Heerhugowaard, Netherlands (lute, psaltery, M).

Terence A. Lucas, 7 Dew Close, Dunchurch, Rugby, Warwickshire CV22 6NE, UK; tel: Rugby 81944 (balalaika, guitar, lute, hurdy-g; M).

Laurence Marshall, 282 Wilbraham Road, Manchester M16 8WF, UK; tel: 061-881 8774 (keyboards; M).

Dan E. Meyers, Lorien, Wadhurst, Sussex TN5 6PN, UK; tel: Wadhurst 2045 (shakuhachi, flute; M,R,C,P).

Irmela Judith Meier, 11 Heyworth Rd, London E5, UK; tel: 01-986 0333 (ww, bar, oboe; M,P).

* Theo Miller & Susan Andersen, R.R.L., Pender Island, BC, Canada VON 2MO; tel: (604) 629-3794.
Stephen Murphy, 30 Boronia Street, Concord West, NSW 2138, Australia (lute, guitar, viol; M).


Ray Nurse, 3370 West 23rd Ave., Vancouver, BC, Canada V6S 1K3; tel: (604) 738-9924 (lute; M, P).

Chinyere Nwachukwu, Department of Social Anthropology, Queen's University of Belfast, Northern Ireland BT7 1NN, UK (all instrs; C).

Patrick O'Brien, 50 Plaza Street East, Brooklyn, NY 11238, USA (lute).

Michael O'Shea, 12 Wakefield Road, Brighton, Sussex BN2 3FP, UK (plucked fretted strings; M, E).

Leonard W. Parr, 17 Vincent Close, Corringham, Stanford-le-Hope, Essex, UK; tel: S-l-Hope 42079 (hurdy-g; M).

Richard Reusch, 24 W. Congress, Apt.3, St. Paul, MN 55107, USA; tel: (612) 222-0950 (lute, orpharion; P).

David C. Rolfe, "Tawarri", Bungendore, NSW 2621, Australia.

*David Ross, c/o 303 East Gaylord, Mt. Pleasant, Mich 48858, USA.

Søren Schultz, Lykkevej 2, Esrum, DK 3230 Graested, Denmark; tel: 03-290299 (lute; M, P).

Sibley Music Library, Eastman School of Music, University of Rochester, Rochester, NY 14604, USA.

James Skae, 79 Twyford Avenue, Stamshaw, Portsmouth, Hants. PO2 8DG, UK; tel: Portsmouth 699218 (spinet, harp; M).


Pavel Sraj, Prešernova 17, 64240 Radovljica, Slovenia, Yugoslavia (lute, bar flute; M, G).

*Denys Stephens, 101 Polvithen Drive, Carbis Bay, St. Ives, Cornwall TR26 2SW, UK.

*Peter Storm, Pilehøjvej 9, Ugledige, DK-4735 Mern, Denmark.

Ian W. Strang, 23 Partickhill Road, Glasgow G11 5BP, UK; tel: 04-1334 5239 (ten. wind, brass, lute, citern, viol).

Peter W. Wallace, 'Haldon', 16c Grosvenor Road, Gloucester GL2 0SA, UK; tel: Gloucester 24686 (recorders; M, F).

Richard Woods, Loyola University - IFS, 6525 N. Sheridan Rd., Chicago, Ill 60626, USA; tel: (312) 274-3000 x 454 (harps, crwth, lute; M, F).

Zuckermann Harpsichords Inc., Box 121, Stonington, CT 06378, USA; tel: (203) 535-1715 (keyboards; M).

**General Facilities**

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**Plate Tuning Help:** Julian Emery

**Art Work:** Peter Smalley

**Italian Translation:** Emul Edmon

**Organological Index**

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**String Instrs. General:** Steven Brown

**Dulcimers:** R. Hall

**Psalteries:** Charles Crabtree

**Psalteries:** Peter Gracie

**Keyboards general:** Laurence Marshall

**Keyboards general:** Zuckermann Harpsichords

**Harpischord etc:** Sender Fontwilt

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A NOTE ON THE BELLY CONSTRUCTION OF EARLY ENGLISH VIOLS.

E. Segerman.

That the belly construction of the usual type of early English viol did not follow the two-piece carved Italian violin model has always been evident to anyone who examined one carefully. Joints between separate pieces occur under each foot of the bridge, and under one of these joints lies the bass-bar. Pre-Barak Norman viols had two more joints which passed near the narrowest points on the waist. Christopher Simpson contrasted the construction of these viols with those "of that shape [of a violin] (the Bellyes being digged out of the Plank)". The obvious alternative is a bent-stave construction, related to that of a lute back.

I first heard of bent-staved construction from Stephen Gottlieb some years ago. He suggested it after examining the Rose viol in the V & A, associating it with many burn marks he noticed on the under-side of the belly. John Pringle, in his article on John Rose in Early Music (Oct. '78) doubted this association. There is good reason to doubt it since the measured arching and thicknessing indicates that the staves are simultaneously curved in different directions at each point. One would expect the maker, if he used bending, to bend over-thick pieces to one curvature, assemble, and then carve the other curvature. This carving would remove the burn marks of bending. In a recent conversation, Pringle mentioned to me that the belly of the Nuremberg Jaye viol has recently been removed and Friedemann Hellwig reports burn marks under the central and end staves. No purpose for these burn marks has been suggested.

Another curious aspect of these viols can be seen in Pringle's excellent drawings of the V & A Rose and Jaye viols (available from the V & A at a very commercial price). It appears that the glueing surface between belly and ribs is not a plane, being highest at the blocks and dipping lower in-between. Some of this dipping might be due to distortion but it appears that some is not.

An analogous situation exists with early lutes, as observed by David van Edwards and others, where the soundboards dip by about 5mm in the region of the rose. The string tension on lutes tilts the bridge, raising the soundboard below it and dipping the soundboard above it. The heavy bar just below the rose acts as a pivot and the rose tends to rise towards the strings. Cutting a dip in the ribs to lower the soundboard in the region of the rose avoids the possible problem of string-slapping against the rose.

I believe that a reasonable explanation is possible for both the burn marks and the cut-away on the sides of early English viol if we assume that their makers had sets of arching templates that they insisted on trying to match and we consider the problems involved in making bent-staved soundboards. The staves need to be rather thick to allow for carving out the transverse arch. The thicker it is the harder it is to bend, so I imagine that very little extra thickness would be allowed for correcting inaccuracies in the bending of the longitudinal arch. Such inaccuracies are inevitable and so arching adjustment after the belly was assembled smoothed and thicknessed would be called for. (It is possible that there was no attempt to bend the staves to longitudinal arching templates, relying completely on later adjustment.) Re-bending the soundboard using perhaps the convex surface
of a banana-shaped bending iron seems reasonable. The goal was presumably to match a set of transverse arching templates. When this goal was approached as well as expected, they could then just carve the viol ribs to fit the edges of the final belly shape. Since carving the ribs is much easier than cutting into the blocks, the staves would tend to be under-bent with the ideal longitudinal arch being an upper limit to be approached but not exceeded.

I've deliberately been ambiguous about which staves were bent. We at NRI have made about 8 viols with the centre stave (number 3) bent and the others carved. In cross section the assembly before carving is something like

![Diagram of bent stave](image)

There is no need to bend the end staves (1 and 5) but I believe that it is quite possible to bend the in-between staves 2 and 4 to take full advantage of the method. (The advantage is to increase the stiffness for the thickness by having the wood grain follow the contours.) Finding a successful method for bending staves 2 and 4 to the complex shape required is much more easily done by experiment than by theory. One of our craftsmen attempted it once but without success. The problem with further experimentation is one familiar to most instrument makers - one responds to the pressures of customers before that of research. This is an area where the amateur maker can make an important contribution.

FoNRRI Comm. No. 290

MALCOLM ROSE

MAKING SOLID BENTSIDES FOR HARPSICHORDS

A number of makers have asked for information on making solid, rather than laminated, bentsides. My experience is with making copies of the Henri Hemsch of 1756 in the Boston Museum of Fine Arts; the case work is of poplar, and the bentside 17.5 mm thick. The measurements given will have to be adjusted slightly for other thicknesses. Select the cleanest timber for the bentside; it must be free from all but the smallest knots, or tearing will occur.

DESIGN. When making templates for the bentside former, the most useful reference point is that at which the straight part of the bentside departs from a straight line. Mark this point on the drawings and on the former, and align the two points for all measurements and calculations. This does not apply of course where the bentside has a continuous curve, but a central reference point is still the most useful.

THE FORMER. There is no alternative to making a heavy wooden former; it will be subject to considerable stress during the bending process. Mine was designed with two criteria in mind: (a) it must be adjustable, to make bentsides of different shapes for different harpsichords. (b) it must not involve the use of precious cramps for weeks at a time.
The former is built up from about 12 boards about 25 mm thick; old floorboards from a demolition site are ideal, but don't put them through your planer, as the grit in the surface will wreck the cutters. The drawing shows how each layer is cut alternately long and short to overlap the previous layer. Each board can be marked out with a template before assembly, and cut out on a bandsaw. The shape of the former should be more or less the same shape as the finished bentside, or perhaps a little more curved. The boards are then glued and nailed together, and the curved surface cleaned up when assembled. Build up a width about 70 mm wider than the widest bentside you are likely to make.

THE BARS. Bars of wood 12 mm wide are screwed across the former at intervals, as shown in the drawing. These allow the air to reach both sides of the bentside and speed up the drying; and by making and keeping complete sets of bars, the former can be made adjustable. While in the former, the bentside must of course be bent more than needed for its final shape, to allow for it to spring back a little. To calculate the height of the bars, place the finished former alongside the harpsichord drawing; measure off a set of bars which will give a curve greater than the finished curve by the amounts shown on the drawing. The bars will leave slight marks on the bentside, which will have to be cleaned up with compass plane and cabinet scraper. This marking can be reduced by using an extra bar between each of those shown on the drawing, making 23 in all.

THE BOLTS. The bentside is held on to the former by 12 pressure bars of wood about 35 mm x 20 mm, which are bolted through the former. Drill holes for bolts of about 10 mm diameter at each end of the 12 positions shown on the drawing. Don't forget the bentside will increase in width by about 10 mm when soaking wet; give the bolts about 7 mm clearance on each side of the bentside. Plane a slight curve on to the underside of the pressure bars so that they press in the middle of the bentside first. They will bend flat as further pressure is applied.

SOAKING THE BENTSIDE. Some kind of metal tank is needed which is tall enough to immerse the bentside a little deeper than the point at which it departs from straight. Scrap metal yards are a likely source. Fit an electric immersion heater in the bottom of the tank, in such a way that it will not touch the timber. When the bentside has soaked for two weeks, switch on the immersion heater and allow the water temperature to rise to the usual domestic level. Give the bentside about half an hour at this temperature.

THE BENDING PROCESS. Insert the bentside, still hot, into the former at the far end of the curve and tighten the pressure bar on it; add the next pressure bar, then the next, so that it is gradually pulled round the curve. Make sure the bentside is straight in the former, remembering that it is considerably swollen in width at the curved end. For drying time I would recommend at least two months at room temperature, but the longer the better. Any smaller parts which need to be bent are of course quicker; a typical bentside liner of 38 mm x 19 mm would need to soak for four days and would dry in two weeks. It is of course a long process, but with careful planning ahead and making sure the former is constantly in use, the process should not cause delays in a small workshop.

Please write if any parts remain unclear, or if you would like to see a former of this type in action.
FORMER FOR MAKING SOLID BENTSIDES FOR HARPSICHORDS

Distances from the surface of the bars to the finished curve of bentside

- 27 mm
- 20 mm
- 15 mm
- 10 mm
- 7 mm
- 5 mm
- 3 mm

Point of departure from straight

- 12 cm
- 20 cm
- 29 cm
- 29 cm
- 29 cm
- 29 cm
- 10 cm

Measurements:
- 114 cm
- 123 cm
- 144 cm
- 192 cm
Painting of instruments is quite straightforward but is rather time-consuming. To get a good finish it is necessary to use a suitable paint and to rub it down properly in the old-fashioned way, as coach painting was done. Ordinary house paints are not suitable. If you want to experiment with old fashioned methods of course you can—but be warned—many of them are difficult, or to our modern eyes defective. Multi-layer coatings on a semi-flexible base have to be carefully constructed or else they can craze, warp the substructure or fail to dry. On the whole it seems best to use the same binder, be it oil, glue or whatever, for all the coats, and to avoid putting a strong layer over a weaker one.

It is quite possible to make your own paint. Dry pigments are available in all basic colours from Plotons and other art shops, and all the Earth Colours from French Polish suppliers where they are very much cheaper. A binder is needed to stick them on with, and if that does not dry easily, you need a drier. That makes a paint, of sorts.

A glue-based method using gilders gesso, which is whiting and rabbit-skin glue size, for undercoats, and gluefixed pigments is quite possible—the colours are nice and it looks very antique, but you can run into trouble—gesso pulls the surface badly if it is too strong and it can easily warp a panel or craze plywood.

The following is a method of painting using commercially available materials. However the paints are sold in minimum quantities of one litre and several separate tins are needed. The cost is about £35 (£1980) but you will have paint left over.

Painting this way makes it possible to separate the making of the surface, the colour, and the gloss and to form each one separately to the required standard. It is a workable method of getting good results using an available system produced by a reputable firm, who have a good back-up service. It is not authentic but it works.

The two London makers of Oil Paints have recently merged. J.W. Bollom have taken over John Keep. Both ranges of paint are now available from Keeps at 15 Theobalds Road, London WC 2. Keeps are an old fashioned coach paint and signwriting firm. Bolloms are more go-ahead and produce good paint in 'Architects Ranges' for big painting contracts. They have a laboratory at Beckenham which you can phone if you have serious enquiries where they are genuinely knowledgable and very helpful.

The best procedure seems to be as follows:-

(1) Ground. Not all timbers are suitable for painting. Wood with a pronounced grain such as Pine or Spruce will show that grain through any number of coats of paint and cause great trouble. Open grained woods like Oak need filling. But all close grained hardwoods, such as Poplar, Lime, Beech, Sycamore etc, paint well. The work must be sanded smooth and all major holes filled—not necessarily small ones at this stage. What is important is to get all bumps and projections off.

(2) Brushes. Only the best will do. Hamiltons Perfection are good. Bolloms own range leave something to be desired. 1½" wide will do even for lids plus a little one for awkward bits. The paint must be laid on with the brush in the normal way, carefully crossed off to minimise brushmarks as they will all show, and worked fairly fast to prevent the edge drying on large areas. It is best to place the surface horizontal if possible.
Normally it is not possible to paint both surfaces of a lid on the same day, as the paint on the underside will be marked, but if time is a problem keeps undercoats dry faster than Bollops.

(3) Primer One coat of Pink wood primer starts it off.

(4) Filler There are many proprietary fillers. The plaster-like ones may show through the next coat, and some may sink. Putty does not show, or you can make your own colour-matched putty by mixing some whiting into the paint that you are using.

(5) Undercoats The purpose of the undercoats is to obtain a faultless surface. To do this quite a lot of coats are needed. It is not at all necessary to put the same number of coats on every place. Two thin coats may be enough on fine mouldings - more can clog them, but on a visible area like the top of the lid four is a minimum and some people use six or seven. After each coat go briefly over it with rubbing-down paper and 'de-nib' it i.e. remove all dust specks and runs, and then fill any holes found. Do NOT rub it down after each coat - the idea is to build up a thick and even layer of paint.

Although undercoats are supposed to be of a colour related to topcoats this is a fearful nuisance on an instrument with several colours on it. It is quite satisfactory and much more economical of paint to use a mid-grey undercoat which will do for all colours.

(6) Rubbing Down When you are sure that you have enough paint on you can try rubbing down. This is the biggest single job. Using waterproof silicon carbide paper, 380 grit or so, on a cork or felt block, and lots of water (do NOT rub down dry - it is dusty, slow, inefficient and wastes abrasive paper) you rub it all over until every part of the surface is rubbed smooth - i.e. all bumps are cut down to the level of the depressions. Be extra careful at edges and corners so as not to go through anywhere. When done the surface should be like polished marble.

(7) Colour Coats You can use two coats of eggshell enamel now. However a better way is to separate the colour from the gloss. Into a tin of Bollops eggshell enamel you add some Bollops Matting Agent to make it matt (they do not make a matt paint). This gives a thin matt colour. Normally two coats are needed as its hard to get perfect coverage with one coat. De-nib as usual but extra carefully. When you are satisfied with the result you can if you wish at this point apply gold leaf on lines and mouldings.

There is a problem with colours. Bollops have quite a good range, but the strong dark colours, which need a lot of expensive pigments in them are not as plentiful, or as strong, in the lists as one might hope. If you want a colour that they do not have the best thing is to have them make it up for you specially, but there is a minimum quantity that they will make and it is far more than you will need. If you experiment with putting stainers in paint do not overdo it or the paint will not dry. Bollops Lab will produce to special order a Varnish called No 262 which is the vital part of a paint mixture and it will make a paint when mixed with artists oil colours, which come in every colour under the sun, at a price.

(8) Varnish Over the colour and gilding you can lay a semi-matt varnish to protect it all. Bollops is an oil/polyurethane mix that bonds to oil paint but gives it greater protection. The oil paint is quite soft - otherwise you could not do all that rubbing down - but the varnish hardens it.
The semi-matt finish looks good - but if you feel impelled to lay on several coats and rub this down you can get any degree of shine that you feel like. For that you would need the finer grades of paper such as 600 through to 1200, but it is not to be recommended if only because it shows up defects in the levelness of the understructure.

FoMRHI Comm. 292

MAKING ARCADES FOR KEYBOARD INSTRUMENTS - John Rawson

There are many different patterns of arcades, all made different ways. Like all these things they need either a fair degree of skill or equipment or both.

1. Lathe-turned. Cut thin sheets of wood to about 2" x 1", make a jig for a lathe faceplate into which it will jam, and turn with lathe tools in the usual way. Cut to size afterwards.

2. Drilled. Get a commercial flatbit, cut off most of the shank, and the point. Grind to the required profile. Use it in a bench-drill. It must cut full-circle in oversize sheets of wood, which must be cramped down firmly. Cut to size afterwards.

3. Gouged. Early instruments such as the Vaudry have a trefoil gouged into the wood of the keylever. The endgrain is left showing and is painted or stained.

4. Pressed. Small pieces of leather or paper can be impressed with a pattern in specially made dies.

Some patterns, such as the Siculus Virginal, use several techniques; turned, pierced, laminated to a contrasting wood, carved and scored.

The arcades are generally made a fraction oversize, are glued to the keys after cutting and are then trimmed exactly.
THE MACHINE

The generation of a clean consistent moulding requires a machining process and the ideal tool is a pillar drill having a range of speeds of 500 to 4,000 rpm. It is possible to use a pistol drill but the scrap rate may be high and you are limited to using a cutter with a pilot. A plunging router will give excellent results but making the cutter is a job for the specialist and likely to be expensive.

THE CUTTER

To make a cutter suitable for the pillar drill:

1) Purchase a Ridgway flatbit and cut off the shank 2 inches from the radius and either all or part of the pilot depending on whether you want a centreless arcade or not (fig 1). The material of these bits is not very hard so no harm will be done to your hacksaw blade.

2) The sides of the flat part must be ground concentric with the part of the shank that is left (fig 2). This requires a cylindrical grinder. Your local Technical College should be able to help you with this. Alternatively an engine reconditioner or large garage should have a valve grinder which will do the job. After grinding the sides of the cutter grind the end flat or form a small point to act as a pilot (fig 3).

3) Holding the shank in the soft-jaws of the vice, look at the grinding marks on the end. These should show you the centre of the cutting face. File a relief of 15 to 20 degrees on the right hand half of the bottom face (fig 4). Turn the cutter through 180 degrees and repeat the process. A few strokes with a fine slip stone will improve the surface finish of the faces.

4) With your dividers mark out from the centre the position of the raised parts in the desired pattern. File the required shapes into the end faces using sharp needle files. Make sure that there is some relief to the sides of the cut-outs as well as the bottom (fig 5).

5) Finally remove the burrs from the vertical faces on the oilstone. The cutter is now ready for use.

THE CUTTER IN USE

1) The optimum cutting speed can only be determined by experiment on scraps of the material you intend to use for the key covering. Too slow a speed may give a poor finish while too fast a speed will burn the wood. To start with try a speed between 1,000 & 1,500 rpm.

2) When using a centreless cutter the wood should be clamped to the drill table as it is not unknown for the bit to grab and either ruin one or more mouldings or even hurl the wood across the workshop.
FIG. 1

CUT AT A AND EITHER B OR C

FIG. 2

FIG. 3

FIG. 4

FIG. 5
Creation of the required archings in the top plates of viols using templates is a slow process. Furthermore, one needs a separate set of templates for each size and type of viol.

In many respects a better idea is to drill a pattern of holes in the face of the plate before it is carved. Then one can hack away at a great rate until the holes are just removed. After this comes finishing, using scrapers and sand paper. The slow process of convergence on to the required shape is avoided. There is nothing new about this idea, of course.

And I'm not sure about the originality of the jig herein described for measuring the archings of a finished plate and drilling the pattern of holes in a new one. It seems so simple that someone else is likely to have thought of it. If so, all credit to him. The following Comm. is addressed to people who haven't.

Making the Jig (see diagram)

The span and height indicated are sufficient for all normal viols up to those of consort-bass size. Increase the dimensions if you wish to handle double basses.

I found it convenient to make it from aluminium alloy and the raw material I obtained was dimensionally very precise. You could use steel and braze it but watch out for warping. The essential point is that the top surface of the channel section must be straight and parallel to the surface table upon which the jig will rest to within a fraction of a mm. The diameter of the holes is chosen to suit the drill bit and depth probe you intend to use (my holes are 3 mm). The exact location of the holes is not important; there must merely be enough of them to be able to locate one over any point marked for drilling on the surface of the viol plate, taking into account that there is latitude to slide the plate around beneath the jig.

I made the jig in about as much time as it would take to make a single set of templates.

Taking Measurements from an Existing Plate

To get the essential data on drilling depths, you can:

1. Use the jig to measure-up an existing plate not yet mounted on an instrument. Mark-up a series of points on the plate - enough to provide a good definition of its shape. Number them and record their co-ordinates (say, "X" along the long axis of the plate from the bottom end and "Y" across the plate from the centre line either side - you only need to measure up on one side, by the way, since the plate should be symmetrical). A complication is dealing with locations in the vicinity of the C-holes where the slope of the plate is high; for such locations drop a perpendicular from the rule you're using which is kept horizontal. Having marked them up, use a probe to measure the depth of the surface of the plate below the top surface of the channel section, for each point. See remarks below, related to requirement for a flat table used in conjunction with the jig. Record each measurement against the number of the point. To save repeated changes of drill settings in the later process of drilling a new plate you can, alternatively, follow around the plate with a constant probe depth, thereby defining a contour of constant depth. Record the co-ordinates of sample points around the contours.

2. Take measurements off an old set of templates and convert them to
equivalent depth-below-jig data by subtracting them from the jig height, making an adjustment as necessary for edge thickness of the plate. On

3. Take measurements off a complete instrument using a flexible French curve wrapped over the surface of the plate, thus giving template-type profiles. Proceed as for 2.

If you are a mathematician you might rise to the challenge of developing profiles analytically. Perhaps a numerical solution of the equations governing the deflection of a thin plate with boundaries equivalent to the edges of the viol plate, subjected to uniform pressure; perhaps with extra loading in the central area to avoid humps in top and bottom bouts. It might yield beautifully smooth contours.

However the depth data is obtained, one big advantage of the whole procedure is the ease with which the data may be manipulated. To scale from one size of viol to another, merely multiply all depths and their locational co-ordinates by the ratio of viol sizes. Alternatively, if you wish to increase the arching heights for a given size of viol, scale up only the depth data. One set of tabulated data and a pocket calculator will substitute for a pile of templates. Also they’re easier to communicate to a fellow maker.

Drilling a Plate

It is essential to have a very flat table, that is, within a fraction of a millimetre. It sounds a tall order, but most Formica or Laminex kitchen tables will do the job; check with a straight edge along the direction in which the jig will lie — a slight bow in the other direction will not matter since it should be possible to clamp the plate so that its edges touch the table in the vicinity of the jig, for each drilling operation. I use a marble top from an old wash stand — it’s perfect for the job.

A corollary to this is the preparation of the plate so that it, too, will lie flat. If necessary, gouge it out slightly on the underside so that the edges contact the table.

Mark out and number the hole positions on the top of the plate, and if you have lots of holes of constant depth to drill corresponding to contours, join them up with a pencil line so that you can drill them in succession without referring back to the tabulated data.

Note that the wedge shape of the plate as formed by a side-to-side arrangement of slabs of quarter-sawn spruce in theory creates marking-out errors if you measure off the lateral co-ordinates down the slopes. However, the wedge angle is only about 6 degrees and the error thus less than one percent. Correct for it if you like. Much the same will apply to plates fabricated in other ways.

It remains only to drill the holes. Take great care in drill settings! Keep the chuck tight! Go as close as you dare to the nominal depth settings to allow for final scraping; about a millimetre might be a reasonable limit. Add the thickness of a steel washer which might be used to prevent wear on the jig surface.

Drill by hand or using a very light electric drill (e.g. an EXPO router). Be careful to hold drill vertically particularly for holes in locations of high plate slope. In this connection it is convenient that the areas around the edges of the centre bouts have their high slopes along the direction of the jig — the drill can be squared-up using a set-square sitting in the channel of the jig.
Two or three drill bits of varied length can be used to cope with the range of depths encountered. Alternatively a range of washers of graduated thickness could be used in conjunction with a single bit.

**Using the Jig for Plate Thicknessing**

The jig can also be used during the later process of plate thicknessing. Some people use a vertical drill press to drill a pattern of holes over the back of the plate, locating a domed anvil on the base of the drill press against which the other side of the plate is held. The whole process is, of course, a bit like the one described above for arching. But there will be a whole zone in the central parts of large viol plates which can't be reached unless the throat of the drill press is very large.

By locating a similar anvil of measured height under the centre of the present jig, such areas are easily managed. If necessary, the jig can be raised on blocks to create sufficient drilling clearance.

**Diagram**

21 holes 3 mm D

Support

Height

4 cm

42 cm

Channel: Al alloy 50 mm base x 25 mm high (external) x 3 mm thickness

**Jig for Arching and Thicknessing Viol Front Plates**
I am happy to be able to report response to the plea in para. 3 of Comm. 274. Uta Henning has very kindly made available a copy of Rudolf Lück's original dissertation of 1954 on which the Jarbuch article was based. It contains a good deal of extra material, but leaves the current uncertainties as they were.

The instruments I enquired about are all colascione-like in their proportions. They are not like the Talbot colachon and could not be used for the sort of solo music that we know about at present, because of their great string lengths. I wonder if they were used for playing a single line bass, like a modern bass guitar in a pop group.

Other additional information includes: - Janowka (not Janowska as I misprinted him) on the mandora - 'The tuning of the Mandora is a fourth higher in all strings than one usually tunes the Cializona......One finds them in two forms, either with six or eight strings.

The tuning of the six course Mandora: Sexta F, quinta G, quarta c, tertia f, secunda a, Cantarella d'.

'Der Donaueschinger Tabulatur' (Donaueschinger Bibliothek Ms Mus I272), with 'Regeln zur erlernung des gallison'. Dated 1734, it has a schematic drawing of a six-course mandorlaute-like instrument with nine frets and about 87 ff. of music. Title page has 'Gegenwärtiges Gallison: oder Mandor Buch....'

'Der Amberger MS' (Stadtarchivs Amberg MS No 39), (c.1730) has 180 plus pieces of music for six-course instrument with ten frets, tuned 2-4-4-3-4-4-4-3-4, and four other variants including 4-4-3-4-4.

To my list of calachon tunings must now be added: To Dresden Mus.2/V/6, 2-4-4-3-4. To brescianello, F X X X F G c f a d' and X X X X Dia G c f a d'.

To the mandore sources can be added Brussels, Bibliothèque du Conservatoire royal de musique: MS 5.619, (c.1730-40), a collection of pieces for mandora tuned 4-4-4-3-4.

Sadly two errors were not spotted in my final typescript. The Skine Ms mandore tuning is 4-5-4-5 and of course the last three calachon tunings should be c not C for the fourth course.

I have kept till last a titbit from Lück's dissertation. It is puzzling that Walther's Lexicon only X X X X X X X X X regurgitates Bonanni and Mersenne on the Colascione. Apparently Mattheson wrote in his copy 'Calichon, ou es tu?'.

Donald Gill.
INTRODUCTION TO THE SMALL ORGAN

Dominic Gwynn

The study of small organs, that is, those that are portable or transportable, is still in its infancy; their history is veiled in mystery. Virtually no work has been done on the manner of their use. Generally speaking they appear to have been used in processions, in small chapels, travelling chapels (with armies etc) in theatres, in drawing-rooms and music rooms and anywhere where an organ was required either for its repertoire or for accompaniment and a larger organ was not available.

In the Middle Ages the different sizes of organ seem to have developed from different uses, but by 1600 the significance of a particular type was less clear cut. For instance, the positive had been joined up to the large church organ, as the choir, but still developed as a separate organ, so that both might have had the same application in appropriate circumstances. Through the eighteenth century there is a much greater sense of the use of chamber organs and barrel organs for their own sakes. By 1850 the special place occupied by these types had been superseded by the piano and the harmonium.

A good impression of the variety of types of organ and the places in which they were used, at an early date, is given by the 1547 Inventory of Henry VIII's musical instruments, published in Russell's 'The Harpsichord and Clavichord'. But most of the evidence is scattered in isolated references and in the growing number of small organs which are being "discovered".

Main types of small organ:

1. Portative: in the modern usage of the word, those organs that are capable of being carried and played by one person. Presumably in general use up to c1550, though the principal evidence is pictorial and may suggest that these organs were more widely used than in fact they were. A sixteenth century use of the word was for an organ which could be played while in procession, on the tail of a cart, etc.

2. The earliest positive organs resemble the portative in pipe display and compass but have a stand for the bellows. These developed into the most common form of small organ, with increasingly elaborate cases and pipe fronts, larger compass and increased number of stops, up to the eighteenth and early nineteenth century by which time it resembled a secretaire bookcase.

3. A variation on this type was the table organ with the bellows in the lid of the case making the instrument easily movable. The examples of this type that I know are mid-eighteenth century and come from central Germany.

4. The other common type is the table organ with the bellows behind the chest. There is one illustrated in the Syntagma Musicum Part II. These organs often had regal stops (as did most organs of the sixteenth and seventeenth centuries in Northern Europe). In sixteenth century England regals and
and portative is often an interchangeable term.

5. The regal started off as a variation of type \( \mathcal{R} \), but after 1620 increasingly became the horizontal reed type which originated in Nurnburg. The latter was novel to Praetorius. In both forms they made a useful substitute for the organ as well as having their own use in the theatre and as a domestic instrument.

6. The bureau organ, with the keyboard on top of a chest with pipes, wind chest and bellows below, was used by heretical congregations in the seventeenth century and as a domestic instrument in the eighteenth.

7. The outdoor organ, including the Hornwerk, the seventeenth century water organs and other curiosities.

In organbuilding, dimensions and forms are more crucial to the sound than materials. Concern about materials was mainly confined to durability. It should not be forgotten that the organ is a wind instrument, and it is influences on the wind supply which are important. The vital ratios in the measurement of organs are:-

For pipes
- pitch length (theoretical); circumference; mouth width; mouth height.
- pitch length; diameter; diameter scales through the rank; circumference; mouth width; mouth height.

For windways
- flue area; foothole; cannell size; pallet opening; trunk area; bellows area; bellows inlet.

An indication of the sense of these relationships can be gained from the essay by Bernhardt Edskes on the 1968 restoration of the Schnitger organ at Nieuw Scheemda in 'Arp Schnitger en zyn werk in het Groningerland' (Stichting Groninger Orgelland 1969).

In practice, the exigencies of small organ design mean that some of these ratios are more or less arbitrary.

Apart from the Bernhardt Edskes' essay mentioned above, there is a certain amount of published material. This is a short list:-

**Contemporary**

Christhard Marhenholz, *The Calculation of organ pipe scales* (Positif Press, Oxford), is a seminal book, even if much of the material is presented in the terms of the Orgelbewegung. It is admirably summarised by Poul-Gerhard Andersen in Organ-building and Design, chapter 3 (Allen and Unwin).

Reinhardt Menger, *Das Regal* (Tutzing 1973) contains a slightly inconsistent typology of regals without flue stops and some measurements, but draws no conclusions and the scales given are not full enough to be able to draw one's own.

**Theorists**

Werkmeister, *Orgelprobe 1698* (facsimile Bärenreiter 1970), not much technical detail, but shows what an adviser was looking for.

Bendeler, *Organpoeia 1690* (Frits Knuf), gives scaling techniques and many other details.

**Investigators**

Dom Bedos de Celles, *L'Art du Facteur d'Orgues 1766-78* (frac, facsimile Bärenreiter is the cheapest), is the essential reference book for anyone working backwards in organbuilding techniques, even if he was writing from a limited viewpoint.

Van Heurn, *De Orgelmaker 1804-5* (Frits Knuf), takes Bedos as his model, but without as many pictures.

Lastly, all those interested in the English Organ should join the British Institute of Organ Studies (Membership Secretary - Nick Plumley, Middleton B, Christ's Hospital, Horsham, Sussex, RH13 7LE) or at least buy the Journal.

Any good book on the early guitar must be welcomed, and one written by an authority of James Tyler's standing warrants careful reading. It is thorough, painstakingly researched, and elegantly produced, and packs in a good deal of solid information. It is in two sections, a history and a handbook, though to some extent the two halves overlap. This calls for intelligent cross-referencing by the reader, a task which would be easier if there had been a subject index, the only serious omission by the publisher.

Though this is not primarily a book for makers and restorers - surviving 17th and 18th century instruments are not described in any detail - it nevertheless covers ground which is far from irrelevant to their interests and provides some starting points for further research. The author should not be criticised for not indicating those parts where his own opinions have been needed to supplement scant source material; informed guesswork can be as valuable as patient research, though more open to controversy. So when Mr. Tyler suggests a parallel development of the wire-strung chitarra battente and the Neapolitan mandolin, one may respect the slender evidence for this while feeling that here is yet another field for more musicological research. Similarly, musicians may be puzzled by the author's suggestion that when music for the guitar is in staff notation, '...the treble clef seems illogical, and is often awkward to play from'.

There are 29 plates, including pictures of four handsome instruments, which are, however, not wholly representative of the structural, decorative, and dimensional changes which took place in the development of the guitar. Informed readers, and in particular members of FoMRHI, may wish that the number of instruments illustrated had been increased to include examples from such important makers as Tielke, Sellas, and Voboam.

Early guitar music was notated in tablature and Tyler covers the differences between the French and Italian ways of writing very thoroughly, and clearly explains the early guitar chord system, called 'alfabeto', and its use in the rasguedo or strumming styles. More might have been made of the variety of ways of playing chords in mixed tablature, and while space may not have allowed sufficient emphasis to be put on the freedom, within the musical conventions of time and place, which the Baroque and Renaissance performer enjoyed, the omission of any reference to notes inegale, and to at least some of the finer points of ornamentation, could lead the beginner into an over-simplified approach to embellishment. Indeed, Mr. Tyler's distrust of applying keyboard realisations to the guitar may satisfy the purist, but raises the question whether it is not preferable to examine the usefulness of any source in arriving at a coherent and musically satisfying performance.
The author provides a guide to the tuning arrangement he believes appropriate to each listed work, for the choice of bass bourdons in the fourth and fifth courses in one of the problems of authentic performance of the Baroque guitar repertoire. The reader should not accept without question what is said here. The main difficulty lies in the ambiguity of the original texts, but there is, for example, no basis for thinking that the Italian virtuoso Francesco Corbetta always used the French tuning; indeed, it would seem logical to assume that he would have used one of the Italian tunings for works composed in his youth and published in Italy; as would no doubt other Italian composers, such as Foscarini, Calvi, Granata, and Pelligrini.

If, as Mr. Tyler says, "... the most important function of the guitar was... as a continuo playing instrument", even within the relatively small compass of the book it would have been worthwhile expanding this chapter beyond the two pages it receives. After all, many of the early guitar books, including those by Sanz, Corbetta, Carré and Granata deal with this subject in some detail and contain numerous examples.

The book has four appendices, all of considerable value and thoroughness. Primary sources are listed chronologically, and the publisher might have made them more helpful by using the alphabetical arrangement adopted elsewhere in the lists of vocal music with guitar accompaniment and available sources of tablatures. Equally, it would surely not have been difficult to provide a list of locations signified by R.I.S.M. abbreviations, if only to save the student from further hunting.

This book must be recommended to the inquisitive musician or instrument maker who is looking for an introduction to the fascinating and often tantalising subject of the classical guitar's predecessors. James Tyler has provided a guide with which one can quickly discover that the instrument did not simply evolve from the primitive to the sophisticated, but rather reached a series of plateaux, from which can be surveyed rich and varied musical landscapes.
Review of: Will Jansen, The Bassoon

Part VI is now with us, ending in the middle of a chapter with a note from the publisher, in case this surprises us (nothing surprises us in connexion with this book), saying that it was indeed intentional that "this issue ends with chapter 25, page 1978... this is not an error", in which case I've lost 900 pages since it ends, in fact, with page 1078. This fascicle begins with a random selection of 169 musical examples of the use of the bassoon, omitting a number of important points (eg Haydn's use of bassoon and violin) and so random that one movement of a work is no.71 and another is no.167, with no discernible schema or rationale to explain such an order. Each example is described and then transcribed, with much of the description repeated as a caption. There are also 6 examples for the contrabassoon, plus an afterthought for the bassoon which has been omitted from the transcriptions. There are then some very incomplete notes on bassoon repertoire, but this seems to be merely the introduction to a massive great list which will appear in a future fascicle; there is a list of 21 works for dulcian, one of which is scored for 2 clarini, timpani and basso continuo as well, which I'd have thought would make it, and several of the others, much more likely to be for bassoon than for dulcian. There is then a chapter on Bassoons and Contrabassoons of Historical Value which includes a section on reconditioning and conservation. When I tell you that his advice on buying an old bassoon is never to pay more than 150 guilders (his equivalent is $75) and never a cent more than 175-190 guilders for a unique specimen, you will realise that he is living in cloud-cuckoo land, and that his advice on restoration includes reaming out the bore with emery paper, which renders the book positively dangerous, you may wonder why I continue to review this. I feel that a) if the book continues to arrive it is our duty to review it, and b) if you know what it's like it may save you a lot of money. The section on indexing and drawing is useful, that on photography (judging by his own photographs) unhelpful, that on measuring the bore a generation or two out of date. The chapter on collections which include bassoons is chaotic and incomplete; it is coded according to whether there is a large, medium or small number of bassoons, with no indication of the number concerned and none at all of the importance; eg Bill Waterhouse's collection is 'medium', the fact that in it there are two Stanesby instruments is ignored. There is then a number of drawings of makers' marks, many of them atypical and some inaccurate, and anyway random, as always. At which point I will follow the example of this fascicle and, thinking that I have written enough, just stop.
This is a beautiful recording, with one of the best surfaces I've heard in years, of mid-seventeenth century music for guitar and chitarriglia (treble guitar), played on two original five course instruments, both of course gut strung throughout. The guitar is by Georgiou Platestainer and chitarriglia is anonymous, c.1640, perhaps, Harvey hints in the sleeve notes, by Giovanni Smit. Both are contemporary with most of the music. The composers are Giovanni Paolo Foscarini, Francesco Corbetta, Stefano Pesori (a highly entertaining suite for the smaller instrument), Angelo Michele Bartolotti, Domenico Pellegrini (a highly atmospheric battle), Ludovico Roncalli, Carlo Calvi (the second of the suites for the chitarriglia) and Giovanni Battista Granata, all of whose music on this record falls between 1630 and 1680. The record ends with a minuet by Giocomo Merchi dating from nearly a century later, which seems a very odd choice - not that I've anything against it as a piece of music, but the style is so different that it doesn't seem to fit with the rest. The music is very well played throughout, though I had the impression that there were a few notes all-but missed in the last of the Pesori pieces. It is fascinating to hear this music on the proper instruments with the right tone quality - one can understand the desire of players of the modern guitar to play the music, but after hearing this record, I can't understand how anyone would want to listen to it played on any other instruments than these and their contemporaries.

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